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Welcome to InTouch HMI

InTouch HMI continues Wonderware’s tradition of market leadership in Human Machine Interface (HMI) applications. This booklet gives you a quick overview of the major features of InTouch HMI and explains the essential tasks to create several types of InTouch applications.

Working with Traditional InTouch HMI

The following figure shows the components to create stand-alone InTouch HMI applications, which consist of Application Manager, WindowMaker, and WindowViewer.

You create and manage stand-alone applications with InTouch Application Manager. You develop stand-alone applications with WindowMaker and run them from WindowViewer. You can switch directly between WindowMaker and WindowViewer to test or run your applications and switch back to make modifications to your applications.
Creating Modern Applications with ArchestrA Graphics

A Modern application uses the same components as stand-alone InTouch applications. Modern applications combine the familiar workflow of stand-alone InTouch applications with the capability inherent in ArchestrA symbols. The following figure summarizes the workflow of creating, building, and running stand-alone and Modern applications.

Modern InTouch applications give you the capability to easily integrate ArchestrA symbols directly into your applications. You simply drag ArchestrA or Situational Awareness Library symbols from WindowMaker’s ArchestrA Graphic Toolbox into Modern application windows. All configuration steps to configure symbols are completed from InTouch WindowMaker.
Adding ArchestrA Symbols to Modern Applications

After you have created a Modern application, WindowMaker’s ArchestrA Graphic Toolbox includes separate folders containing the ArchestrA Symbol Library and Situational Awareness Library of predefined symbols. The ArchestrA Symbol Library contains realistic symbols of standard industrial objects.

Situational Awareness Library symbols are configurable symbols designed to enhance an operator's situational awareness of current process conditions using highly efficient visual techniques and best practices. Situational Awareness Library symbols have a simplified look and provide minimum visual detail to efficiently convey their functional purpose and status without showing irrelevant information to operators.

Most Situational Awareness Library symbols are designed as Symbol Wizards that incorporate multiple visual and functional configurations in each symbol. Selecting a configuration for a symbol is a simple matter of selecting options from a list without the burden of extensive design work. Also, Situational Awareness Library symbols provide faster application run-time performance because of their lightweight design and simple appearance.
Creating Managed Applications

You have a choice of how you create your InTouch applications. You can create stand-alone and Modern InTouch applications with the Application Manager and develop them with WindowMaker.

InTouch HMI shares the ArchestrA Integrated Development Environment (IDE) with Wonderware Application Server. You can also create managed InTouch applications from the ArchestrA IDE using ArchestrA symbols and automation objects.

The ArchestrA IDE includes a suite of graphic tools and automation objects to build simple or complex system environments. Using automation objects, you can integrate your InTouch applications much more easily into the Wonderware System Platform. Also, you can embed pre-built ArchestrA and Situational Awareness Library symbols into your applications or use a wide assortment of tools from the ArchestrA Graphic Toolbox to create your own symbols.

Using the ArchestrA IDE to manage your InTouch applications, you can:

- View which applications are running on individual Galaxy nodes.
- Use a central repository to manage applications.
- Deploy application changes to WindowViewer nodes running InTouch applications.

Integrating ArchestrA Objects with InTouch

An ArchestrA Galaxy is your specific production environment to run your managed InTouch applications. A Galaxy includes all computers and components. It is a collection of platforms, engines, application objects, templates, instances, and attributes you define as the parts of your specific application. This collection is stored in a Galaxy database on a node called the Galaxy Repository (GR).
ArchestrA manages your InTouch applications with a specific type of ArchestrA object called the InTouchViewApp application object, which is derived from the ArchestrA $InTouchViewApp base template.

After you derive a new InTouchViewApp template from the $InTouchViewApp base template, you can associate the InTouchViewApp template with an InTouch application by:

- Creating a new InTouch application.
- Importing a stand-alone InTouch application.

An InTouchViewApp template represents one specific InTouch application at design time and cannot be executed at run time.

You deploy an instance of your derived InTouchViewApp template to a target node to run your InTouch applications. The target node is the node on which the managed InTouch application can run in WindowViewer.

To distribute your InTouch application, you can create multiple instances of the same InTouchViewApp template and deploy them to multiple nodes.

**Working with the ArchestrA Symbol Editor**

You can create ArchestrA symbols from basic elements such as rectangles, lines, circles, or text much like graphics created from WindowMaker. The ArchestrA Symbol Editor also includes other graphic tools to create more complex drawing elements like closed curves, chords, and Windows controls.

ArchestrA Symbols are graphics you can add to a Modern application window to visualize data in a production process. You create ArchestrA symbols in the ArchestrA Symbol Editor. You select a basic graphical object called an element from the **Tools** panel and place it on the drawing area called the canvas.
Then, you can change the appearance of your drawn elements either by accessing their properties directly, or by modifying their physical appearance. You can configure the elements or the symbol with animations.

The following figure shows the various tools and palettes of the ArchestrA Symbol Editor that you use to create and customize symbols.

When you embed an ArchestrA symbol into an InTouch window and the symbol is contained in an Automation template, you can easily create a new instance of the Automation object. The embedded symbol automatically references the new object.

The following figure shows the integration of the ArchestrA IDE with traditional InTouch components. The figure shows the steps to create a managed InTouch application with the ArchestrA IDE.
1. Create a managed InTouch application in the ArchestrA IDE by deriving a template from the $InTouchViewApp base template.

You create a managed application on one node of the Galaxy with WindowMaker. Then, you deploy it to one or more target nodes running WindowViewer.

2. Open the managed application in WindowMaker.

3. Develop your InTouch application in WindowMaker. If needed, switch to WindowViewer to test the application.

4. Save the changes to the InTouch application.

5. Derive an instance of the managed application and select the nodes to deploy the application.

6. Deploy the InTouch application to the target nodes running WindowViewer in the Galaxy.

7. Run the application in WindowViewer on target nodes.

After you build your managed application from the ArchestrA IDE, you can publish it. A published InTouch application is no longer associated with the InTouchViewApp template and cannot be edited from the ArchestrA IDE. But, a published InTouch application can still communicate with the Galaxy by any embedded ArchestrA symbol. You can write data back to the Galaxy or visualize Galaxy data with the ArchestrA symbol.
## Comparing Different Types of InTouch Applications

The following table shows some major similarities and differences between different types of InTouch applications.

