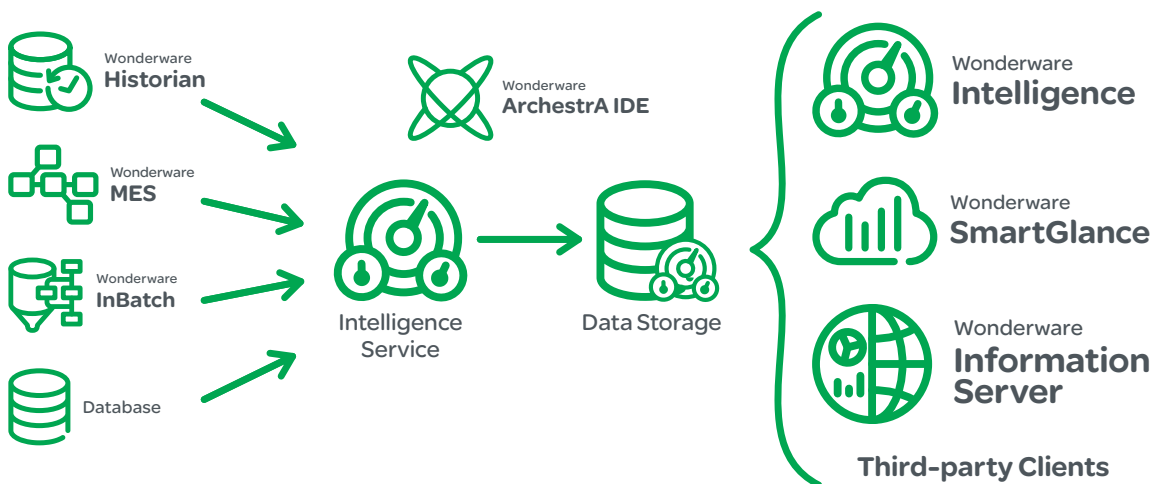# Wonderware Intelligence

Turning Industrial Big Data into actionable information

Wonderware Intelligence Software is an Enterprise Manufacturing Intelligence (EMI) / Operational Intelligence (OI) offering which automates the calculation, contextualization and storage of operational Key Performance Indicator (KPI) and metrics historical data. It empowers operational stakeholders to improve plant performance by visualizing and analyzing critical metrics information.

This powerful solution helps you to maximize return on investment in plant floor and enterprise solutions, unlocking the business relevant context hidden in the distributed data of your existing applications. It adds the information and insight you need for more transparency to the true cost and profit contributions from your operations.

Wonderware **Historian**

Wonderware **MES**

Wonderware **InBatch**

Database

Wonderware **ArchestrA IDE**

Intelligence Service

Data Storage

Wonderware **Intelligence**

Wonderware **SmartGlance**

Wonderware **Information Server**

Third-party Clients

Wonderware

by **Schneider** Electric

Wonderware Intelligence

Wonderware® Intelligence addresses the Industrial Big Data challenge by offering an easy to use, non-disruptive solution to a company's data analysis problems.

SUMMARY

Wonderware Intelligence software allows you to automate the job of creating Key Performance Indicators derived from multiple sources, and calculates a history of your operations metrics, which are continuously updated in near real-time resolution.

User-friendly analytics and dashboard-based monitoring of metrics empower workers and decision makers across the organization to make informed assessments.

BUSINESS VALUE

Manufacturing Intelligence helps to improve operational performance and competitiveness through improved operational decision-making. It assists in gaining new insights into optimization potentials that may be now hidden in disconnected functional domains or in separate sets of data that are typically found in most manufacturing plants and enterprises today.

Use Your Data to Maintain Competitiveness

Industrial operations leverage multiple software systems to manage the day to day operations in an effective and secure manner. These systems generate large sets of data including time series process data in historians, alarm data in HMI/SCADA systems, production, consumption and execution logs or electronic batch records. Additionally, there is quality information residing in quality management systems, planning and cost information in business systems and finally, today's focus on sustainability adds records of energy consumption.

As a result customers have large amounts of data (Industrial Big Data) in multiple silos, but are still challenged with creating relevant reports reflecting performance measures in overall context of their operational process.

Using spreadsheets to calculate and analyse metrics for insights is not effective: they are often generated after the fact, are hard to sustain or are too complex for collaborative use across an organization.

