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# Wonderware ArchestrA System Platform Installation Guide

9/20/11

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# Chapter 1

## ArchestrA System Platform Installation

You can use the ArchestrA<sup>®</sup> System Platform installation program to install the entire suite of products or any of the components.

### Preparing for ArchestrA System Platform Installation

Before you begin the installation program, you need to prepare your system, and you should plan your installation according to the two installation types available to you—product-based and role-based.

### ArchestrA System Platform Prerequisites

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

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**Important:** At the start of the installation, the prerequisites are system-specific and not product-specific.

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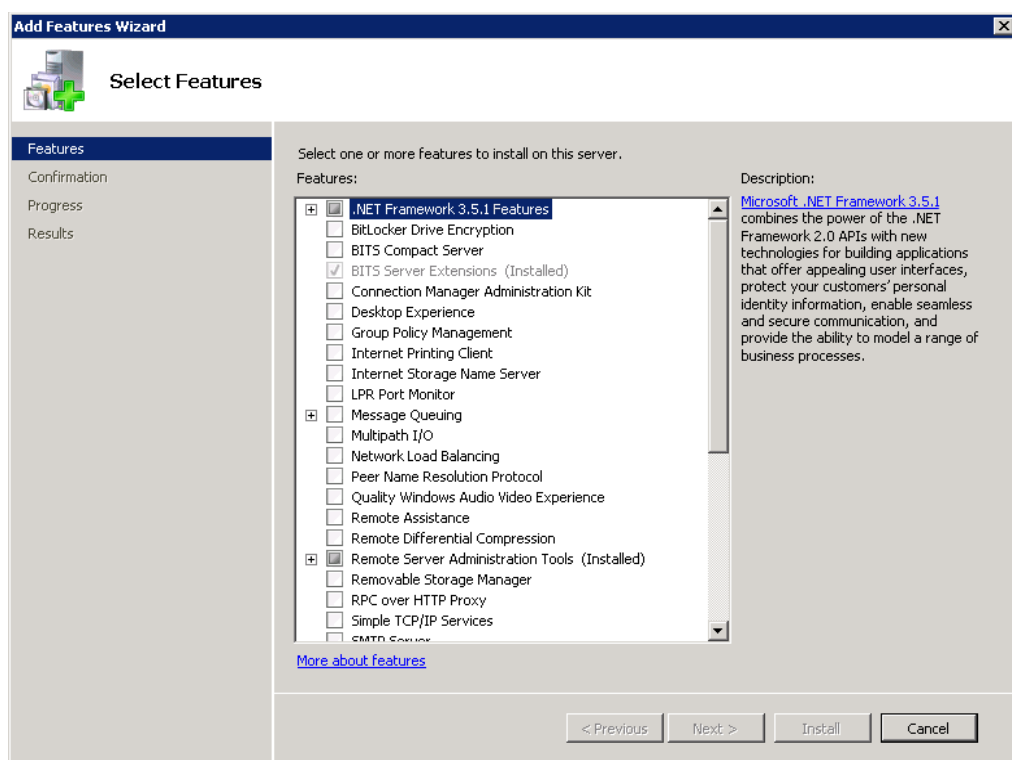
You must have the following software installed and enabled on your computer before you install the ArchestrA System Platform:

- Windows Installer 4.5
- Microsoft .NET<sup>®</sup> Framework 3.5 Service Pack 1

Microsoft .NET Framework 3.5 SP1 is required by the software, as well as by the installation framework. The Windows Server 2008 R2 operating system requires this feature to be enabled prior to allowing the install.

### To enable the .NET Framework feature in Windows 2008 Operating System

- 1 In Control Panel, open **Administrative Tools**.
- 2 Open **Server Manager**, and then click **Features**.
- 3 Click **Add Features** to start the wizard.
- 4 In the features list, select the **.NET Framework 3.5.1 Features** check box.



Enabling .NET Framework 3.5.1 feature does not actually install .NET Framework 3.5 SP1. The Arcestra System Platform media will install it if it is not already installed in the computer.

The ArcestrA System Platform installation installs both system-specific and product-specific prerequisites. You do not have to exit from the ArcestrA System Platform installation procedure to install the prerequisite software.

**Important:** The exception to the prerequisites installation workflow is the SQL Server requirement for installing the Galaxy Repository (GR). If you select the GR for installation, and if the supported version of SQL Server is not already installed, you must exit the installation program, install the supported SQL Server version, then resume the installation. We recommend that you install the supported SQL Server version before you begin the ArcestrA System Platform installation program.

For information on prerequisites and software requirements for the specific products, see the Readme files of the specific products located in your documentation directory, or see the specific product information chapter in this installation guide.

## Selecting a Type of Installation

The ArcestrA System Platform installation program offers you a choice of two types of installation— product-based or role-based.

### About Product-Based Installation

Product-based installation provides a combination of features not specific to a node. This would be the preferred installation type for a stand-alone product installation.

If you are familiar with Wonderware products and their associated components, you can opt for a product-based installation, and then choose the components that you need.

For example if you need to install InTouch<sup>®</sup> with the default options, then select a product-based installation.

### About Role-Based Installation

Role-based installation provides a combination of features specific to a node. This is preferred in ArcestrA types of installation.

If you are uncertain about the specific products or components you need, but you know what role your computer will play, you can opt for a role-based installation.

For example, if your computer is a run-time node or a development node, you can select those roles in the role-based installation program. The ArcestrA System Platform installation program will install all components required for the roles that you have selected.

It is recommended that you define the node you are installing and select the appropriate role before starting the installation program. During the installation, you can click a role to see its description, as described in "Installing the ArcestrA System Platform" on page 13.

The following roles are available for selection:

- **Runtime Client:** Install only the necessary components required to run a visualization client, Historian client, and ArcestrA object server run-time components.
- **Development Workstation:** Install the components required for an engineering development workstation with only the required components to allow the node to connect to an existing development server. InTouch and ArcestrA System Platform applications can be developed and tested.
- **System Platform Development Server:** Install the components required to host the development server, and develop and test InTouch and ArcestrA System Platform applications.
- **Historian Client:** Install the components required to connect to an existing Historian Server and analyze the data.
- **Historian Server:** Install the necessary components to store historical data in an ArcestrA environment.
- **Information Portal:** Install the necessary components for aggregating and presenting plant production and performance data on the internet or company intranet with the capability to access live plant process data, integrated data trending and analysis, production and performance reporting, and integration to existing IT infrastructure and web portals.
- **All in One Node**
- **Custom**

# Installing the ArcestrA System Platform

You can select a product-based or a role-based installation for your computer.

## To install the ArcestrA System Platform

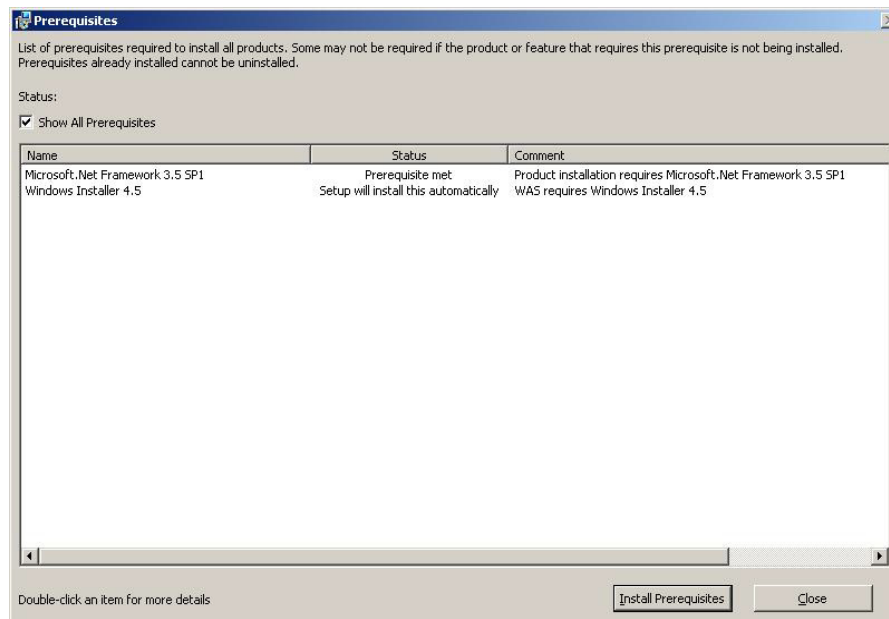
- 1 Insert the DVD into your DVD-ROM drive. Browse the DVD and run setup.exe in the root directory of the DVD.



The installation program detects the initial system requirements. It first checks if the minimum operating system and hardware requirements are met. If the requirements are met, the installation proceeds to verify the general installation prerequisites.

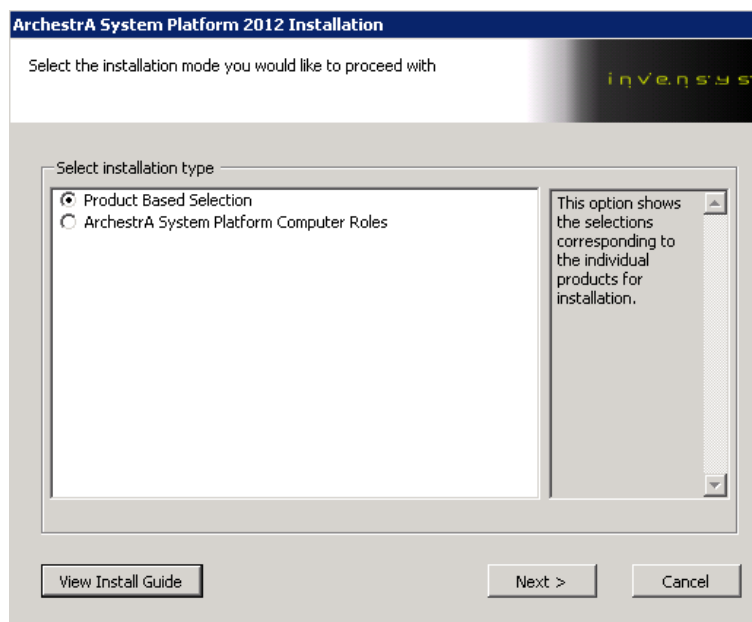
For more information on specific system requirements, see the *ArcestrA System Platform 2012 Readme*.

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



You can select the **Show All** check box to view all prerequisites.

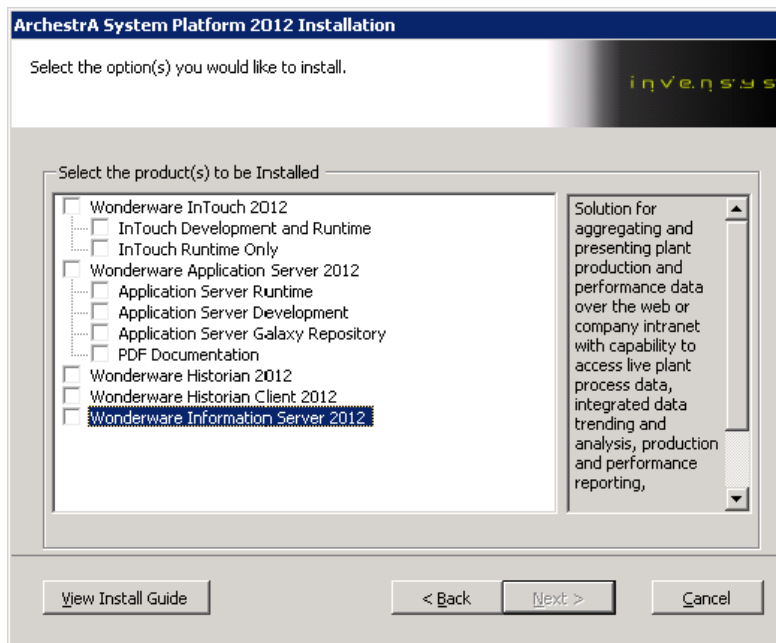
- 3 Click the prerequisite whose status is Not Met, and then click **Install Prerequisites**. The general system prerequisites are installed.
- 4 Click **Next**. The select installation type dialog box appears.



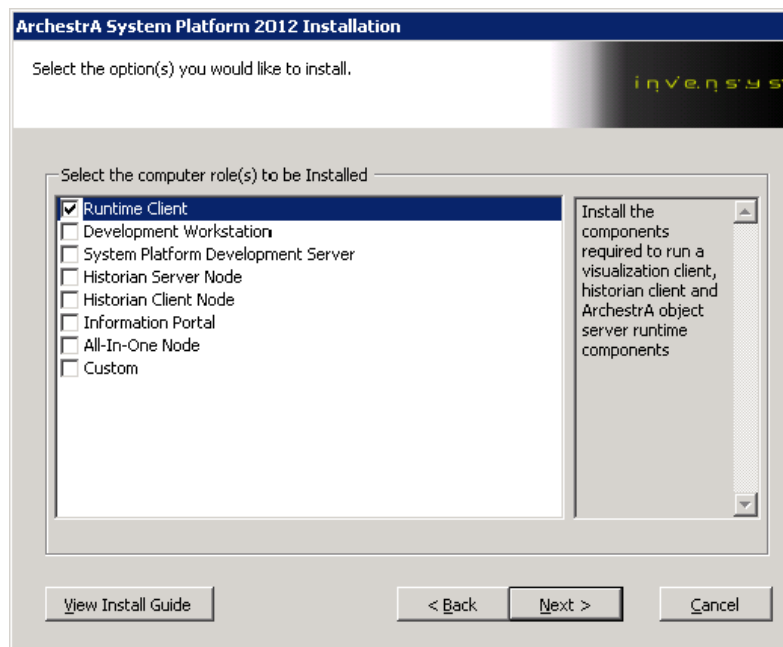
- 5 Select whether you want a product-based or a computer role-based installation, and then click **Next**. The select components dialog box appears.

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

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

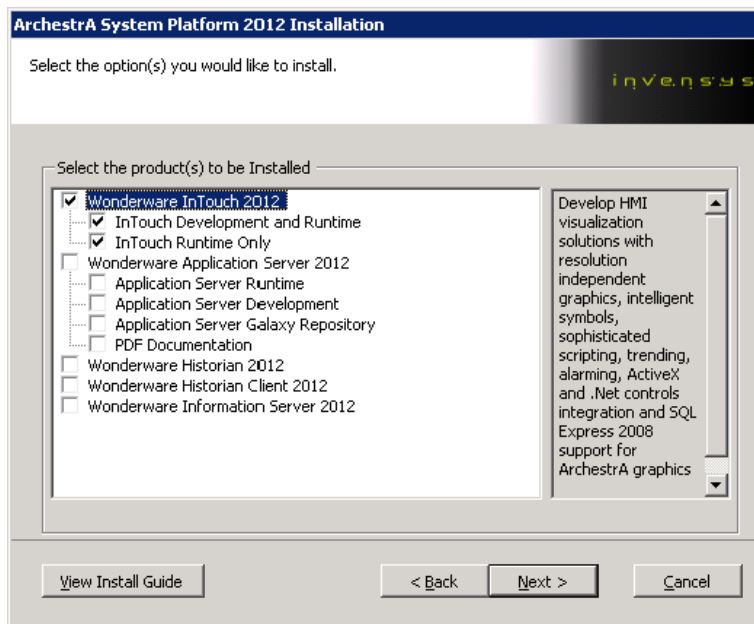


If you select the **Arcestra System Platform Computer Roles** option, the role based installation dialog box appears.



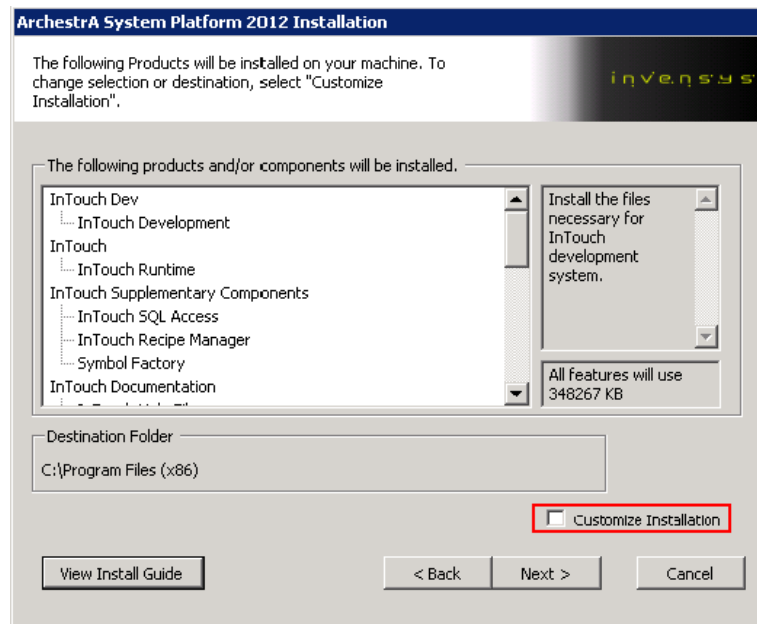
**Note:** You can select multiple products or roles. All the selected components will be installed together.

- 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.

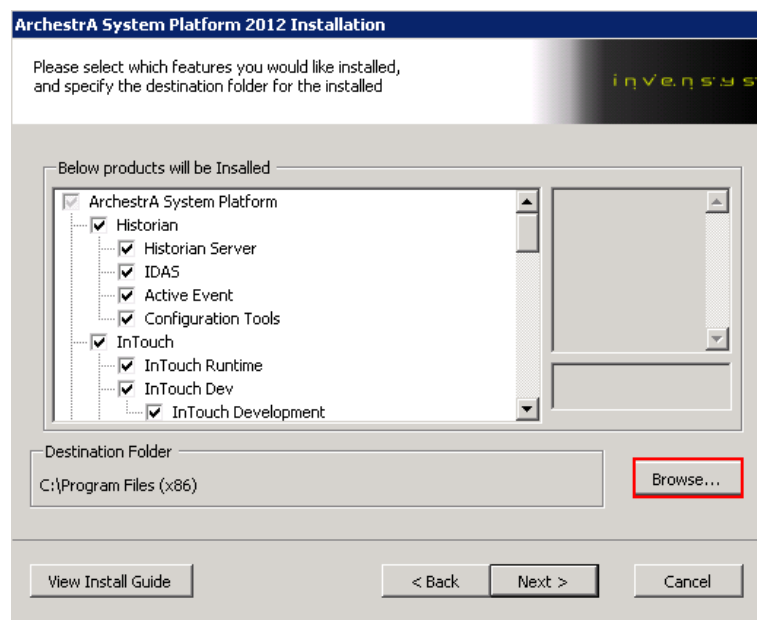




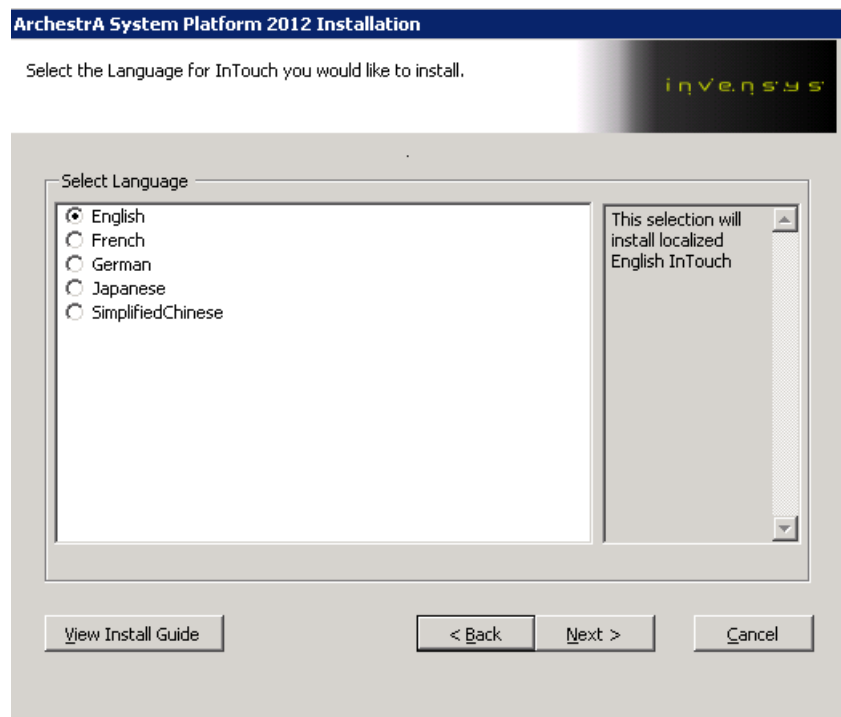
- 7 On the verify selection dialog box, view your selection.
- 8 Select the **Customize Installation** check box to change your configuration, if required, and then click **Next**. The customize installation dialog box appears.



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

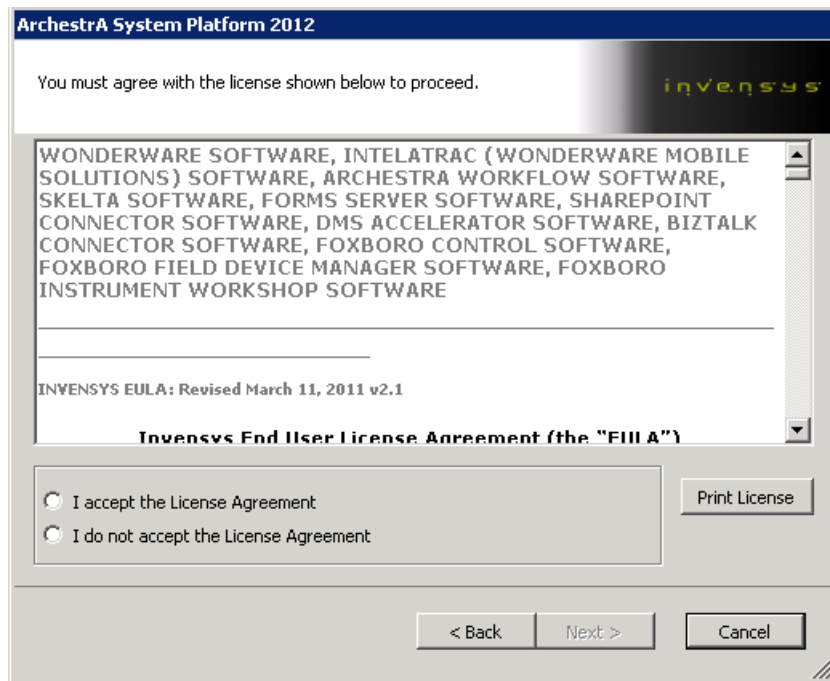


- 9 Change your selection, and then click **Next**. If you have selected an InTouch HMI installation, the language selection dialog box appears. Click the language for your InTouch HMI installation.



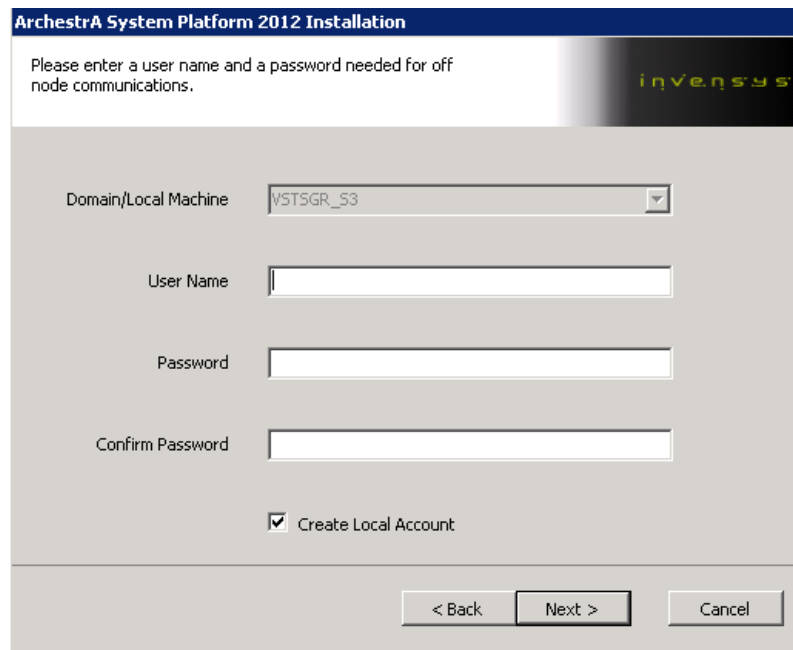
If you select InTouch features, you need to select a language for the InTouch installation. The localized InTouch versions are supported only in the paired operating system. For example, the German version of the InTouch HMI is only supported on the German operating system.

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



The dialog box is titled "Arcestra System Platform 2012". It contains the text "You must agree with the license shown below to proceed." and the Invensys logo. The license text lists various software products: WONDERWARE SOFTWARE, INTELATAC (WONDERWARE MOBILE SOLUTIONS) SOFTWARE, ARCESTRA WORKFLOW SOFTWARE, SKELTA SOFTWARE, FORMS SERVER SOFTWARE, SHAREPOINT CONNECTOR SOFTWARE, DMS ACCELERATOR SOFTWARE, BIZTALK CONNECTOR SOFTWARE, FOXBORO CONTROL SOFTWARE, FOXBORO FIELD DEVICE MANAGER SOFTWARE, and FOXBORO INSTRUMENT WORKSHOP SOFTWARE. Below the license text is a scroll bar. At the bottom, there are two radio buttons: "I accept the License Agreement" (selected) and "I do not accept the License Agreement". To the right of the radio buttons is a "Print License" button. At the bottom right are three buttons: "< Back", "Next >", and "Cancel".

**11** Click the **I Accept the License Agreement** option, and then click **Next**. The **Arcestra User Account** dialog box appears.



The dialog box is titled "Arcestra System Platform 2012 Installation". It contains the text "Please enter a user name and a password needed for off node communications." and the Invensys logo. Below the text are four input fields: "Domain/Local Machine" (with a dropdown menu showing "VSTSGR\_S3"), "User Name", "Password", and "Confirm Password". Below the input fields is a checkbox labeled "Create Local Account" which is checked. At the bottom right are three buttons: "< Back", "Next >", and "Cancel".

- 12** Specify an ArcestrA user account. You can create a new ArcestrA user account if no other ArcestrA-enabled software is installed on the computer, or specify an existing user account.

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

- a** Type your user name and password.
- b** Click 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.
- a** Type the user name and password for the existing account.
  - b** Clear the Create Local Account check box.

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

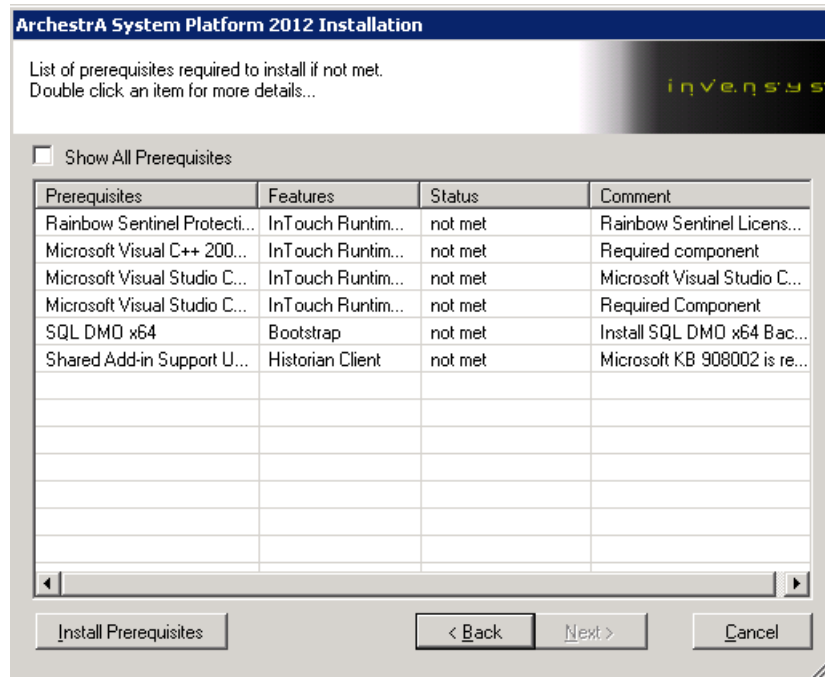
Wherever an ArcestrA user account is required, the ArcestrA System Platform 2012 Installation dialog box appears and you need to provide a valid user name and password.