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Types of InTouch Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stand-Alone</td>
</tr>
<tr>
<td>Main Use</td>
<td>Tag based and native symbols</td>
</tr>
<tr>
<td>Create an Application</td>
<td>Application Manager</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Edit an Application</td>
<td>WindowMaker started from Application Manager</td>
</tr>
<tr>
<td>Delete an Application</td>
<td>Delete folder and remove from Application Manager</td>
</tr>
<tr>
<td>Publish an Application</td>
<td>Yes, from WindowMaker</td>
</tr>
<tr>
<td>Create ArchestrA Symbols</td>
<td>No</td>
</tr>
<tr>
<td>Incorporate ArchestrA Symbols</td>
<td>No</td>
</tr>
<tr>
<td>Incorporate ArchestrA Objects</td>
<td>No</td>
</tr>
</tbody>
</table>
Connectivity with FS Gateway and OPC

FS Gateway (FactorySuite Gateway) is included with the InTouch HMI. When the InTouch HMI is installed, an InTouch Access Name is created for FS Gateway, pointing by default to the localhost.

FS Gateway streamlines OPC (OLE for Process Control) setup, enhancing device integration. DAS Manager (Data Access Server Manager) also is included, providing the SMC (System Management Console) as an interface for configuring FS Gateway and OPC.

FS Gateway requires configuration using the SMC (System Management Console). OPC Servers require a separate installation.
Welcome to InTouch HMI
Installing InTouch HMI

The simplified installation process makes installing InTouch easier than ever.

The major decision you must make when you install InTouch HMI is whether to install the InTouch development and run-time components, or the run-time components alone.

The installation program guides you in selecting the features you want, verifying or modifying your selections, installing prerequisite software, and then installing InTouch HMI and the ArchestrA IDE if you chose to install development components.

What You Need to Install InTouch HMI

You must have the following materials ready to install InTouch HMI:

- Installation DVD.
- Computer that meets the hardware and software requirements listed in the InTouch HMI Readme.

**Important** Use the hardware and software requirements listed in the Wonderware Application Server Readme if you are going to install the ArchestrA IDE.
Prerequisites

The installation program analyzes the software installed on your computer and lists any software that is required but not currently installed.

**Note** At the start of the installation, the prerequisites check is system-specific rather than product-specific.

The following software must be installed and enabled on your computer before you install InTouch HMI:

- Windows Installer 4.5
- Microsoft .NET® Framework 4.5.1
- SQL Server 2012 Express

SQL Server 2012 Express is installed to enable the use of the ArchestrA IDE and ArchestrA Graphics with InTouch applications.

SQL Server 2012 Express will be installed only if the following conditions are met:

- No version of SQL Server is installed on the system.
- You select only **InTouch Development and Runtime** during the Wonderware System Platform installation. You must not select any Application Server components. When you select **InTouch Development and Runtime**, a Galaxy Repository will be installed.

The installation program installs both system-specific and product-specific prerequisites. You do not have to exit from the installation program to install the prerequisite software.
Performing the InTouch HMI Installation

The following procedure explains the steps to install the InTouch HMI. Before you start installing InTouch HMI, you should have a clear idea whether you want to develop, deploy, and publish your own applications, or require only the InTouch run time to run applications already created and deployed.

To install InTouch HMI

1. Insert the installation DVD into your computer’s DVD-ROM drive.

   If your network or company security policy does not permit autorun, browse the root directory of the DVD and run setup.exe.

   The installation program verifies if the minimum operating system and hardware requirements are met. If the requirements are met, the installation proceeds to verify the general installation prerequisites.

2. Install system-specific prerequisites.

   If your computer does not meet the initial system prerequisites, the Prerequisites dialog box appears.

   • Select the Show All check box to view all prerequisites.

   • Double-click any listed prerequisite to see more information.

3. Click Install Prerequisites. The program installs the general system prerequisites.

4. Click Next. The Select installation type dialog box appears.
5 Select whether you want a product-based or a computer role-based installation, and then click **Next**. The select components dialog box appears.

**Note** The select components dialog box varies depending whether you select a product-based or role-based installation.

If you the select the **Product Based Selection** option, then the product-based installation dialog box appears.

If you select the **Wonderware System Platform Computer Roles** option, the role based installation dialog box appears.

**Note** You can select multiple products or roles. All the selected components will be installed together.

6 Select the check boxes to indicate which products or roles you want to install, and then click **Next**. The verify selection dialog box appears.

7 Select the **Customize Installation** check box to change your configuration, if desired.
Performing the InTouch HMI Installation

**Important** The InTouch 16-Pen Trend Wizard supplementary component is no longer installed by default. Regardless of whether you select a product or role-based installation, you must select the **Customize Installation** option to install the 16-Pen Trend Wizard.

Complete the following installation steps to install InTouch HMI supplementary components and make other customization changes:

a Select **Customize Installation**.

b Click **Next**. The customize installation dialog box appears.

c Scroll the list to the **InTouch Supplementary Components** section.

d Select **16 Pen Trend** from the list.

- You can make other product and component selections.

- You can click **Browse** on the customize installation dialog box to change the program installation destination folder.

e Click **Next** to continue the remainder of the installation procedure.

The language selection dialog box appears.

8 Select the language for your InTouch HMI installation. If you select InTouch features, you need to select a language for the InTouch installation. The localized InTouch versions are supported only on paired operating systems. For example, the German version of the InTouch HMI is supported only on a German version of Windows.

9 Click **Next**. The **End User License Agreement** dialog box appears.

10 Accept the license agreement, and then click **Agree**. The ArchestrA **User Account** dialog box appears.
11 Specify an ArchestrA user account. You can create a new ArchestrA user account if no other ArchestrA-enabled software is installed on the computer, or specify an existing user account.