Overcoming the Industrial Data Challenge

Wonderware Intelligence addresses the biggest challenges to leverage the hidden insights in industrial data. The software is designed to automate the transformation of time series and transactional data across multiple sources and to turn large amounts of Industrial Big Data into actionable metrics and Key Performance Indicator (KPI) information. Metrics and context information is persisted in an open information model, providing a single version of the truth that data warehouses and enterprise business intelligence tools need to make strategic sense out of production data.

The Wonderware Intelligence solution is complemented by the most easy-to-use analytical capabilities, interactive reports and dashboards to empower operational teams with real-time visibility and self-service access to information, and to facilitate cross-functional collaboration for operational performance improvements.
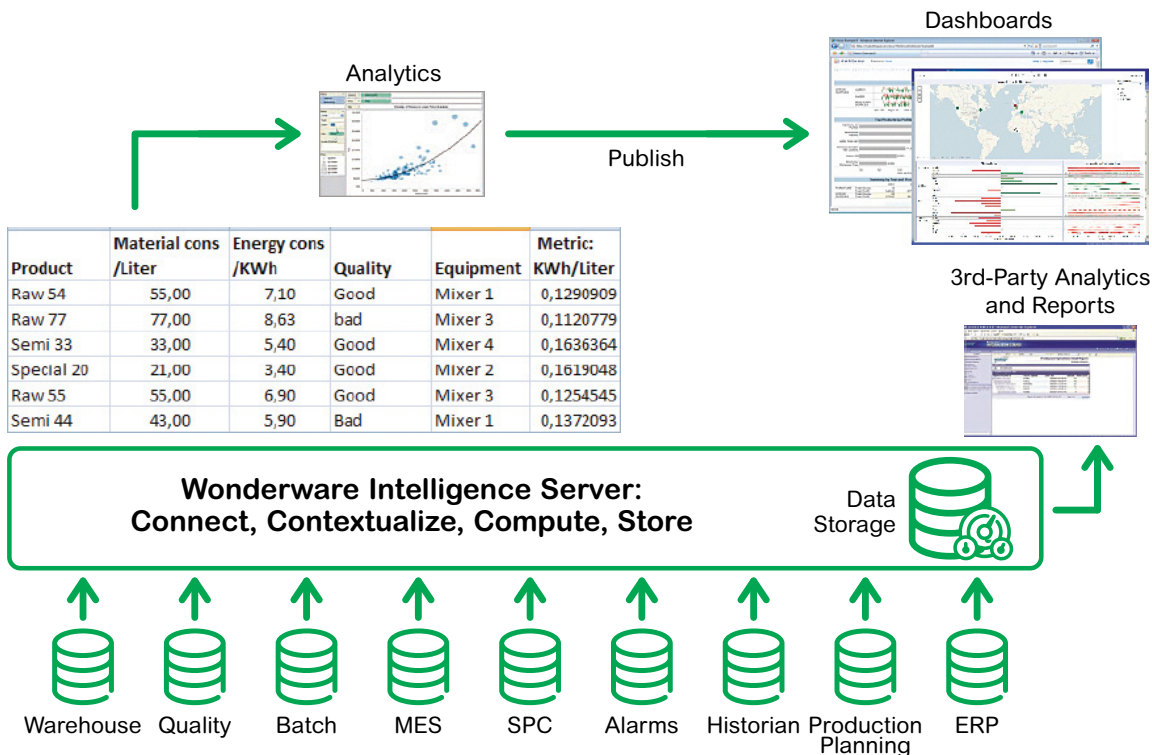
Wonderware Intelligence