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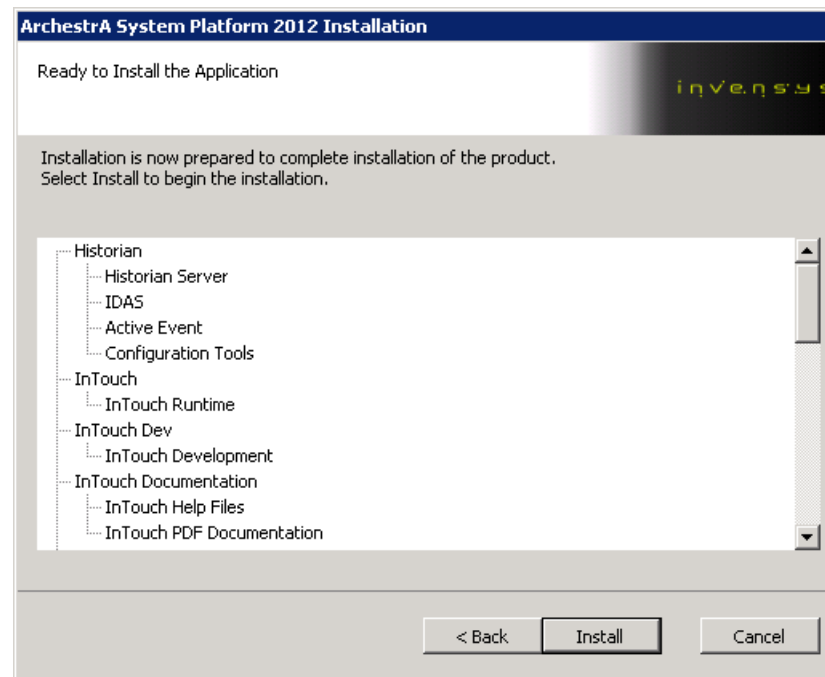
**WARNING! The ArcestrA user account is a Windows operating system account located on the local computer or on a domain. Do not delete this account with operating system account management tools. If you do, ArcestrA-enabled software may stop functioning properly.**

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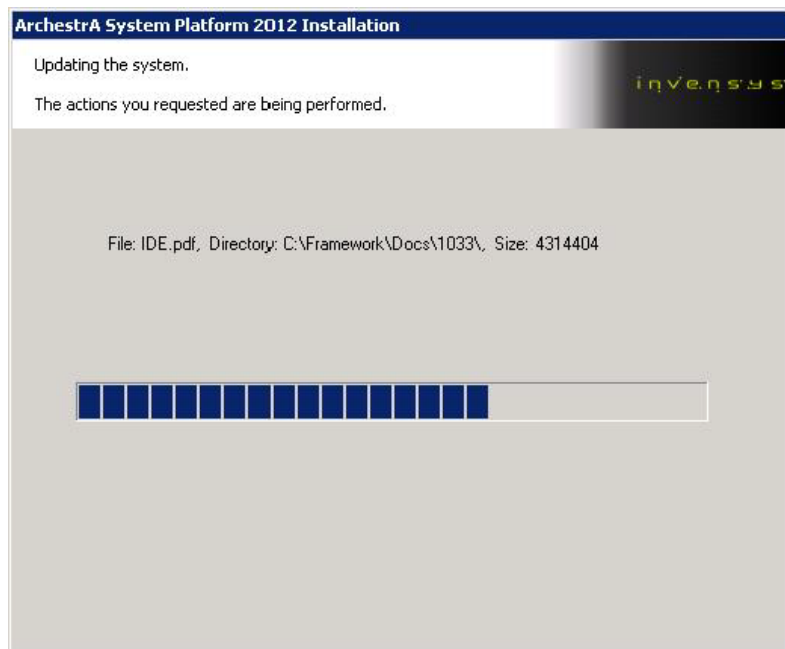
- 13** Click **Next**. The list of prerequisites for the selected components appears. The prerequisites listed vary depending on the products or product combinations selected.



- 14** Click any prerequisite with status of Not Met, and click **Install Prerequisites**. When all prerequisites are installed, click **Next**. The final installation confirmation dialog box appears.



**15** Click **Install**. The progress bar appears.



**16** After the installation is over, the complete installation dialog box appears. If the installed products do not need configuration, click **Finish**, else click **Configure**. For more information on configuring products, see "Configuring Products" on page 23.

---

**Note:** You must restart the system to complete the installation.

---



## Configuring Products

Some products require post-installation configuration for initial setup. You need to configure your products using the **Configurator** dialog box after you have installed them. The **Configurator** dialog box lists all product components that you have installed. You can configure the locations for the product database and the data files.

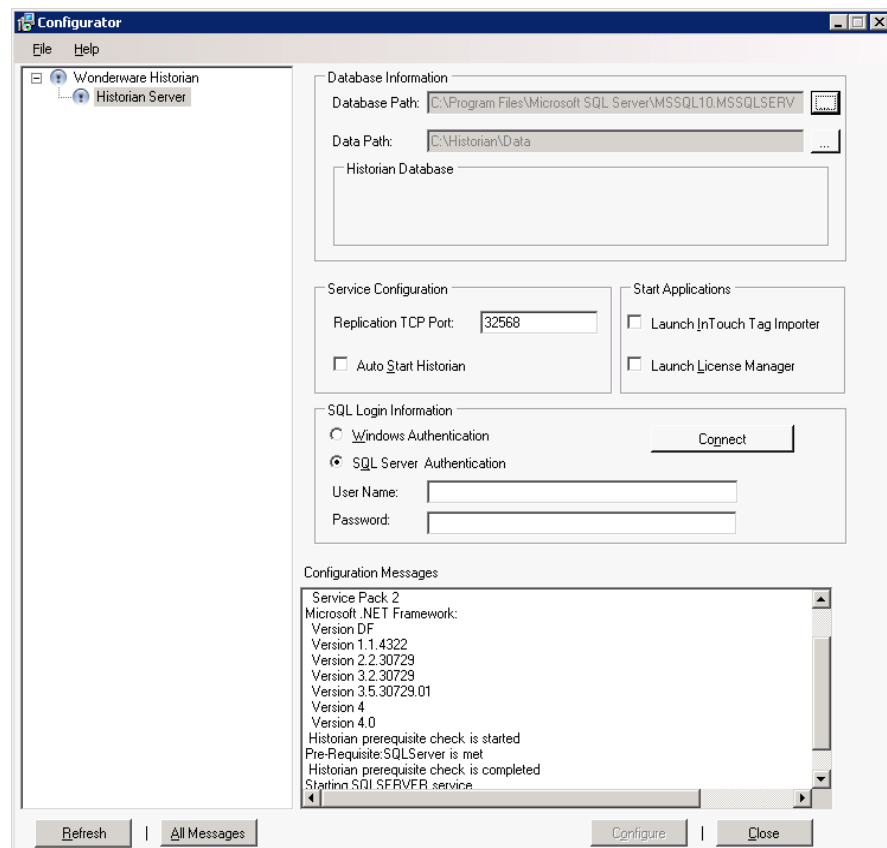
**Note:** You need to configure the products only if you have installed Wonderware Historian Server or Wonderware Information Server.

For more information on the products, see the following chapters in this guide:

- Modifying an Installation
- Repairing an Installation
- Uninstalling an ArcestrA System Platform Component
- Upgrading an ArcestrA System Platform Component

### To configure products

- 1 In the complete installation dialog box, click **Configure**. The **Configurator** dialog box appears. The following example shows configuration for the Historian Server



- 2 On the left pane, select the component and configure the details on the right pane.
- 3 Click **Configure**. After the installation is complete, the system may prompt you to restart. You can restart now or later.

---

**Note:** The installed programs may not function properly until you restart the system.

---

## Modifying an Arcestra User Account

After you install the Arcestra System Platform, you can use the Arcestra Change Network Account utility to change or recreate the Arcestra user account. This utility is located in the **Common** folder after you install the Arcestra System Platform products. You must have Administrator privileges on the computer to make changes with the Change Network Account utility. For more information, see the Change Network Account utility on-line help.

---

**Note:** If you recreate the user account using the Change Network Account utility, the Microsoft Windows security component on the computer can take several minutes to update this information on the Arcestra Galaxy node. Until that occurs, the Arcestra component may not function properly. Restarting the Galaxy node updates this information immediately.

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# Modifying an Installation

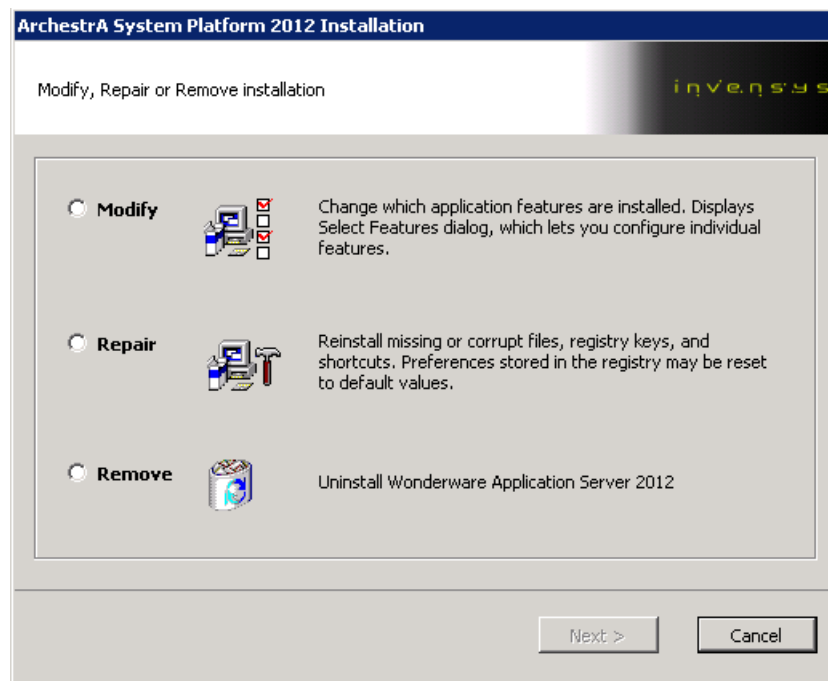
You can change the ArchestrA System Platform components installed on your computer. You can add new components or remove the existing ones. You can modify any component of ArchestrA System Platform.

**Note:** You must have the installation DVD inserted in the DVD-ROM drive before you can modify a program.

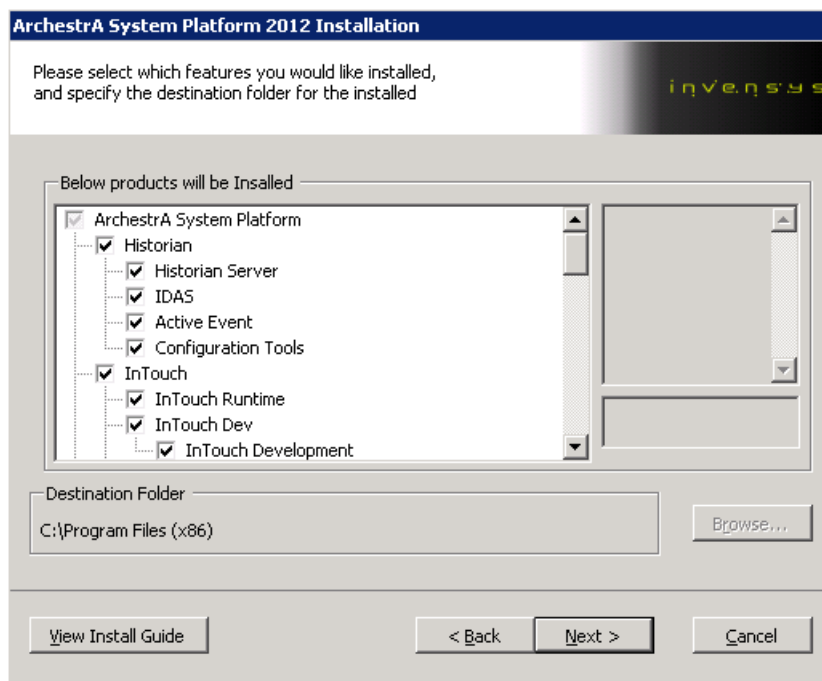
## To modify an installation

- 1 Click the **Add or Remove Programs** option in Windows **Control Panel**. (In Windows Server 2008 R2, this is called **Uninstall or Change a Program**.) The list of software installed on your computer appears.
- 2 Select any ArchestrA System Platform component, and then click the **Uninstall/Change** button. The **Modify, Repair or Remove Installation** dialog box appears.

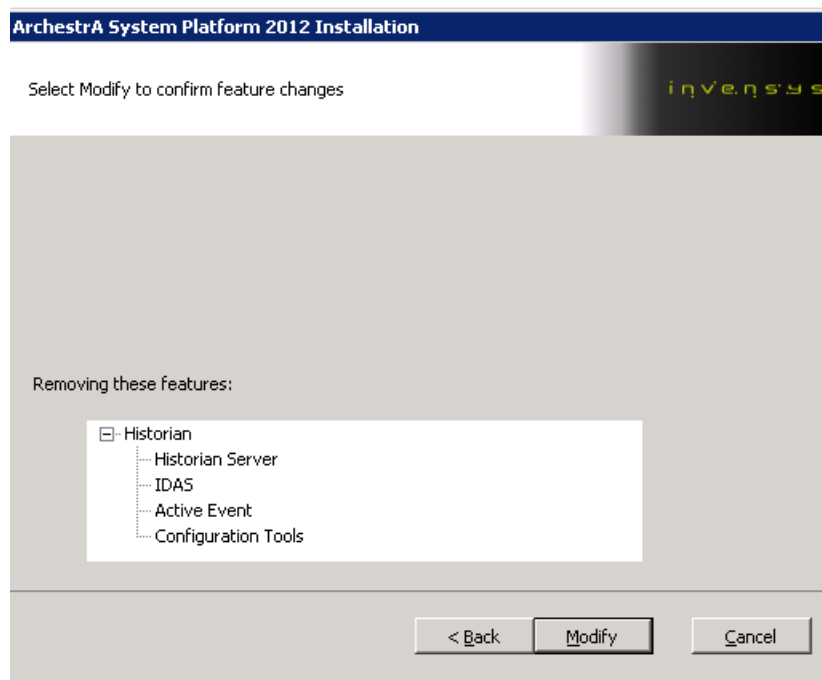
**Note:** The name of the **Uninstall/Change** button varies depending on the Windows operating system installed on your computer.



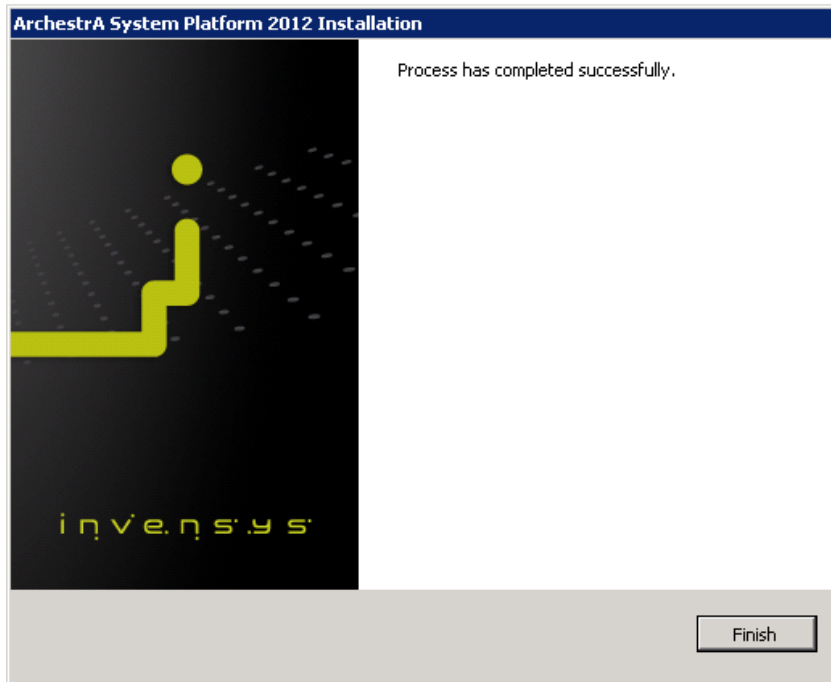
- 3 Click the **Modify** option, and then click **Next**. The list of ArchestrA System Platform components appears.



- 4 Select or clear the components that you want to add or remove, and then click **Next**. The verify change dialog box appears.



- 5 Click **Modify**. The selected components are added or removed and the complete modification dialog box appears.



- 6 Click **Finish**. The modification is complete.

## Repairing an Installation

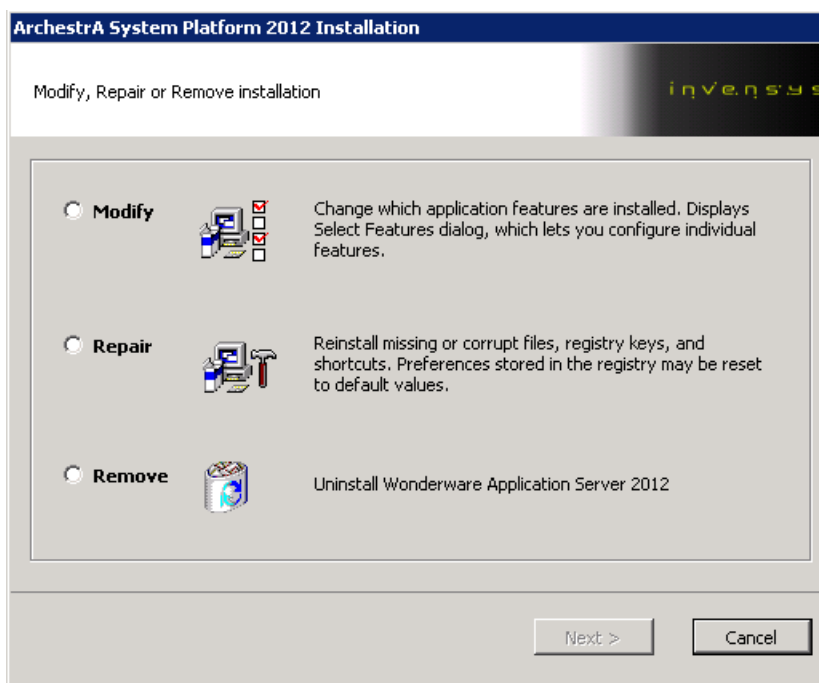
You can repair the installation of any component of the ArcestrA System Platform. You can repair missing or corrupt files, registry keys or shortcuts. You can also reset the registry key to the default value.

**Note:** You must insert the installer DVD in the DVD-ROM drive before you can repair a program.

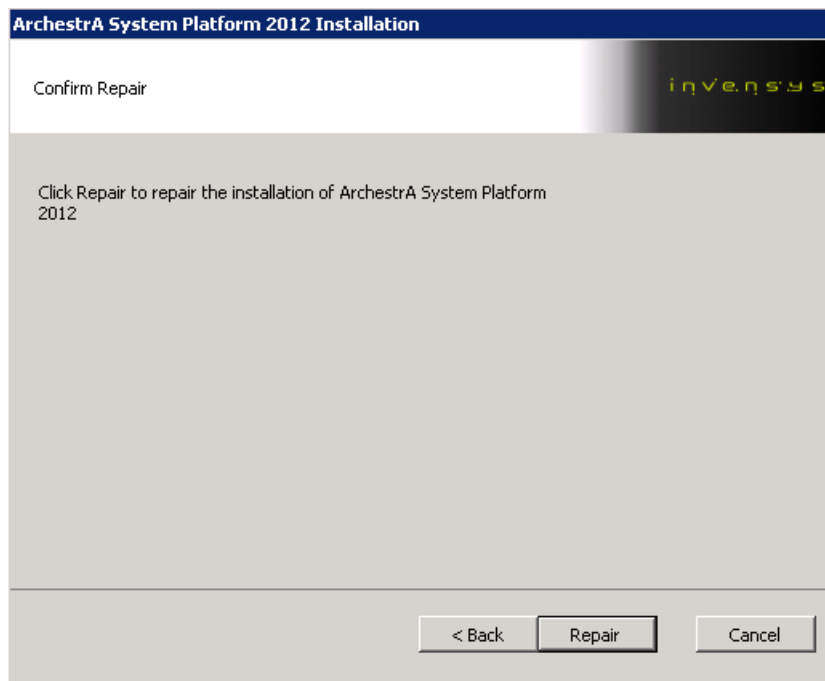
### To repair an installation

- 1 Click the **Add or Remove Programs** option in Windows **Control Panel**. (In Windows Server 2008 R2, this is called **Uninstall or Change a Program**.) The list of software installed on your computer appears.
- 2 Select the ArcestrA System Platform component that you want to repair, and then click the **Uninstall/Change** button. The **Modify Repair or Remove Installation** dialog box appears.

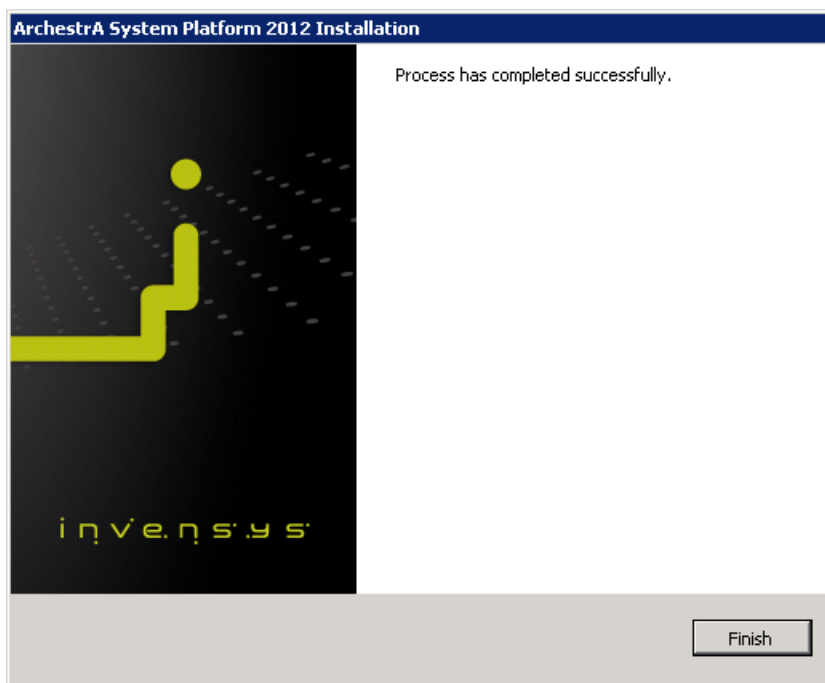
**Note:** The name of the **Uninstall/Change** button varies depending on the Windows operating system installed on your computer.



- 3 Click the **Repair** option, and then click **Next**. The **Confirm Repair** dialog box appears.



- 4 Click **Repair**. The complete repair dialog box appears.



- 5 Click **Finish**. The installed software is repaired.

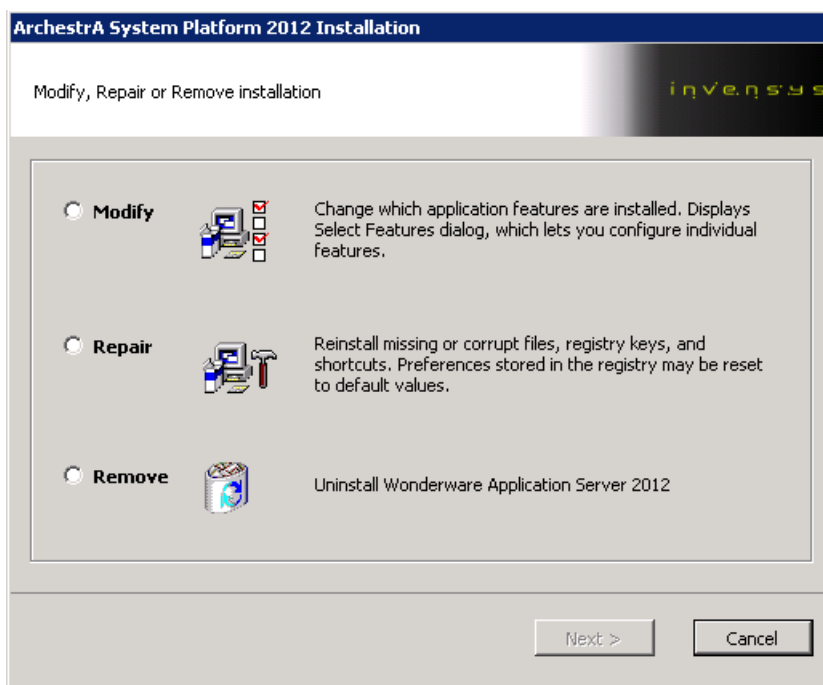
## Uninstalling an ArcestrA System Platform Component

You can uninstall any component of the ArcestrA System Platform that is installed on your computer.

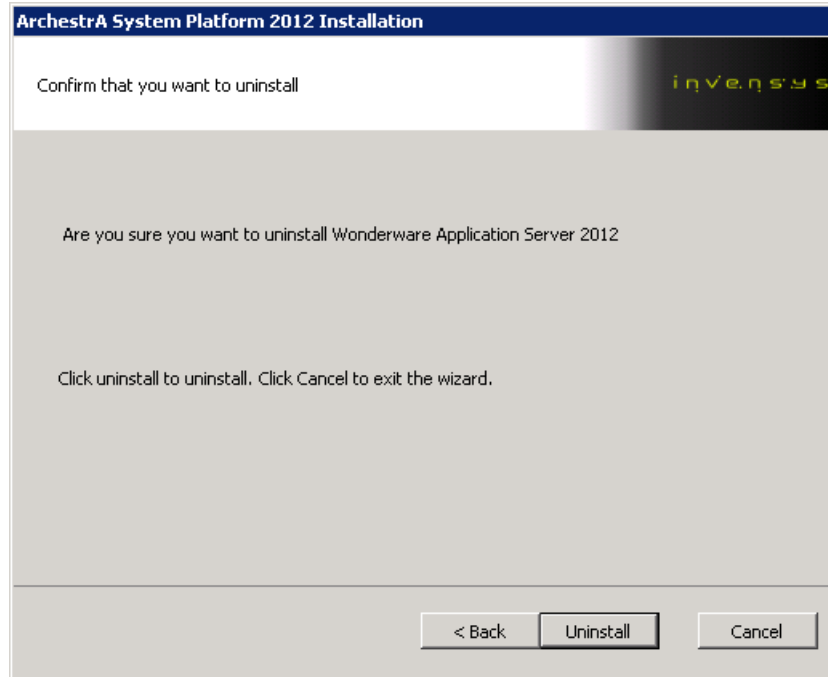
### To uninstall the ArcestrA System Platform component

- 1 Click the **Add or Remove Programs** option in Windows **Control Panel**. (In Windows Server 2008 R2, this is called **Uninstall or Change a Program**.) The list of software installed on your computer appears.
- 2 Select the ArcestrA System Platform component that you want to uninstall, and then click the **Uninstall/Change** button. The **Modify Repair or Remove Installation** dialog box appears.

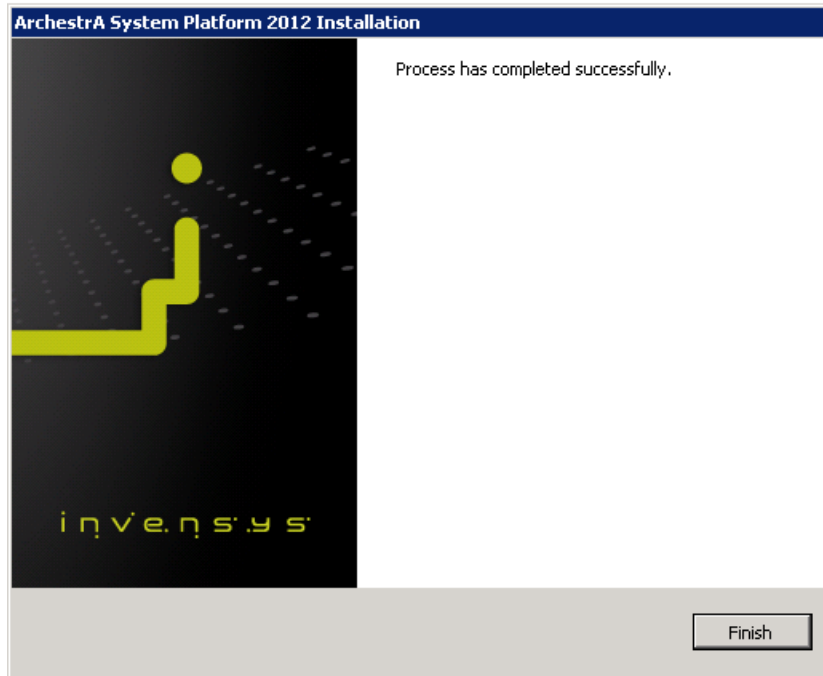
**Note:** The name of the **Uninstall/Change** button varies depending on the Windows operating system installed on your computer.