**If you create a new account**, do the following:

a Type a user name and password.

b Select the **Create Local Account** check box if not already selected. By default, this is selected and the **Domain/Local Machine** box displays your computer name.

c Specify a different domain/local machine name if necessary. If you clear the check box, the **Domain/Local Machine** box displays the default domain name. You can then modify it.

**If you select an existing user account**, it should meet the following requirements:

- User account with a permanent password that does not expire.
User account in which the password cannot be changed.

User account that is a member of the local Administrators group.

The ArchestrA user account is a user name and password combination that enables inter-node communication between all computers in an ArchestrA environment. You must specify the same user account on every node when you install Wonderware System Platform components for the first time on computers that communicate with each other.

Wherever an ArchestrA user account is required, the Wonderware System Platform Installation dialog box appears and you need to provide a valid user name and password.

**WARNING!** The ArchestrA user account is a Windows operating system account located on the local computer or on a domain. Do not delete this account with operating system account management tools. If you do, ArchestrA-enabled software may stop functioning properly.

12 Click **Next**. A list of prerequisites specific to the components you have selected appears after you complete the User Account setup.
Select the **Show All Prerequisites** check box to view all prerequisites.

Double-click any listed item to see more information.

If any prerequisite is not met, click **Install Prerequisites**. The program installs the product-specific prerequisites.

13 Click **Next** after all prerequisites have been installed.

14 Review the products to be installed.

The final installation confirmation dialog box appears after the program finishes installing the product-specific prerequisites.

15 Click **Install**. A horizontal bar shows the progress of the installation. A dialog box indicates the installation has completed successfully.

16 Click **Finish**. A dialog box indicates the InTouch software is being configured. Then, a dialog box shows options to **Reboot Now** or **Reboot Later** to complete the installation.
17 Select **Reboot Now** or **Reboot Later**.

After the computer restarts, InTouch HMI is ready for use. The next section explains how to install your Wonderware license and enable all InTouch HMI features.

**Installing Your Wonderware Product License**

Wonderware enforces the use of its products with a software license. A license contains your customer information, product data, and software features. Until you apply your Wonderware license, you can only run the InTouch HMI in demonstration mode.

There are two types of licenses: unserved and served.

- An unserved license is installed as a file typically named ArchestrA.lic on the same computer as the Wonderware application.
- Served licenses are only installed on computers with an installed ArchestrA license server. License servers can reside on local or remote computers. Served license files are typically named ArchestrAserver.lic.

You use the Invensys License Manager to install a license file containing your Wonderware product license. The Invensys License Manager is included as a common component when you install the InTouch HMI.

This procedure explains how to apply an unserved license by installing the ArchestrA.lic file with Invensys License Manager on a single computer. For information about installing a served license in a multi-node environment, see the help for the Invensys License Manager.
To install your Wonderware product license

1  Start Invensys License Manager by doing the following:
   a  Place the installation DVD in the DVD-ROM drive of the computer where InTouch HMI is installed.
   b  Click **Start** from the Windows desktop to show the Start menu with a list of installed applications.
   c  Click **Invensys License Manager**.
      If the Invensys License Manager does not appear on the **Start** Menu, click **All Programs** and select it from the **Invensys | License Manager** folder.

2  In the **Machine** field, enter the node name of the computer where InTouch HMI has been installed.

3  Click **Next**.
4 Click **Import & Install license(s)**. The wizard window updates to show a field to browse to the location where the license file is located.

5 Browse the installation DVD, select the ArchestrA.lic file, and click **Next**.

The ArchestrA License Manager copies the ARCHESTRA.LIC file to the C:\Program Files (x86)\Common Files\ArchestrA\License folder on the selected computer.

Now you can start creating InTouch applications. The next section explains how to build a Modern application from WindowMaker.
Building Modern Applications

You create and build Modern InTouch applications using the familiar workflow of stand-alone InTouch applications. The major difference between Modern and stand-alone applications is the ability to incorporate ArchestrA symbols directly into Modern applications. When you are creating a window for a Modern application, you simply drag ArchestrA or Situational Awareness Library symbols directly from WindowMaker’s ArchestrA Graphic Toolbox into a window.

All configuration steps to use ArchestrA Graphics are completed from InTouch WindowMaker. You do not need to use the ArchestrA IDE to create a Modern application containing ArchestrA or Situational Awareness Library symbols.
Creating a Modern Application

You create a Modern InTouch application from InTouch Application Manager.

To create a Modern application

1. Click **Start** on your Windows desktop and click **InTouch** to start Application Manager.

2. Select **New** by one of the following methods:
   - **a** Select **New** from the **File** menu.
   - **b** Right-click within Application Manager and select **New** from the shortcut menu.
   - **c** Select the **New** icon from the menu bar.
   - **d** Press the Ctrl + N keys.

The **Create New Application** wizard appears with options to create a Modern or Legacy (stand-alone) application.

3. Select **Modern InTouch Application** and click **Next**.

   The **Create New Application** wizard updates to show a field to enter a base directory path to save InTouch applications.

4. Click **Browse** and select a directory path.
5 Click Next.

The Create New Application wizard updates to show a field to enter the name of the folder for the new Modern application being created.

6 Type the name of the folder and click Next.

The Create New Application wizard updates to show fields to enter a name and a description of a new Modern application.

7 Type “Chocolate Milk” as the name of the Modern application in the Name field.

8 If you want, enter an optional description of the application in the Description field.

The description appears in the Description column of Application Manager’s list of applications.

9 Click Finish.

A horizontal bar shows the progress of creating a new Modern application.

After a Modern application is created, it appears in Application Manager’s list of applications. The Application Type column identifies the application as Modern.
Editing a Modern Application

Opening and editing a Modern application is similar to a stand-alone InTouch application. You open a Modern application from the InTouch Application Manager and edit it in WindowMaker.

This section demonstrates the basic steps to build a Modern application. The figure below shows a window from a simple Modern application that combines and mixes the ingredients to make chocolate milk. Complete the procedures in this section to learn the overall workflow to build Modern applications.

