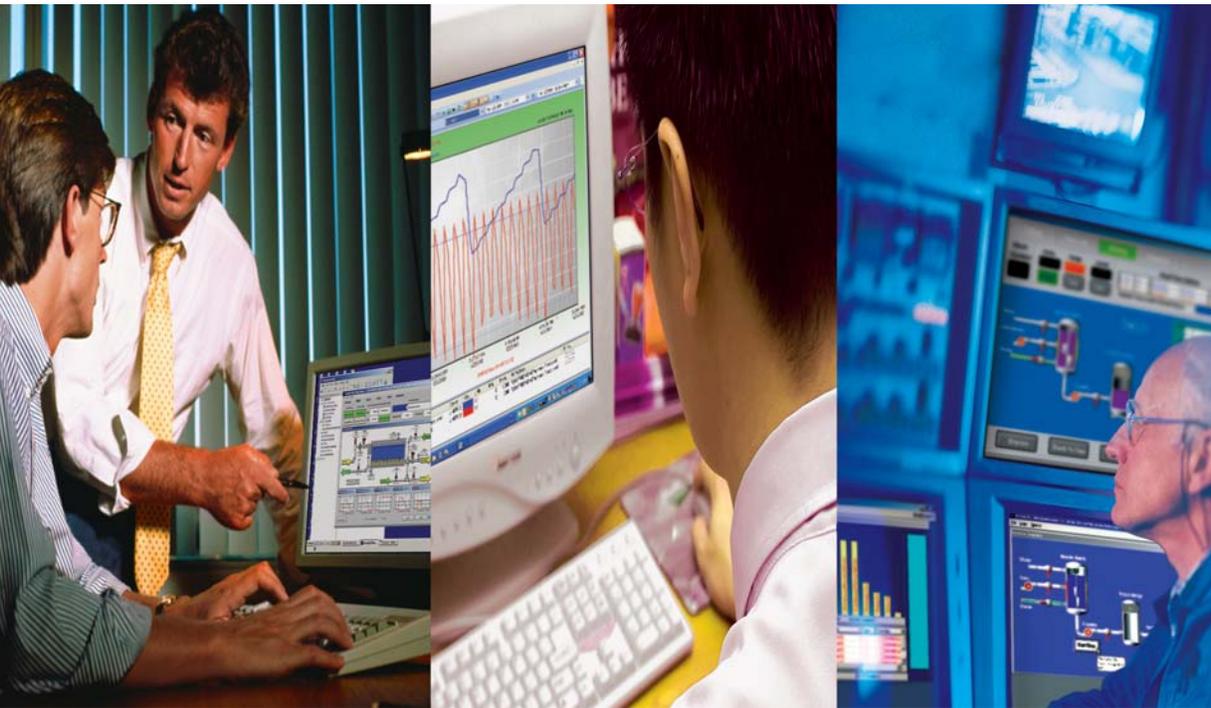# Real-Time Plant Information and Automation Software Platform

- ○ *Dramatic Engineering Savings*
- ○ *Lower Cost of Ownership*
- ○ *Agility to Respond and Grow*
- ○ *Uncompromising Openness*

Visualize   Analyze   Optimize

BENEFITS

- Unify diverse automation systems for improved operations and information management
- Design, build, secure, standardize, maintain, and deploy plant intelligence applications
- Drive corporate standards to replicate success across the enterprise
- Lower lifecycle costs for plant IT solutions
- Change and expand the system as a whole without disruption

CAPABILITIES

- Integrated Development Environment enabling concurrent development
- Assembly of applications using advanced ArchestrA technology
- Real-time peer-to-peer application services
- Unlimited scalability
- Realistic model of the plant and process
- Standard environment for scripting, alarming, tags and history
- Single namespace without tag limitations
- Common model for security, validation and audit trails
- Integration of manufacturing and business systems
- Centralized diagnostics
- Tools to facilitate and enforce corporate standards
- Support for different network topologies
- Control hardware-independent
- Easy redistribution of server load

BUSINESS VALUE

Drive Standards

Unfortunately, because many manufacturing systems are closed and inflexible, a plethora of good ideas and prototype manufacturing

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Powering intelligent plant decisions in real time.

processes developed by corporate engineering departments to improve plant performance never make it to operating plants. Why not? Because it is hard to transfer this engineering work and scale up to a full-size plant.