- 3 Click the **Remove** option, and then click **Next**. The confirmation dialog box appears.



- 4 Click **Uninstall**. The component is uninstalled and the complete uninstallation dialog box appears.



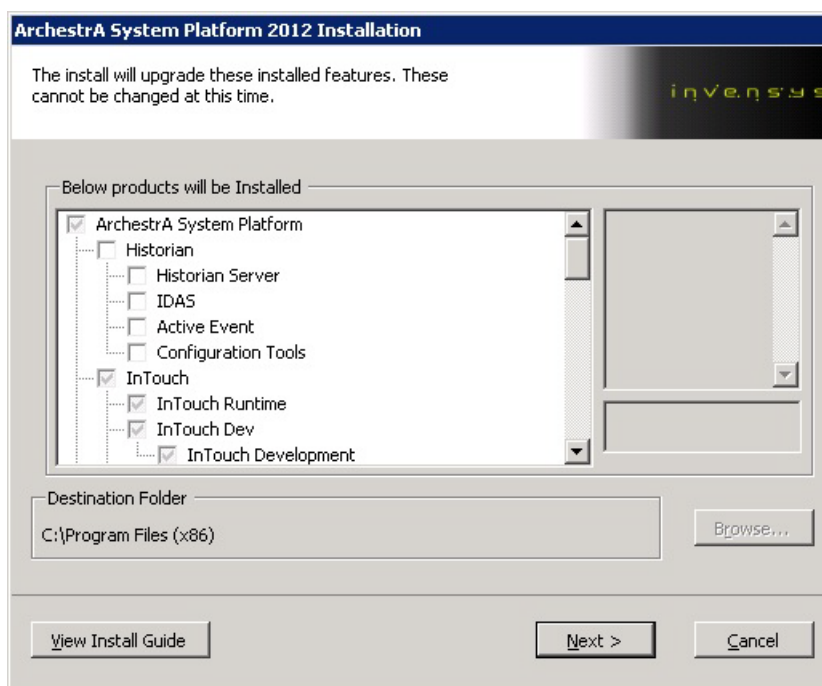
- 5 Click **Finish**. The uninstallation process is complete.

## Upgrading an ArcestraA System Platform Component

You can upgrade any component of the ArcestraA System Platform if you have an older version of the software installed in your system.

### To upgrade an ArcestraA System Platform Program Component

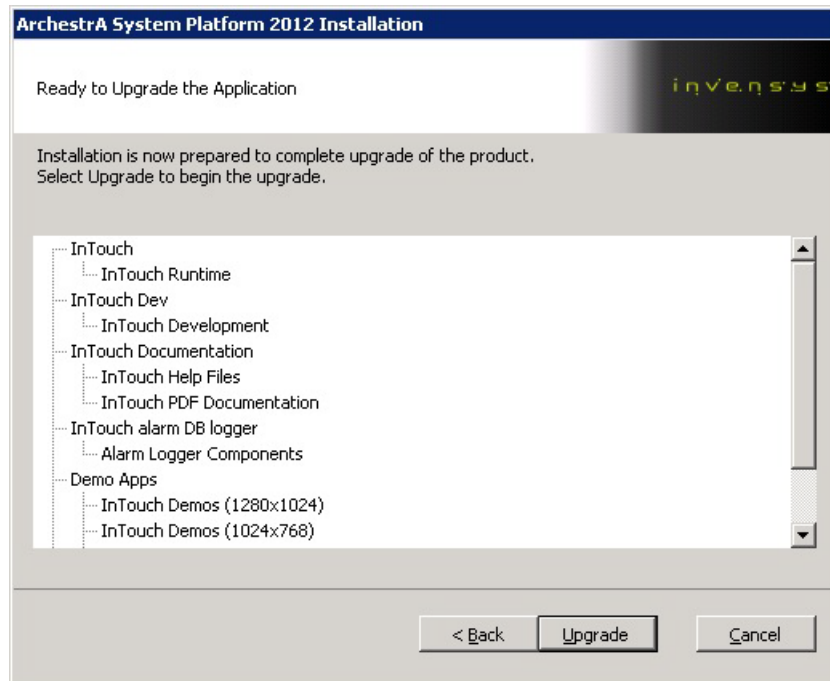
- 1 Insert the DVD into your DVD-ROM drive. Run setup.exe to start the set-up program. The upgrade feature dialog box appears.



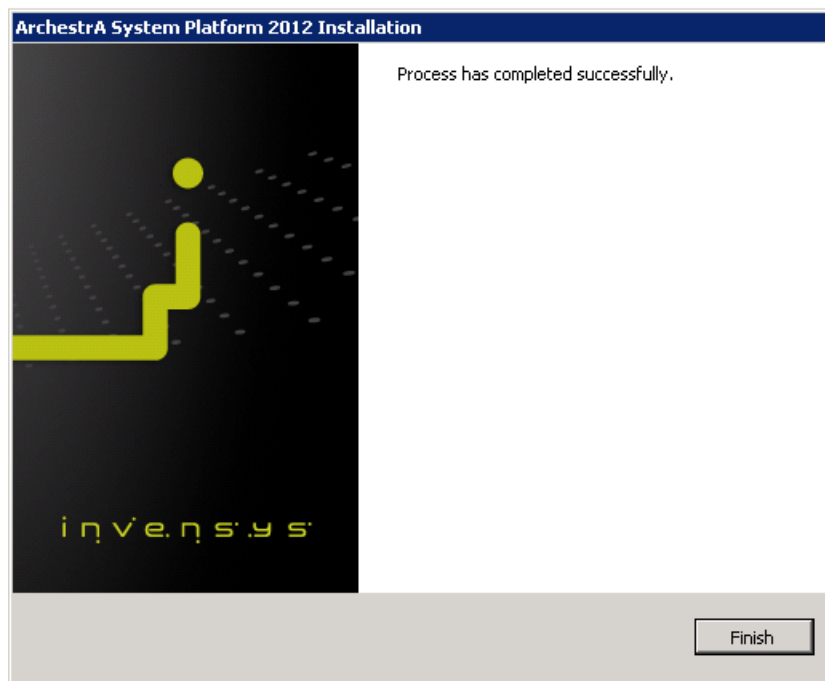
**Note:** You can only upgrade the products that are already installed and you will not be able to install new products that have an upgrade process. The installed components that need to be upgraded are selected and disabled. You can neither clear these check boxes nor select more components during the upgrade.



- 2 Click **Next**. The confirm upgrade dialog box appears.



- 3 Click **Upgrade**. The complete upgrade dialog box appears.



- 4 Click **Finish**. The upgrade process is complete.



## Chapter 2

# Application Server Requirements and Prerequisites

### ArchestrA User Account

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 each time you install Application Server components on computers that communicate with each other.

---

**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.**

---

If no other ArcestrA-enabled software is installed on the computer, you are prompted to create a new ArcestrA user account or specify an existing user account during the Application Server installation. 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.

---

**Note:** The Application Server installation will add the necessary SQL Server privileges for SQL Server 2008. For more information, see "SQL Server Rights Requirements" on page 37.

---

After you install the Application Server, you can use the ArcestrA Change Network Account utility to change or recreate the ArcestrA user account. This utility is located in the Common folder after you install Application Server. You must have Administrator privileges on the computer to make changes with the Change Network Account utility. For more information, see the Change Network Account utility documentation.

---

**Note:** If you recreate the user account using the Change Network Account utility, the Microsoft Windows security component on the computer can take several minutes to update this information on the ArcestrA Galaxy node. Until that occurs, the ArcestrA component may not function properly. Restarting the Galaxy node updates this information immediately.

---

# SQL Server Requirements

In a typical configuration, Microsoft SQL Server will be installed before you install Application Server. It is important to take into consideration the requirements of the different versions of SQL Server.

For more information about the Microsoft SQL Server versions supported by Application Server, see the current *Application Server Readme* available on the ArcestraA System Platform DVD.

---

**Note:** Application Server supports only the 32-bit version of SQL Server. The SQL Server installation media allows the selection of 32-bit (x86) or 64-bit (x64) in the **Options** tab of the installation program. If you have already installed the 64-bit version, you must exit the Application Server installation, uninstall SQL Server 2008 64-bit and replace it with a 32-bit version.

---

## SQL Server Database Requirements

See the *Application Server Readme* for information about the versions SQL Server supported by Application Server.

For more information about specific requirements for SQL Server configuration, see "SQL Server Rights Requirements" on page 37.

- A supported version of SQL Server must be installed on the computer designated as the ArcestraA Galaxy Repository (GR) node before you install Application Server.
- You cannot install and use Application Server on a computer that has both Microsoft SQL Server 2000 and Microsoft SQL Server 2008 installed.
- The GR locks the SQL Server maximum memory usage to 65% of the computer's physical memory.
- TCP/IP must be enabled on the computer hosting a SQL Server database. The TCP/IP protocol setting can be verified from the SQL Server Network Configuration under SQL Server Configuration Manager.

## SQL Server Rights Requirements

SQL Server 2008 and later versions do not automatically create the BUILTIN\Administrators role that was delivered in SQL Server 2005. Because of this change to SQL Server, the Application Server installation process creates the necessary operating system user group (aaAdministrators), as well as the necessary SQL Server login. This automated process provides the rights required to allow operations within the GR without the need for blanket BUILTIN\Administrator rights. The aaAdministrators group must be present and enabled.

If you accidentally delete the aaAdministrators group from the Windows operating system, you can run either of the two following options to restore it:

- Click **Start**, point to **All Programs**, point to Wonderware, and then click the **Change Network Utility**.
- Click **Start**, point to **All Programs**, point to Wonderware, and then click the **aaConfig SQL Utility**.

If you accidentally delete the aaAdministrators group from the SQL Server security logons, you must run the aaConfig SQL Utility to restore it.

## Issues with Legacy Common Components

Wonderware Application Server uses the latest version of the ArcestrA common components, which are installed to the following folder:

C:\Program Files\Common Files\ArcestrA

On a 64-bit operating system, the common components are installed to the following folder:

C:\Program Files (x86)\Common Files\ArcestrA

Legacy ArcestrA common components are installed to the following folder:

C:\Program Files\FactorySuite\Common

On a 64-bit operating system, legacy common components are installed to the following folder:

C:\Program Files (x86)\FactorySuite\Common

It is possible to install duplicate common components on a computer if you install an ArcestrA product that still uses the legacy common components after you install Application Server. Unexpected behavior can occur if duplicate common components are installed. The system components may not run properly, or may not run at all. Contact technical support for further assistance. You can also reference Tech Note 454, Manual Uninstall of Wonderware Products.

---

## Chapter 3

# Configuring and Upgrading Application Server

You can upgrade previous versions of the Application Server to version 3.5.

## Upgrading a Previous Version of Application Server to Version 3.5

The following earlier versions of Application Server can be upgraded to version 3.5:

- Version 3.0 SP2
- Version 3.1
- Version 3.1 SP1
- Version 3.1 SP2 Patch 01
- Version 3.1 SP3 Patch 01

---

**Important:** Ensure that you have installed the latest patch for your existing version, wherever possible, before upgrading to version 3.5. Also, only systems that meet the minimum system requirements, including operating system and SQL Server version, can be upgraded.

---

You can upgrade the following components of Application Server to version 3.5:

- Bootstrap

You will see a warning message if you attempt to upgrade a computer with a deployed WinPlatform. You have the choice to continue with the upgrade or to cancel. If you continue with the Bootstrap upgrade, the WinPlatform object is removed and upgraded to version 3.5.

If an InTouchViewApp instance is deployed for a managed InTouch application, the folder is undeployed and deleted. You are prompted to stop InTouch WindowViewer from running the managed application.

- IDE and Bootstrap

You will see a warning message if you attempt to upgrade a computer with a deployed WinPlatform. You have the choice to continue with the upgrade or to cancel. If you continue with the upgrade, the current IDE and Bootstrap are removed and the new versions are installed.

If an installed InTouchViewApp instance is deployed for a managed InTouch application, the folder is undeployed and deleted. You are prompted to stop InTouch WindowViewer from running the managed application.

- Galaxy Repository (GR) and Bootstrap

You will see a warning message if you attempt to upgrade a computer with a deployed WinPlatform or a client application is connected to the GR node. You have the choice to continue with the upgrade or to cancel. If you continue with the Bootstrap upgrade, the components are removed and upgraded to version 3.5.

Upgraded IDE/Client nodes cannot connect to a non-upgraded GR node. The GR node is undeployed before it is upgraded to Application Server 3.5.



- IDE, GR, and Bootstrap

You see a warning message if you attempt to upgrade a computer with a deployed WinPlatform or if a client application is connected to the GR node. You have the choice to continue with the upgrade or to cancel. If you continue with the Bootstrap upgrade, all components are removed and upgraded to version 3.5.

- Run-time node

Upgrading the Bootstrap on any computer removes the running WinPlatform and AppEngine. Both of these system objects are marked as undeployed if they are running on any Galaxy node.

---

**Note:** No system objects are removed on non-GR nodes when migrating from earlier versions of Application Server.

---

If a remote node is disconnected from the GR node, or if you upgrade the remote node before you upgrade the GR node, the remote Platform is not marked as undeployed. You must undeploy and redeploy the Platform.

The run-time functionality of Application Server continues throughout the upgrade process, except during a run-time node upgrade. Configuration, however, must be done using components that are at the same version level. For example, you cannot use the Galaxy Browser in the InTouch HMI on a non-upgraded node to view or select attributes from an upgraded Galaxy. You can, though, view or modify run-time data using an InTouch window or the Object Viewer.

## Basic Upgrade Sequence

---

**Important:** Back up the Galaxy before starting an upgrade. Also, upload any run-time changes for critical objects. You cannot upload any run-time change from non-upgraded nodes after you upgrade the system.

---

The basic upgrade steps are:

- 1** Upgrade your hardware and prerequisite software such as the operating system or Microsoft SQL Server to the required versions. For information on hardware and software requirements, see the Readme file.

If you are upgrading the SQL Server 2008 database on the GR node, you must undeploy the GR node before starting the SQL Server 2008 upgrade.

- 2** Upgrade the GR node. For more information, see "Upgrading a Galaxy Repository Node" on page 42.

- 3 Upgrade at least one IDE installation. If you upgrade the GR node, that IDE installation is upgraded. However, if you have any IDE-only nodes, you will have to upgrade them separately. For more information, see "Upgrading an IDE-only Node" on page 43.
- 4 Use the upgraded IDE to connect to the upgraded GR node and migrate the Galaxy database. For more information, see "Migrating the Galaxy Database" on page 44.
- 5 Deploy the GR Platform.
- 6 Upgrade run-time nodes.
  - Upgrade non-redundant run-time nodes one at a time and redeploy them. For more information, see "Upgrading Run-Time Nodes" on page 44.
  - Upgrade redundant pairs as a set. For more information, see "Upgrading Redundant Pairs" on page 45.

If you upgrade a remote Platform node before you migrate the Galaxy database, the remote Platform and hosted objects show the software upgrade pending icon after you migrate and deploy the Galaxy. To resolve this, undeploy and redeploy the remote Platform.

The preferred sequence of upgrade is:

- 1 Upgrade the GR node.
- 2 Upgrade the IDE node.
- 3 Migrate the Galaxy database.
- 4 Upgrade the remote Platforms.

---

**Important:** After you have upgraded the GR node to Application Server version 3.5, you will not be able to deploy or undeploy from the GR node to non-upgraded remote nodes. Also, the upgraded GR node will not be able to connect to an IDE node that has not been upgraded to version 3.5.

---

---

**Note:** As long as the operating system and SQL requirements are met, upgrade is supported. During software installation, operating system upgrade is not supported.

---

## Upgrading a Galaxy Repository Node

When you upgrade a GR node, the database schema is migrated from the existing schema to the new version 3.5 schema. Existing data from the GR is also migrated to the new schema.

You must upgrade all Application Server components (IDE, Bootstrap, and GR) to the same version that are installed on the GR node.

When you upgrade the GR node, the local Platform and all hosted objects are undeployed.

**To upgrade the GR node**

- 1 Run Setup.exe from the DVD. The **Welcome** dialog box appears.
- 2 Click **Next**. Review the recommended steps before you upgrade and take appropriate action, if needed.
- 3 Click **Next**. Review the status of objects deployed in the system and take appropriate action, if needed.
- 4 Click **Next**. The **Select Features** dialog box appears. Any previously-installed features appear dimmed.
- 5 Click **Next**. The **Prerequisites** dialog box appears. You can select the **Show All** check box to view all prerequisites.
- 6 Click the prerequisite whose status is "Not Met", and then click **Install Prerequisites**. The general system prerequisites are installed.
- 7 Click **Next**. Follow the prompts to complete the upgrade.

## Upgrading an IDE-only Node

If you have IDE-only installations on nodes other than the GR node, you need to upgrade them separately.

---

**Important:** A GR node that has been upgraded to Application Server version 3.5 cannot connect to an IDE node that has not also been upgraded. Conversely, an IDE node that has been upgraded cannot connect to a GR node that has not been upgraded.

---

**To upgrade an IDE-only node**

- 1 On the IDE node, run Setup.exe from the DVD. The **Welcome** dialog box appears.
- 2 Click **Next**. The **Select Features** dialog box appears. Any previously-installed features appear dimmed.
- 3 Click **Next**. The **Prerequisites** dialog box appears. You can select the **Show All** check box to view all prerequisites.
- 4 Click the prerequisite whose status is Not Met, and then click **Install Prerequisites**. The general system prerequisites are installed.
- 5 Click **Next**. Follow the prompts to complete the upgrade.

## Migrating the Galaxy Database

To migrate the database:

- The IDE you use to migrate the database must be the current version.
- The GR node must already be upgraded to the current version.

Make sure that all connections to the Galaxy database are closed before migrating the database.

After you migrate the Galaxy, deployed objects on a non-upgraded node are marked with pending software upgrade status.

### To migrate the Galaxy database

- 1 Start the IDE.
- 2 Connect to the Galaxy database to migrate. You are prompted to migrate it.
- 3 Follow the prompts to complete the migration.

## Upgrading Run-Time Nodes

After you upgrade the GR and IDE, all run-time nodes continue to run. This allows you to upgrade the run-time nodes individually when it is convenient.

---

**Important:** After you have upgraded the GR node to Application Server version 3.5, you will not be able to deploy or undeploy from the GR node to remote nodes. Also, the upgraded GR node will not be able to connect to an IDE node that has not been upgraded to version 3.5.

---

Upgrading to Application Server 3.5 on a run-time node will remove any deployed Platforms on that node.

After you upgrade and then deploy a run-time node, it continues to function with other run-time nodes as long as the other nodes are the current version or from the previous version.

The run-time node does not function while you are upgrading it. You cannot roll back the upgrade.

After you upgrade the run-time node and all hosted objects, you need to redeploy the WinPlatform to the node.

The GR node migration fails if the GR node is used as a run-time node for another GR.

### To upgrade a run-time node

- 1 Run Setup.exe from the DVD. The **Welcome** dialog box appears.
- 2 Click **Next**. Accept the license agreement.

- 3 Click **Next**. Review the status of objects deployed in the system and take appropriate action, if needed.
- 4 Click **Next**. The **Select Features** dialog box appears. Any previously-installed features appear dimmed.
- 5 Click **Next**. Follow the prompts to complete the upgrade.
- 6 Deploy the platform and all hosted objects to the run-time node.

## Upgrading Redundant Pairs

You must upgrade a redundant pair as a set. The primary and backup engines must be treated as a single node.

During the upgrade, the primary and backup engines are not available for fail-over.

### To upgrade a redundant pair

- 1 Using the System Management Console (SMC), set all engines on the redundant pair platforms to off-scan.

---

**Note:** Alarms do not update in alarm clients while the engines are set to off-scan.

---

- 2 On the primary node, do the following:
  - a Run Setup.exe from the DVD. The **Welcome** dialog box appears.
  - b Click **Next**. Accept the license agreement.
  - c Click **Next**. Review the status of objects deployed in the system and take appropriate action, if needed.
  - d Click **Next**. The **Select Features** dialog box appears.
  - e Click **Next**. Follow the prompts to complete the upgrade.
- 3 Repeat step 2 for the backup node.
- 4 Deploy the primary platform.
- 5 Deploy the backup platform.



## Chapter 4

# InTouch HMI Requirements and Prerequisites

You need to meet the requirements and prerequisites for Wonderware products.

## Wonderware Product Licensing

**NOTICE: LIMITATIONS TO THE WONDERWARE LICENSING FOR INTOUCH 10.5 AND APPLICATION SERVER 3.5.**

**PROPER USE OF LICENSED PRODUCTS MUST BE STRICTLY FOLLOWED TO ENSURE A FULLY FUNCTIONING PRODUCTION SYSTEM. READ THIS ENTIRE NOTICE.**

If you are licensed for a ArchestrA System Platform or the Wonderware Application Server, you can use all the functionality in these products up to the limits in your license files.

If you are licensed for only InTouch 10.5 development and run time, you are licensed to use:

- All InTouch product software capabilities
- InTouch tags up to the licensed limit
- ArchestrA graphics
- ArchestrA IDE

---

**Important:** You are not licensed to use or deploy in production any Object templates in the IDE other than InTouchViewApp Object.

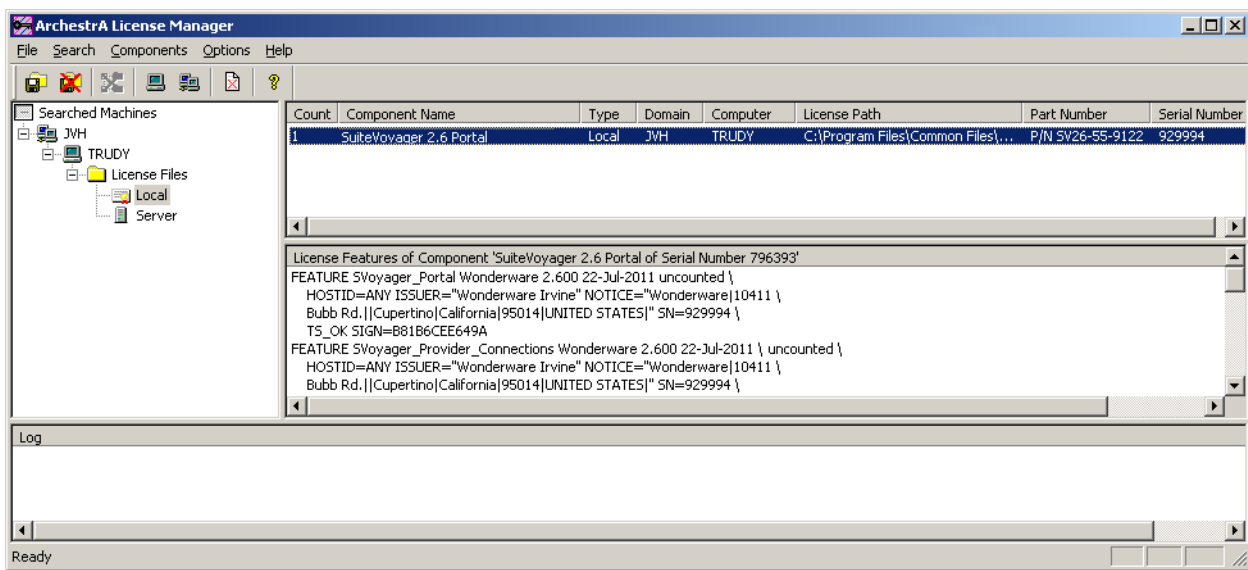
---

However, you **can** use the additional functionality in the Wonderware Application Server in a Demo mode as you learn about its capabilities and consider the advantages of upgrading to full Wonderware System Platform license.

Wonderware provides you with most or all of the product software in a demonstration, or “Demo,” mode. Demo mode lets you learn about and experience the full breadth of the Wonderware product line, technology, and capabilities without requiring a legal license file to run the software.

#### How to obtain licensing information:

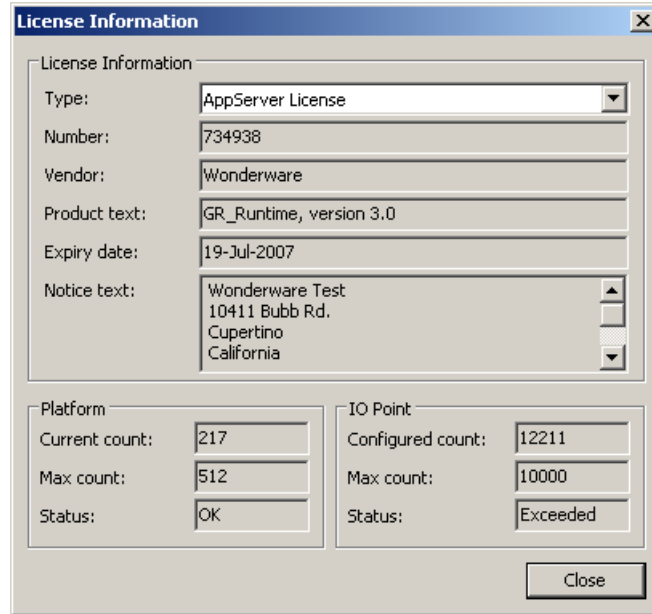
You can browse licensing information for any computer that appears in the ArchestrA License Manager browser.



You can navigate to the ArchestrA License Manager from **Start, All Programs, Wonderware**. You can start the ArchestrA License Manager from any Wonderware product by clicking **Help, About**, then click **View License**.



You can use the License Information utility to see whether the current local or remote I/O counts exceed the maximum specified by your Wonderware license.



The screenshot shows a window titled "License Information" with a close button in the top right corner. The window is divided into two main sections. The top section, labeled "License Information", contains several fields: "Type:" with a dropdown menu showing "AppServer License"; "Number:" with a text box containing "734938"; "Vendor:" with a text box containing "Wonderware"; "Product text:" with a text box containing "GR\_Runtime, version 3.0"; "Expiry date:" with a text box containing "19-Jul-2007"; and "Notice text:" with a text box containing "Wonderware Test", "10411 Bubb Rd.", "Cupertino", and "California". The bottom section is divided into two columns. The left column, labeled "Platform", contains "Current count:" (217), "Max count:" (512), and "Status:" (OK). The right column, labeled "IO Point", contains "Configured count:" (12211), "Max count:" (10000), and "Status:" (Exceeded). A "Close" button is located at the bottom right of the window.

License Information	
Type:	AppServer License
Number:	734938
Vendor:	Wonderware
Product text:	GR_Runtime, version 3.0
Expiry date:	19-Jul-2007
Notice text:	Wonderware Test 10411 Bubb Rd. Cupertino California
<b>Platform</b>	
Current count:	217
Max count:	512
Status:	OK
<b>IO Point</b>	
Configured count:	12211
Max count:	10000
Status:	Exceeded

In addition, carefully read the *License Certificate* documentation, which describes the licensed products you received. The *License Certificate* is included with your Licensing CD.

---

**Important:** Attempting to deploy unlicensed functionality to a production environment is illegal and results in problems when upgrading to a future version. Deploying unlicensed functionality is not supported by Wonderware.

---

For further explanation of licensing compliance, see Appendix B of the *InTouch Data Management Guide* installed with the software. Or, contact your local Wonderware Distributor or Wonderware Technical Support.