In the window, the Alarm Viewer control and the lines that represent pipes are traditional InTouch graphic elements. All other graphics elements shown in the window are ArchestrA or Situational Awareness library symbols that can be used in Modern applications.
To edit a Modern application

1. Open InTouch Application Manager.
2. Double-click on the Chocolate Milk application to edit it. The first time you open an InTouch application in WindowMaker no windows have been created.

3. Right-click on Windows in the Windows & Scripts area of WindowMaker and select New Window from the shortcut menu.

4. Assign “Mixing Station” as the name of the window in the Name field of the Window Properties dialog box.
5 Set the width and height of the window by entering values in the **Window Width** and **Window Height** fields.

6 Change the default background of the window to a lighter color by clicking **Window Color** and selecting a color from the **Standard Palette**.

7 Click **OK**.
   The window you created appears in WindowMaker. Continue with the next procedure to add symbols to the window.

**Adding Symbols to a Window**

Modern applications use a drag and drop method to add symbols from the ArchestrA Graphic Toolbox to a window. This procedure explains how to add the following symbols to the window you created earlier:

- Situational Awareness Library
  - 3 valves (Valves folder, SA_Valve_2Way)
  - 1 vessel (Equipment folder, SA_Tank_Vessel)
  - 1 meter (Meters folder, SA_Meters)
  - 1 simple trend (TrendPen folder, SA_Trend)
  - 1 agitator (Equipment folder, SA_Agitator_Settler)

- ArchestrA Symbol Library
  - 3 rocker switches (Switch folder, RockerSwitch)

- InTouch Wizards
  - 1 alarm viewer control (AlarmViewerCtrl)

- InTouch Graphic Toolbar
  - 3 lines that represent pipes
To add symbols to a Modern Application

1. If necessary, open the Mixing Station window you created in WindowMaker.

2. Expand the Situational Awareness Library folder in the ArchestrA Graphic Toolbox to show the list of folders.

3. Open the Valves folder and select the SA_ISA_2WValve symbol.

4. Keeping your left mouse key pressed, drag the symbol to the open window and release the key at the approximate location where you want to place the symbol.

5. Select the symbol and place it precisely where you want it to appear in the window.

6. Repeat steps 3-5 and add the remaining ArchestrA and Situational Awareness Library symbols listed on the previous page.

   The list of symbols on the previous page includes the folders in the ArchestrA Graphic Toolbox where the symbols are located.

7. Click the Wizards icon from the WindowMaker menu bar and select AlarmViewerCtrl from the ActiveX Controls group.

8. Click OK and place the Alarm Viewer control near the top of the window.

9. Select the Line tool from the WindowMaker graphic tool bar.

10. Draw three lines that represent the two input pipes and the output pipe.

11. Click Line from the menu bar and select a thicker line type to make your lines look more like pipes.
12 Arrange the graphic elements on your window to look like the following example of a chocolate milk mixing station.

Creating InTouch Tags

Like a traditional stand-alone InTouch application, a Modern application represents an industrial process using data associated with InTouch tags.

In this simple application, tag data will be shown or used to set the state of the symbols that represent the equipment of a mixing station.

This procedure explains how to create the following tags for a mixing station Modern application:

<table>
<thead>
<tr>
<th>Tag</th>
<th>Tag Type</th>
<th>Symbol Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank_Level</td>
<td>Memory Integer</td>
<td>Mixing Tank</td>
</tr>
<tr>
<td>Valve_Chocolate</td>
<td>Memory Discrete</td>
<td>Chocolate Valve</td>
</tr>
<tr>
<td>Valve_Milk</td>
<td>Memory Discrete</td>
<td>Milk Valve</td>
</tr>
<tr>
<td>Valve_Outlet</td>
<td>Memory Discrete</td>
<td>Outlet Valve</td>
</tr>
<tr>
<td>Agitator_RPM</td>
<td>Memory Integer</td>
<td>Tank Agitator</td>
</tr>
</tbody>
</table>
To create InTouch tags

1. On the Special menu, click **Tagname Dictionary**.
2. Click **New**. The **Tagname** field clears.
3. Type **Tank_Level** in the **Tagname** field.
4. Click **Type** to show the various types of InTouch tags.
5. Select **Memory Integer** as the type of tag.
6. Click **Alarms** near the top of the Tagname Dictionary to expand the dialog box to show fields to set alarm conditions.

7. Select **High** and set 1400 in the **Alarm Value** field.
8. Click **Save**.
9. Repeat steps 2-4 to create the three valve tags.
   a. Enter the name of the valve tag in the **Tagname** field.
   b. Set the tag type to Memory Discrete for all three valve tags.
   c. Click **Save** to save each valve tag.
10. Create the Agitator_RPM tag using the same steps (2-8) used to create the Tank_Level tag.
a Enter Agitator_RPM as the name of the tag.
b Set the tag type to Memory Integer.
c Select High and set the **Alarm Value** field to 1500.

### Creating a Window Script

A window script sets the operating conditions of the Chocolate Milk application while it is running in WindowViewer:

- When the Chocolate or Milk valves are open and the Outlet valve is closed, the tank fills with ingredients.
- When the Chocolate or Milk valves are open and the Outlet valve is open, the tank volume remains constant.
- When the Chocolate and Milk valves are closed and the Outlet valve is open, the chocolate milk empties from the tank.
- When the mixing tank level is less than 1500 liters and the chocolate or milk values are open, the tank begins to fill with ingredients.
- When is the tank level is greater than 500 liters and the outlet valve is closed, the agitator begins to rotate.
- When the tank level falls to less than 500 liters and the outlet valve is open, the agitator stops.
To create a window script

1. Right-click on a blank area of the Mixing Station window to show a shortcut menu.
2. Select **Window Scripts** from the shortcut menu.
3. Type or copy the following windows script into the **Scripts** dialog box.