Increase the ROI of Your Industrial IT Investment

Wonderware Intelligence leverages the existing investments you have in your plant floor and enterprise solutions. It does not replace - but supplements that data, adding the information, context and insight you need for more transparency to your operations to drive operational and financial improvements.
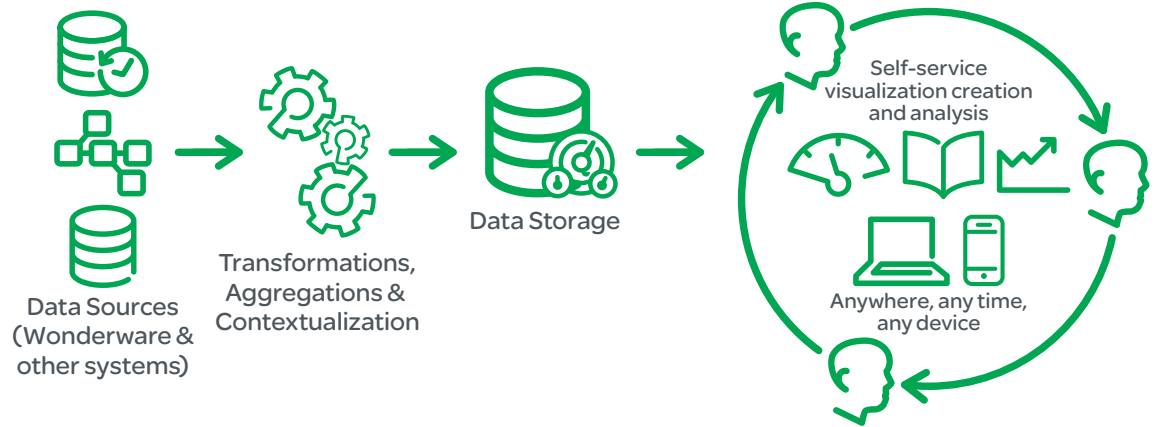
Wonderware Intelligence continuously computes the metrics that are important to you to determine current plant, multi-plant or infrastructure performance. It provides near real-time visibility of progress against metrics, unlike traditional business intelligence tools which typically refresh daily, at the soonest.

Wonderware Intelligence can be used in any industry—whether you are in food & beverage, life sciences, chemicals, oil & gas, energy or infrastructure. It accesses the data feeding the KPIs that you need to manage your operations, whether that data comes from your Wonderware system, a process historian, MES, ERP, LIMS, or other enterprise or custom legacy application.

Utilize Wonderware Intelligence Clients or existing Wonderware reporting products, or any other web-based content, by viewing this source data when drilling down into dashboards to determine cause and effect relationships. Wonderware Intelligence comes with predefined data models and dashboard content for Wonderware InBatch®, System Platform Alarms, Wonderware MES/Performance and Wonderware Corporate Energy Management. Pre-defined data models significantly shorten the time to reach an analytical view of your plant or business unit operations' performance and results.

Analytics

Publish

Dashboards

3rd-Party Analytics and Reports

Product	Material cons /Liter	Energy cons /KWh	Quality	Equipment	Metric: KWh/Liter
Raw 54	55,00	7,10	Good	Mixer 1	0,1290909
Raw 77	77,00	8,63	bad	Mixer 3	0,1120779
Semi 33	33,00	5,40	Good	Mixer 4	0,1636364
Special 20	21,00	3,40	Good	Mixer 2	0,1619048
Raw 55	55,00	6,90	Good	Mixer 3	0,1254545
Semi 44	43,00	5,90	Bad	Mixer 1	0,1372093

Wonderware Intelligence Server: Connect, Contextualize, Compute, Store

Data Storage

Warehouse Quality Batch MES SPC Alarms Historian Production Planning ERP

Wonderware Intelligence
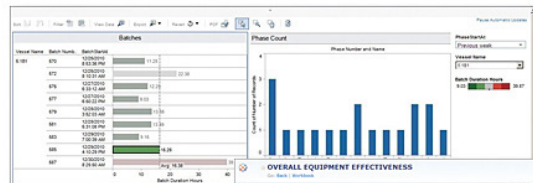

Empowerment and Collaboration

Information visibility at the right time empowers workers and operations decision makers to change the way they plan, schedule or act. Wonderware Intelligence relates data for a holistic view across different core functions, domains and operations, regardless of where the data resides.

The ability to analyze metrics in context creates insights to optimize margins (e.g. for business unit operations), to minimize costs with optimized use of energy and raw materials, or to improve operational efficiencies with improved throughput, quality, and asset utilization.
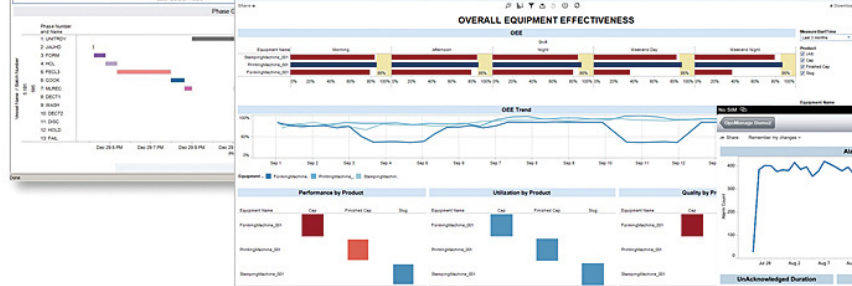
Operations Metrics That Make Business Sense