Systems utilizing the Industrial Application Server can initially be rolled out as part of a pilot program, with minimal investment, so that manufacturers can see how much time and money can be saved in the manufacturing process. The engineering work can then be easily re-used and applications can be assembled, tested and redeployed across the entire organization. As new capabilities are incorporated, synchronization across all systems is a snap.

Enterprise-Wide Integration

The Wonderware Industrial Application Server provides one platform that can connect both business and plant-floor systems and applications. What's more, companies can achieve this complete enterprise integration without replacing their existing hardware or software or rewriting applications.

Today, application servers are commonly used in IT systems to run business logic, manage data storage and provide information to client computers, but are not built to meet the demanding needs of real-time plant-floor systems that store or manage data related to plant operations. Wonderware has overcome these limitations and provides an industrialized version of an application server specifically built for the manufacturing environment.

Lowest Total Lifecycle Costs

The Wonderware Industrial Application Server introduces a new era in engineering productivity and scalability for industrial automation applications. It provides a framework for simplifying the development, deployment, maintenance and administration of distributed automation applications. It also enables manufacturers, OEMs and system integrators (SIs) to:
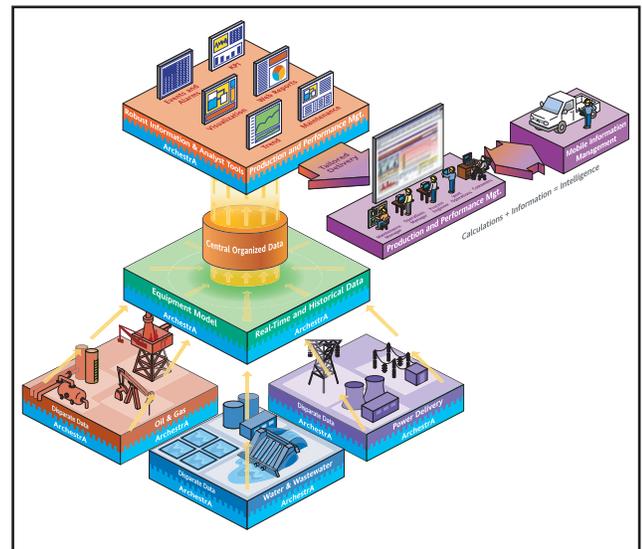
- Develop applications that realistically model the components of a plant or facility;
- decrease engineering, ownership and maintenance costs for information and automation systems; and
- Create systems that evolve as the company's needs for increased monitoring and MES functionality emerge.

APPLICATION

HMI and Supervisory

For HMI and Supervisory systems, the Wonderware Industrial Application Server combines the flexibility of a peer-to-peer architecture with the power to implement global changes across an entire organization in minutes. Benefits include:

- Freedom to maximize productivity by re-architecting your system;
- The ability to create and widely distribute HMI applications;
- Significant savings by reusing application engineering across multiple plants;
- Easy system management and expansion; and
- Accommodations for frequent system changes and maintenance.

Common SCADA Software Platform

SCADA

The Industrial Application Server's distributed peer-to-peer architecture, re-usable templates, and remote deployment and maintenance capabilities make supporting SCADA applications remarkably efficient. Large oil & gas, power-distribution and water/wastewater systems are easier to manage as a result of the Industrial Application Server's impressive scalability.

It also optimizes network communications over slow and intermittent networks, which significantly enhances application deployment and communications.

