Wonderware has been providing robust, comprehensive batch execution systems since 1996 with the introduction of InBatch Premier production management software. InBatch software provides many tangible benefits associated with improving the performance and efficiency of batch processes, including the ability to increase production and improve product quality.

InBatch Premier software excels at automating the simplest to the most complex batching applications that demand flexibility. Consistent with the ISA S88 flexible batching standard, InBatch Premier software offers comprehensive batch execution and equipment history, material genealogy, stringent security, Web-based reporting and the ability to facilitate the design and implementation of systems that are compliant with FDA 21 CFR Part 11 regulations.

When combined with award-winning ArchestrA technology, InBatch Premier software achieves an unprecedented level of productivity by providing enhanced batch application flexibility. Some of tangible benefits for batching applications include the:

- Reconciliation of material inventory with actual quantities in vessels
- Use of material characteristics during the batch process
- A scripting engine, which facilitates interaction with third-party databases, files and other systems
- External phase engine, which facilitates custom application items
- Ability to adjust and apply formula parameters at runtime
- Generation of specific alarms associated with a specific batch

**Product Highlights**

- Comprehensive Batch Execution and Equipment History
- Complete Material Genealogy
- Connectivity with Industrial Application Server
- Stringent Security History
- Web-Based Reports and Schedules
- FDA 21 CFR Part 11 Ready
- Consistent with S88 standard
- Batch Scheduling and Execution
- Recipe Management
- Robust Batch Execution Engine
- Model-Based Configuration
- High Availability via Redundant Batch Servers
- Remote Administration
**FLEXIBLE MANUFACTURING**

InBatch Premier software creates an environment that enables manufacturers to react quickly to new products, changing customer schedules and unexpected plant-floor events. Every recipe can have a different procedure and formula, and recipes can be scheduled for production on any train that satisfies the equipment requirements defined in the recipe. In many instances, there is a need for the automatic adjustment of formulation parameters at runtime. This is easily accomplished via the combination of InBatch software and ArchestrA technology. The ability to configure the use of process equipment and to modify the formulation at runtime provides manufacturers with the flexibility needed to successfully compete in today’s competitive manufacturing environment.

**FASTER TIME TO MARKET**

**Graphical Recipe Development**

The Recipe Editor provided by InBatch Premier software utilizes a very intuitive approach to recipe development, which gives production personnel the ability to graphically and easily develop and maintain recipes without costly engineering support. As a result, engineers can focus on true engineering issues. The Recipe Editor offers the following benefits:

- A graphical procedure environment featuring Sequential Function Charts (SFC)
- Unit Procedures and Operations saved to libraries with drag-and-drop simplicity
- Unit Procedures and Operations retrieved from libraries by dragging and dropping
- Recipe creation time reduced by through re-use of Unit Procedures and Operations

**Simulate Execution of New Recipes**

After the process model - consisting of the manufacturing equipment and operational specifications - has been configured within the InBatch software, the system is available to create recipes that can then be executed in simulation against the process model without being tied to a control system such as a PLC. As a result, InBatch software can:

- Address scaling issues
- Determine if a plant has the required equipment, processing capabilities and materials to produce the desired recipes

**Validate the Recipe, Not the Control System**

In regulatory industries, the time and effort that goes into validating the entire system is enormous. In many validated batching execution systems, bringing a new recipe to production means revising or rewriting the control code. Therefore a major part, if not the entire system, would require costly, time-consuming revalidation, which could delay new product releases. With InBatch Premier software, the control code, or PLC code, is written in a modular format to provide a specific task or function rather than as part of a fixed sequence of operations. As a result, InBatch Premier software can help you direct and orchestrate the sequence of operations in the controller or PLC to suit particular recipes. Because the control system does not change, only the new recipe needs to be validated. The time and expense saved in validating only the new recipe is enormous.