## Chapter 5

# Historian Server Requirements and Recommendations

For your Wonderware Historian to achieve maximum performance, make sure your hardware and software meets the following requirements. Because the Wonderware Historian is a high-performance relational database, it is also important to size your system to handle the level of data that you expect to store.

The Wonderware Historian is tightly integrated with Microsoft products, and a working knowledge of both Microsoft SQL Server and Microsoft Windows operating systems is required. For more information on Microsoft SQL Server or Windows operating systems, see your Microsoft documentation.

## Server Requirements

The minimum hardware and software requirements for the Wonderware Historian are based on the tag count and the anticipated data throughput rate. These requirements are divided into four levels, which are outlined in this section.

The recommended memory configuration for SQL Server 2005 (32-bit) and SQL Server 2008 (32-bit) is to clamp their memory consumption to 50 percent of the amount of physical memory installed on the server or 512 MB, whichever is larger. For SQL Server 2008 R2 Standard and Enterprise editions (32-bit), the recommended physical memory configuration is 1 GB. The recommended Windows virtual memory setting is twice the amount of physical RAM installed on the server. (See the Microsoft Web site, [www.microsoft.com](http://www.microsoft.com), for updated installation requirements for SQL Server versions.)

For tag counts less than 30,000, the data throughput rate is assumed to be equal to the tag count. For tag counts greater than or equal to 30,000, the data throughput rate is assumed to be 30,000 values per second. This is the guaranteed throughput that the system can handle, but throughput rates substantially higher, are possible depending on the hardware configuration.

You can install the Wonderware Historian on operating systems that have the User Account Control (UAC) turned on.

If you are running the Wonderware Historian on a virtual server, the historian must have an adequate CPU, adequate network memory, and disk I/O resources at all times. Overloading the virtual server leads to unpredictable behavior.

---

**Note:** If the Wonderware Historian is running on the Windows Server 2003 or later operating system, DDE is not supported.

---

### Operating Systems

The following are the supported operating systems:

- Windows Server 2003 Enterprise R1/R2 SP2
- Windows Server 2003 Standard Edition R1/R2 SP2
- Windows XP Professional SP3
- Windows Server 2008 Standard (32 or 64-bit)
- Windows Server 2008 Enterprise Edition SP2 (32 or 64-bit)
- Windows Server 2008 R2 Standard
- Windows Vista Business SP2 (32 or 64-bit)
- Windows Vista Enterprise SP2 (32 or 64-bit)
- Windows Vista Ultimate Edition SP2 (32 or 64-bit)
- Windows 7 Professional Edition (32 or 64-bit)
- Any of the above running under VMWare ESX, Server version 4.0
- Stratus with Windows Server 2008 SP2

**Microsoft SQL Server**

The following are the supported SQL Server versions (32-bit versions only):

- Microsoft SQL Server 2008 SP1 Enterprise Edition
- Microsoft SQL Server 2008 SP1 Standard Edition
- Microsoft SQL Server 2005 SP3 Standard Edition
- Microsoft SQL Server 2005 SP3 Enterprise Edition

**Disk Space**

- 300 MB of free disk space to install the Wonderware Historian
- Appropriate space for history block storage. For more information, see "Disk Sizing and Data Storage" on page 56.

**Level 1 Server - Hardware**

A Level 1 server can handle a load of about 5,000 tags. For example, 2,600 analogs, 2,200 discretes, 300 strings, and 20 non-I/O Server (manual) tags. The requirements are:

- Processor:
  - Minimum: P4 3.2 GHz CPU
  - Recommended: dual-core CPU
- RAM:
  - Minimum: 1 GB (Windows Server 2003 and Windows XP)
  - Minimum: 2 GB (Windows Server 2008 and Windows Vista)
  - Recommended: 4 GB
- 100 Mbps network interface card (NIC)

**Level 2 Server - Hardware**

A Level 2 server can handle a load of about 63,000 tags. For example, 40,000 analogs, 20,000 discretes, 300 strings, and 5,000 non-I/O Server (manual) tags. The requirements are:

- Processor:
  - Minimum: P4 3.0 GHz dual CPU
  - Recommended: quad-core CPU
- RAM:
  - Minimum: 4 GB
  - Recommended: 6 GB
- 1 Gbps network interface card (NIC)

**Level 3 Server - Hardware**

A Level 3 server can handle a load of 130,000 tags. For example, 70,000 analogs, 50,000 discretes, 6,000 strings, and 20 non-I/O Server (manual) tags. The requirements are:

- Processor:
  - Minimum: P4 2.7 GHz Xeon quad CPU
  - Recommended: dual processor, quad-core CPUs
- RAM:
  - Minimum: 6 GB
  - Recommended: 10 GB
- 1 Gbps network interface card

A performance report for different historian systems is provided in "System Sizing Examples" on page 73.

## High Availability Support

The Wonderware Historian provides built-in support for Stratus ft3500 fault-tolerant servers.

## Requirements for Historian Management Tools

The management tools include the Wonderware Historian System Management Console and the Wonderware Historian Database Export/Import Utility. If you are installing the tools on a remote computer, the following requirements apply:

- Any of the following operating systems:
  - Windows Server 2003 Enterprise R1/R2 SP2
  - Windows Server 2003 Standard Edition R1/R2 SP2
  - Windows XP Professional SP3
  - Windows Server 2008 Standard SP2 (32 or 64-bit)
  - Windows Server 2008 Enterprise Edition SP2 (32 or 64-bit)
  - Windows Server 2008 R2 Standard
  - Windows Vista Business SP2 (32 or 64-bit)
  - Windows Vista Enterprise SP2 (32 or 64-bit)
  - Windows Vista Ultimate Edition SP2 (32 or 64-bit)
  - Windows 7 Professional (32 or 64-bit)
  - Any of the above running under VMWare ESX
  - Stratus with Windows Server 2008 SP2

- Microsoft Management Console 2.0
- MDAC 2.7
- Internet Explorer 6.0 or later
- 20 MB of free disk space

---

**Note:** The InTouch History Importer is installed as part of the server installation.

---

## Remote IDAS Requirements

A remote IDAS runs on all supported operating systems: domain member, standalone workstation, or server.

To determine the CPU and memory needed for a remote IDAS, use the same guidelines of the Wonderware Historian computer. For more information, see "Server Requirements" on page 51.

The IDAS computer does not necessarily have to be as powerful as the server computer, because it will not be performing all of the same functions (for example, processing SQL Server transactions), but it should be powerful enough to handle the tag load that you expect.

The amount of free disk space required depends on whether or not you will have store-and-forward enabled for the IDAS. If store-and-forward is enabled, you need to make sure that the disk space on the remote IDAS computer is sufficient to store cached data if the network connection to the historian fails. Estimate the disk space requirements for a remote IDAS as that of the historian. For more information, see "Disk Requirements for Historical Data Files" on page 59.

A remote IDAS configured for store-and-forward has more stringent requirements on memory to ensure that the IDAS local storage engine has sufficient resources to run properly. In general, estimate memory requirements for a remote IDAS configured for store-and-forward the same as you would for a historian having the corresponding tag count.

## Security Considerations for a Remote IDAS

If you set up a remote IDAS, you need to configure security settings that allow access permissions between the remote IDAS and the Wonderware Historian. For example, the historian needs to access the remote computer to start and stop the IDAS. Also, the remote IDAS needs to access the historian computer to send data. These are administrative tasks, which require administrative permissions.

When you install the historian, you must specify an administrative user account under which all of the historian services run. Make sure that this same user account is added to the Administrators security group on the remote IDAS computer. The existence of the same administrative user account on both the computers, allows the historian to access the remote IDAS, and vice versa.

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**Note:** A remote IDAS only requires the same administrative account to exist on the local computer and the historian. It is not required for you to log on to the remote IDAS computer using the administrator account.

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If you change the Windows login using the System Management Console, after installing the historian, make sure that the user account change is reflected on the remote IDAS computer.

If you are running the historian in a domain environment (recommended), you can create the administrative user account on the domain controller and add the account to the Administrators group on the historian computer and the remote IDAS computer. Do not create a local user on any computer with the same name and/or password as the administrative user account.

If you are running a remote IDAS in a workgroup environment, there is no centralized management and authentication of user accounts (no domain controller). Create the same administrative user account on each individual computer running a historian component. For example, if you have a computer running the historian and plan to install remote IDASs on two other computers, create the user account (that is, matching user names and passwords) on all three computers.

For information on workgroups, domains, creating user accounts, and adding accounts to the Administrators security group, see your Microsoft operating system documentation.

## Disk Sizing and Data Storage

A number of storage-related questions must be answered when setting up the Wonderware Historian. They include:

- How important is the data? Is it acceptable that four weeks of data is stored online and is then over-written?
- How important is the configuration and event data? This type of information is stored in the Microsoft SQL Server database.
- How often is data in the Microsoft SQL Server database changing?
- Is anyone in the organization going to require operating data that is older than a month? Older than a year?
- How much is the SQL Server component of the historian expected to be used (for example, for the event system)?



- How long can the system be off-line in the event of a component failure?
- What happens if the system stops storing data?
- What happens if stored data is lost as a result of a hard drive failure?
- Can the server equipment be taken off-line to perform repairs?

Ask yourself questions like these to help you determine disk space requirements and how you should plan to protect your data.

A performance report for different historian systems is provided in "System Sizing Examples" on page 73.

## General Hardware Recommendations for Storage

The following are the general recommendations for the hardware used for storage:

- SCSI drives configured using hardware RAID is optimum. The disk space required is a function of data rate and the desired history duration.
- NTFS is the only officially supported file system for a production environment. Although the historian can run using the FAT file system, data corruption can occur if the system crashes while files are still open.
- Enable file compression for the historical data storage locations: Circular, Buffer, and Permanent. File compression on these directories is automatically set during the installation process. However, if you re-assign the storage locations (for example, for the alternate location), you must set the compression manually.

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**Note:** File compression is only available for the NTFS file system.

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## Planning for Disk Space Requirements

There are a number of factors to consider when estimating the amount of disk space required to run the Wonderware Historian:

- Disk space required to install the required software components and files needed to run the historian.
- Disk space required to store the historian database files.
- Disk space required to store the historian data files.
- If a remote IDAS is used, the disk space required on the local IDAS computer to store cached data if the network connection to the historian fails.

- We recommend that you keep sufficient free disk space (around 20%) so that you can run a disk defragmenting utility without negatively affecting the historian performance.

A performance report for different historian systems is provided in "System Sizing Examples" on page 73.

## Disk Requirements for Database Files

The Wonderware Historian installation program adds two databases to the Microsoft SQL Server: Runtime and Holding.

- The Runtime database stores all historian configuration data and event data. The information in the Runtime database is stored to disk as a database file named Run100dat.mdf. Its associated log file is Run100log.ldf.

The configuration data in the database file remains relatively static and usually never causes the file size to go above 20 MB. However, if you set up events, records of event detections and the results of any data summaries or snapshots increase the size of the Runtime database file because the tables are filling up. Also, entries are created in the log file for event-related transactions. If the database files are set to auto-size, the Runtime database file expands to accommodate event-related data until the hard drive is full.

- The Holding database temporarily stores tag definitions being imported from InTouch® HMI software. The information in the Holding database is stored to a database file named Holding100Dat.mdf. Its associated log file is Holding100Log.ldf.

---

**Note:** Historical plant data is not stored in the database files. This type of data is stored in special files called history blocks.

---

The Runtime and Holding databases are set to automatically expand at a 10% rate (the default).

You cannot change these defaults during the installation. The databases can be resized later using Microsoft SQL Server utilities. For more information on sizing databases, see your Microsoft SQL Server documentation for guidelines.

---

**Note:** If you are upgrading version 9.0 or 10.0 of the Wonderware Historian, the installation program needs space to save a copy of the old Runtime database while it creates the new one. To upgrade, the database space required is twice the size of the old database, plus the database size for the new install.

---

## Disk Requirements for Historical Data Files

The Wonderware Historian stores historical plant data to hard disk in special files called history blocks. When you install the historian, you are required to specify a storage location (directory) in which these files will be dynamically created and subsequently filled. You must have at least 200 MB of free disk space for these files to install the historian.

After the historian is up and running, when the free space on the drive containing the storage directory drops below a minimum threshold, the oldest data is overwritten. It is very important that you allocate enough disk space to store your plant data for the desired length of time.

The amount of data that can be stored to disk before running out of space is dependent upon the number of tag values that are stored and how often they are stored. That is, the more tags you have, the fewer values you can store *per tag* before you need to archive off the oldest data. Likewise, the higher the specified storage rate per tag, the faster the system runs out of space.

NTFS file compression can reduce the actual amount of storage space by factors of 2:1 to 10:1. For the estimates, a conservative "worst case" factor of 2:1 is used.

---

**Important:** You must have sufficient disk space in the circular storage area to hold at least two full history blocks, plus the space specified for the minimum threshold for the circular storage area. Use the System Management Console to view or change the minimum threshold value.

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A performance report for different historian systems is provided in "System Sizing Examples" on page 73.

## Analog, Discrete, and Fixed-Length String Storage Requirements

For analog, discrete, and fixed-length string (128 characters or less) tags, each value that is stored uses Storage Size + 3 bytes of disk space, plus approximately 15% overhead. Use the following formula to estimate the disk usage:

$$\text{Estimated disk usage per day} = (1.15 * (\text{Storage Size} + 3) * \text{number of tags}) * (60 / \text{storage rate in seconds}) * 60 \text{ minutes} * 24 \text{ hours} / (\text{NTFS compression ratio})$$

For example, the disk usage per day for 10,000 4-byte analog tags (that is, Storage Size = 4 bytes) that are stored at ten-second intervals would be  $(1.15 * (4 + 3) * 10000) * (60 / 10) * 60 * 24 / 2$ , which is approximately 332 MB per day.

The disk usage per day for 10,000 discrete tags (that is, Storage Size = 1 byte) that are changing, on average, every 60 seconds would be  $(1.15 * (1+3) * 10000) * (60/60) * 60 * 24 / 2$ , which is approximately 32 MB per day.

The disk usage per day for 10,000 8-byte string tags (that is, Storage Size = 8 bytes) that are changing, on average, every 60 seconds would be  $(1.15 * (8+3) * 10000) * (60/60) * 60 * 24 / 2$ , which is approximately 87 MB per day.

## Variable-Length String Storage Requirements

For strings of variable length that are 128 characters or more, the number of bytes required for storage will be the actual number of characters being sent from the data source + 5 bytes, plus 15% overhead. Therefore, the average disk usage per day for a variable-length string that is receiving an average of 'N' characters per sample could be calculated using the following formula:

Estimated average disk usage per day =  $(1.15 * (N+5) * \text{number of tags}) * (60 / \text{average storage rate in seconds}) * 60 \text{ minutes} * 24 \text{ hours} / (\text{NTFS compression ratio})$

For example, the disk usage per day for 10,000 131-byte string tags that are changing, on average, every 60 seconds and the average incoming value is 60 characters in length would be  $(1.15 * (60+5) * 10000) * (60/60) * 60 * 24 / 2$ , which is approximately 513 MB per day.

The use of variable-length strings also has an impact on memory. For more information, see Chapter 5, "Data Storage Subsystem," in the *Wonderware Historian Concepts Guide*.

# Performance Considerations

For a complete Wonderware Historian system, the following components put a demand on memory.

- Internal historian subsystems, such as the Configuration Manager, data acquisition, and data storage
- The associated Microsoft SQL Server
- The operating system
- Client access (data retrieval), which includes caching

When determining the amount of memory to purchase, remember that adding more memory is the cheapest and easiest thing that you can do to improve performance. Increasing the amount of memory reduces the amount the server has to use virtual memory, thus lowering the load on the storage subsystem. Even if you have a large amount of memory, additional memory is used as additional disk cache, speeding up disk access and therefore file service. Also, processes needed by the server become faster because they are memory-resident.

A major factor in system performance is the amount of plant data you anticipate storing in the system, including considerations about how often that data is stored and retrieved. In general, the more you store, the more often you store it, and the more you retrieve it, the slower the system. The major storage factors affecting the performance of the system are:

- Effective analog flow rate (analog updates per second).
- Period of online data storage required.
- Effective discrete variable flow rate.
- Number of concurrent end users required.
- Complexity of end user queries.
- Number and size of string tags, as well as the effective flow rate of string values.
- Number and duration of string tag retrieval queries, as well as the frequency at which these queries are executed.

A performance report for different historian systems is provided in "System Sizing Examples" on page 73.

## Server Loading

When a user connects to the Wonderware Historian with a client, configuration information is immediately requested from the historian. This information includes the tags that the server stores, their descriptions, engineering units, and other tag data. SQL Server reads this information from the database (stored on disk) and places it in memory.

As the user selects time periods to trend, the historian reads data from files located on the disk and prepares the results of the client's data request to be transmitted back to the client. The ability of the server to quickly handle subsequent requests for data from the same client and others is dependent on the server's ability to keep as much information in memory without having to again access data from the disk.

As a higher load is placed for memory, a higher load is placed on the disk I/O system as the server has to use disk caching and read from the data files.

The following table summarizes the loading for various systems.

System	Load Description
Acquisition and storage	Base load of the historian. This load exists as long as the system is running. However, this load is not affected by client activity.
Retrieval	Variable loading caused by data retrieval from client applications. When the client initially connects, the data requested is configuration data, which is stored in SQL Server. The historian requests data from SQL Server, causing its loading to increase. As the client requests historical data, the disk time increases as information from the data files is transferred to memory. This continues as the client requests additional data. If the client application requests data that has already been transferred to memory, there is no associated disk activity and transfer of data to memory.

The server must be able to adequately handle the variation on loading caused by the client applications. To accomplish this, make sure that your hardware is sized so that it can handle the base load created by the acquisition and storage systems and that there are adequate resources still available for the retrieval system.

## IDAS Performance

An IDAS can acquire an unlimited number of real-time data values, from an unlimited number of I/O Servers, each with an unlimited number of topics. However, IDASs are subject to the following limitations.

- The maximum sustained data throughput for any single IDAS is 30,000 items per second for real-time data. For late or old data, the maximum throughput is 9,000 items per second. The total combined throughput (real-time data plus late or old data) cannot exceed 30,000 items per second. For higher-volume applications, you can set up multiple IDASs to serve a single storage subsystem.
- The size of any data value is limited to 64,000 bytes.
- The maximum number of tags supported by any single IDAS is 30,000.

## Tiered Historians

If you are installing a tiered historian, tier 1 nodes use the same basic configuration for the number and types of tags and data collection rates.

The tier 1 configuration should be “delta” data collected and stored:

- 12,000 analog tags every 2 seconds
- 2,900 discrete tags every 2 seconds
- 100 32-character string tags every 30 seconds

For the analog and discrete tags, the averages and value state aggregates are:

- 6000 tags with an hourly calculation performed at the top of each hour
- 6000 tags with 1-minute calculations performed at the top of each minute

plus

- 1500 tags replicated (not aggregated) in tier 2
- 1500 tags stored only in tier 1 (no aggregates or replication)

## Storage Subsystem Performance

The storage subsystem can support a continuous data acquisition rate of 30,000 updates per second. The storage sub-system also supports a burst rate of 60,000 updates per second up to 1 second.

The storage subsystem processes all real-time data as a high-priority task that is never interrupted. However, data received from "manual" methods (such as UPDATE/INSERT commands, CSV file imports, or store-and-forward) is handled by a low priority task. If the system is generally busy, then it may take some time for the manual data to be posted.

## Networking Recommendations

The Wonderware Historian is a highly configurable package that can be set up in many different ways depending on your needs.

The historian can use any protocol currently supported by Microsoft SQL Server 2008. You can use the default Microsoft SQL Server 2008 protocol (named pipes) with TCP/IP. TCP/IP is required if SuiteLink™ is used.

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**Note:** If the historian is running on the Windows Server 2003 or later operating system, DDE is not supported.

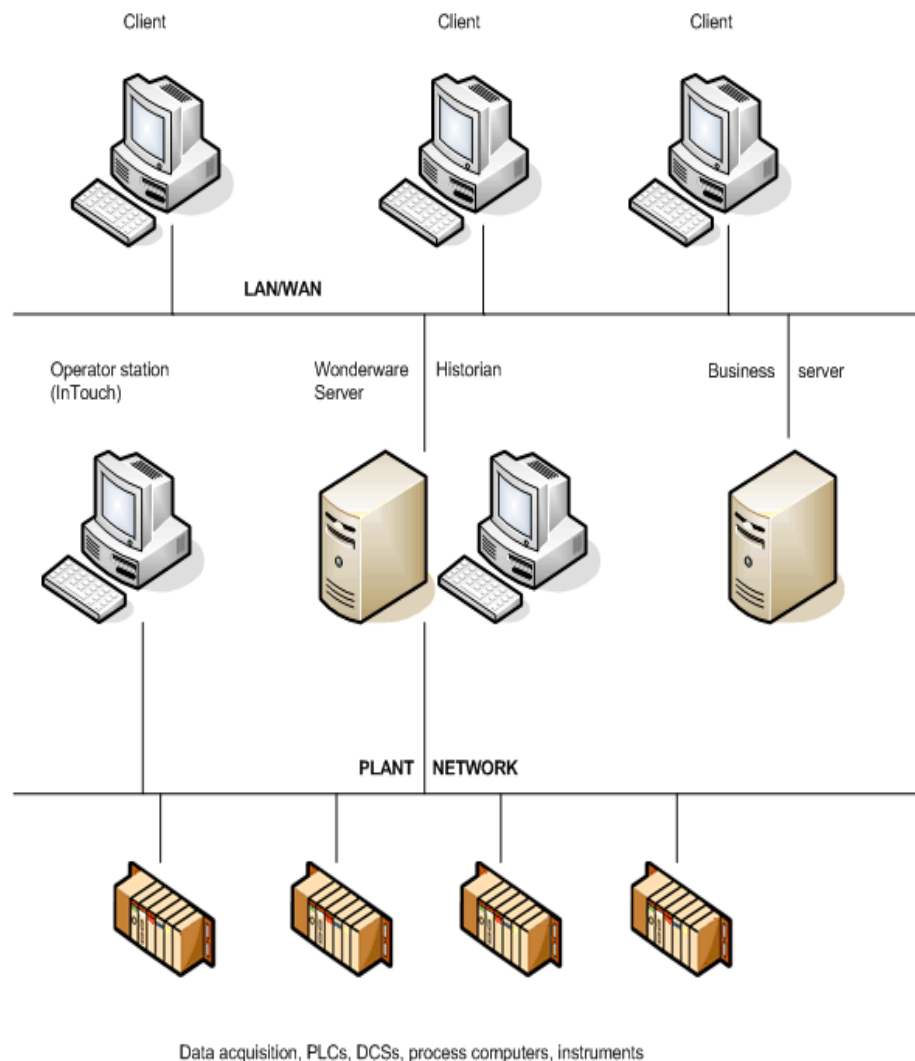
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It is highly recommended that you run the historian on a dedicated computer. For example:

- Do not use the historian computer as a domain controller, mail server, or an Internet server.
- Do not use the historian computer as a workstation.
- Do not use the historian computer for InTouch HMI software, InControl™, or other Wonderware products.



Generally, it is recommended that you split the process and IS networks to ensure that the process network does not become overloaded. The following illustration shows one possible network architecture where the historian is the link between the process network and the business LAN/WAN:



For this architecture, install two network cards on a server computer and configure them to segment the IS network from the process network.

**Note:** All tags to be stored in historian are on "advise" all the time. This may cause heavy load conditions on the process network. Before you install the historian, investigate the possible load impact of installing the historian on your network.

## Client Access

All clients should connect to the Wonderware Historian using the default Microsoft SQL Server connection. Usually, this means using the name of the computer on which the historian is running as the server name when logging on.

### Client Connections to the Wonderware Historian

The Wonderware Historian and its clients consume both Windows operating system connections and SQL Server connections in the following ways:

- **Wonderware Historian:** When the historian itself is running without the event subsystem, it uses six database connections and zero Windows connections.
- **System Management Console:** Each open System Management Console consumes one database connection, and each remote System Management Console also consumes a Windows connection.
- **Event System:** Each different time interval for event tags uses a database connection and zero Windows connections. For example, if there are 15 event tags with time interval of 30 minutes, and 10 event tags with an interval of 60 minutes, that consumes two connections. The event subsystem uses zero Windows connections.
- **Local IDAS:** Consumes no connections.
- **Remote IDAS:** Each remote IDAS uses one Windows connection and zero database connections.
- **Wonderware Application Server Platform:** A platform configured to historize data consumes a Windows connection and a database connection.
- **Wonderware Application Server Engine:** Each Engine configured to historize data will consume a database connection.
- **Historian Client applications and controls:** Each Historian Client application or control consumes a database connection for each specified server, and each remote node consumes a Windows connection.

Certain versions of the operating system and SQL Server impose connection limits or workload limits. For more information, see "Client Connection and Workload Limits" on page 67.

## Client Connection and Workload Limits

Small historian applications can use a Wonderware Historian that is running on Windows XP Professional. However, only small applications are supported because of the performance limitations imposed by the operating system and by Microsoft SQL Server.

- Operating System Limitations

Microsoft limits the number of concurrent client connections to the "desktop" versions of their operating systems. For Windows, a "connection" is access to any service on the computer (for example, file sharing, print services, Terminal Services, remote access, authentication, and any connection through a named pipe). These connections are specific to the client computer, so if NodeA is accessing print services and a shared directory on NodeB, that counts as a single connection to NodeB.

The Windows XP Professional operating system rejects all connections above the 10-connection limit. More details on this limitation are available in Microsoft Knowledge Base article 314882.

## Network Protocols for Clients

To change the default network protocol used by Microsoft SQL Server to something other than named pipes, configure the client network access using the SQL Server Client Network Utility. For more information, see your Microsoft SQL Server documentation.

## Licensing

The Wonderware Historian requires a valid license to run. Use the ArchestrA License Utility to manage licenses and associated feature lines.

The historian allows functionality based on the presence of a valid license file and/or feature lines. The historian checks that:

- A valid license file exists at the expected location on disk.
- One or more feature lines relevant to the product is contained in the license file. A feature line defines specific behavior that is allowed for the product. Typically, feature lines are bundled together according to predefined licensing schemes.

If a valid license file cannot be found, or if the file does not contain the appropriate feature lines, the historian is considered to be unlicensed. If unlicensed, the historian starts up and runs for an unlimited period of time. However, data is only collected and stored for system tags.

The historian reads the license file and appropriately updates the system behavior when:

- The historian starts.
- You commit changes to the system using the System Management Console.
- You refresh the license information using the System Management Console.

Unless noted, all aspects of historian licensing are dynamic. That is, you can make licensing changes during run time, and the system runs uninterrupted.

The following feature lines are available:

- Historian\_Tagcount Feature Line
- Historian\_ServerOS Feature Line
- Historian\_RemoteIDASCount Feature Line
- Historian\_ModifyHistoryData Feature Line
- Historian\_HistoryDuration Feature Line
- Historian\_Processors Feature Line

Use the System Management Console to view license and feature line information relevant to the historian. For more information, see "Viewing License Information" in Chapter 9, "Viewing or Changing System-Wide Properties," in the *Wonderware Historian Administration Guide*.

## Historian\_Tagcount Feature Line

The Historian\_Tagcount feature line specifies the number of tags for which the Wonderware Historian acquires and stores data. The tag count feature line does not restrict the number of tag definitions you can create in the database (just the tags for which data is acquired and stored). System tags and event tags are not included in the tag count.

If this feature line is absent, or if no license file is found, the tag count defaults to 0.

For a licensed tag count of  $n$ , the historian recognizes only the first  $n$  non-system tags it reads from the database, in whatever order the database presents the tags to the Wonderware Historian Configuration service. For example, if you have a licensed tag count of 500, only the first 500 non-system tags are licensed for data collection and storage.

If the tag count feature line in the license file changes, the run-time behavior of the historian does not change until you refresh the license information or a system restart occurs. If the tag count is increased, the historian starts acquiring and storing data for the additional tags, if they exist in the database. If the tag count is decreased, the historian stops acquiring and storing data for all tags except for the system tags and the first  $n$  tags in its list, where  $n$  denotes the tag count.