   ```plaintext
   IF Tank_Level < 1500 AND (Valve_Chocolate OR Valve_Milk) THEN
     Tank_Level = Tank_Level + 20;
   ENDIF;
   IF Tank_Level > 500 AND NOT (Valve_Outlet) THEN
     Agitator_RPM = Agitator_RPM + 15;
   ENDIF;
   IF Tank_Level > 0 AND (Valve_Outlet) THEN
     Tank_Level = Tank_Level - 20;
   ENDIF;
   IF Tank_Level < 500 AND (Valve_Outlet) THEN
     Agitator_RPM = 0;
   ENDIF;
   
   Set the **Condition Type** field to **While Showing**.
4. Set the **Every** field to a value between 500-700 milliseconds.
   The window script will run periodically at the interval you set in the **Every** field.
5. Click **Validate** to see if there are any errors in the script.
6. Correct any script errors and click **OK**.
Configuring Symbols

ArchestrA symbols contain custom properties that extend the standard properties of a symbol. In this sample application, you must assign tags to custom properties to show the current value of a tag or set the states when the equipment represented by a symbol is active or inactive.

Most Situational Awareness Library symbols are also Symbol Wizards. In addition to custom properties, Symbol Wizards contain Wizard Options to configure their appearance and functionality.

This procedure explains how to assign values to the custom properties and Wizard Options listed in the following tables.

Symbol Custom Properties

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Custom Property</th>
<th>Assigned Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chocolate Rocker Switch</td>
<td>Value</td>
<td>Valve_Chocolate</td>
</tr>
<tr>
<td>Milk Rocker Switch</td>
<td>Value</td>
<td>Valve_Milk</td>
</tr>
<tr>
<td>Outlet Rocker Switch</td>
<td>Value</td>
<td>Valve_Outlet</td>
</tr>
<tr>
<td>Chocolate Valve</td>
<td>EquipmentStateActive</td>
<td>Valve_Chocolate</td>
</tr>
<tr>
<td>Milk Valve</td>
<td>EquipmentStateActive</td>
<td>Valve_Milk</td>
</tr>
<tr>
<td>Outlet Valve</td>
<td>EquipmentStateActive</td>
<td>Valve_Outlet</td>
</tr>
<tr>
<td>Mixing Tank</td>
<td>LabelVisible</td>
<td>True</td>
</tr>
<tr>
<td>Tank Agitator</td>
<td>PV</td>
<td>Agitator_RPM</td>
</tr>
<tr>
<td></td>
<td>PVRangeFullScaleMax</td>
<td>3000</td>
</tr>
<tr>
<td></td>
<td>PVRangeFullScaleMin</td>
<td>0</td>
</tr>
<tr>
<td>Tank Volume Meter</td>
<td>PV</td>
<td>Tank_Level</td>
</tr>
<tr>
<td></td>
<td>PVRangeFullScaleMax</td>
<td>1500</td>
</tr>
<tr>
<td></td>
<td>PVRangeFullScaleMin</td>
<td>0</td>
</tr>
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</table>
## Symbol Wizards

<table>
<thead>
<tr>
<th>Symbol Wizards</th>
<th>Wizard Options</th>
<th>Assigned Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chocolate Rocker Switch</td>
<td>None-ArchestrA symbol</td>
<td>N/A</td>
</tr>
<tr>
<td>Milk Rocker Switch</td>
<td>None-ArchestrA symbol</td>
<td>N/A</td>
</tr>
<tr>
<td>Outlet Rocker Switch</td>
<td>None-ArchestrA symbol</td>
<td>N/A</td>
</tr>
<tr>
<td>Chocolate Valve</td>
<td>ActuatorType</td>
<td>Digital</td>
</tr>
<tr>
<td>Milk Valve</td>
<td>ActuatorType</td>
<td>Digital</td>
</tr>
<tr>
<td>Outlet Valve</td>
<td>ActuatorType</td>
<td>Digital</td>
</tr>
<tr>
<td>Mixing Tank</td>
<td>QualityStatusIndicator</td>
<td>False</td>
</tr>
<tr>
<td>Tank Agitator</td>
<td>PVNumericDisplay</td>
<td>True</td>
</tr>
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<td></td>
<td>EngUnits</td>
<td>True</td>
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<tr>
<td></td>
<td>EngUnitsType</td>
<td>StaticText</td>
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<tr>
<td></td>
<td>QualityStatusIndicator</td>
<td>False</td>
</tr>
<tr>
<td>Tank Volume Meter</td>
<td>Type</td>
<td>Level</td>
</tr>
</tbody>
</table>
To configure custom properties and Wizard Options

1. Double-click on the Chocolate rocker switch to show the **Edit Symbol Properties** dialog box.

2. Select **Value** from the **Name** field.
3 Click the **Browse** button at the right of the **Default Value** field to show the **Select Tag** dialog box.

![Select Tag dialog box](image)

4 Select the **Valve_Chocolate** tag and click **OK**. The current value of the Valve_Chocolate tag is associated to the Chocolate rocker switch’s Value custom property.

5 Repeat steps 1-4 for the other two rocker switch symbols and assign the tag shown in the Symbol Custom Properties table to each symbol’s Value custom property.

6 Double-click on the Chocolate valve to show the **Edit Symbol Properties** dialog box.

7 Using steps 1-4, assign the Valve_Chocolate tag to the symbol’s EquipStateActive custom property.

8 Click the **Wizard Options** tab.

9 Select **ActuatorType** from the **Name** field.

10 Set the **Value** field to Digital and click **OK**.

11 Repeat steps 1-10 and assign values to the custom properties and Wizard Options of the remaining symbols of the Chocolate Milk application.
Changing Symbol Labels

The Symbol Wizards used in the Chocolate Milk application have their Label Wizard Option set to True and the LabelType Wizard Option set to StaticText. With this symbol configuration, you can use the InTouch Substitute Strings function to assign a visible static label for the symbols in the Mixing Station window.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Current String</th>
<th>Application Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chocolate Valve</td>
<td>Label</td>
<td>Chocolate</td>
</tr>
<tr>
<td>Milk Valve</td>
<td>Label</td>
<td>Milk</td>
</tr>
<tr>
<td>Outlet Valve</td>
<td>Label</td>
<td>Outlet</td>
</tr>
<tr>
<td>Mixing Tank</td>
<td>Label</td>
<td>Chocolate Milk</td>
</tr>
<tr>
<td>Agitator</td>
<td>Label</td>
<td>Agitator</td>
</tr>
<tr>
<td></td>
<td>EU</td>
<td>RPM</td>
</tr>
<tr>
<td>Tank Meter</td>
<td>Label</td>
<td>Tank Volume</td>
</tr>
<tr>
<td></td>
<td>EU</td>
<td>Liters</td>
</tr>
<tr>
<td>Trend</td>
<td>Label</td>
<td>Tank Volume</td>
</tr>
</tbody>
</table>

To change symbol labels

1. Right-click on the Chocolate valve symbol to show the shortcut menu.

2. Select **Substitute** and **Substitute Strings** from the shortcut menu.

The **Substitute Strings** dialog box appears with fields to substitute the current strings of the symbol.
3 Type Chocolate in the **Label** field and click **OK**.
The Chocolate label appears above the valve symbol.

4 Repeating steps 1-3, assign labels to the remaining symbols you added to the Mixing Station window.

**Running a Modern Application**
After you have finished, your Mixing Station window should look like the following example.

You view a running Modern application from WindowViewer. In this example, a window script begins running when viewing the application. The script assigns states and values to the assigned InTouch tags associated with the symbols shown in the application’s window.