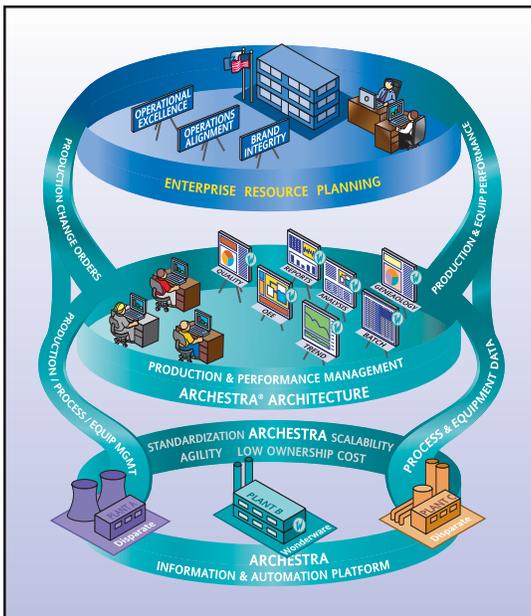## Production and Performance Management

Designed to increase your ability to improve production and performance management, the Wonderware Industrial Application Server can empower you to:

- Quickly create OEE (overall equipment efficiency) calculations for your existing equipment templates;
- Define downtime definitions; and
- Easily add production counters.

Because the plant equipment is already defined as part of a common plant model in the Industrial Application Server, these calculations can be easily added when needed.

Benefits include the ability to:

- Add MES functions without purchasing large software applications;
- Build on existing supervisory functionality;
- Make proactive system modifications; and
- Positively contribute to the bottom line.

Production and Performance Management

PLATFORM FOR REAL-TIME PLANT INFORMATION AND AUTOMATION MANAGEMENT

Realistic Model of the Plant and Process Applications for More Intuitive Application Development

Wonderware's Industrial Application Server provides significantly more flexibility and power than tag-based development products as a
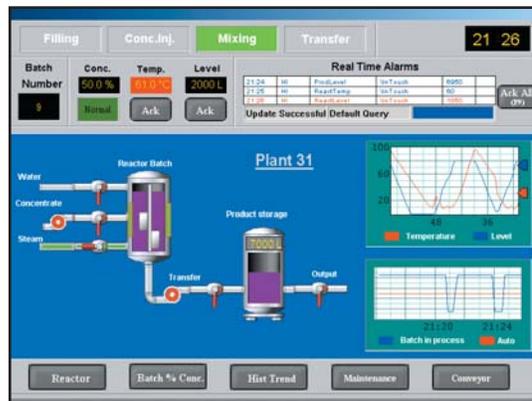
result of its more intuitive and simplified approach to developing supervisory and information management applications.

In order to streamline project development, the Wonderware Industrial Application Server provides Application Object Templates, which represent:

- Devices such as pumps, conveyers, valves, control loops, PLCs or plant equipment; and
- Processes like calculations, sequences, database triggers or workflows.

These templates can be linked and combined to form more complex structures. Furthermore, entire plant areas can be configured, with associated alarming and security. One component builds upon another, with the ability to define, configure, monitor and manage all information and aspects of the operation.

InTouch HMI Integration

Single Namespace and No Tag Limit for Unlimited Growth

Systems based on the Wonderware Industrial Application Server can scale from a single computer to a system of hundreds of nodes, all the way up to 1 Million I/O!

With the Wonderware Industrial Application Server:

- Development is performed within the ArchestrA Integrated Development Environment (IDE);
- There is one secure global namespace for all process data;
- Application creation is a drag-and-drop process using advanced but easy-to-use ArchestrA Object Templates;
- Objects are organized according to the plant model;

- Configuration is stored in one central location; and
- Applications easily deploy to servers in a scalable computing architecture.

Common Security Model, Validation and Audit Trail for Regulated Industries

The Industrial Application Server provides data security at the lowest possible level of granularity and extends the Microsoft Windows security model down to the physical equipment layer. Security permissions are maintained at the device or object level and are easily configured from the IDE.

Operator actions can be verified by password or by supervisor. Change management is also enforced with a complete audit trail.
The Industrial Application Server's approach to security is ideal for industrial applications that are impacted by FDA 21 CFR Part 11 requirements and other regulations issued from governmental agencies.

Integrate the Manufacturing World with the IT World for Complete Enterprise Automation

The Industrial Application Server provides data integration capability and communications security needed to tie all of your islands of automation together. In today's economy, it's difficult to justify funding to change out your existing control system, even if your purpose in doing so is to integrate plant and business data. Fortunately, with the Wonderware Industrial Application Server, you don't need to replace your system to enjoy the benefits of enterprise integration.