Wonderware Intelligence allows you to adhere to operating goals with near real-time resolution. It will help you understand the impact of planning, execution, staff and equipment behavior on quality, performance, material and energy consumption, and the effects on overall business performance.
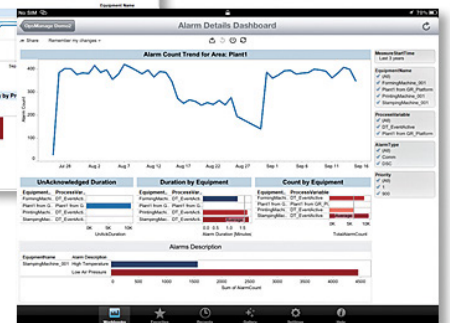
Batch Execution Dashboard

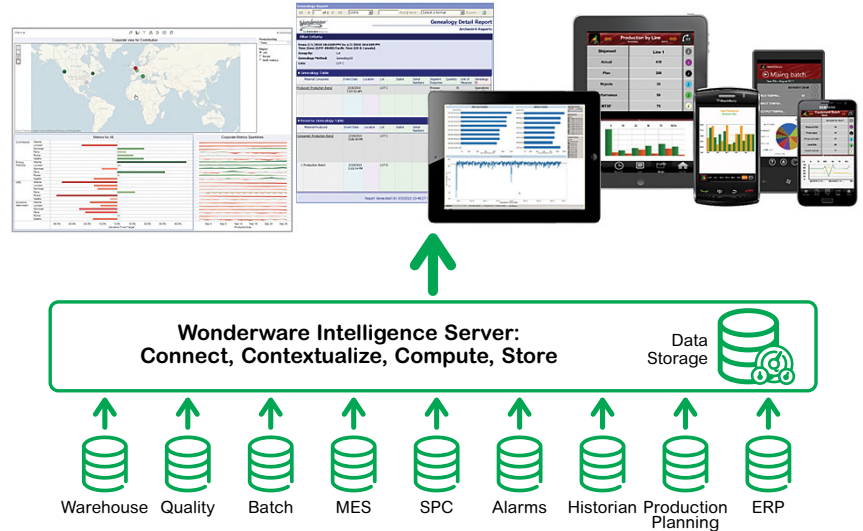**OEE Dashboard**

Energy Dashboard

Wonderware Intelligence Features

Wonderware Intelligence Server

Wonderware Intelligence Server manages the acquisition, aggregation and persistence of operational metrics with both time stamp and relational context information across multiple data sources. Data sources include Wonderware software applications (Wonderware MES, CEM, Historian, etc.); enterprise data and third-party plant sources like Historians, MES, HMI/SCADA; and other plant systems.

The Wonderware Intelligence Server is scalable, from a single site/single server to multiple servers for hosting data from multiple sites. You can establish a hierarchical data structure for aggregating multiple databases into one data store.
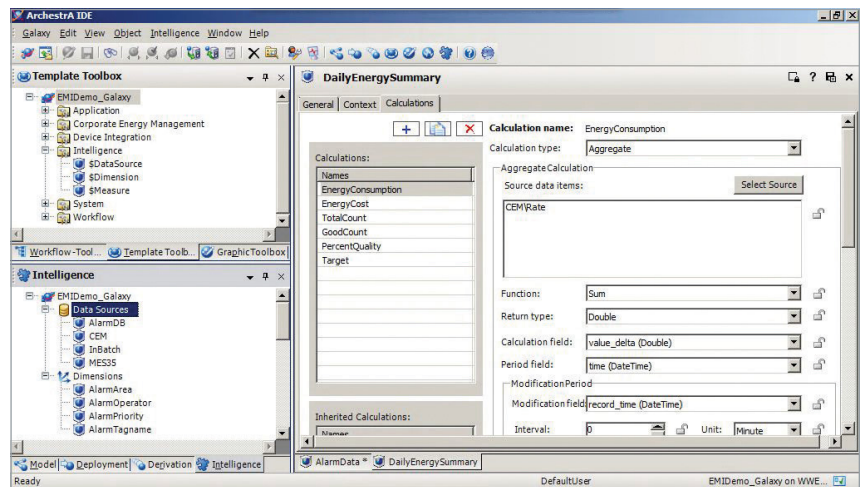
Configurable Information Model

The Intelligence Information Model is configured using three types of configuration items - data sources, dimensions, and measures, using the Wonderware System Platform's object-oriented Integrated Development Environment (IDE).