The following example shows the Chocolate Milk application immediately after starting it in WindowViewer. All of the valves are closed and the mixing tank is empty.

Typically, Situational Awareness Library symbols use fill shading to indicate their current state. Open the Chocolate or Milk valve by selecting a rocker switch. Notice the change in the fill color that indicates the valve is open. Also, the fill color of the agitator and meter symbols change to indicate they are in an active state or showing a value.

When the tank volume reaches 500 liters, the agitator starts and its current RPM appears next to the agitator. Alarms occur if the tank volume exceeds 1400 liters or the agitator exceeds 1500 RPM. You manage alarms as you would in a stand-alone InTouch application by selecting options from the shortcut menu of the Alarm Viewer control.
Getting More Information About Modern Applications

This section explained the basics of working with ArchestrA symbols, custom properties, and Wizard Options to build a Modern application. The *InTouch Modern Application Guide* provides more information that you need to manage and configure your Modern applications.

Managing a Modern Application

The *InTouch Modern Application Guide* includes a set of concise procedures to manage your Modern applications from InTouch Application Manager.

- Exporting and importing Modern applications
- Migrating to a Modern application
- Publishing a Modern application
- Deleting a Modern application

Configuring a Modern Application

The *InTouch Modern Application Guide* explains how to configure Modern applications using WindowMaker functions.

- Configuring Modern application languages
- Configuring the Application Style Library
- Configuring Alarm Priority Mapping
- Exporting ArchestrA graphics from a Modern application
- Importing ArchestrA graphics to a Modern application
- Exporting ArchestrA symbol text strings from a Modern application
- Importing ArchestrA symbol text strings to a Modern application
- Configuring NAD support
Creating Managed Applications

When you install InTouch HMI, you can install several sample applications. You can examine these sample applications to understand how scripts, animations, and graphics work together to provide a visual interface for your production environment.

The following figure shows a portion of a window from the InTouch reactor demonstration application.

![Diagram of a reactor system with a meter]

The reactor application demonstrates how you manage an application with the ArchestrA IDE and includes ArchestrA symbols and objects.

The analog meter next to the product storage tank shows the current volume of liquid stored in the tank. The meter is not part of the standard reactor application.

This section describes the essential tasks to create a managed InTouch application by showing how to embed this meter into the Reactor application.
Starting the ArchestrA IDE

You can start the ArchestrA IDE from the Windows Start menu or from InTouch Application Manager.

Starting the ArchestrA IDE from the Start Menu

The following procedure shows the steps to start the ArchestrA IDE from a computer running Microsoft Windows 7 and later versions of Windows.

To start the ArchestrA IDE from the Windows Start Menu

1. Click the Windows Start button.
2. Click the ArchestrA IDE icon from the list.

The Connect to Galaxy dialog box appears.
Creating a Galaxy

After you start the ArchestrA IDE, the **Connect to Galaxy** dialog box appears. The first time you start the ArchestrA IDE you need to create a Galaxy, which is an ArchestrA database. After that, you can select the Galaxy in which you are developing managed applications each time you start the ArchestrA IDE.

To create a Galaxy

1. Start the ArchestrA IDE. The **Connect to Galaxy** dialog box appears.

2. Click **New Galaxy**. The **New Galaxy** dialog box appears.

3. Complete the fields of the **New Galaxy** dialog box by doing the following:
   a. Type the node name of the computer that serves as the Galaxy Repository (GR). This is the computer where the SQL Server database server is running.
b Type the name of the Galaxy that you are creating.
c Select Reactor_Demo_Application_Server.cab as the type of Galaxy from the drop-down list of the Galaxy Type box.
This is a custom Galaxy that contains only the necessary ArchestrA automation objects to edit and run applications. It also includes the InTouch Reactor Demo application.

4 Click Create. The New Galaxy dialog box shows the progress of creating a new Galaxy.

5 Click Close after the new Galaxy is created.

6 Click Connect to connect to the Galaxy you created. The ArchestrA IDE dialog box appears.

7 Click the Template Toolbox tab.

8 If necessary, click the aaReactorDemo folder to show the objects within it.

The Template Toolbox shows the $aaReactorDemo derived template. You can use this derived template to create a managed application or edit the application within WindowMaker.
Deploying Your Application Objects

Deploying your Galaxy copies the objects from your ArchestrA development environment to a run-time environment. Until you deploy your application’s objects from the IDE, you cannot run your managed applications.

The pane at the bottom left of ArchestrA IDE includes three tabs to show different views of your Galaxy objects. Selecting the **Deployment** tab shows the current status of all objects that are part of your application. An orange square next to an object indicates the object is undeployed.

To deploy your application’s objects

1. In the **Deployment** pane, right click on the name of the Galaxy at the top of the list of application objects.
2. Select **Deploy** from the shortcut menu.

   The **Deploy** dialog box appears with options.
3 Accept the default options and click **OK**.

4 Click **Close** after all of your objects have been deployed. The orange square next to each object is gone, indicating that your application’s objects are deployed.

**Editing a Managed Application**

You edit a managed InTouch application by starting WindowMaker from the ArchestrA IDE.

**To start WindowMaker from the ArchestrA IDE**

1 Open the ArchestrA IDE.

2 Click the **Template Toolbox** tab to show the set of folders containing ArchestrA automation objects.

3 If necessary, click on the **aaReactorDemo** folder to expand the list of automation objects within it. You see the `$aaReactorDemo` template.