Control Hardware Independence and Unrivaled Device Integration

Wonderware, together with greater than 100 third-party companies, offers a large selection of 32-bit I/O Servers for hundreds of the most popular control devices, PLCs, RTUs and DCSs — including Rockwell, Siemens, GE, Schneider, Foxboro, Fisher-Rosemont, Honeywell and more.

Reduce Costs with Centralized Diagnostics and Maintenance

With the Wonderware Industrial Application Server, you can modify portions of applications and perform maintenance without bringing the entire system down. The result is decreased maintenance costs and the ability to quickly and cost-efficiently respond to changes or problems. In addition, new plant equipment and workstations can be easily added without disrupting the rest of the line or plant.
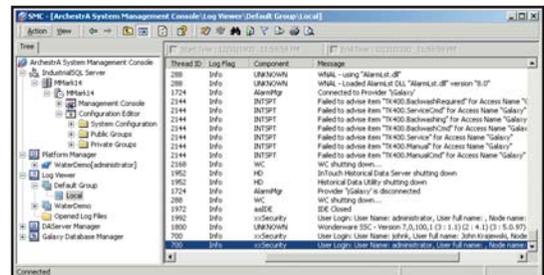
Resolve Problems Quickly with Remote System-Wide Diagnostics

Any workstation on the network - local or remote - can be equipped and configured to view the status of the entire system.

System diagnostics include the status of the following on all workstations and servers in the Industrial Application Server network:

- System communications;
- Historian functions:
- Supervisory application functions; and
- Computer and network health.

All personnel can utilize a common, familiar administration toolset.

Remote System Maintenance

Cut Down on Travel Costs with Remote Software Deployment

Plant personnel can easily deploy and manage their automation applications over large distributed networks from the Industrial Application Server's IDE, making the chore of individually installing and maintaining the same application on every PC in the system a thing of the past. The Industrial Application Server also significantly decreases the deployment costs associated with project commissioning, upgrades and expansions.

Save on Hardware by Using Standard PCs for Industrial Applications

Assembling a network of low-cost, off-the-shelf PCs is easy because of the robustness provided by Wonderware software. Because of its distributed nature and common services, the Industrial Application Server does not require expensive server-class or fault-tolerant computers to enable a robust industrial application.

Cost-Effective Redundancy for Critical Applications
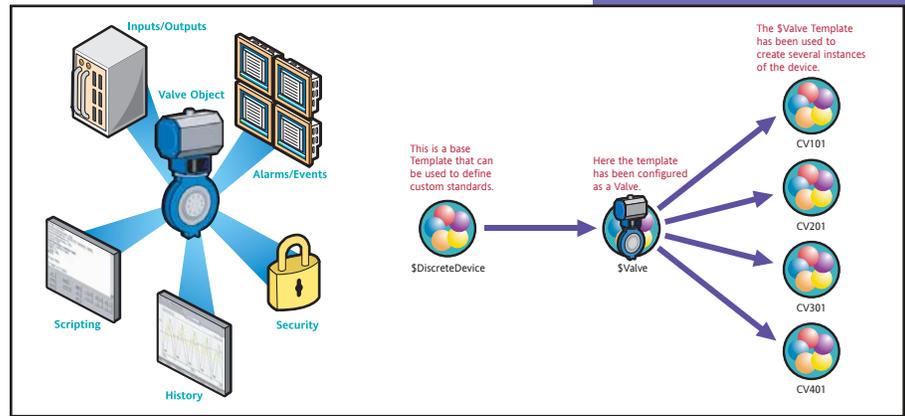
Using Wonderware software,

- A supervisory node can be backed up by another computer;
- Two supervisory nodes can back each other up; and
- Redundant PLC communication paths can be easily defined.

All of this is possible without complicated scripting and programming.

TEMPLATE-BASED, STANDARDS-DRIVEN DEVELOPMENT

Easier Application Creation with ArchestrA Object Technology

With the Industrial Application Server, all the tags, I/O, alarm, historical collection, supervisory scripting and security configuration are stored within an ArchestrA Application Object. This makes the application easier to maintain as all the logic and configuration related to the object is stored in one location.