Automation of Data Extraction, Transformation and Loading

After deployment of the Information Model in the IDE, the software extracts, transforms and loads data from the historical data sources into a data store that is structured according to the designated information model. The software loads the data store by periodically refreshing the current data, while loading historical data in reverse chronological order.
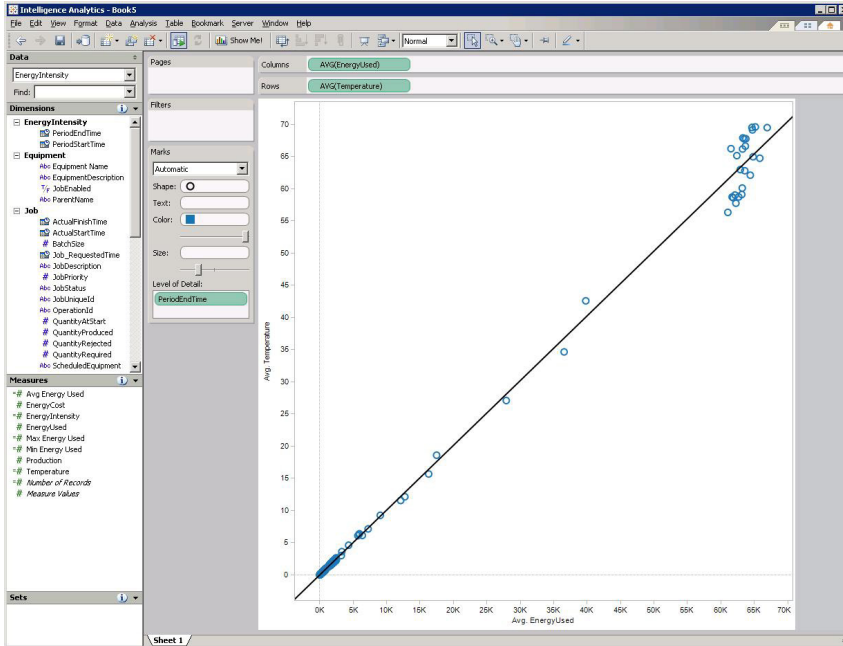
Data Store

As a result, Wonderware Intelligence provides an always up-to-date data store, optimized for retrieval and persisted in a Microsoft® SQL Server database. The data store can be used to monitor Key Performance Indicators, as well as use for responsive root cause analysis.

Intelligence data can either be displayed in the Tableau®-based Intelligence Clients, Wonderware Smart Glance mobile reporting application, or by any of your preferred analytics, business intelligence (BI), reporting, or client tools.

Wonderware Intelligence Features (continued)

Wonderware Intelligence Clients – Powered by Tableau® Software

Wonderware Intelligence Clients (Tableau Software for Wonderware Intelligence) provide an award-winning, easy to use, self-service approach to information, empowering stakeholders to create and publish personalized charts, interactive reports and dashboards for collaboration. This unmatched self-reliant approach perfectly complements Wonderware Intelligence, securing acceptance and empowerment to leverage the know-how of your industrial and operations employees, without the requirement to turn them into IT experts.
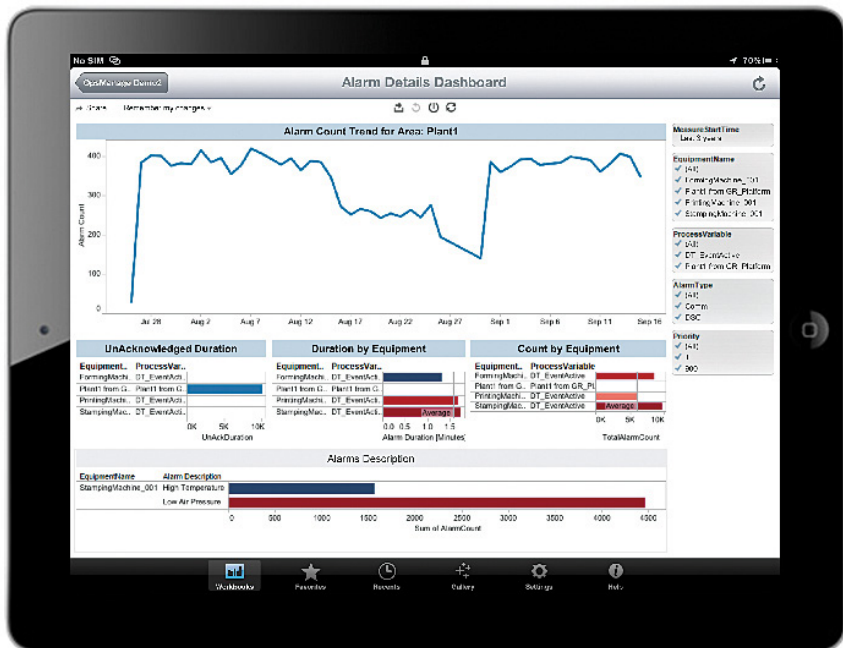
Wonderware Intelligence Analytics Client