## Historian\_ServerOS Feature Line

The Historian\_ServerOS feature line controls whether the installed version of the Wonderware Historian is licensed to run on one of the following Microsoft server operating systems:

- Windows Server 2003 Enterprise R1/R2 SP2
- Windows Server 2003 Standard Edition R1/R2 SP2
- Windows Server 2008 Standard or Enterprise Editions SP2 (32 or 64-bit)
- Windows Server 2008 R2 Standard (64-bit)

If the historian is installed on a server operating system, and this feature line is present in the license file, the historian runs with full functionality as defined by the other feature lines in the license file. If the feature line is not found, the behavior is the same as for the regular version of the historian running as unlicensed.

## Historian\_RemoteIDASCount Feature Line

The `Historian_RemoteIDASCount` feature line controls the maximum number of remote IDASs that can be used by the historian. The remote IDAS count feature line does not restrict the number of remote IDAS definitions you can create in the database.

If this feature line is 0, then there is no limit on the number of remote IDASs. If the remote IDAS count feature line does not exist, or if the license file is not found, no remote IDASs are allowed.

If the remote IDAS count is  $n$ , the historian uses the local IDAS, plus the first  $n$  remote IDASs defined in the historian database. The local IDAS is identified as the IDAS having the same computer name as the historian computer. For example, if the feature line is equal to 2, then the local IDAS and the first two defined remote IDASs are used. Any remaining remote IDASs defined in the database (plus all I/O Servers, topics, and tags associated with these IDASs) are ignored. Information pertaining to an unlicensed remote IDAS (including corresponding I/O Servers and topics) does not appear in the System Management Console.

The tag count feature line is applied after the remote IDAS feature line. If the license file allows all remote IDASs defined in the database to be used, but not all of the tags in the database, the historian uses all IDASs, including their associated I/O Servers and topics, but only acquires and stores data for the allowed number of tags.

If the remote IDAS count feature line in the license file changes, the runtime behavior of the historian does not change until you refresh the license information or a system restart occurs. If the remote IDAS count is increased, the historian starts acquiring and storing data from the additional remote IDASs, if they exist in the database. If the remote IDAS count is decreased, the historian stops acquiring and storing data for all tags assigned to defined remote IDAS  $n+1$  and higher, where  $n$  denotes the remote IDAS count.

For the IDAS failover feature, the remote IDAS count is applied as follows:

- The local IDAS is counted only once, even if it has a failover node configured. At runtime, the failover IDAS (which must be on a remote node), does NOT run unless a valid license for at least one remote IDAS is present.
- Each remote IDAS configured in the database is counted only once, even if it has a failover node configured.

## Historian\_ModifyHistoryData Feature Line

The Historian\_ModifyHistoryData feature line controls whether history data modifications are allowed.

The data modification feature line controls whether you can modify history data via SQL queries (inserts or updates) and CSV file imports (both normal CSV imports and "fast load" CSV imports).

- If the feature line is present, all CSV file import operations, as well as SQL inserts and updates, are permitted.
- If the feature line is not detected, all attempted operations involving SQL inserts and updates and CSV file imports (including FastLoad) are not allowed.

If disallowed, SQL insert queries and update queries return an appropriate message to the client stating that the license excludes this functionality. For CSV file imports and fast load file imports, a warning message is logged when a file is first placed in the historian import folder. The warning message states that the license excludes this functionality.

## Historian\_HistoryDuration Feature Line

The Historian\_HistoryDuration feature line controls the maximum number of days in history, starting with the current day, for which data can be retrieved from the Wonderware Historian. For example, if the history duration is 50, you can only retrieve data that was stored during the last 50 days.

If this feature line is 0, then there is no limit on retrieving data. If this feature line is missing, the default is seven days.

If you attempt to retrieve data for a period of time starting before the earliest time indicated by this feature line, the start time for the data retrieval is reset to the earliest time allowed by the feature line.

This feature line has no impact on data storage in the Wonderware Historian.

## Historian\_Processors Feature Line

The Historian\_Processors feature line controls the maximum number of processors (CPUs) allowed in the Wonderware Historian computer. This feature line has no impact on the operation of remote IDASs or other remote clients of the historian.

If this feature line is absent, a maximum of one processor is assumed.

If the actual number of processors in the historian computer is less than or equal to the number of processors specified in the feature line, the historian is considered to be licensed.

Hyperthreaded and multi-core CPUs are supported and recommended. From a licensing perspective, a "processor" is the physical "package" and a multi-core or a hyperthreaded processor is counted as a single processor.

## Support for Non-English Operating Systems

The English version of Wonderware Historian, the Wonderware Historian Database Export/Import Utility, and the InTouch History Importer run on localized versions of all the supporting operating systems for the following languages. Also, the corresponding version of Microsoft SQL Server for the required language must be used.

- German
- French
- Japanese
- Simplified Chinese

The following entities are not supported in double-byte languages:

- Domain names, user names, and passwords (including SQL Server login names and passwords).
- Names of I/O Server host machines, I/O Server application names, topic names, and item names.
- Any text associated with licensing.

## Integration with Other Wonderware Products

The Wonderware Historian is Wonderware's open relational database for plant and process data. Many of the features of the historian allow it to be used with many of Wonderware's other products.

The historian can store data from any application that supports DDE or SuiteLink™. Examples of Wonderware applications that can send data to the historian are Wonderware Application Server, I/O Servers, and InTouch® WindowViewer™.

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**Note:** If the historian is running on the Windows Server 2003 or later operating system, DDE is not supported.

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Any client application that can retrieve information using SQL can retrieve data from Wonderware Historian. For example, some Wonderware products that can retrieve data by means of SQL queries are the InTouch HMI, Wonderware Information Server, Historian Client applications and controls, SPCPro, Manufacturing Execution Module, and InBatch™ products. The historian further extends SQL to improve the ability to handle time series data.



Also, Wonderware Historian I/O Server (aahIOSvrSvc.exe) is an interface for clients to access current data values a historian by means of the SuiteLink protocol. The Wonderware Historian I/O Server can update items with current values for given topics, providing "real-time" I/O Server functionality.

Finally, you can use InTouch to configure the historian by importing tag definitions and I/O Server definitions from the InTouch Tagname.x file into the Runtime database.

## System Sizing Examples

To help you determine how to size your system, performance reports are provided for different Wonderware Historian configurations.

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**Important:** The information presented here is a guideline only. The actual results in your environment may vary.

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### Process (Non-Tiered) Historian Sizing Examples

Performance reports are provided for various levels of a single process (non-tiered) Historian.

#### Server 1: 2.4 GHz Single Processor Quad-Core CPU

##### Wonderware Historian Specifications

- DELL OptiPlex 755 with 2.4 GHz single processor quad-core CPU
- 4 GB RAM
- 512 MB Virtual Memory
- 1 Gbps NIC
- Windows XP Professional SP2
- Microsoft SQL Server 2005 Standard Edition SP3
- SQL memory clamped @ 512 MB
- 12-hour history block duration

##### Tag Information

Tag count (total) = 5,187

Analog tags = 2,607

Discrete tags = 2,285

String tags = 295

Manual tags = 17

Update rate of +/- 5,000 updates/second

### **Remote IDAS**

None.

### **Event Information**

- 3 snapshot events, each having:
  - 1 analog snapshot
  - 1 discrete snapshot
  - 1 string snapshot
- 2 summary events, each having:
  - 1 AVG calculation (1 tag every 8 hours)
  - 1 MAX calculation (1 tag every 8 hours)
  - 1 MIN calculation (1 tag every 8 hours)
  - 1 SUM calculation (1 tag every 8 hours)
- 1 SQL insert every 4 hours
- 2 SQL multi-point updates every hour

### **Query Load**

For the following seven queries, each are occurring at different times in the hour:

- 1 query (trend):
  - live mode - 1 second update
  - 1-hour duration
  - 10 tags (7 analogs, 3 discretes)
- 1 query: 1-hour range / hour (1 tag)
- 4 queries: 15-minute range / hour (1 tag)
- 1 query: 24-hour report every 24 hours (25 to 30 tags)

**Performance Results**

Category	Value
Average CPU load (%)	4.74
Wonderware Historian memory (Private Bytes) consumption (MB)	138
Number of online history blocks	207
Uncompressed hard drive disk space per history block (MB)	925

**Server 2: Four Dual-Core 2.7 GHz CPUs****Wonderware Historian Specifications**

- DELL Precision WorkStation T5400 with four dual-core Intel Xeon 2.7 GHz CPUs
- 4 GB RAM
- 3072 MB Virtual Memory
- 1 Gbps NIC
- Windows 2003 Standard Server
- Microsoft SQL Server 2005 Standard Edition SP3
- SQL memory clamped @ 1024 MB
- 4-hour history block duration

**Tag Information**

Tag count (total) = 63,000

Analog tags = 39,359

Discrete tags = 19,734

String tags = 295

Manual tags = 5,057

Update rate of +/- 30,000 updates/second

### Remote IDAS

One remote IDAS:

- P4 1.7 GHz
- 1 GB RAM
- 34,000 tags via the remote IDAS and the rest via the local IDAS

---

**Note:** Because this configuration was used for performance and stress testing, the remote IDAS tag count is more than the recommended 30,000 maximum.

---

### Event Information

- 3 snapshot events, each having:
  - 1 analog snapshot
  - 1 discrete snapshot
  - 1 string snapshot
- 2 summary events, each having:
  - 1 AVG calculation (1 tag every 8 hours)
  - 1 MAX calculation (1 tag every 8 hours)
  - 1 MIN calculation (1 tag every 8 hours)
  - 1 SUM calculation (1 tag every 8 hours)
- 1 SQL insert every 4 hours
- 2 SQL multi-point updates every hour

### Query Load

For the following seven queries, each are occurring at different times in the hour:

- 1 query (trend):
  - live mode - 1 second update
  - 1- hour duration
  - 10 tags (7 analogs, 3 discretes)
- 1 query: 1-hour range / hour (1 tag)
- 4 queries: 15-minute range / hour (1 tag)
- 1 query: 24-hour report every 24 hours (25 to 30 tags)

**Performance Results**

Category	Value
Average CPU load (%)	9.89
Wonderware Historian memory (Private Bytes) consumption (MB)	680
Number of online history blocks	104
Uncompressed hard drive disk space per history block (GB)	2.47

**Server 3: Four Dual-Core 3.4 GHz CPUs****Wonderware Historian Specifications**

- DELL PowerEdge 6800 with four dual-core Intel Xeon 3.4 GHz CPUs
- 16 GB RAM
- 4096 MB Virtual Memory
- 1 Gbps NIC
- Windows 2003 Enterprise Server
- Microsoft SQL Server 2005 Standard Edition SP3
- SQL memory clamped @ 3967 MB
- 2-hour history block duration

**Tag Information**

Tag count (total) = 133,941

Analog tags = 73,600

Discrete tags = 53,560

String tags = 6920

Update rate of +/- 50,000 updates/second

**MDAS**

In the total tag count, 4009 tags originated from Wonderware Application Server.

### Remote IDAS

Two remote IDASs:

- Remote IDAS 1: P4 1.9 GHz, 1 GB RAM
- Remote IDAS 2: P4 2.5 GHz, 512 MB RAM

44,370 tags via the remote IDAS 1

45,584 tags via the remote IDAS 2

44,383 tags via the local IDAS

---

**Note:** Because this configuration was used for performance and stress testing, the remote IDAS tag counts are more than the recommended 30,000 maximum.

---

### Event Information

- 3 snapshot events, each having:
  - 1 analog snapshot
  - 1 discrete snapshot
  - 1 string snapshot
- 2 summary events, each having:
  - 1 AVG calculation (1 tag every 8 hours)
  - 1 MAX calculation (1 tag every 8 hours)
  - 1 MIN calculation (1 tag every 8 hours)
  - 1 SUM calculation (1 tag every 8 hours)
- 1 SQL insert every 4 hours
- 2 SQL multi-point updates:
  - 1 every 15 minutes
  - 1 every 30 minutes

### Query Load

For the following seven queries, each are occurring at different times in the hour:

- 1 query (trend):
  - live mode - 1 second update
  - 15-minute duration
  - 15 tags (10 analogs, 5 discretes)
- 1 query: 1-hour range / hour (1 tag)

- 4 queries: 15-minute range / hour (1 tag)
- 1 query: 24-hour report every 24 hours (25 to 30 tags)

### Performance Results

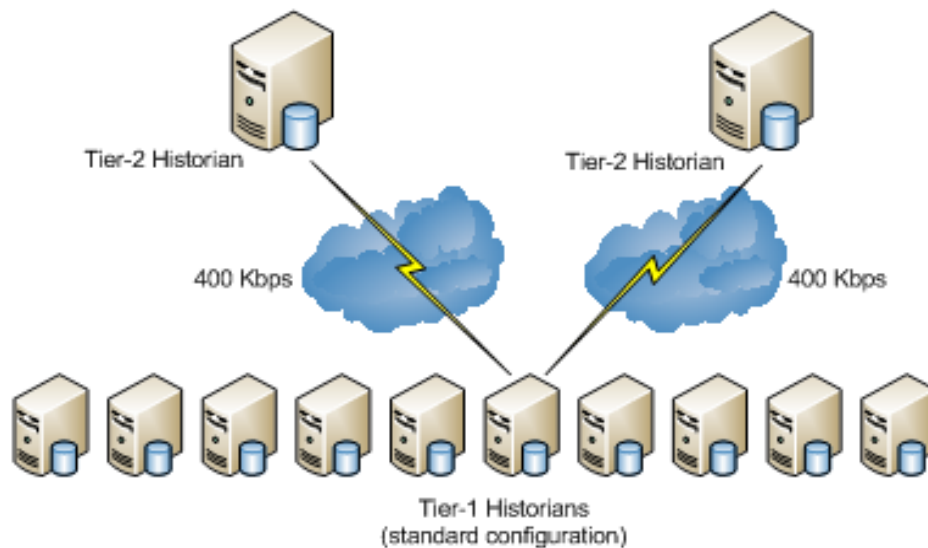
Category	Value
Average CPU load (%)	13.9
Wonderware Historian memory (Private Bytes) consumption (MB)	1,478
Number of online history blocks	470
Uncompressed hard drive disk space per history block (average GB)	1.73

## SCADA (Tiered) Historian Sizing Examples

Performance reports are provided for various levels of a multiple Historian SCADA configuration.

### Topology 1: Centralized Tiered Historian Topology on a Slow/Intermittent Network

This topology consists of ten tier-1 historians performing simple and summary replication of the same tags independently to two tier-2 historians. This topology is targeted to reflect the requirements of geographically distributed SCADA applications operating on slow and intermittent networks.



The 400 Kbps data transfer limit reflects a typical data transfer speed between remote locations over the Internet. The data transfer from each tier-1 historian to a tier-2 historian is assumed to be through a dedicated 400 Kbps connection; multiple tier-1 historians do not share the same 400 Kbps connection. It is assumed that the 400 Kbps is a bandwidth that can be fully used.

### **Tier 2 Historian Specifications**

- DELL PowerEdge 6800 with four dual-core Intel Xeon 3.4 GHz CPUs
- 16 GB RAM with enabled PAE or 4 GB RAM
- Disk I/O subsystem of a 100MB/s throughput, 6 ms access time.
- 100/1000 Base-T network card
- 400 Kbps network connection (actual usable bandwidth)

### **Tier 1 Historian Specifications**

- DELL Precision WorkStation T5400 with dual processor quad-core Intel Xeon 2.7 GHz CPUs
- 4 GB RAM
- Disk I/O subsystem of a 60MB/s throughput, 16 ms access time.
- 100/1000 Base-T network card

### **Loading Information**

Assume that the total tag count on the tier-1 historian is 15,000.

The tier-1 historian receives 15,000 tags from I/O Servers of the following types and data rates:

- 12,000 4-byte analog delta tags changing every 2 seconds: (10,000 always fitting the real-time window and 2,000 falling outside of the real-time window being 50 minutes late).
- 2,800 1-byte discrete delta tags changing every 2 seconds
- 200 variable-length string delta tags of 32-character length changing every 30-seconds

The tier-2 historian stores the following:

- 6,000 tags with hourly analog summary calculations performed at the top of each hour (using 6,000 4-byte analog tags as tier-1 tags)
- Another 6,000 tags with 1-minute analog summary calculations performed at the top of each minute (using 6,000 4-byte analog tags as tier-1 tags)



- 1,500 tags replicated (as simple replication) to tier-2 (using 1,400 1-byte discrete tags and 100 variable-length string delta tags as tier-1 tags)
- Another 1,500 tags only stored on tier-1 (using 1,400 1-byte discrete tags and 100 variable-length string delta tags as tier-1 tags)

### Performance Results for the Tier-2 Historian

Category	Value
Average CPU load (%) (with no queries executing)	1%
Wonderware Historian memory (Virtual Bytes) consumption (GB)	3.05 GB
Number of online history blocks	312
Uncompressed hard drive disk space per history block (average MB)	888 MB

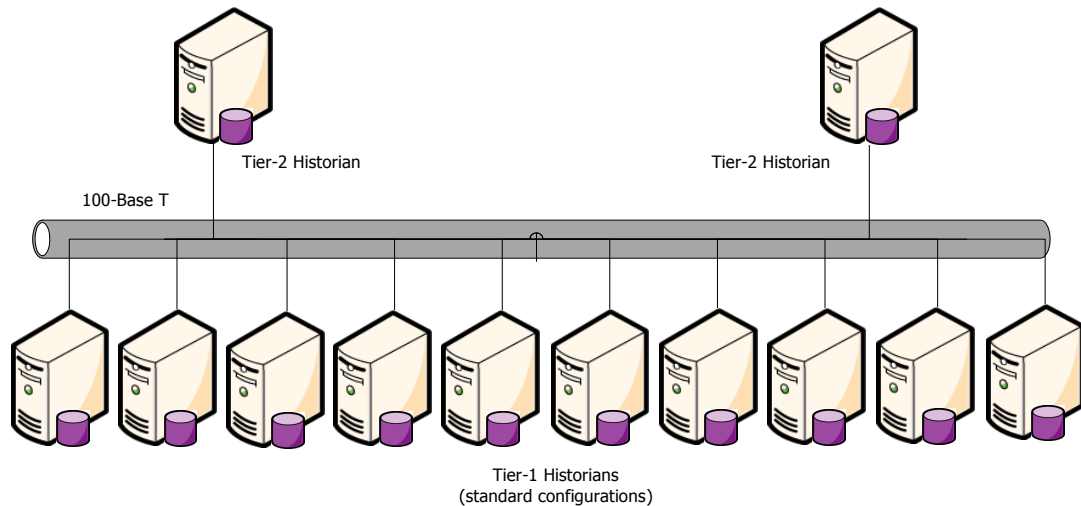
### Latency Results

Category	Value
Fastload (1 day fastload)	10.33 hours
Simple replication	4 seconds
Summary replication	4.6 seconds

Latency is the difference in time between when the value is received by the tier-1 historian and when it is received by the tier-2 historian.

## Topology 2: Centralized Tiered Historian Topology for a Single Physical Location

A 100 Mbps data transfer limit reflects a typical data transfer speed within one location, but distributed over several buildings. In this case the 100 Mbps bandwidth is a physical characteristic of the connection. It is assumed that up to 33% of that physical bandwidth can be used.



### Tier 2 Historian Specifications

- DELL PowerEdge 6800 with four dual-core Intel Xeon 3.4 GHz CPUs
- 16 GB RAM with enabled PAE or 4 GB RAM
- Disk I/O subsystem of a 100MB/s throughput, 6 ms access time.
- 100/1000 Base-T network card
- 100 Kbps network connection (actual usable bandwidth)

### Tier 1 Historian Specifications

- DELL Precision WorkStation T5400 with dual processor quad-core Intel Xeon 2.7 GHz CPUs
- 4 GB RAM
- Disk I/O subsystem of a 60MB/s throughput, 16 ms access time.
- 100/1000Base-T network card

### Loading Information

Assume that the total tag count on the tier-1 historian is 15,000.

The tier-1 historian receives 15,000 tags from I/O Servers of the following types and data rates:

- 12,000 4-byte analog delta tags changing every 2 seconds: (10,000 always fitting the real-time window and 2,000 falling outside of the real-time window being 50 minutes late).
- 2,800 1-byte discrete delta tags changing every 2 seconds
- 200 variable-length string delta tags of 32-character length changing every 30-seconds

The tier-2 historian stores the following:

- 6,000 tags with hourly analog summary calculations performed at the top of each hour (using 6,000 4-byte analog tags as tier-1 tags)
- Another 6,000 tags with 1-minute analog summary calculations performed at the top of each minute (using 6,000 4-byte analog tags as tier-1 tags)
- 1,500 tags replicated (as simple replication) to tier-2 (using 1,400 1-byte discrete tags and 100 variable-length string delta tags as tier-1 tags)
- Another 1,500 tags only stored on tier-1 (using 1,400 1-byte discrete tags and 100 variable-length string delta tags as tier-1 tags)

### Performance Results for the Tier-2 Historian

Category	Value
Average CPU load (%) (with no queries executing)	1.55%
Wonderware Historian memory (Virtual Bytes) consumption (GB)	3.3 GB
Number of online history blocks	312
Uncompressed hard drive disk space per history block (average MB)	888 MB

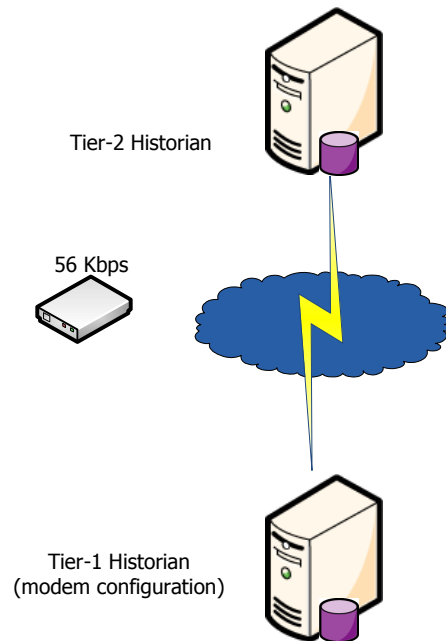
### Latency Results

Category	Value
Fastload (1 day fastload)	9.92 hours
Simple replication	1.65 seconds
Summary replication	1.51 seconds

Latency is the difference in time between when the value is received by the tier-1 historian and when it is received by the tier-2 historian.

## Topology 3: Simple Tiered Historian Topology for a Modem Configuration

In a modem configuration, the network bandwidth between the tier-1 and the tier-2 historians is limited by 56 Kbps. Because the tag count and the replication data rate of the tier-1 historian should be very limited, it would be sufficient to consider only one tier-1 historian performing simple replication to one tier-2 historian over a modem network.



### Tier 2 Historian Specifications

- DELL Precision WorkStation T5400 with dual processor quad-core Intel Xeon 2.7 GHz CPUs
- 4 GB RAM
- Disk I/O subsystem of a 60MB/s throughput, 16 ms access time.
- 100/1000Base-T network card
- 56K modem

### Tier 1 Historian Specifications

- OptiPlex 755 with single processor quad-core CPU 2.4 GHz
- 4 GB RAM
- Disk I/O subsystem of a 60MB/s throughput, 16 ms access time.
- 100/1000Base-T network card
- 56K modem

### Loading Information

In the tier-1 historian modem configuration, the tier-1 historian receives 3,000 tags from I/O Servers of the following types with average update rate 300 items per second:

- 1,500 4-byte analog delta tags (1,400 always fitting the real-time window and 100 falling outside of the real-time window being 50 minutes late)
- 1,350 1-byte discrete delta tags
- 150 variable-length string delta tags of 32 bytes each

### Performance Results for the Tier-2 Historian

Category	Value
Average CPU load (%) (with no queries executing)	1%
Wonderware Historian memory (Virtual Bytes) consumption (GB)	1.86 GB
Number of online history blocks	30
Uncompressed hard drive disk space per history block (average GB)	43 MB

### Latency Results

Category	Value
Fastload (1 day fastload)	n/a
Simple replication	5 seconds
Summary replication	n/a

Latency is the difference in time between when the value is received by the tier-1 historian and when it is received by the tier-2 historian.



## Chapter 6

# Historian Server Installation and Configuration

A complete Wonderware Historian system consists of the following software components:

- Microsoft SQL Server
- Historian program files, database files, and history data files
- System Management Console, the configuration and control tool
- One or more local or remote IDASs (at least one must be defined)
- Wonderware Historian documentation.

You should have a definite plan for implementing the historian in your plant environment before you start the installation process. This plan should include the type of network architecture for the historian system, the amount of disk space required for data storage, and the amount of space required for the historian database files and log files.

Also, any administrative security accounts that you specify for either the Microsoft SQL Server or the historian should be accounts that do not change often, if ever. In particular, do not change an administrative password during any part of the installation process.

You must have administrative rights on the local computer to install the historian. The account with which you log on to the computer must also be a sysadmin for the SQL Server or you must be able to provide a sysadmin account for the SQL Server when prompted for it during the installation. For SQL Server 2008, computer administrators are not automatically added as SQL Server sysadmins by default.

The installation program detects any previous versions of the historian and notifies you of your migration options.

## Microsoft SQL Server Installation

You need to install and run the required version of Microsoft SQL Server before installing the Wonderware Historian. A Microsoft SQL Server installation CD is included in your historian package.

Configure the following Microsoft SQL Server options before installing the historian. If you already have Microsoft SQL Server installed, you can run the Microsoft SQL Server setup program to change these options. Microsoft SQL Server options should only be configured by a qualified Windows or SQL Server administrator. For more information, see your Microsoft SQL Server documentation.

- Microsoft SQL Server 2005 or 2008 is required.
- Microsoft Client Utilities must be installed.
- The historian must run with the Microsoft SQL Server default instance name (that is, the computer name).
- Make sure that the x86 option is selected from the **Options** panel before installing SQL Server. If SQL Server is installed as a native 64-bit application, it won't work with Wonderware Historian.
- During the Database Engine Configuration step of the SQL Server 2008 installation, make sure to add the ArchestrA user account and/or the local Administrators group as authorized users.
- Remote Microsoft SQL Servers are not supported by the historian.
- For networking support, use named pipes and any other support required at your site. However, you must select at least named pipes and TCP/IP sockets (the defaults). It is highly recommended that you do not modify the default configuration for named pipes and TCP/IP sockets.
- As you select the path to the data files, you must consider that the historian Runtime database will grow, especially if you are going to use the event subsystem (including summaries) or storing data in the ManualAnalog, ManualDiscrete, or ManualString tables.
- The Microsoft SQL Server services should be installed using the local system account. The account you specify should be an account that does not change often, if ever.
- For obvious security reasons, you should not use a blank password for Microsoft SQL Server.



- Both case-sensitive and case-insensitive SQL Servers are supported. However, you should avoid mixing case-sensitive collations in tiered historian topologies.
- The SQL Server e-mail functionality requires a Windows domain user account. You can change the service account after SQL Server is installed. However, it is highly recommended that you use an account for which the password does not change often. For more information on SQL Server e-mail, see your Microsoft SQL Server documentation.

## Wonderware Historian Installation Features

The Wonderware Historian installation program allows you to install some of the features of the system separately. The following table describes the various historian features that can be installed. The online help is installed with all the features.

For information on hardware and software requirements for installing any of these features, see the Wonderware Historian Readme file..

Feature	Description
Wonderware Historian	Installs or re-installs the historian, configuration tools and utilities, a local IDAS, and ActiveEvent.
IDAS	An IDAS, which can be used remotely. The IDAS is always installed if you select to install a complete historian.
Configuration Tools	The server management tools include Wonderware Historian Configuration Editor and Wonderware Historian Management Console. Both of these applications are MMC snap-ins that are contained in the System Management Console. These tools are always installed on the same computer as the historian and can also be installed on a different computer on the network. The Wonderware Historian Database Export/Import Utility is also an installed configuration tool.
ActiveEvent	ActiveEvent is an ActiveX control that allows you to notify the historian event system when an event has occurred in another application, such as InTouch HMI software.

## About the Wonderware Historian Installation

The Wonderware Historian installation is performed in two phases. In the first phase, the installation program performs the following operations:

- Deploys the common components, such as SuiteLink and the License Viewer, unless they are already installed and validated.
- Locates a running Microsoft SQL Server 2005 or 2008 on the local computer.
- Logs on to the installed Microsoft SQL Server using the account of the person who is currently logged on. This account must be an administrative account on the local computer.
- Checks for required disk space based on the features that you select.
- Creates the historian directories on the hard disk, installs program files for the selected features, and registers components. For more information, see "Wonderware Historian Installation Features" on page 89.
- Populates the historian program or startup group with icons.