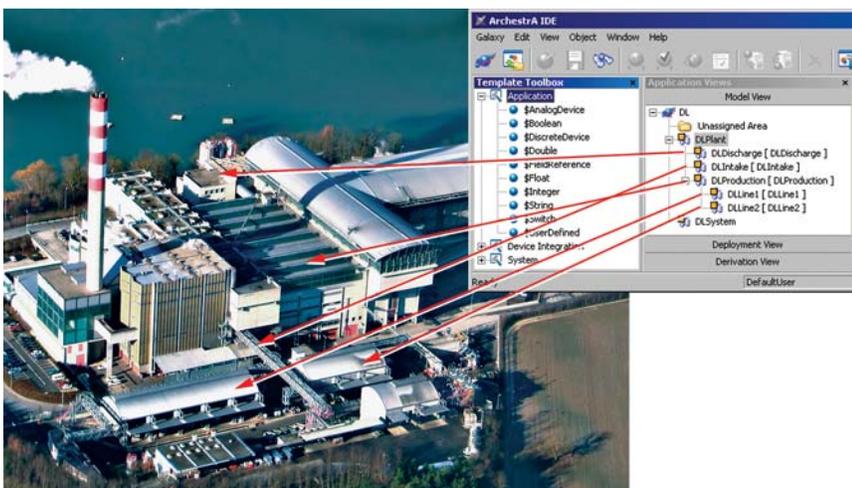*Engineering Re-use Through Application Components*

The Industrial Application Server enables quick and simple creation of these objects by deriving them from templates. These templates can even be set up to automatically associate specific I/O references to the PLC registers based on the object name.

These ArchestrA Application Objects can be easily built, replicated and assembled, drastically reducing engineering setup and deployment costs, while reducing system startup time and risk.

You can also adapt and extend your development environment with application object plug-ins. To find plug-ins that are appropriate for your specific application, go to www.archestra.biz.

Improve Your Productivity with the Integrated Development Environment

Industrial Application Server solutions are developed using the ArchestrA IDE, which is delivered as part of the FactorySuite A^2 Development License.

Plant Model View

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The ArchestrA IDE:

- Generates all the application code required for a running an application, based on templates that encapsulate best practices;
- Automatically deploys applications to nodes without the need to physically install the software on each computer.

The ArchestrA IDE also synchronizes the application with the plant or facility model so that the model accurately represents the actual application that is delivered. In addition to its visual interfaces, the powerful IDE provides built-in script editors and a class browser to enable developers to view, modify and customize applications.

Facilitate Developer Collaboration with the ArchestrA IDE

Developers can collaborate on projects and share assets using the multi-developer capabilities provided by the ArchestrA IDE. In addition, companies can leverage engineering resources in multiple locations by allowing multiple engineers to work simultaneously on the same project. To achieve this collaborative approach, the IDE uses efficient check-in/check-out procedures and provides an audit trail of revision history for each object.

Decrease Maintenance Costs with Centralized Visualization Management

For process visualization, the Industrial Application Server leverages Wonderware's award-winning InTouch human-machine interface (HMI) software. The InTouch HMI leverages the common automation services and distributed architecture of the Industrial Application Server. Thus, existing InTouch users can benefit from the Industrial Application Server's:

- Security model;
- Component architecture;
- Application logic;
- Scalability;
- Diagnostics; and
- Networked namespace.

Leverage the Powerful Scripting Capabilities of Microsoft .NET Technology

Wonderware's Industrial Application Server supports and extends Wonderware's QuickScript function with QuickScript.NET, an easy-to-use scripting language that supports almost any data type.
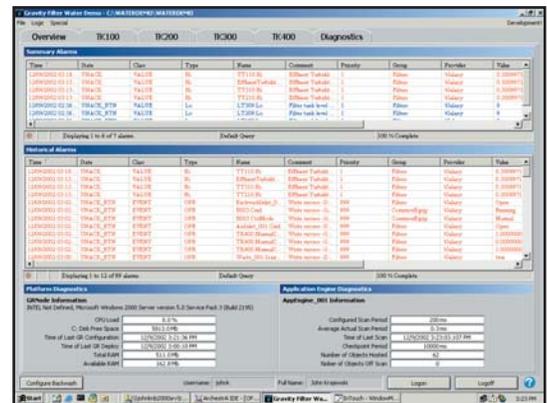
QuickScript.NET offers:

- Scripting functions that can be created in other .NET development environments such as Microsoft's VisualStudios.NET
- Deterministic execution orders and data traceability required for critical automation environments; and
- Compatibility with existing InTouch QuickScript functions, enabling re-use of existing engineering work

Immediately Deliver Information to the Historian with Object Templates

The Industrial Application Server automatically configures and pushes data to the IndustrialSQL Server historian to enable immediate data logging and delivery of plant information.

Historical logging requirements are defined within each ArchestrA Application Object template and are an integral part of that object. With the addition of the Industrial Application Server, it's much simpler to configure and maintain the plant historian.
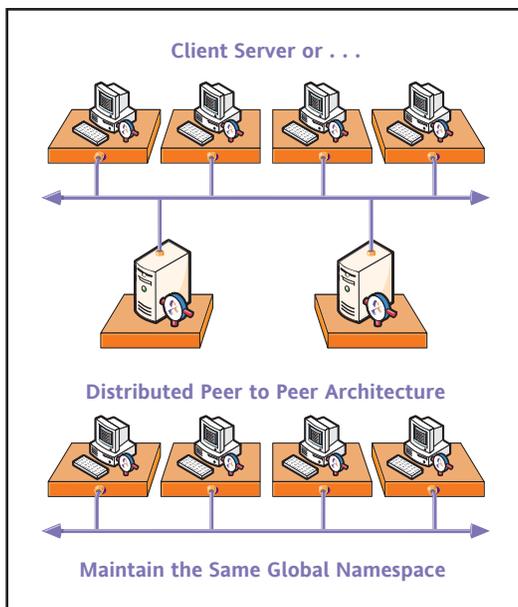

Powerful Distributed Alarming

Enterprise-Wide Reporting Using the Distributed Alarm Sub-System

The Industrial Application Server supports a fully distributed alarm sub-system, which greatly improves the quality of alarm information, while reducing system configuration time. This powerful alarm sub-system supports multiple alarm-acknowledgement models for easy viewing and management of alarm conditions.

Facilitate and Enforce Corporate Standards to Improve Business Processes

The Industrial Application Server provides the ability to securely encapsulate intellectual property as templates that can be used in any automation or information application across the enterprise. This capability enables manufacturers to quickly identify successful processes and operations, and re-implement them across the company in multiple locations.

In addition, the outstanding scalability of applications created with Wonderware software makes it possible to introduce new projects as prototypes on a single computer initially, and then quickly scale up to an extremely efficient and powerful multi-node system.

Client Server or . . .

Distributed Peer to Peer Architecture

Maintain the Same Global Namespace

Change Network Topology at Any Time

FAST CHANGE MANAGEMENT

The Wonderware Industrial Application Server can decrease the lifecycle costs of owning and maintaining automation applications, while extending the useful lifespan of automation systems.

You Dictate the Ideal Network Topology for Your Project

The Industrial Application Server provides users with complete flexibility in architecture choices, both during the initial system design phase and throughout the lifetime of an installed system. You can select one topology initially and then switch to another if new information indicates that a different topology will work better.

Distribute the Load with Flexible Redeployment

Using the Industrial Application Server, an application running on a single computer can be re-distributed across several computers using easy drag-and-drop techniques. As a result, plant personnel can effectively respond to demands for increased performance, capacity expansion and retrofits without being constrained by prior application deployment decisions.

Your System Warrants the Flexibility, Agility and Peak Performance Offered by the Industrial Application Server

In essence, the Wonderware Industrial Application Server provides companies with the agility and flexibility to cost-effectively respond to changes in automation system requirements, while protecting initial engineering investments.

At Wonderware, we acknowledge that you should have the power to run your automation and information projects as you see fit without being constrained by software limitations. So we make it our mission to give you the flexibility, agility and performance you need to get your job done, and done right.

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decisions in real time.

Contact Wonderware or your local Distributor for information about software products for industrial automation.
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