**REDUCING THE LIFE-CYCLE ENGINEERING COSTS OF BATCH EXECUTION SYSTEMS**

**ArchestrA Technology**

The ArchestrA technology combined with the InBatch software significantly reduces the configuration and maintenance costs of the operator information and interoperability of the control code by providing:

- Unlimited Tag/Object definition
- Unrivaled project architectural freedom
- Project structure via the plant model
- System load distribution
- Reuse of code, resulting in dramatically improved productivity
- Ease of maintenance and change propagation
- A foundation for tighter suite integration
- Enhanced communications and diagnostics
Simplify and Reduce Costly Control Code

Engineering the configuration and maintenance of the control code (a.k.a., PLC code) for these systems typically requires substantial technical abilities. However, with InBatch Premier software, the control/PLC code is created in a modular structured format called Phases to provide a specific task or function. This approach gives you the ability to:

- Alter the sequence of operations directly in the controller or PLC
- Develop fewer elaborate sequences in controllers and PLCs
- Implement unit-to-unit material transfers and unit control
- Drastically reduce initial engineering efforts
- Extend system capabilities
- Reduce the amount of custom control code
- Control controllers and PLCs with a less comprehensive understanding of code sequencers
- Decrease implementation and maintenance costs by up to 60%

Enterprise-Wide Reuse - Write Once, Reuse Many Times

ArchestrA Technology

The ArchestrA technology behind the InBatch software provides increased operator information and interoperability functionality. It facilitates the ability to write code once and then reuse it many times, saving a substantial amount of engineering time. The ArchestrA technology also provides the following benefits:

- Centralized deployment and maintenance
- Reduced engineering resources
- Global application deployment
- Shorter project life-cycles when product life-cycles are shorter
- Quickly adaptable, efficient systems that work well for agile enterprises
- Increased projects focused on asset optimization
- Fewer projects focused on capacity expansion

Control Logic

Unit procedure and phase logic is modular and structured, which allows users to create standard control or PLC logic libraries, enabling re-use throughout the enterprise. After the phase logic for a particular task or function has been developed and tested, it can simply be replicated for re-use at other manufacturing sites. As a result, manufacturers can more easily standardize PLC code throughout their organizations. The type of standardization that the InBatch software enhanced with ArchestrA technology provides can reduce costs because users can create code once and then re-use it multiple times, eliminating custom non-standard control code.

Modeling Your Plant Processes

Batch manufacturing is based on the execution of recipes. InBatch recipes are based on the Process Model, which manages a plant’s processing and control capabilities by defining the plant’s equipment and processing capabilities as well as its control and information requirements. Once defined, recipes can be easily created, scheduled and executed.

Batch History

In many batch execution systems, creating a batching history requires extensive configuration and high-level database knowledge. But, with InBatch Premier software, the complete batch history is provided automatically through the batch historian, which stores all batch history to a standard Microsoft SQL Server database. All batch events, material usage, material production, operator changes, comments, alarms and equipment history are automatically logged. A full complement of standard batch report templates is also provided.

Scalability

InBatch Premier software provides a scalable architecture to meet the needs of small, simple applications such as pilot operations, all the way up to extremely large and demanding systems. The system can literally grow as the manufacturing demands increase. In addition, InBatch Premier software offers the ability to quickly and easily add additional processing lines, manufacturing cells or operator nodes or provide remote development capabilities in a very simple, straightforward manner.
Recipe Management
The InBatch Premier recipe management system is very intuitive. It enables production personnel to graphically develop and maintain recipes without costly engineering support. As a result, the engineering staff can focus on true engineering issues. InBatch software provides a Recipe Editor and a graphical procedure environment featuring Sequential Function Charts (SFC) for recipe management.

In addition, InBatch Premier software automates the execution of production sequences and allows for fast changeovers from product to product, resulting in increased productivity. For situations in which raw ingredients and their associated characteristics are dynamic, ArchestrA technology enables InBatch algorithms to be developed such that formulation parameters can be adjusted automatically at runtime. From a product-quality perspective, the software enforces the execution of recipe procedures while verifying that operators execute their activities in the proper sequence, thereby ensuring consistent batch-to-batch product quality.

Batch Management
The InBatch Premier software’s Batch Server is responsible for all aspects of batch management — including schedule dispatching, batch control, equipment arbitration, allocation and release, batch history, material consumption and production, and runtime client management.