Intelligence Analytics Clients (Tableau Desktop for Wonderware Intelligence) enable users to quickly visualize and analyze Intelligence data with simple drag and drop capabilities, allowing the creation of rich visualizations and dashboards in minutes. With a few clicks, users can publish interactive Dashboards that feature drill-down capabilities for root-cause analysis. Several data visualization objects are available: grids, charts (line, bar, pie, bullet), maps (geographical, heat, tree) and more, all helping you to understand the information at a glance. Intelligence Analytics Clients can also configure reports and dashboards that encompass existing reporting content from other Wonderware reporting applications.

Wonderware Intelligence Standard Clients

Intelligence Standard Clients provide viewing access to published Dashboards, using Tableau Server for Wonderware Intelligence. They allow the user to browse and navigate the Intelligence data as personalized content, featuring the same visualization capabilities and drill down analysis capabilities as the Analytics Client.

High performance data management secures fast response times, even when you are dealing with Industrial Big Data. Support for several web browsers and mobile tablet devices allows you to view Intelligence dashboards anytime, wherever you are.

Wonderware Intelligence Specifications

Wonderware Intelligence Server

Data adapters

Wonderware Intelligence software includes the following data adapters:

• OSIsoft PI Server Native adapter (requires OSI PI Data Access option - SDK)

• OSIsoft PI Server OLEDB adapter (requires OSI PI Data Access with PI OLEDB provider)

• Wonderware Historian adapter

• Microsoft SQL Server adapter

• Oracle data adapter

• Text File adapter (CSV format)

• A Toolkit is available to build additional data adapters.

Operating Systems

Wonderware Intelligence Server supports the Microsoft Windows Server platform, including:

• Windows Server 2008 R2 Standard or Enterprise Edition (64-Bit)

• Windows Server 2012 Standard or Data Center Edition (64-Bit)

• Windows Server 2012 R2 Standard or Data Center Edition (64-Bit)

The English version of the Wonderware Intelligence Server software is supported on the following non-English operating systems:

• French   • German   • Japanese   • Simplified Chinese

Database Technology

Wonderware Intelligence Server supports the following databases:

• Microsoft SQL Server 2008 R2 in Standard or Enterprise Edition (32-Bit and 64-Bit)

• Microsoft SQL Server 2012 in Standard or Enterprise Edition (64-Bit)

• Microsoft SQL Server 2014 in Standard or Enterprise Edition (64-Bit)

Virtualization

Wonderware Intelligence Server supports the following virtualization platforms:

• Microsoft Hyper-V™
• VMware vSphere 5.x

Wonderware Intelligence Specifications (continued)

Wonderware Intelligence Clients – Tableau Software for Wonderware Intelligence

Wonderware Intelligence clients provide language support for:

- English
- German
- Brazilian Portuguese
- Korean
- French
- Spanish
- Japanese
- Simplified Chinese

Analytics Client

Wonderware Intelligence Analytics Client – Tableau Desktop for Wonderware Intelligence supports the Microsoft Windows platform, including:

- Microsoft Windows Vista SP2 or newer (both 32- and 64-bit)
- Microsoft Server 2008 R2 or newer

Standard Client (Dashboard Access)

Tableau Server Dashboards for Wonderware Intelligence support the following web browsers and mobile device platforms:

- Microsoft Edge or Internet Explorer 8 or later
- Apple Safari 3.x or later, including Safari on the iPad (iOS 5.1.1 or later)
- Mozilla Firefox 3.x or later (not supported on mobile devices)
- Google Chrome, including on Android devices
- Android Browser (Android 3.2 or later)
- Tableau Mobile iPad and Android Apps, available at the Apple App Store and Google Play Store, respectively

Wonderware Intelligence clients provide connectivity to the following data sources (strictly in conjunction with Wonderware Intelligence Server only):

Microsoft SQL Server, Microsoft SQL Server Analysis Services, Oracle, Microsoft Excel, Microsoft Access or text files.

More about Wonderware Intelligence Software

For more information on Wonderware Intelligence software please contact your local Wonderware distributor, or visit www.software.schneider-electric.com/products/wonderware/production-information-management/intelligence-software