4 Double-click on the `$aaReactorDemo` template. WindowMaker starts as the default editor. The figure below shows WindowMaker after you initially open the Reactor demonstration application for editing.

![WindowMaker screenshot](image_url)

The **Windows & Scripts** area lists the windows that
are part of the Reactor demonstration application. This figure shows the **Windows to Open** dialog box to select the windows you want to edit. You may have to open the **Windows to Open** dialog box. Steps 5 and 6 explain how to open the dialog box and select the Reactor application windows.

5 Click **File**, and then **Open Window** to show the **Windows to Open** dialog box.

![Windows to Open dialog box](image)

6 Select the **Main**, **Menu**, and **Reactor Display** windows from the list and click **OK**. Together, these windows make up the main Reactor demonstration screen.

The following figure shows the portion of the Reactor Demo window containing graphics that represent the components of a reactor.
7 Increase the text size of the OUTPUT caption to the right of the tank by doing the following:
   a Click on the OUTPUT caption to select it and show the text box sizing handles.
   b Using your mouse, click on a sizing handle and keep the mouse button pressed.
   c Move the mouse to increase the size of the text box.
   d Release the mouse button when the text is the size you want.
8 Save your changes to the window.
9 Click **File**, and then **Exit**. WindowMaker closes and you return to the ArchestrA IDE. The **Check In** dialog box appears.

![Check In dialog box](image)

10 Type a comment if you want, and then click **OK**.
11 Click **Close** after the application is checked in.

You have made a round trip from the ArchestrA IDE to WindowMaker and back to the ArchestrA IDE again. Now that you understand the steps to edit a managed application from WindowMaker, the next section explains how to embed an ArchestrA symbol in an application window.
Embedding ArchestrA Symbols into an InTouch Managed Application Window

You can embed an ArchestrA Symbol into the windows of your managed InTouch application. You cannot embed ArchestrA Symbols into windows of stand-alone applications.

The embedded symbol appears with its original name appended by a number. The number increments each time you embed the same symbol again.

To embed an ArchestrA Symbol from the Graphic Toolbox

1. Open the ArchestrA IDE.
2. Double-click on the $aaReactorDemo derived template to open it in WindowMaker.
3. Show the main Reactor window.
5. Click the Graphic Toolbox icon. The symbols that belong to the Graphic Toolbox are listed in the left pane.
6. Expand the list of the ArchestrA Symbol Library folder.
7. Expand the Analog Meters folder. The meter symbols within the folder appear in the right pane of the Galaxy Browser.
Click on the AnalogMeter90Degree symbol and click **OK**. WindowMaker reappears.

Click to the right of the tank in the Reactor window to embed the meter symbol. The meter symbol appears at the window location you selected.

Click on the meter to select it. Sizing handles appear around the border of the symbol.

Using your mouse, move the sizing handles to change the size of the meter.

Reduce the size of the meter and position it near the top of the tank.

**Tip** Press the SHIFT key to maintain the vertical and horizontal perspective when you resize the meter.

Click the **Runtime** icon to run the application in WindowViewer.

Verify the size of the meter and that it is aligned with the top of the tank.

Click the **Development** icon to return to WindowMaker.
Connecting Attributes to an ArchestrA Symbol

You can connect ArchestrA Symbol attributes to InTouch tags by overriding the custom properties of an embedded ArchestrA Symbol.

Custom properties expose the attributes of an ArchestrA Symbol to InTouch. The custom properties may or may not be used internally by the animations of the ArchestrA Symbol.

To connect an ArchestrA Symbol to an attribute

1. Double-click on the embedded meter. The Edit Custom Properties dialog box appears.

2. Select the Value property. Do the following to associate an ArchestrA attribute to the meter:
   a. Remove the three hyphens from the Default Value field.
   b. Click the browse button of the Default Value box. The Select Tag dialog box appears.
   c. In the Tag Source field, select Default Galaxy. The Galaxy Browser dialog box appears with StorageTank_001 listed in the Instances column.
   d. Select StorageTank_001 to show a list of attributes.
Select the ProdLevel attribute from the list and click **OK**. The **Edit Custom Properties** dialog box shows the StorageTank_001 ProdLevel attribute assigned to the **Value** property of the meter symbol.

Select the **Max** property from the **Edit Custom Properties** dialog box.

Type 10000 in the **Default Value** box.

Click **OK** to close the **Edit Custom Properties** dialog box.

Any animation in the ArchestrA Symbol configured with the selected custom property now uses the object attribute value during processing.

3 Select the meter symbol you embedded.

4 Click **Special**, and then **Substitute Strings** to show the **Substitute Strings** dialog box. Do the following to change the labels that appear on the meter:

Type the word Volume in the **Label** box.
b Type Liters in the **Units** box, and then click **OK**. The face of the meter shows the labels you changed.

5 Save your work in WindowMaker.

6 Test your managed InTouch application by switching to WindowViewer and running the Reactor application.

The analog meter symbol you embedded in the Reactor window shows the same tank volume value as the digital read-out at the bottom of the tank.

During testing, changes can be made to a symbol even without checking in the symbol. These changes are propagated to all places the symbol is used and that switching to WindowMaker and then back to WindowViewer accepts these changes. This is the quickest way to develop a managed InTouch application with ArchestrA symbols.

After you place your application into production, you can designate specific computers just to run your applications in WindowViewer.

Another new feature of the InTouch HMI is InTouch Access Anywhere, which provides you with remote access to Wonderware InTouch applications from almost all devices that support an HTML5 compatible web browser. Using InTouch Access Anywhere, you can show WindowViewer running your applications on mobile phones, portable tablets, or remote desktop computers.

These procedures explained some of the essential steps to create a managed application with the ArchestrA IDE. The next section includes a set of tables that list other important tasks and the books within the InTouch library that describes how to complete these tasks.