BATCH INFORMATION MANAGEMENT

Batch Historian
InBatch Premier software automatically captures and stores all data associated with processing events related to the management and execution of batches. This includes material genealogy, all batch events, phase events and equipment arbitration, including allocation and release, equipment status changes, operator actions and comments and any alarms associated with a particular batch. InBatch Premier software also maintains an audit trail of all security system events.

Powerful Reporting
In order to provide powerful reporting capabilities, InBatch Premier software offers a comprehensive set of Web-based production reports. These reports can be customized to help users easily schedule, generate and view batch reports with a browser. As a result, all of the appropriate personnel throughout the enterprise can access valuable operational information and thereby maximize productivity.

High Availability
In many critical batch applications, a PC hardware failure cannot be tolerated. To avoid such failures, InBatch software facilitates the deployment of a Redundant Batch Server, which mirrors the operations of the primary server. Should a hardware issue occur on the primary server, the back-up server automatically assumes primary server status.

REGULATORY COMPLIANCE

FDA 21 CFR Part 11 Ready
From its inception, InBatch Premier software has provided all of the capabilities that modern manufacturers need to facilitate the design and implementation of systems, applications and solutions that comply with FDA 21 CFR 11 regulations. Thus InBatch software has played a critical role in the creation of many FDA-validated applications in industry today.

Recently, Wonderware extended the InBatch software’s functionality to offer security based on the Microsoft Windows authentication scheme, which inherits the enforcement of various account policies from the Windows operating system and provides features like Password Timeout, Password Reuse and limited re-tries to obtain security clearance.
Food Industries

InBatch Premier software is also ideal for addressing the increasing regulatory pressures in the food and beverage industries. The two primary regulations involve the Bioterrorism Act in the United States and the EC / 178 / 2002 in the European Union. The requirements for both regulations involve the capturing and storage of all processing events associated with the management and execution of food processing. The InBatch software's extensive historian capabilities facilitate the building of batching systems that meet these requirements. For more information on how Wonderware software can help you comply with the regulations associated with The Bioterrorism Act, go to www.wonderware.com/ecompliance or e-mail us at ecomplianceinfo@wonderware.com. For more information on the EC / 178 / 2002, go to http://europa.eu.int/comm/food/food/foodlaw/traceability/index_en.htm.

BATCH CLIENT ACTIVEX CONTROLS

InBatch software provides a comprehensive set of ActiveX Controls that can be easily integrated into InTouch process graphic displays to provide operators with a very robust and friendly interface to the batch server.

FLEXIBLE ARCHITECTURE

In addition, InBatch software provides a scalable client/server architecture for users to design solutions that meet their needs. Architectural elements include:

- **Batch Server**: Host platform for the batch engine and all batch configuration information
- **Redundant Batch Server (Optional)**: Hot backup batch server with automatic switchover support if the primary batch server fails
- **Batch Information Server**: Host platform for the batch historian based on the Microsoft SQL Server and a Web portal reporting software
- **InTouch Batch Client**: Host platform for standard InTouch software using Batch Client ActiveX Controls

- **InTouch TSE with Batch Client**: Host platform for InTouch Terminal Services Edition (TSE) with support for Batch Client ActiveX Controls
- **Report Web Clients**: Any Web browser that connects to the Batch Information Server for reports
- **SuiteVoyager Portal Software**: Host platform for Wonderware's SuiteVoyager portal software
- **SuiteVoyager Web Client with Batch Client**: Any Web-browser view published using the InTouch XML Export facility that uses Batch Client ActiveX Controls

ALL-IN-ONE SINGLE NODE SYSTEM

The All-In-One Single Node application is only recommended for small pilot projects and non-production development systems. The All-In-One solution requires the InBatch Server, the Batch Information Server, InTouch software and the I/O Server be installed on one machine.