The Database Configuration Utility automatically runs after the historian program file installation is complete. This utility:

- Creates and/or configures the required databases.
- Creates the directory for the history data files (history blocks).

To install the Wonderware Historian for use in a tiered historian environment, install the Wonderware Historian on the individual computers, then implement them as described in Chapter 7, "Managing and Configuring Replication," in the *Wonderware Historian Administration Guide*.

Use the ArchestrA System Platform installation program to install the entire system or any of the features. It is assumed that you are familiar with the installation options. The installation program does not log any errors that may occur.

You must have administrative rights on the local computer to install the historian. The account with which you log on to the computer must also be a sysadmin for the SQL Server or you must be able to provide a sysadmin account for the SQL Server when prompted for it during the installation. For SQL Server 2008, computer administrators are not automatically added as SQL Server sysadmins by default.

---

**Important:** Do not install Wonderware Historian on a computer named INSQL, because this conflicts with the name of the Wonderware Historian OLE DB provider and the installation eventually fails.

---

For detailed instructions on installing, see Chapter 1, "ArchestrA System Platform Installation."

After the installation completes, configure the server using the instructions in "Configuring Databases and Data File Locations" on page 91.

Refer the **Readme** file before using the historian.

## Configuring Databases and Data File Locations

Use the Configurator to configure locations for the Wonderware Historian database and data files. Any supported version of Microsoft SQL Server must be installed and running on the local computer. The Configurator connects to the SQL Server using Windows authentication by default or you can enter SQL Login information. The system authenticates the credentials and connects to the SQL Server.

The Configurator is for the Historian Server only. The other features such as IDAS, ActiveEvent, and Configuration tools do not have an associated Configurator.

You can start the Configurator at any time using the Windows Start menu on the Historian computer.

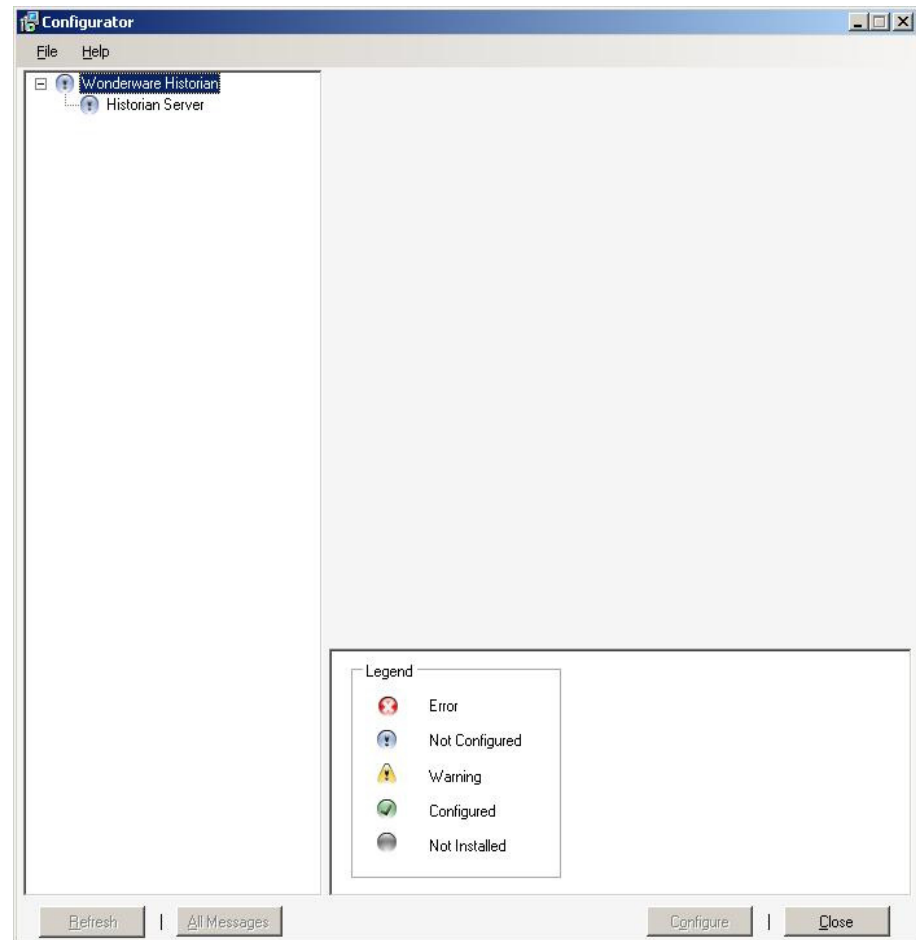
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**Note:** You must have administrative rights on the local computer to configure the historian. The account with which you log on to the computer must also be a sysadmin for the SQL Server or else you must be able to provide a sysadmin account for the SQL Server when prompted for it during the installation. For SQL Server 2008, computer administrators are not automatically added as SQL Server sysadmins by default.

---

### To configure the databases and data file folders

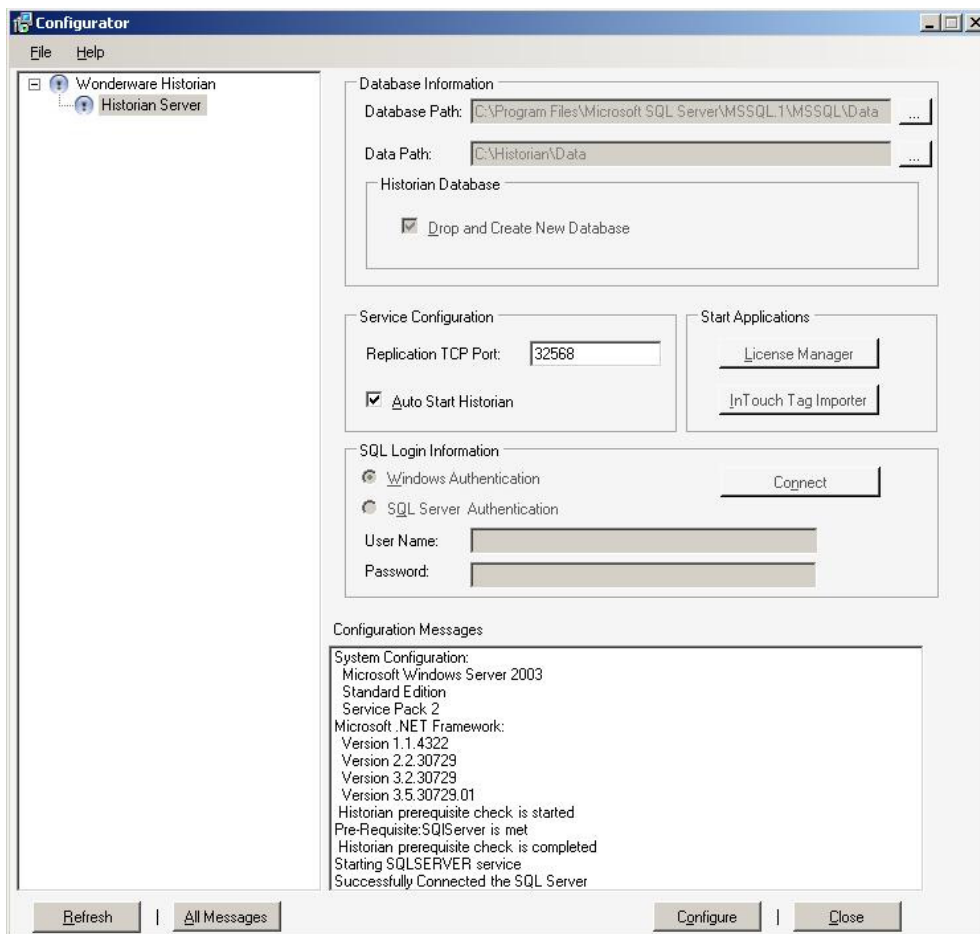
- 1 Click **Configure** on the final installation dialog box. The **Configurator** dialog box appears. The product feature tree expands by default.



The **Legend** box shows the status indicators. The status indicators are:

- Error - Indicates that an error occurred during configuration.
- Not Configured - Indicates that the feature is installed, but not configured.
- Warning - Indicates that configuration is complete, but with warnings.
- Configured - Indicates that configuration completed successfully.
- Not Installed - Indicates that the feature is not installed.

- 2 Click the **Historian Server** node. The **Configurator** dialog box appears. The prerequisite status check automatically starts.



- 3 In the **Database Information** area, configure the databases.

#### Database Path

Unless you have specific requirements, keep the default SQL Server database path. This is the path where the configuration database is deployed. Click the ellipsis button to specify a different directory in which to install the historian database files.

#### Data Path

Click the ellipsis button to specify a different directory for the historian history blocks.

Make sure that you have a sufficient amount of available space on the drive you specify, because the plant data will be stored primarily in the path you specify in the **Data Path** box, which is used for history blocks. The SQL Server database files typically take less disk space.

**Historian Database**

If the database is created for the first time, then this option is not available. When re-configuration is done, then the **Drop and Create New Database** option is available. If you select this check box, then the existing database is dropped and a new database is created. If this check box is cleared, then the database would not be dropped, but will be configured for changes, if any.

- 4 In the **Service Configuration** area, configure options that pertain to components of the Historian that run as Windows services.

**Replication TCP Port**

If you are configuring a tiered historian server, enter the port number for tag replication between the tier 1 and tier 2 servers. You must enter the same port for all the tier 1 and tier 2 systems working together in the tiered configuration. The port you specify is added to the exclusions list of Windows Firewall.

**Auto Start Historian**

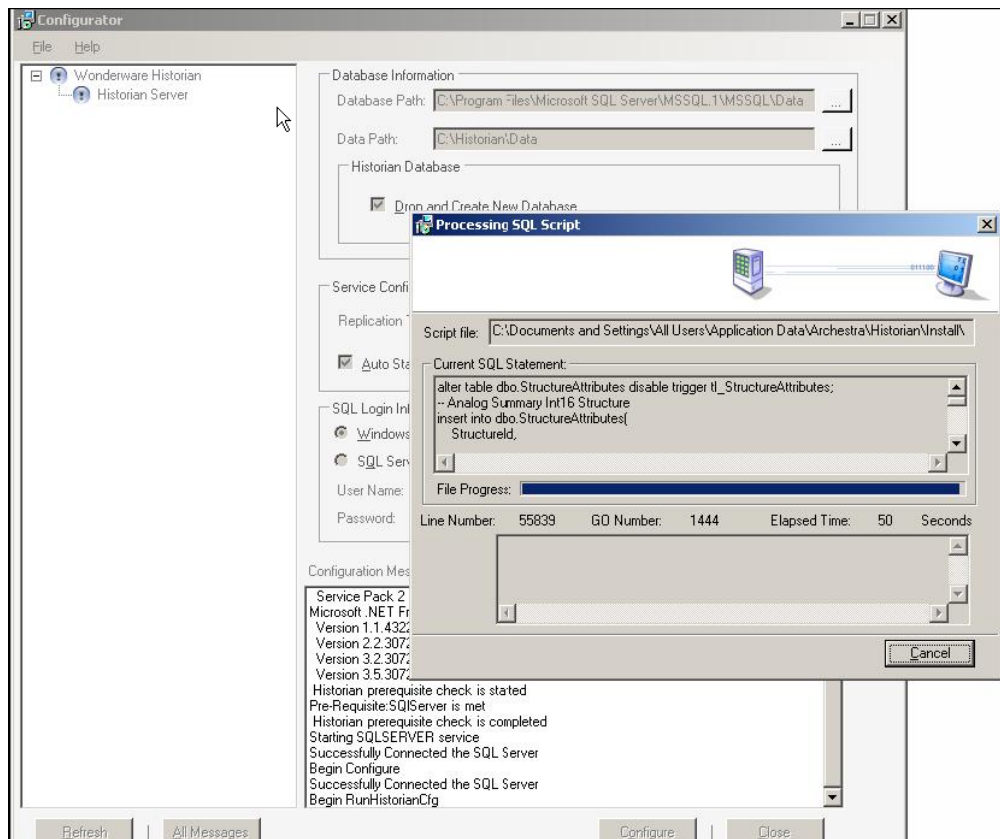
Automatically starts Wonderware Historian.

- 5 In the **Start Applications** area, click the appropriate button to start the **License Manager** or the **InTouch Tag Importer**. These buttons are not available until the server is successfully configured.
- 6 In the **SQL Login Information** area, you can log on to the SQL Server if you have the "sysadmin" privileges enabled. You can select the **Windows Authentication** radio button to use the interactive user's account or select **SQL Server Authentication** radio button and provide the credentials as required. This connection information is not stored and is used only for completing the configuration.

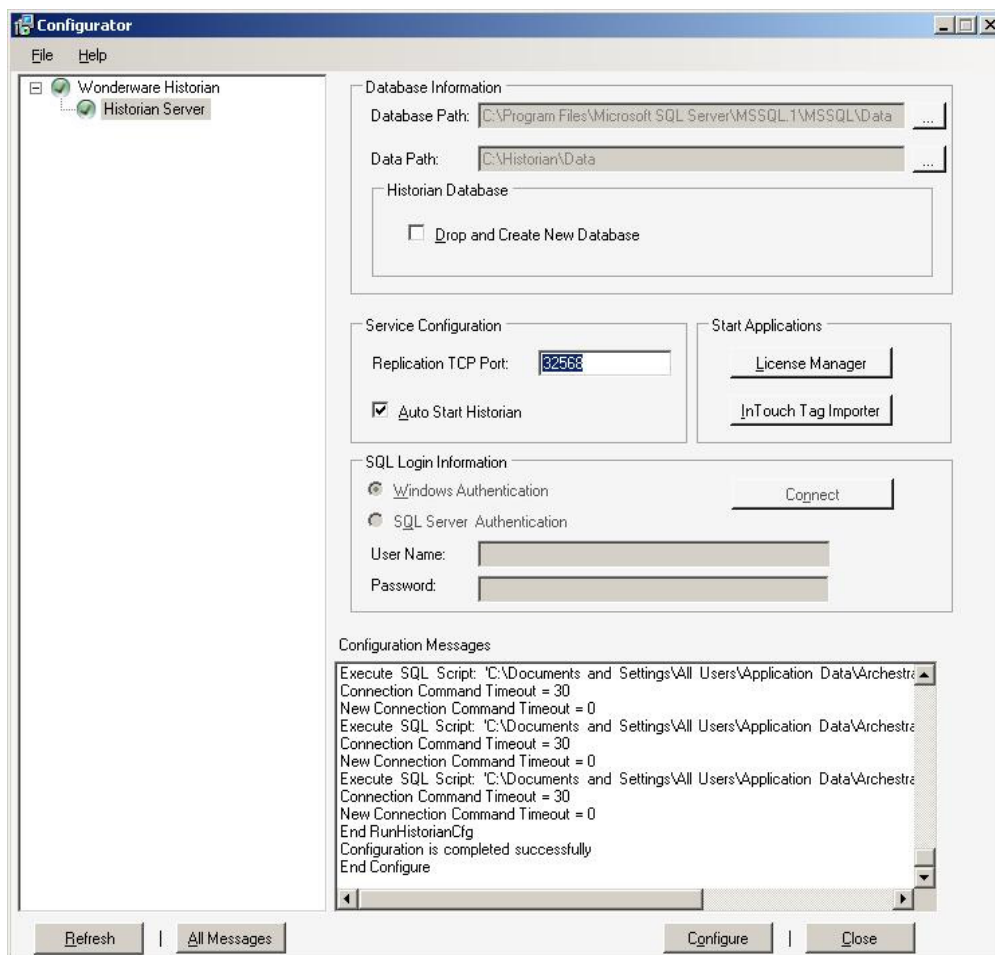
When you click **Connect**, the connection to the SQL Server is tested.

- 7 In the **Configuration Messages** area, you can view the messages regarding prerequisite checks, current configuration state, and configuration activities that are logged.

- 8 Click **Configure**. The **Processing SQL Script** dialog box appears. You can see the historian database configuration scripts running. Multiple scripts run during the configuration.



After the system finishes running the SQL scripts, the Wonderware Historian node and Historian Server node are shown with a green status indicator if the database is successfully configured.



**9** Click **All Messages** to see all the configuration messages.

**10** Click **Close** to exit the **Configurator**.



## Testing the Installation

Test the Wonderware Historian installation to make sure that everything is installed correctly and is working properly.

### To test the installation

- 1 Start the historian.
- 2 Start the storage system and check that the system is receiving data from the system tags.

After the historian is installed, no additional configuration is required to run client tools against the server using named pipes. However, you may want to change the system or server configuration using the System Management Console

## Antivirus Software

After installing the Wonderware Historian, configure your antivirus software to prevent archive files from being scanned. Also, antivirus software should not scan files in the following folders (ensure the sub folders of the listed directories are also excluded):

The datapath that you enter in the **Data Path** field in the configurator while configuring the database. The default path is  
c:\Historian\Data\\*.\*

c:\Program Files\ArchestrA\\*.\*

c:\Program Files\Wonderware\\*.\*

c:\Program Files\Common Files\ArchestrA\\*.\*

c:\Program Files (x86)\ArchestrA\\*.\*

c:\Program Files (x86)\Wonderware\\*.\*

c:\Program Files (x86)\Common Files\ArchestrA\\*.\*

For Windows XP Professional and Windows Server 2003 operating systems, the path is:

c:\Documents and Settings\All Users\Application Data\ArchestrA\

For Windows Vista, Windows Server 2008, Windows 7 Professional, and Windows Server 2008 R2 operating systems, the path is:

c:\ProgramData\ArchestrA\

For Windows XP Professional and Windows Server 2003 operating systems, the <SMC Logger Storage file path> is:

c:\Documents and Settings\All Users\Application Data\ArchestrA\LogFiles

For Windows Vista, Windows Server 2008, Windows 7 Professional, and Windows Server 2008 R2 operating systems, the <SMC Logger Storage file path> is:

c:\ProgramData\ArchestrA\LogFiles

SQL Server database files of type:

.mdf

.ldf

## Wonderware Historian Menu Shortcuts

The following **Start** menu shortcuts are created in the Start\Programs\Wonderware\Wonderware Historian folder.

- Database Configuration Export and Import
- Import InTouch Historical Data
- Wonderware Historian
- Historian Books Online

In addition, the shortcut to the System Management Console appears in the Start\Programs\Wonderware folder.

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**Note:** If you performed a complete historian installation, the System Management Console is configured so that the local SQL Server is already registered. However, if you only installed the client tools, the console is empty.

---

## Repairing the Wonderware Historian

For a repair, the installation program automatically detects if you have an existing copy of the Wonderware Historian on your computer and then reinstalls missing or corrupt program files, registry keys, and shortcuts.

For detailed repair instructions, see "Repairing an Installation" on page 28.

To repair a database, use the Database Configurator. For more information, see "Configuring Databases and Data File Locations" on page 91.

## Modifying the Wonderware Historian Installation

You can modify the Wonderware Historian features that are already installed.

For detailed modification instructions, see "Modifying an Installation" on page 25.

To modify the disk directories for the database files and/or the history data files (history blocks), use the Database Configurator. For more information, see "Configuring Databases and Data File Locations" on page 91.

## Uninstalling the Wonderware Historian

The uninstall program allows you to remove all the historian program files. The Runtime and Holding databases and the history blocks are not deleted.

During the uninstall, you have the option to delete the configuration files (idatcfg\_\*.dat) created by IDAS and the Configuration Service.

For detailed uninstall instructions, see "Uninstalling an ArchestrA System Platform Component" on page 30.

## Upgrading from a Previous Version

You can upgrade to Wonderware Historian 10.0 SP1 from Wonderware Historian 9.0, Wonderware Historian 9.0 Patch01, Wonderware Historian 9.0 Patch02, and Wonderware Historian 10.0. No other versions are supported for direct upgrades.

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**Note:** The Wonderware Historian was previously known as Wonderware IndustrialSQL Server.

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## About Upgrading to Wonderware Historian 10.0 SP1

You can directly upgrade from Wonderware Historian 9.0, Wonderware Historian 9.0 Patch01, Wonderware Historian 9.0 Patch02, and Wonderware Historian 10.0. It is possible to upgrade from earlier versions of Wonderware Historian, but you must first upgrade to the 9.0 version. Follow the instructions in the 9.0 documentation to perform the upgrade. After you have upgraded to the 9.0 historian, you can then upgrade to Wonderware Historian 10.0 SP1.

## About Database Migration

The data in an existing Runtime database can be migrated to a new Runtime database. The old Runtime database is not deleted. Keep the old database until the Wonderware Historian migration is validated.

There is no migration for the content of the Holding database, because this database is used only to temporarily hold data when importing an InTouch data dictionary.

Not all of the system tags included in previous versions are included in version 10.0. Any configuration data associated with these obsolete system tags is not migrated.

For the event subsystem, all SQL-based detectors and actions are migrated to the OLE DB syntax. If you have any custom SQL-based detectors or actions, you need to rewrite them using the OLE DB syntax.

History data that is stored in SQL Server tables (not history blocks) can be migrated after the general upgrade has been performed.

The scripts are created when you first run the database setup utility so that you can run them at any time.

For Windows XP Professional and Windows Server 2003 operating systems, the default file path is:

```
c:\Documents and Settings\All Users\Application  
Data\ArchestrA\Historian\Install\Scripts
```

For Windows Vista, Windows Server 2008, and Windows 7 operating systems, the file path is:

```
\ProgramData\ArchestrA\Historian\Install\Scripts
```

## Upgrading from Wonderware Historian Version 9.0

If the Wonderware Historian 9.0 and IDAS 9.0 node are running on Windows 2003 SP2 and SQL Server 2005 SP3, then upgrading to Historian 10.0 SP1 occurs smoothly. The Wonderware Historian installation program detects the 9.0 Runtime database and prompts you to migrate or create the database.

### **To upgrade from Wonderware Historian 9.0 on Windows 2003 SP2 and SQL Server 2005 SP3**

- 1** Back up the Runtime database.
- 2** Shut down and disable Wonderware Historian 9.0 using the Management Console. Any remote sending data of IDAS to Wonderware Historian 9.0 will go into store-and-forward mode.

- 3 Run the ArchestrA System Platform installation program to perform the upgrade. For more information, see "Upgrading an ArchestrA System Platform Component" on page 32.
- 4 Migrate the 9.0 Runtime database or create the new database and finish the install.
- 5 Restart the computer.
- 6 Start the Historian. The Historian will start acquiring and storing the store-and-forward data from the existing remote IDASs.
- 7 After the Historian Server node is upgraded, you can upgrade any remote IDAS nodes.

If Wonderware Historian 9.0 is not running on an operating system or SQL Server supported by Wonderware Historian 10.0 SP1, you cannot migrate the operating system or SQL Server. You will need to set up another computer.

**To upgrade from Wonderware Historian 9.0 on a computer NOT running Windows 2003 SP2 and SQL Server 2005 SP3**

- 1 Back up the Runtime database.
- 2 Shut down and disable Wonderware Historian 9.0 using the Management Console. Any remote IDASs sending data to Wonderware Historian 9.0 will go into store-and-forward mode.
- 3 Set up a computer with the desired supported operating system and SQL Server.
  - Make sure that you install all the necessary requirements. For more information, see "Server Requirements" on page 51.
  - Select the same collation and sort order that was used for your previous SQL Server installation. For more information, see "Microsoft SQL Server Installation" on page 88.
- 4 Restore the Runtime database using SQL Server database management tools.
- 5 Run the ArchestrA System Platform installation program to perform the upgrade. For more information, see "Upgrading an ArchestrA System Platform Component" on page 32.
- 6 The installation program detects the Runtime 9.0 database and prompts you to migrate the database or recreate the new database. The existing Runtime database is renamed to Runtime 9.0 and the version 10.0 SP1 database is created. If you chose to migrate, the utility runs the migration scripts (Migrate90To100.sql and MigrateSQLHistData90to100.sql) to transfer the historian configuration and history data from the old database.
- 7 Finish the installation of Wonderware Historian.

- 8 Copy history blocks from the previous version to the new computer.
- 9 Use the historian System Management Console to update the storage locations and system parameters to configure paths as per your new hardware configuration and the Runtime parameters as per your new implementation.

## Upgrading from Wonderware Historian Version 10.0

If Wonderware Historian 10.0 and IDAS 10.0 are running on Windows 2003 SP2, SQL Server 2005 SP3, and SQL Server 2008 SP1, then upgrading to Historian 10.0 SP1 occurs smoothly.

### To upgrade from Wonderware Historian 10.0

- 1 Shut down and disable Wonderware Historian 10.0 using the Management Console. Any remote IDAS nodes to Wonderware Historian 10.0 will go into store-and-forward mode.
- 2 Run the ArchedrA System Platform installation program to perform the upgrade. For more information, see "Upgrading an ArchedrA System Platform Component" on page 32.
- 3 The installation program detects the Runtime 10.0 database and prompts you to keep the existing database or recreate the new database.
- 4 If you re-create the database, existing Runtime database will not be re-named but will be overwritten with a new Runtime 10.0 SP1 database. If you do not re-create the database, the existing database will remain intact.
- 5 Finish the installation of Wonderware Historian.
- 6 Restart the computer.
- 7 Start the Historian. The Historian will start acquiring and storing the store-and-forward data from the existing remote IDASs.
- 8 After the Historian Server node is upgraded, you can upgrade any remote IDAS nodes.

---

**Note:** While upgrading from 10.0, you will not be prompted for any kind of database migration. Database migration will only take place if you intend to upgrade Wonderware Historian 9.0, Wonderware Historian 9.0 P01, or Wonderware Historian 9.0 P02 to Historian 10.0 or Historian 10.0 SP1.

---

## Migration of History Data Stored in SQL Server

The normal SQL Server tables in the Runtime database contain configuration data and certain types of history data. History data that is stored in the normal SQL Server tables includes:

- Data in the AnalogManualHistory, DiscreteManualHistory, and StringHistory tables.
- Event and summary data, which is stored in the EventHistory, SummaryHistory, SummaryData, AnalogSnapshot, DiscreteSnapshot, and StringSnapshot tables.

These tables can contain hundreds of thousands of rows, if not millions of rows. Depending of the amount of data to be migrated, migrating this data can take a few minutes to many hours, and in some cases, days.

---

**Important:** You MUST perform the database migration before the server goes back into production, because the history table content will be truncated. Be sure that you have disk space equivalent to two times the size of the Runtime database on the drive to which the history data will be migrated; otherwise, the migration may fail. Back up the Runtime database with the migrated configuration data before migrating the history data.

---

The scripts used to migrate the SQL Server history data can be found in the Wonderware Historian installation directory. By default, this directory is:

```
\Program Files\ArchestrA\Historian\Install\Scripts
```

The filename is:

MigrateSQLHistData90to100.sql

Do not attempt to migrate the data until you complete the upgrade to the Wonderware Historian 10.0. To migrate the data, execute these scripts using SQL Server Management Studio. You may prefer to run the script in blocks (that is, execute the syntax commands between the GO statements).





## Chapter 7

# Wonderware Historian Client Requirements

You can use the Wonderware Historian Client software to address specific data representation and analysis requirements. The Wonderware Historian Client software maximizes the value of the data present in the Wonderware Historian and helps you organize, explore, analyze, present, and distribute process data in a variety of formats.

With the Wonderware Historian Client software, you can:

- Explore data graphically to find important information
- Analyze data
- Develop and execute ad hoc queries against any data stored in the Wonderware Historian database
- Visualize the current process state
- Produce rich automated reports, publish Trend charts and static and dynamic Excel reports on the Wonderware Information Server portal.

## Wonderware Historian Client Components

The Wonderware Historian Client software comprises of tools that eliminate the need to be familiar with the SQL and provides intuitive point-and-click interfaces to access, analyze, and graph both current and historically acquired time-series data.