Getting More Information

The InTouch HMI product library consists of a set of user guides and an online help system. The design of InTouch product information uses a task-based approach. This means that books and help are organized by the typical tasks to build an application using the InTouch HMI.

The following figure shows some of the typical tasks that are part of developing an InTouch application. Each user guide describes the specific tasks to set up functional aspects of an InTouch application. The tasks to set up each of these functional components are described in individual user guides or in a chapter of a user guide.

The InTouch library is offered in two different media:

- Portable Document File (PDF), which can be viewed with Adobe® Reader®. Each user guide is included on the InTouch installation DVD as a PDF file.
- Online help, which can be viewed while an InTouch application is running. The help is context-sensitive and is also linked to all online InTouch information.
The following table describes the InTouch documentation library, delivered as PDFs. Online help is available from each application.

<table>
<thead>
<tr>
<th>Publication Name (file name)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The InTouch HMI Concepts and Capabilities Guide</strong> (ITConcepts.pdf)</td>
<td>Describes all of the features and main concepts in the InTouch HMI without going too deep into the technical and procedural details.</td>
</tr>
<tr>
<td><strong>The InTouch HMI Application Management and Extension Guide</strong> (ITAppManagement.pdf)</td>
<td>Describes how to create and manage InTouch applications locally and in a network environment. It also covers application-level functionality, such as security. This guide describes how to run an InTouch application in different environments, such as with Terminal Services, on a Tablet PC, and using multiple monitors.</td>
</tr>
<tr>
<td><strong>The InTouch HMI Data Management Guide</strong> (ITDataManagement.pdf)</td>
<td>Describes how to work with data items in the InTouch HMI and connect your application to the physical devices in your plant environment.</td>
</tr>
<tr>
<td><strong>The InTouch HMI Modern Application Guide</strong> (ITModernAppGuide.pdf)</td>
<td>Describes how to create, manage, and configure InTouch HMI Modern applications from Application Manager and WindowMaker.</td>
</tr>
<tr>
<td><strong>The InTouch HMI Visualization Guide</strong> (ITVisualization.pdf)</td>
<td>Describes how to develop the graphical operator interface of an InTouch application. This guide includes information on how to create visualization windows, how to draw and animate graphic elements, and how to use wizards and ActiveX controls in your application.</td>
</tr>
<tr>
<td><strong>The InTouch HMI SmartSymbols Guide</strong> (ITSmartSymbols.pdf)</td>
<td>Describes how to create reusable templates for graphic symbols that can save you a lot of engineering time and effort.</td>
</tr>
<tr>
<td>Publication Name (file name)</td>
<td>Description</td>
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<tr>
<td>------------------------------</td>
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</tr>
<tr>
<td>The InTouch HMI and ArchestrA Integration Guide (ITAAIntegration.pdf)</td>
<td>Describes how to integrate the InTouch HMI and ArchestrA technology to develop more robust applications that use richer graphics.</td>
</tr>
<tr>
<td>The InTouch HMI Alarms and Events Guide (ITAlarmsandEvents.pdf)</td>
<td>Describes how to configure alarms for your data items, how to view and acknowledge alarms, and how to use the alarm clients and utilities supplied with the InTouch HMI.</td>
</tr>
<tr>
<td>The InTouch HMI Scripting and Logic Guide (ITScriptsandLogic.pdf)</td>
<td>Describes how to write scripts in the InTouch HMI to automate common tasks and processes. This guide includes a reference of the InTouch scripting language and functions.</td>
</tr>
<tr>
<td>The InTouch HMI Supplementary Components Guide (ITSupplementary.pdf)</td>
<td>Describes software components that you can optionally install and use with the InTouch HMI. You can set up connectivity to SQL databases, create data trends, and manage industrial recipes. The supplementary components also include a library of symbols such as meters, valves, and pumps.</td>
</tr>
<tr>
<td>InTouch HMI Documentation Addendum (ITAddendum.pdf)</td>
<td>Contains recent updates to the InTouch documentation.</td>
</tr>
</tbody>
</table>
Getting Technical Support

Wonderware Technical Support consists of a global team of qualified Certified Support Providers. If you have questions or concerns about System Platform, contact Wonderware Technical Support.

Telephone: U.S. and Canada
800-966-3371
7 a.m. to 5 p.m Pacific Time

Outside the U.S. and Canada
949-639-8500

For local support in your language, contact a Wonderware-certified support provider in your area or country.
Refer to the following web address for a local distributor or sales office in your area:
http://us.wonderware.com/aboutus/contactsales

Fax: 949-639-1545

E-mail: Customer First members, send an e-mail message to our priority address:
custfirstsupport@wonderware.com
Customers without a support agreement, send an e-mail message to:
wwsupport@invensys.com

Web: Registered customers, submit your questions to our Support web site.
Refer to the following web site for instructions to register for Wonderware technical support:
Getting Product Training

Wonderware offers introductory and advanced training courses for InTouch HMI. Training courses are held at our training facilities in Lake Forest, California as well as regional offices worldwide. On-site customer training programs are also available at your site.

**Telephone:**
U.S. and Canada  
866-998-7246

Outside the U.S. and Canada  
949-639-8508

**Mail:**
Wonderware/Invensys Systems  
26561 Rancho Parkway South  
Lake Forest, CA 92630  
Attn: Training Department

**E-mail:**
training.wonderware@invensys.com

**Web:**
For training in your language, contact a Wonderware-Certified Training Provider in your area or country.
Refer to the following web address that lists Certified Training Providers in various countries:
http://global.wonderware.com/EN/Pages/WonderwareContactTraining.aspx

You can view Wonderware’s current training schedule and register for classes at:
http://global.wonderware.com/EN/Pages/WonderwareTrainingOpportunities.aspx

You can also send an e-mail message or contact us by phone for more information about training fees, course schedules, training options, and registration.