Wonderware’s InBatch Premier Software, the Industrial Application Server and ArchestrA Technology

InBatch ArchestrA Objects provide the foundation for an object library designed to provide enhanced connectivity between InBatch software and the Wonderware Industrial Application Server. This library of objects provides an unprecedented level of productivity.
by providing the following enhanced batch capabilities that increase application flexibility:

- Reconciliation of material inventory with actual quantities in vessels
- Use of material characteristics during the batch process
- A scripting engine, which facilitates interaction with third-party databases, files and other systems
- External phase engine, which facilitates custom application items
- Ability to adjust and apply formula parameters at runtime
- Generation of specific alarms associated with a specific batch

**InBatch and InTouch Architecture**

Redundant InBatch servers combined with InTouch software offer a cost-effective and robust solution for high-availability applications. The Batch Information platform supports Batch History based on the Microsoft SQL Server and Web-based report scheduling and viewing.

**InBatch, InTouch TSE, SuiteVoyager Architecture**

InBatch Premier software supports a thin-client technology offering that includes InBatch, InTouch TSE and SuiteVoyager software. Coupling InTouch TSE with Batch Runtime Client support is a very cost-effective solution for applications that require a large number of runtime clients. In this configuration, InBatch server information is viewed through Wonderware’s SuiteVoyager portal software, and operators can interact with executing batches using Microsoft Internet Explorer browsers.

**CONNECTIVITY**

Wonderware DA Servers and the SuiteLink protocol provide connectivity to Wonderware’s InBatch software.

**Integration with Other Wonderware Products**

As the batching component for the Wonderware product line, InBatch software tightly integrates with:

- Industrial Application Server
- InTouch visualization software
- IndustrialSQL Server real-time plant historian
- ActiveFactory data analysis and reporting clients
- DT Analyst asset monitoring and OEE software
- QI Analyst SPC/SQC software
- Device integration tools such as Wonderware DA Servers and I/O Servers, the SuiteLink protocol and OPC technology
- SuiteVoyager portal software
- InTrack resource tracking software

SuiteVoyager delivers tailored plant performance content throughout the enterprise using web browser technology.
### SYSTEM REQUIREMENTS

#### INBATCH SERVER *(includes Redundancy)*

<table>
<thead>
<tr>
<th>Qualified Operating Systems</th>
<th>Additional Required Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Windows XP Professional</td>
<td>Service Pack 1 or 2</td>
</tr>
<tr>
<td>Microsoft Windows 2000 Server</td>
<td>Service Pack 3 or 4</td>
</tr>
<tr>
<td>Microsoft Windows 2003 Server</td>
<td></td>
</tr>
</tbody>
</table>

#### INBATCH INFORMATION SERVER

<table>
<thead>
<tr>
<th>Qualified Operating Systems</th>
<th>Additional Required Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Windows 2000 Server</td>
<td>Service Pack 3 or 4, Wonderware’s IndustrialSQL Server 8.0 historian, or Microsoft SQL Server 2000 with Service Pack 3 Crystal Reports Professional 8.0</td>
</tr>
<tr>
<td>Microsoft Windows 2003 Server</td>
<td>Wonderware’s IndustrialSQL Server 8.0 historian, or Microsoft SQL Server 2000 with Service Pack 3 Crystal Reports Professional 8.0</td>
</tr>
</tbody>
</table>

#### INBATCH RUNTIME CLIENT

<table>
<thead>
<tr>
<th>Qualified Operating System(s)</th>
<th>Additional Required Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Windows XP Professional</td>
<td>Service Pack 1 or 2, Wonderware’s InTouch 7.11, 8.0 or 9.0 software</td>
</tr>
<tr>
<td>Microsoft Windows 2000 Professional</td>
<td>Service Pack 3 or 4, Wonderware’s InTouch 7.11, 8.0 or 9.0 software</td>
</tr>
<tr>
<td>Microsoft Windows 2003 Server</td>
<td>Wonderware’s InTouch 7.11, 8.0 or 9.0 software</td>
</tr>
</tbody>
</table>

#### INBATCH DEVELOPMENT CLIENT

<table>
<thead>
<tr>
<th>Qualified Operating System(s)</th>
<th>Additional Required Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Windows XP Professional</td>
<td>Service Pack 1 or 2</td>
</tr>
<tr>
<td>Microsoft Windows 2000 Professional</td>
<td>Service Pack 3 or 4</td>
</tr>
<tr>
<td>Microsoft Windows 2003 Server</td>
<td></td>
</tr>
</tbody>
</table>