### Desktop Applications

The Wonderware Historian Client software includes the following stand-alone applications:

#### **Wonderware Historian Client Trend**

- Allows plotting of historical and recent data over time
- Allows you to compare data over different time periods

#### **Wonderware Historian Client Query**

- Allows you to query the Wonderware Historian database
- Provides complex, built-in queries
- Eliminates the need to be familiar with the database structure or SQL

### Microsoft Office Add-Ins

The Wonderware Historian Client software includes the following add-ins to the Microsoft Excel and Microsoft Word applications.

#### **Wonderware Historian Client Workbook**

- Allows display and analysis of historical and recent data from a Wonderware Historian database using the Excel spreadsheet format

#### **Wonderware Historian Client Report**

- Allows advanced reporting of historical and recent data from a Wonderware Historian database using the Word document format

## ActiveX and .NET Controls

The aaHistClientTrend and aaHistClientQuery controls provide essential functionality of Wonderware Historian Client Trend and Wonderware Historian Client Query. You can use these controls in container applications, such as InTouch® HMI software, Visual Studio (Visual Basic .NET or C#), and Internet Explorer. You can also use Wonderware Historian Client "building block" controls (such as aaHistClientTagPicker, aaHistClientTimeRangePicker, and so on) in your custom applications.

## Requirements and Recommendations

You must log on to the computer as an administrator to install the Wonderware Historian Client software. Be sure that you read the hardware and software requirements in the Wonderware Historian Client Readme before starting the installation.

### Hardware Requirements

The hardware requirements for installing the Wonderware Historian Client are described in the following table:

	<b>Minimum Server Requirement</b>	<b>Recommended Server Requirement</b>
Processor	1.2 GHz Pentium III or higher	2 GHz or higher
Memory	512 MB RAM	1 GB RAM or more
Disk Space	55 MB	55 MB

### Operating System Requirements

The following table lists the supported operating systems for the Wonderware Historian Client components:

<b>Operating System</b>	<b>Wonderware Historian Trend</b>	<b>Wonderware Historian Query</b>	<b>Wonderware Historian Workbook</b>	<b>Wonderware Historian Report</b>
Windows XP SP3	Supported	Supported	Supported	Supported
Windows 2003 SP2	Supported	Supported	Supported	Supported

Operating System	Wonderware Historian Trend	Wonderware Historian Query	Wonderware Historian Workbook	Wonderware Historian Report
Windows Vista SP1	Supported	Supported	Supported	Supported
Windows 2008 Server	Supported	Supported	Supported	Supported
Windows 7	Supported	Supported	Supported	Supported

You can visit the Microsoft Web site for instructions on installing the various supported operating systems.

**Note:** The Wonderware Historian Client components are supported on Microsoft Windows Vista and Windows 7 operating systems with the User Access Control enabled, and without running as an administrator.

## Other Software Requirements

The following list describes the other third-party software requirements that support the Wonderware Historian Client software:

- Microsoft .NET Framework 3.5 SP1 or later. If this version of the .NET Framework is not installed on the computer, the installation automatically installs it for you.
- Microsoft Word 2000 or later.
- Microsoft Excel 2000 or later.

## Support for Operating System Language Versions

The English version of the Wonderware Historian Client software runs on the following operating system language versions:

- English
- French
- German
- Japanese
- Simplified Chinese

**Note:** The SQL Server locale language must be the same as the operating system locale language.

## Chapter 8

# Historian Client Installation and Configuration

The ArchestrA System Platform installation program allows you to install the Wonderware Historian Client software. The ArchestrA System Platform installation program copies the files from the setup DVD to the target computer.

For more information on the components installed, see "Wonderware Historian Client Components" on page 106.

## About the Wonderware Historian Client Installation

Before installing the Wonderware Historian Client software, log on to the computer as an administrator. Before copying the software files, the ArchestrA System Platform installation program checks for the basic system prerequisites.

The ArchestrA System Platform installation program checks if a Microsoft Excel process is running. If Excel is running, a message appears informing you that an Excel process and the aaHistClientReportingService.exe service are running.

To continue with the installation, you need to manually stop the services and click **Retry**. Click **Close** if you want to stop the installation.

When the aaHistClientReportingService.exe service stops, any scheduled reports for Wonderware Information Server will not be generated during the Historian Client installation. After the Historian Client installation completes, the aaHistClientReportingService.exe service needs to be started manually for the scheduled reports to get generated.

This issue occurs if:

- You install Wonderware Historian Client after installing Wonderware Information Server.
- An Excel scheduled report is published to the Wonderware Information Server portal.

---

**Note:** In some cases, depending upon the operating system and the prerequisite, you may have to restart the system after the prerequisites are installed. In such cases, the setup automatically continues after the restart.

---

For instructions on installing the Wonderware Historian Client software files, see "Installing the ArcestrA System Platform" on page 13.

After the Wonderware Historian Client software is installed on the computer, you must install the Language Packs manually.

## Using Wonderware Historian Client Software with Roaming Profiles

If your network environment uses roaming user profiles, you must change a registry key so that changes to any Wonderware Historian Client software options are saved in the user profiles.

To save software options in the roaming user's profile, add a DWORD key named "EnableRoaming" to the user's HKEY\_CURRENT\_USER\Software\ArcestrA\ActiveFactory registry folder and change its value to 1.

# Setting Up HTTP Access for Wonderware Historian Client Software

Wonderware Historian Client software can access data in the Wonderware Historian Server using HTTP instead of a normal TCP connection. For guidelines on using HTTP access, as well as limitations, see the *Wonderware Historian Client Software User's Guide* or the Wonderware Historian Client software Help file.

## **To set up HTTP Access for Wonderware Historian Client software**

- 1** Install the Wonderware Historian Server. For installation information, see the Wonderware Historian Server documentation.
- 2** Install Microsoft Internet Information Services (IIS). IIS can be installed on the same computer as the historian or on a different computer. If you use Windows authentication for HTTP access, SQLXML/IIS must be installed on the same computer as the Wonderware Historian Server. A single IIS Server can provide HTTP access to multiple SQL Servers, but at least one IIS Server is required to provide HTTP access to a SQL Server. For installation information, see the Microsoft documentation.

---

**Note:** For a single IIS Server to provide HTTP access to multiple SQL Servers, SQLXML must be separately installed for each SQL Server. If SQLXML is already installed and you attempt to install it again, you are not prompted to modify or repair the existing installation. Rather, a new installation starts for support of an additional SQL Server.

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- 3** Install the Microsoft SQLXML software. For more information, see "Installing the Microsoft SQLXML Software" on page 112. The SQLXML software can only be uninstalled using the Add/Remove Programs application in Control Panel.

No software or special configuration is required on the client computer, other than what is generally required to support the Wonderware Historian Client software installation. When you configure the server connection from within a client application, you must specify the web server URL and virtual directory, as well as provide authentication credentials. For more information, see the *Wonderware Historian Client Software User's Guide* or the Wonderware Historian Client software Help file.

## Installing the Microsoft SQLXML Software

You can install the Microsoft SQLXML software on the same computer on which the Microsoft SQL Server is installed (the same computer as the Wonderware Historian Server) or on a different computer. The installation program installs the SQLXML software and configures the IIS virtual directory for SQL Server.

You must install IIS before installing the SQLXML software. If you use Windows authentication for HTTP access, SQLXML/IIS must be installed on the same computer as the Wonderware Historian Server.

### To install the SQLXML software

- 1** Insert the Wonderware Historian Client software DVD into your DVD drive. In the \SQLXML directory of the DVD, double-click SQLXML.msi. The **Welcome** dialog box appears.
- 2** Click **Next**. The **License Agreement** dialog box appears.

Be sure that you understand the license agreement before installing. You cannot continue with the installation without consenting to the agreement.

  - To print out the license agreement, click **Print License**.
  - If you accept the terms of the license agreement, click **I accept the License Agreement**.
- 3** Click **Next**. The **Enter the IndustrialSQL Server name** dialog box appears.
  - In the **IndustrialSQL Server** box, type the name of the Wonderware Historian Server that you want to access using HTTP.
- 4** Click **Next**. The **Enter the Virtual Directory Name** dialog box appears.
  - In the **Virtual Directory** box, type the name of the virtual directory or accept the default virtual directory name.
- 5** Click **Next**. The **Ready to Install the Application** dialog box appears.
- 6** Click **Next** to start the installation. The **Updating System** dialog box appears. When all of the files have been installed and configured, the final dialog box appears.
- 7** Click **Finish**.

For more information on the configuration of the IIS virtual directory for SQL Server, see "Configuring an IIS Virtual Directory for SQL Server" in the *Wonderware Historian Client Software User's Guide* or the Wonderware Historian Client Help file. This information is provided for reference only.



## Repairing the Wonderware Historian Client Installation

You can use the ArcestrA System Platform installation program to repair corrupt files of the installed features. For more information, see "Repairing an Installation" on page 28.

---

**Note:** You can also use the standard Windows **Add/Remove Programs** feature from the Control Panel to repair the Wonderware Historian Client software installation.

---

## Uninstalling Wonderware Historian Client

You can use the ArcestrA System Platform installation program to remove Wonderware Historian Client software that exists on your computer. For more information, see "Uninstalling an ArcestrA System Platform Component" on page 30.

---

**Note:** You can also use the standard Windows **Add/Remove Programs** feature from the Control Panel to remove the Wonderware Historian Client software installation.

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## Upgrading from a Previous Version

You can upgrade the following versions to Wonderware Historian Client 10.0 with SP2:

- ActiveFactory 9.2
- Wonderware Historian Client 10.0
- Wonderware Historian Client 10.0 SP1

The upgrade program automatically backs up the product files, configuration, and user content before the upgrade occurs. When the installation detects the correct previous versions and prerequisite software, the upgrade starts.

For more information, see "Upgrading an ArcestrA System Platform Component" on page 32.



## Chapter 9

# Information Server Requirements and Recommendations

Wonderware Information Server provides enterprise-wide viewing of all information from the plant floor over the Internet or company intranet. You can use Wonderware Information Server together with Internet Explorer to view reports from a variety of data sources, including reports, documents, alarms, and historical and real-time information.

You can also use Wonderware Information Server to view and interact with InTouch application windows that have been converted with the Win-XML Exporter or ArchedrA Web Exporter. These windows show all graphics and animation with real-time links to the factory floor, just as they do in InTouch WindowViewer™, but they do not require InTouch to be installed on the client computer. The Wonderware Information Server uses the latest rendering technologies so that application windows developed in InTouch can be viewed over the Internet with better performance using only a browser.

Wonderware Information Server is tightly integrated with Microsoft Internet Information Server. Working knowledge of Microsoft Internet Information Services, Microsoft SQL Server, and Windows operating systems is required. It is assumed that you are familiar with administering an Internet Information Server and using the administrative tools provided with Microsoft Windows operating systems. For more information on Internet Information Server, Microsoft SQL Server, and Microsoft Windows operating systems, see your Microsoft documentation.

Other features of Wonderware Information Server include:

- MultiViews, which are web displays that contain web-based content, such as HTML pages or Extensible Markup Language (XML) code. This content is stored in reusable components called Web Parts.
- Access panels, a logical grouping of navigation nodes (folders) and links that is only accessible to particular users assigned to it.
- The ActiveFactory Reporting Website, a collection of features that provide a wide array of reporting capabilities from the Wonderware Historian (formally known as IndustrialSQL Server).
- A reporting capability based on the Microsoft SQL Server Reporting Services (SSRS). This feature lets you create, deploy, and execute SSRS reports within the Wonderware Information Server. There are also interface options available to trigger those reports from Wonderware Application Server and the Wonderware Historian.

## Web Server Requirements and Recommendations

Your first step in deploying Wonderware Information Server is to install and configure the web server computer that hosts the Wonderware Information Server web site. In general, use a fast server-class computer with sufficient power to handle the expected load on the web site.

Do not install Wonderware Information Server on a domain controller computer. This is not supported.

Installing Wonderware Information Server is a three-step process:

- 1** Installing and configuring pre-requisite software, such as the operating system, Microsoft SQL Server, Internet Information Services (IIS), and so on.
- 2** Installing the Wonderware Information Server product files.
- 3** Configuring the Wonderware Information Server, so that it is ready for use.

For details on hardware requirements and the specific versions of required and supported software prerequisites, see the Readme file.

## Operating System Requirements

You can install Wonderware Information Server 4.5 on a server computer running any of the supported operating systems listed in the Readme file.

Some operating systems require certain configuration before use with Wonderware Information Server. For more information, see "Guidelines for Installing Microsoft Operating Systems" on page 119.

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**Note:** The MultiViews feature is not supported on Windows 7 and the 64-bit versions of Windows Server 2008 and Windows Server 2008 R2.

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## Software Requirements

You must install the following software on the web server computer before installing Wonderware Information Server. For details regarding the specific versions of required and supported software prerequisites, see the Readme file.

- Microsoft Internet Information Services (IIS). For more information, see "Guidelines for Installing IIS and ASP.NET" on page 126.
- ASP.NET. For more information, see "Guidelines for Installing IIS and ASP.NET" on page 126.
- Microsoft SQL Server. For more information, see "Guidelines for Installing Microsoft SQL Server" on page 122. ArchestrA Reports are not supported on SQL Server 2008 Express Edition.
- To use Windows SharePoint, you must install Microsoft .NET Framework.

You may need to install the following additional software on the web server computer depending on the Wonderware Information Server features you install:

- To install MultiViews feature, you must first install and configure Windows SharePoint Services. For more information, see "Guidelines for Installing and Uninstalling SharePoint Services" on page 132.
- To install the ArchestrA Reports feature, you must install and configure Microsoft SQL Server Reporting Services on the same node as Wonderware Information Server. For more information, see "Guidelines for Installing Microsoft Reporting Services" on page 130.
- To use ActiveFactory Reporting, you must install Microsoft Excel.

For all software, apply the latest patches.

In addition, client users must be members of the same Windows domain, or a trusted domain, as the web server.

You must install an ArchestrA Bootstrap on the Wonderware Information Server portal computer to support any process graphic that uses an ArchestrA reference to get data.

## Using a Domain Controller with Wonderware Information Server

The purpose of a domain controller is to authenticate users in a Windows domain for security reasons. Wonderware Information Server is designed to take advantage of a domain controller for the following security functions:

- **Grant/deny users access to the site.** If a user logged on to the company network and is authenticated by the domain controller, the Wonderware Information Server handles that user as an authenticated login and then proceed to authorize the user according to the security role to which the user has been assigned. However, if a user attempts to access Wonderware Information Server from a computer that is not logged onto the network, a dialog box appears in which the user must provide a valid user name and password for the domain. After entering the appropriate information, the user is authenticated on the network by the domain controller and is granted or denied access. The use of domain logins to provide access is made possible by the use of integrated Windows security by Wonderware Information Server.
- **Assign user privileges within Wonderware Information Server.** Because Wonderware Information Server uses integrated Windows security, the product automatically connects to all the domains that it is a member of and returns a list of users already configured in that domain. This allows you to save time and effort when assigning role-based privileges for Wonderware Information Server. In addition, users are able to have one account and password to access the company network and Wonderware Information Server, instead of multiple names and passwords.

Also, if you do not use a domain controller, Wonderware Information Server uses CPU resources to authenticate users instead of serving them web pages.

Because of these benefits, it is recommended that you use an existing domain controller or install a new domain controller. This allows you to manage users in the company domain separately.

For more information on domain controllers, see your Microsoft documentation or visit the Microsoft web site at [www.microsoft.com](http://www.microsoft.com).

## Using an Existing Domain Controller

If you already have a domain controller in place, you need to add the Wonderware Information Server computer to the domain as a resource. You can add the Wonderware Information Server computer to the domain in advance of deployment.

When you deploy the Wonderware Information Server, the domain resource administrator should be present to verify proper connections to other domain resources, such as SQL Server, the Wonderware Historian, Wonderware Application Server, and InTouch computers.

## Using Wonderware Information Server without a Domain Controller

If your company does not have a domain controller and does not have plans to upgrade and install a domain controller, you can still use Wonderware Information Server. However, the web server that Wonderware Information Server is installed on has to perform user authentication, and all users need to be created in the local user store on the web server. For information on adding local user accounts, see your Windows documentation. For more information on security, see the Wonderware Information Server Administration Guide.

# Guidelines for Installing Microsoft Operating Systems

The following sections provide guidelines for installing the supported Microsoft operating systems. For the list of supported operating systems, see the Readme file.

## Guidelines for Installing Microsoft Windows Server 2003

You can install Wonderware Information Server 4.5 on a server computer running a supported version of the Windows Server 2003 or Windows Server 2003 R2 operating system. The supported versions are documented in the Readme file. This operating system incorporates IIS as part of the default installation.

The following instructions are provided as a guide and do not constitute the entire Windows Server 2003 setup that your company guidelines may require, or that you may encounter while installing the operating system software. These instructions only document specific options you need to configure during the installation.

- Install the operating system on an NTFS partition.
- Install the defaults for Windows Server 2003 components. Select the following IIS components:

- Common Files
- Documentation
- Internet Information Services
- Internet Services Manager (HTML)
- SMTP Service
- World Wide Web Service
- If you have decided not to use a domain controller (not recommended), set up the local computer with users and passwords at this time. For more information, see "Using Wonderware Information Server without a Domain Controller" on page 119.
- Check the Microsoft web site for updates and patches that you may need to install.

## Guidelines for Installing Microsoft Windows Server 2008

You can install Wonderware Information Server 4.5 on a server computer running a supported version of the Windows Server 2008 operating system. The supported versions are documented in the Readme file. This operating system does not incorporate IIS as part of the default installation, so you must select to install it.

The following instructions are provided as a guide and do not constitute the entire Windows Server 2008 setup that your company guidelines may require, or that you may encounter while installing the operating system software. These instructions only document the specific options you need to configure during the installation.

- Install the operating system on an NTFS partition.
- Install the defaults for Windows Server 2008 components. If you have decided not to use a domain controller (not recommended), set up the local computer with users and passwords at this time. For more information, see "Using Wonderware Information Server without a Domain Controller" on page 119.
- Check the Microsoft web site for updates and patches that you may need to install.



## Guidelines for Installing Microsoft Windows 7

Wonderware Information Server 4.5 can be installed on a server computer running a supported version of the Windows 7 operating system. The supported versions are documented in the Readme file. This operating system does not include IIS as part of the default installation, so you must select to install it.

There are some limitations for using Wonderware Information Server on Windows 7:

- The Wonderware Information Server MultiViews feature is not supported on Windows 7, because SharePoint is not supported on it.
- Using Wonderware Information Server on Windows 7 is only appropriate for smaller applications, because of the limits on the number of users.

The following instructions are provided as a guide and do not constitute the entire Windows 7 setup that your company guidelines may require, or that you may encounter while installing the operating system software. These instructions only document specific options you need to configure during the installation.

- Install the operating system on an NTFS partition.
- Install the Windows 7 components. If you have decided not to use a domain controller (not recommended), set up the local computer with users and passwords at this time. For more information, see "Using Wonderware Information Server without a Domain Controller" on page 119.
- Check the Microsoft web site for updates and patches that you may need to install.

## Guidelines for Installing Microsoft Windows Server 2008 R2

You can install Wonderware Information Server 4.5 on a server computer running a supported version of the Windows Server 2008 R2 operating system. The supported versions are documented in the Readme file. This operating system does not incorporate IIS as part of the default installation, so you must select to install it.

The following instructions are provided as a guide and do not constitute the entire Windows Server 2008 R2 setup that your company guidelines may require, or that you may encounter while installing the operating system software. These instructions only document the specific options you need to configure during the installation.

- Install the operating system on an NTFS partition.
- Install the defaults for Windows Server 2008 R2 components. If you have decided not to use a domain controller (not recommended), set up the local computer with users and passwords at this time. For more information, see "Using Wonderware Information Server without a Domain Controller" on page 119.
- Check the Microsoft web site for updates and patches that you may need to install.

## Guidelines for Installing Microsoft SQL Server

Wonderware Information Server uses Microsoft SQL Server to store vital configuration information, such as administrative passwords. Wonderware Information Server needs continuous access to the SQL Server to run properly.

For the list of supported SQL Server versions, see the Readme file.

You can use a SQL Server located anywhere on the same network. If you choose to use a SQL Server that is on a computer other than the one you will install the Wonderware Information Server on, you must:

- Install the Microsoft SQL Server Client Tools on the Wonderware Information Server computer and configure client-side TCP/IP connectivity to the remote SQL Server.
- Exclude TCP Port 1433 and Port 80 from the Windows firewall on the remote SQL Server computer.

Wonderware Information Server can be used with a case-sensitive or case-insensitive SQL Server database.

If you want to use the ArchestrA Reporting Services feature of Wonderware Information Server, you must install SQL Server Reporting Services on the Wonderware Information Server portal computer. It is best to select Reporting Services as part of the original SQL Server installation, rather than to try to add it later.

# Guidelines for Installing Microsoft SQL Server 2008

These instructions are for installing a new SQL Server as a stand-alone installation.

ArchestrA Reports are not supported on SQL Server 2008 Express Edition.

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**Important:** During the Microsoft SQL Server installation, be sure that you select mixed mode as the authentication mode.

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## To install SQL Server 2008

- 1** Insert the SQL Server installation CD into the DVD drive. The **SQL Server Installation Center** window appears.
- 2** In the left pane, click **Installation**.
- 3** In the right pane, click to start the new SQL Server stand-alone installation wizard.
- 4** Click **Next** to progress through the installation windows.
- 5** When the **Feature Selection** window appears, select the following features, at a minimum:
  - **Database Engine Services**
  - **Reporting Services**
  - **Client tools**
- 6** Click **Next**. The **Instance Configuration** window appears.
- 7** Click **Default instance**.

- 8 Click **Next**. Continue with the installation until the **Server Configuration** window appears.

Service Accounts | Collation

Microsoft recommends that you use a separate account for each SQL Server service.

Service	Account Name	Password	Startup Type
SQL Server Agent			Manual
SQL Server Database Engine			Automatic
SQL Server Reporting Services			Automatic
SQL Server Integration Services 10.0	NT AUTHORITY\Network...		Automatic

Use the same account for all SQL Server services

These services will be configured automatically where possible to use a low privilege account. On some older Windows versions the user will need to specify a low privilege account. For more information, click Help.

Service	Account Name	Password	Startup Type
SQL Server Browser	NT AUTHORITY\LOCAL S...		Disabled

- 9 For the service accounts, specify the network account unless otherwise required by your environment. If the SQL Server is installed on the same computer as the Wonderware Information Server, then you can use the localsystem account. However, you will need to be sure to specify a network account when you use the Wonderware Information Server Backup and Restore utility.

**10** Continue with the default settings in the **Collation** tab. The default collation settings are:

- **Database Engine: SQL\_Latin1\_General\_CP1\_CI\_AS**
- **Analysis Services: Latin1\_General\_CI\_AS**

**11** Click **Next**. The **Database Engine Configuration** window appears.

**12** Configure the authentication details. Do the following:

- a** Click **Mixed Mode (SQL Server authentication and Windows authentication)**.
- b** Enter your system administration username and password.

**13** Click **Next**. The **Report Server Installation Options** window appears.

**14** Click **Install the native mode default configuration**.

**15** Click **Next** to continue installing the SQL Server per your requirements.

## Guidelines for Installing IIS and ASP.NET

Wonderware Information Server requires Microsoft IIS and ASP.NET.

If you did not include these options as part of the operating system installation, you will need to add them.

## Guidelines for Installing IIS and ASP.NET on Windows Server 2003

The Windows Server 2003 operating system incorporates IIS as part of the default installation.

### To install Internet Information Services and ASP.NET

- 1** On the Windows **Start** menu, point to **Settings**, and then click **Control Panel**. The **Control Panel** appears.
- 2** Double-click **Add or Remove Programs**. The **Add or Remove Programs** window appears.
- 3** Click **Add/Remove Windows Components**. The Windows Components Wizard appears.
- 4** Select **Application Server**.
- 5** Click **Details**. A list of subcomponents of the application server appears.
- 6** Check **ASP.NET and Internet Information Services (IIS)**.
- 7** Highlight Internet Information Services (IIS) and click **Details**.
- 8** Select the following subcomponents of Internet Information Services (IIS):
  - **Common Files**
  - **Internet Information Services Manager**
  - **SMTP Service**
  - **World Wide Web Service**

---

**Note:** SMTP Service is a requirement for Sharepoint Services.

---

**9** Click **OK** twice. The Windows Component Wizard appears.

**10** Click **Next** to begin installing the selected components.

## Guidelines for Installing IIS and ASP.NET on Windows 7

The Windows 7 includes IIS, but it is not included in the default installation.

### To configure ASP.NET and IIS on Windows 7

- 1 On the Windows **Start** menu, click **Control Panel**. The Control Panel appears.
- 2 Click **Programs**, and then double-click **Programs and Features**.
- 3 Click **Continue** in the **User Account Control** dialog box.
- 4 Click **Turn Windows features on or off**.
- 5 In the **Windows Features** dialog box, expand **Internet Information Services**, expand **Web Management Tools**, expand **IIS6 Management Compatibility**, and then select the following check boxes:
  - **IIS 6 WMI Compatibility**
  - **IIS Metabase and IIS 6 configuration compatibility**Also select the following check boxes:
  - **IIS Management Console**
  - **IIS Management Scripts and Tools**
  - **IIS Management Service**
- 6 Expand **World Wide Web Services**, expand **Application Development Features**, and then select the following check boxes:
  - **.NET Extensibility**
  - **ASP**
  - **ASP.NET**
  - **ISAPI Extensions**
  - **ISAPI Filters**
- 7 Expand **Common HTTP Features**, and then select the following check boxes:
  - **Default Document**
  - **Directory Browsing**
  - **HTTP Errors**
  - **HTTP Redirection**
  - **Static Content**
  - **WebDAV Publishing**

- 8** Expand **Health and Diagnostics**, and then select the following check boxes:
  - **HTTP Logging**
  - **Request Monitor**
- 9** Expand **Performance Features**, and then select the **Static Content Compression** check box.
- 10** Expand **Security**, and then select the following check boxes:
  - **Request Filtering**
  - **Windows Authentication**
- 11** After you enable the required features, start the World Wide Publishing service if you want to install the default configuration of Reporting Services. Otherwise, the SQL Server Setup program only installs Reporting Services and does not configure Reporting Services.

## Guidelines for Installing IIS and ASP.NET on Windows Server 2008 and Windows Server 2008 R2

The procedure for installing IIS and ASP.NET on both Windows Server 2008 and Windows Server 2008 R2 is the same. IIS is not installed by default on these operating systems.

### To configure ASP.NET and IIS on Windows Server 2008 and Windows Server 2008 R2

- 1** Open the Server Manager application. To open Server Manager:
  - a** Open **Control Panel**, click **System and Maintenance**, and then click **Administrative Tools**.
  - b** In the right pane, double-click **Server Manager**.
- 2** In the left pane of Server Manager, select the node that represents the server you are currently working on.
- 3** In the right pane, expand **Roles Summary** and click **Add Roles**. The **Add Roles Wizard** appears.
- 4** Click **Next**. The wizard moves to the **Select Server Roles** step.
- 5** Select the **Web Server (IIS)** check box and click **Next**. The next wizard step that appears is information that guides you in the installation.
- 6** Click **Next**. The wizard moves to the **Role Services** step. A list of available role services is displayed. If you click the name of a role, a short description of the role is displayed.



- 7 Select the **Application Development** role service, and then select the **ASP.NET** check box.

A message is displayed prompting you to select the related options that are also required for Web application development. Click **Add Required Role Services**.

- 8 Click **Next** and verify the role service selection.
- 9 Click **Install** to start the IIS and ASP.NET installation process.
- 10 After the installation is complete, click **Close**.
- 11 Install the Microsoft WebDAV extension.

There are two versions of WebDAV, one for 32-bit operating systems and one for 64-bit. You can download the extension from <http://www.iis.net>. You only need to install the extension files. The Wonderware Information Server Configurator utility will enable and set up authoring rules for the winroot folder during the core Information Server configuration.

---

**Note:** In Windows Server 2008 R2, WebDAV installation can be done during IIS configuration.

---

### To configure Windows authentication for IIS

- 1 In Server Manager, under the **Roles** node, select the **Web Server (IIS)** role.
- 2 In the **Role Services** section, click **Add Role Services**. The **Add Role Services** wizard appears.
- 3 Under the **Security** role service, select the **Windows Authentication** check box.
- 4 Click **Next** and verify the role service changes to be applied.
- 5 Click **Install** to start the IIS and ASP.NET installation process.
- 6 Click **Close** to close the **Add Role Services** wizard.

### To configure Windows Server 2008 to start an IIS Web site

- 1 In Server Manager, click the **Web Server (IIS)** node.  
If the node does not appear under the **Roles** node, refresh the view.
- 2 In the **System Service** section, make sure that the **World Wide Web Publishing Service** is running.  
If the service is not running, start it.
- 3 Under the **Web Server (IIS)** node, select **Internet Information Services (IIS) Manager**, expand the name of the Web server, and then expand **Sites**.

- 4 Right-click **Default Web Site** and select **Start**.
- 5 If you need a secure Internet connection, set up Secure Sockets Layer (SSL).

## Guidelines for Installing Microsoft Reporting Services

You must have the SQL Server Reporting Services installed to use the Arcestra Reporting Services features of Wonderware Information Server.

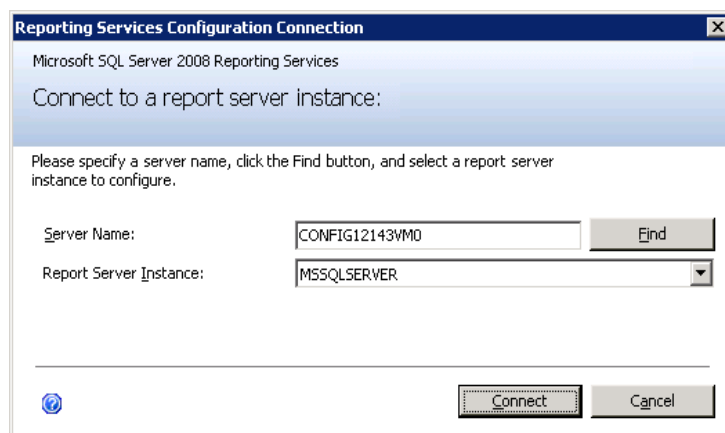
## Guidelines for Configuring SQL Server 2008 Reporting Services

You can use the default settings for SQL Server 2008 Reporting Services. Check the settings and if they are already set by default, do not try to reset them as an error will occur.

You must have IIS and ASP.NET installed before configuring SQL Server Reporting Services. For more information, see "Guidelines for Installing IIS and ASP.NET on Windows 7" on page 127.

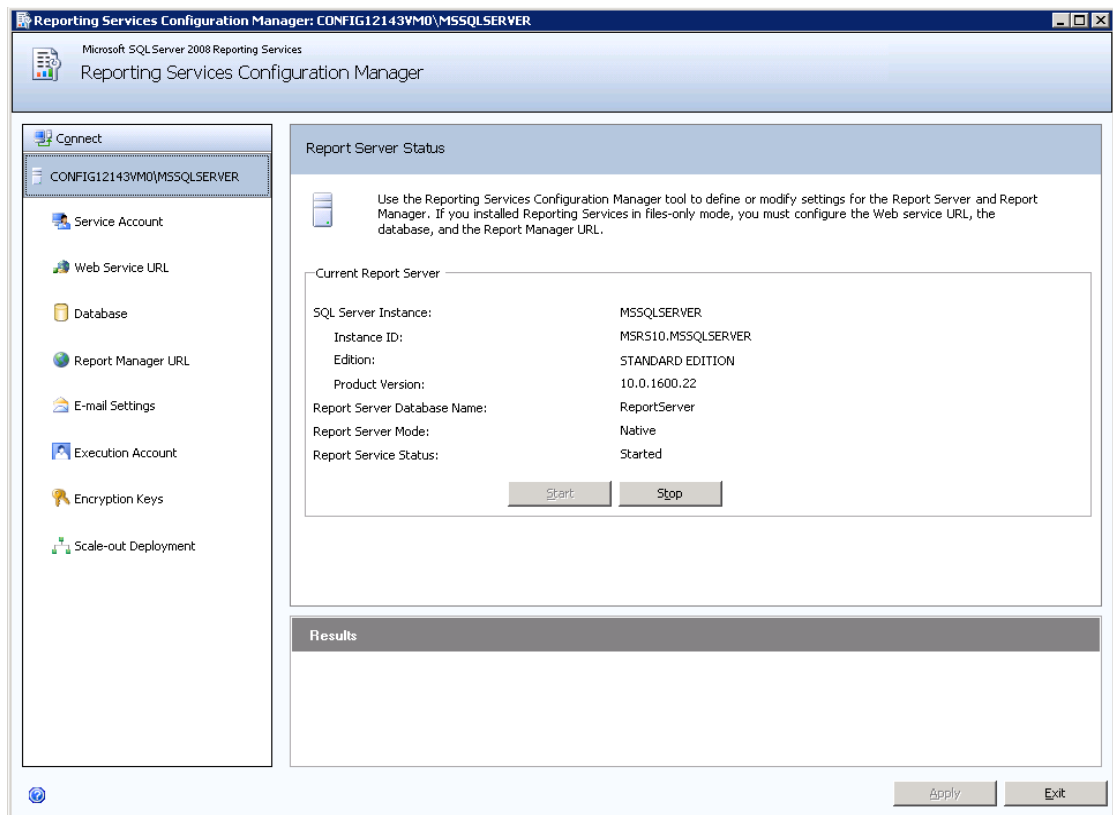
### To configure the SQL Server Reporting Services

- 1 On the Windows **Start** menu, point to **Programs, Microsoft SQL Server 2008, Configuration Tools**, and then click **Report Server Configuration Manager**. The **Reporting Services Configuration Connection** dialog box appears.



- 2 Configure the instance. Do the following:
  - a In the **Server Name** box, enter the name of the local report server node.
  - b In the **Report Server Instance** box, enter **MSSQLSERVER**.

- c Click **Connect**. After the connection has been established, the Report Server Status page appears. The Server Status appears as **Started**.



- 3 Make sure that the following components are configured with no errors:

- **Service Account**
- **Web Service URL**
- **Database**
- **Report Manager URL**

- 4 Click **Exit**.

## Guidelines for Installing and Uninstalling SharePoint Services

Microsoft Windows SharePoint Services 3.0 must be installed before you can install the MultiViews feature. SharePoint Services 3.0 is also known as SharePoint Services 2007.

After installing SharePoint Services, verify that the SQL Server Reporting Services home page appears.

Open your browser and enter one of the following:

- <http://localhost/reports>
- <http://yourservername/reports>

If the home page does not appear, exclude Reports and ReportServer from the SharePoint virtual directory using the SharePoint Administration web site.

Make sure that SharePoint allows applications to be created on the default site.

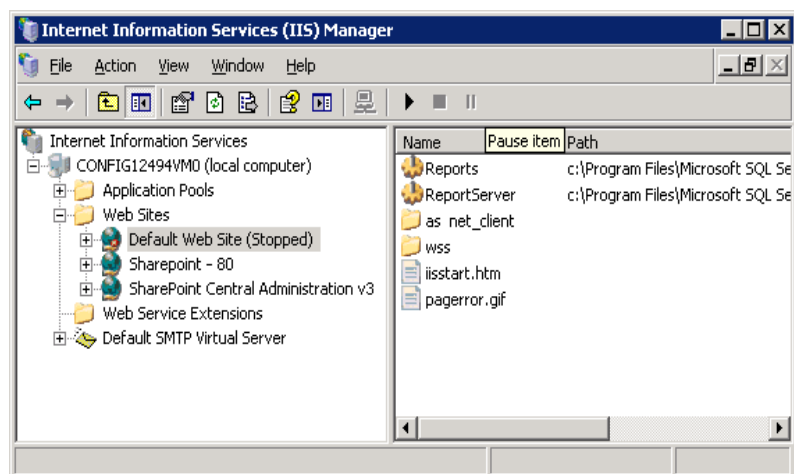
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**Important:** If you uninstall SharePoint Services 3.0, the default website is deleted, which will make the Wonderware Information Server portal inaccessible. Back up the portal before uninstalling SharePoint Services 3.0.

---

## Configuring Windows SharePoint Services 3.0

After you install Windows SharePoint Services 3.0, a default web site named **Sharepoint - 80** is created in IIS so that Sharepoint Services gets the default port of 80. The Default Web Site that is using port 80 is stopped.



You must delete the "Sharepoint - 80" web site that is using the default port.

### To delete the default web site

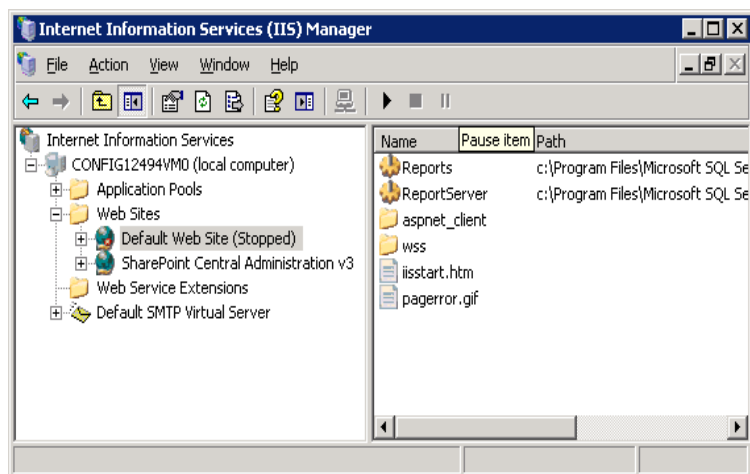
- 1 On the Windows **Start** menu, point to **Programs**, point to **Administrative Tools**, and then click **SharePoint 3.0 Central Administration**. The web site appears.
- 2 Click **Application Management** tab.
- 3 Under **SharePoint Web Application Management**, click **Delete Web Application**. The **Delete Web Application** page appears.
- 4 Do the following:
  - a In the **Web Application** list, click **Change Web Application**. The **Select Web Application** page appears.
  - b Select the Windows SharePoint Services 3.0 default Web site "SharePoint - 80" (<http://ServerName>).

---

**Note:** Make sure that you delete the default web site: <http://ServerName:80>

---

- c Under **Delete content databases**, click **Yes**.
  - d Under **Delete IIS Web sites**, click **Yes**.
  - e Click **Delete**. When a warning message box appears, click **OK**.
- 5 Wait for the **Application Management** tab to appear, and then close the Windows SharePoint Services Central Administration site.
- 6 Open Internet Information Services (IIS) Manager and check that the "Sharepoint - 80" default website created by Sharepoint has been deleted.



- 7 Right-click **Default Web Site** and then click **Start** to start the services.

To run Sharepoint Services 3.0, you must create a new website.

**To create a new web site and site collection**

- 1** On the Windows **Start** menu, point to **All Programs**, point to **Administrative Tools**, and then click **SharePoint 3.0 Central Administration**.
- 2** Click the **Application Management** tab.
- 3** Under **SharePoint Web Application Management**, click **Create or extend web application**. The **Create or Extend Web Application** dialog box appears.
- 4** Create a new web application. Do the following:
  - a** Click **Create a new Web application**. The **Create New Web Application** dialog box appears.
  - b** In the **IIS Web Site** section, click **Use an Existing IIS Web site** and make sure that **Default web site** is selected in the list.
  - c** In the **Application Pool** section, click **Predefined** and make sure that **Network Service** is selected as the security account for the application pool.
  - d** In the **Database Name and Authentication** section, make sure that **Windows authentication** is selected.
  - e** Click **OK** and wait while your changes are processed. The **Application Management** page appears.
- 5** In the **Application Management** page, click on **Create Site Collection**. The **Create Site Collection** page appears.
- 6** Do the following:
  - a** In the **Web Application** section, click **Change Web Application** in the **Web Application** list. The **Select Web Application** page appears.
  - b** Select the new web application that you created in step 4.
  - c** In the **Title** and **Description** section, type the title and description.
  - d** In the **Template** section, click **Blank Site**.
  - e** In the **Primary Site Collection Administrator** section, specify the user name of the person administering this site (for example, svadmin1).
  - f** Click **OK** and wait while your changes are processed. The **Top Level Site Successfully Created** page appears,
  - g** Click **OK** button.
- 7** Make sure that you can access the web site.

# Installing SQLXML for HTTP Access to Wonderware Historian Data

ActiveFactory Reporting can use HTTP to access data in a Wonderware Historian that uses SQL Server 2005.

---

**Note:** Using SQLXML 3.0 to connect to SQL Server 2008 is not supported.

---

When you use the installation Configurator utility to set up an initial data source, you select to use HTTP access and then provide a name for the virtual directory. The Configurator utility takes care of setting up the virtual directory for you and configuring the HTTP access.

Install the SQLXML software on the computer that:

- Has IIS installed.
- Is accessible over the network using HTTP from the Wonderware Historian server computer.
- Is accessible over the network using HTTP from Wonderware Information Server client computers.

## To install SQLXML software

- 1 Locate the \SQLXML folder on the Wonderware Information Server installation CD.
- 2 Run the SQLXML.msi file.

---

**Note:** You may encounter an error while installing SQLXML on the 64-bit version of the Windows 7 operating system. As a workaround, you can install SQLXML by executing the SQLXML.msi file from the command prompt. To do this successfully, the command prompt must be run using the **Run as Administrator** option.

---

# Installing Language Packs for Multilingual Systems

If you want to use Wonderware Information Server on a multilingual system, you must manually install the Microsoft .NET language packs for any language that is in addition to the default language of the system. Wonderware Information Server supports French, German, Chinese, and Japanese. You can download the language packs from the Microsoft website.





# Chapter 10

## Information Server Installation and Configuration

Wonderware Information Server consists of a set of services, a COM+ package of components, and a customizable web server of ASP and HTML pages.

You do not need to be familiar with web building software to set up Wonderware Information Server. The Wonderware Information Server installation program and Configurator utility builds and configures the entire web server for you.

You use the ArchestrA System Platform installation program to copy the required resources, such as files, from the setup DVD to the target computer.

You then use the Configurator utility to finish the setup.

For information on installing or upgrading the Win-XML Exporter, see the *Wonderware Information Server Win-XML Exporter Guide*. For information on installing the ArchestrA Web Exporter, see the *ArchestrA Web Exporter Guide*.

## Installable Features

You can select from the following features during the Wonderware Information Server install:

- **Information Server.** Consists of core Wonderware Information Server system, which manages security, licensing, data sources, process graphics, factory alarms, customizing the portal, access panels, and Table Weaver contents.
- **MultiViews.** Supports SharePoint Web Part Pages that can combine several distinct types of information together in the same web page, which is arranged in a specific layout.
- **ActiveFactory Reporting.** Allows you to generate reports from published ActiveFactory workbooks and trends using data from the Wonderware Historian.
- **ArchestrA Reporting.** Provides infrastructure and tools that extend SQL Server Reporting Services to better support report development and deployment.
- **Sample Content.** Includes sample configurations and reports to show the system's capabilities and accelerate application development. The sample content includes a process graphics demo, a SmartSymbol display, content unit samples, and ArchestrA report samples. You must configure valid alarm and Wonderware Historian data sources to use the sample content.
- **ArchestrA License Server.** Provides support for licensing infrastructure on the Wonderware Information Server computer. An alternative is not to install this feature and use the License Server from a network location. You use the ArchestrA License Manager to set up a license server for Wonderware Information Server. For more information, see the ArchestrA License Manager documentation.

# Installation Pre-Requisites

The installation program checks for the following basic system pre-requisites:

- One of the required operating systems. For more information, see the Readme file.
- A supported version of the Microsoft .NET Framework. If this is not found, the installation program installs it.
- A file system partitioned with NTFS.
- You are a member of the local computer's administrator group.
- IIS is installed. For more information, including which roles and features are required for each supported operating system, see "Guidelines for Installing IIS and ASP.NET" on page 126.
- The required version of MSI is available. If this is not found, the installation program automatically installs it.

All other product pre-requisites are part of configuration and are not checked during the Wonderware Information Server install. For example, the installation does not check for:

- Windows SharePoint Services, if you select the MultiViews feature during installation.
- Microsoft Excel, if you select the ActiveFactory Reporting Website feature during installation.
- SQL Server Reporting Services, if you select the ArchestrA Reporting feature during installation.

## About the Wonderware Information Server Installation

You must be a member of the local computer's administrator group to install Wonderware Information Server.

The person who logs onto the computer as administrator and installs Wonderware Information Server is designated as the first administrator for the Wonderware Information Server. This person is the only one who has access to the administrative pages inside Wonderware Information Server and is responsible for adding additional users to roles, assigning access privileges, customizing the product, configuring data sources, and deploying the licenses.

As an administrator, you must know the names and passwords for the Wonderware Historian and InTouch Alarm System databases from which Wonderware Information Server retrieves data.

You must install an ArchestrA Bootstrap on the Wonderware Information Server portal computer to support any process graphic that uses an ArchestrA reference to get data.

You may be required to restart the Wonderware Information Server computer after the installation program copies the files and before the Configurator runs.

---

**WARNING! If you currently have ActiveFactory 9.0/9.1 Reporting Web Services on your system, do not uninstall it. The Wonderware Information Server installation program uses this for migrating ActiveFactory 9.0/9.1 reports to the ActiveFactory Reporting Web Services in Wonderware Information Server. If you uninstall ActiveFactory 9.0/9.1 Reporting Web Services before installing Wonderware Information Server, it will not migrate and you lose all your ActiveFactory 9.0/9.1 reports.**

---

Install the Wonderware Information Server using the ArchestrA System Platform installation program. For detailed instructions, see "Installing the ArchestrA System Platform" on page 13.

The installation path must be a valid path to which the currently logged in user has write permissions.

When the installation is complete, continue with the configuration steps required for Wonderware Information Server. For more information, see "About Wonderware Information Server Configuration" on page 141.

**Important:** If you exit the installation program without clicking **Configure**, required files, such as the ActiveFactory language packs, are not installed. To install ActiveFactory language packs, run the Wonderware Information Server installation program, select to modify the install, and then remove the ActiveFactory Reporting Website feature. Then run the installation program again and add the ActiveFactory Reporting Website feature. The language packs will be installed.

---

## About Wonderware Information Server Configuration

You use the Configurator to set up the product, such as creating the databases and configuring the pre-requisite software. The Configurator provides detailed feedback on the status of the configuration process.

If you make changes to your operating environment, you can use the Configurator to re-configure Wonderware Information Server. However, always use the Wonderware Information Server portal to make changes to portal configuration. For example, if you want to change the settings for a Historian data source, use the Data Source Manager within the portal, not the Configurator utility.

## Windows Firewall Exceptions

You can leave the Windows firewall on during configuration. The Configurator makes the appropriate firewall exceptions for TCP Port 1433 and Port 80. However, you may need to manually adjust the Windows firewall settings for the following scenarios:

- If you are using a remote SQL Server, you must enable **File and Printer Sharing** in the Windows firewall configuration to permit the Wonderware Information Server Backup and Restore utility to work.
- If you are using a remote SQL Server, Port 1433 and port 80 must be open in the Windows firewall on the remote node to access the Reporting Service web pages.
- If the TCP Port on the local computer is configured to use a port other than Port 1433, you must manually add this other port to the Windows firewall exceptions list.

## Using Windows Authentication with Microsoft SQL Server 2008

If you are using Microsoft SQL Server 2008 and want to use Windows authentication, you must add the BUILTIN\Administrators security group to the sysadmin server role before you use the Configurator utility.

### To add the security group

- 1 Execute the SYS.SP\_GrantLogin stored procedure as follows:

```
EXEC SYS.SP_GrantLogin 'BUILTIN\Administrators'
```

- 2 Open the "BUILTIN\Administrators" login properties and add it to the sysadmin security role.

## Configuring the Wonderware Information Server

Before you start the configuration, be sure that:

- You know the administrative login credentials for the Microsoft SQL Server you are using.
- During the Wonderware Information Server configuration, no one accesses the web server, or any of its services, using a browser. The Configurator needs to be able to shut down services appropriately.

The SQL Server services must be configured to execute using a network account.

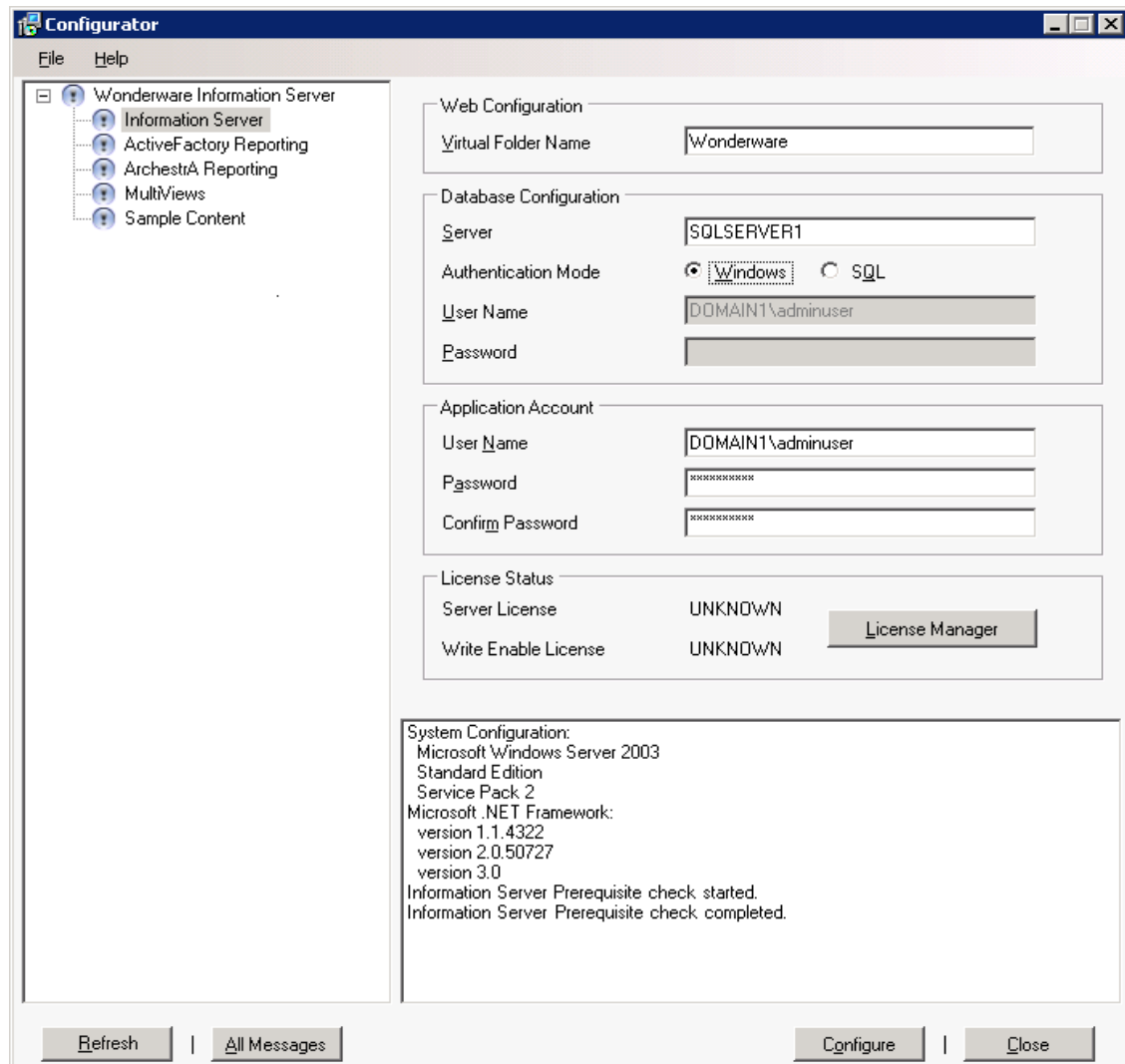
## Starting the Configurator Utility

You can start the Configurator utility at the end of the installation program. If Wonderware Information Server is already installed, you can start the utility from the Windows **Start** menu.

### To start the Configurator utility

- 1 On the **Start** menu on the Windows Taskbar, point to **Programs**, **Wonderware**, then to **Common**, and then select **Configurator**. The Configurator main window appears.

- 2 In the left pane, expand **Wonderware Information Server**. A list of Wonderware Information Server features appears. The icon to the left of the feature name shows the configuration status of the feature.



When you click a feature name, configuration options appear in the right pane.

Status and error messages appear in the window in the bottom right of the dialog box. For more information about a message, including possible actions you need to take, double-click the message text in the window.

- 3 Click on each installed feature and configure the options.
  - For more information on configuring Information Server, see "Configuring the Core Wonderware Information Server" on page 144.
  - For more information on configuring ActiveFactory Reporting, see "Configuring ActiveFactory Reporting" on page 146.
  - For more information on configuring ArchestrA Reporting, see "Configuring ArchestrA Reporting" on page 149.
  - For more information on configuring MultiViews, see "Configuring MultiViews" on page 152.
  - For more information on configuring sample content, see "Configuring Sample Content" on page 153.
- 4 When you are done, click **Close**.

## Configuring the Core Wonderware Information Server

The Configurator checks for the following pre-requisites before configuring the core Wonderware Information Server:

- A supported operating system is installed.
- IIS is installed.
- A supported version of ASP.NET is enabled.
- SQL Server Client Components are installed on the local computer.
- A supported version of SQL Server is installed.

The Configurator:

- Creates the required virtual directories, configures web server extensions, disables the static file cache, and creates the appropriate application pools for the IIS.
- Creates the SuiteVoyager database in SQL Server. The SuiteVoyager database is the administration and configuration database for Wonderware Information Server.
- Creates login IDs used exclusively by the Wonderware Information Server software to access the SuiteVoyager database: svAdmin, svSysAdmin, svSuper and svUser.
- Sets up Windows registry entries.
- Creates the required exceptions in the Windows firewall on the local computer.
- Creates and configures COM+ files and packages.



- Configures the Wonderware Information Server Alarm Consumer, Wonderware License Manager and RDBHandler services.
- Excludes the appropriate virtual directories for SharePoint.

### To configure the core Wonderware Information Server

- 1 Open the Configurator utility.
- 2 In the left pane, click **Information Server**. The configuration options appear in the right pane.

The screenshot shows the configuration utility with the following sections:

- Web Configuration:**
  - Virtual Folder Name: \Wonderware
- Database Configuration:**
  - Server: SQLSERVER1
  - Authentication Mode: ☒ Windows ☐ SQL
  - User Name: DOMAIN1\adminuser
  - Password: [Redacted]
- Application Account:**
  - User Name: DOMAIN1\adminuser
  - Password: [Redacted]
  - Confirm Password: [Redacted]
- License Status:**
  - Server License: UNKNOWN
  - Write Enable License: UNKNOWN
  - License Manager button

- 3 In the **Virtual Folder Name** box, type the virtual folder name. The virtual folder name is the address you enter in Internet Explorer to access Wonderware Information Server. The virtual folder name is not case-sensitive, can be any characters other than /, \*, ?, and \. The maximum length is 240 characters. For example, if you specified MyInfoServer, run-time users would type `http://<computername>\MyInfoServer` to access Wonderware Information Server.

- 4 In the **Database Configuration** area, specify the SQL Server host on which you want to create the Wonderware Information Server database that is used to store administration and configuration information. Do the following:
  - a In the **Server** box, type the name of the SQL Server host.
  - b Select the authentication mode you want to use. Click **Windows** to log on to SQL Server using your current Windows login account, or click **SQL** and type your SQL Server username and password. The account you specify must be an administrative SQL Server account.

---

**Note:** This account information is only used by the installation to create the administration database. It is not stored on the computer in any way or used by the Wonderware Information Server at any later time.

---

- 5 In the **Application Account** area, type the user account information used by portal components to log on and run as Windows services. The account you specify must have sufficient rights on the domain to retrieve a list of domain users. Otherwise, domain users do not appear in the User Manager page of Wonderware Information Server.
- 6 In the **License Status** area, verify the licensing status. If no valid license is found, click **License Manager** to install the license. For more information, see "Installing the Product License" on page 157.
- 7 Click **Configure**. A green check appears in the left pane when Wonderware Information Server is successfully configured.

## Configuring ActiveFactory Reporting

The Configurator checks for the following pre-requisite before configuring ActiveFactory Reporting:

- Microsoft Excel 2007 or later

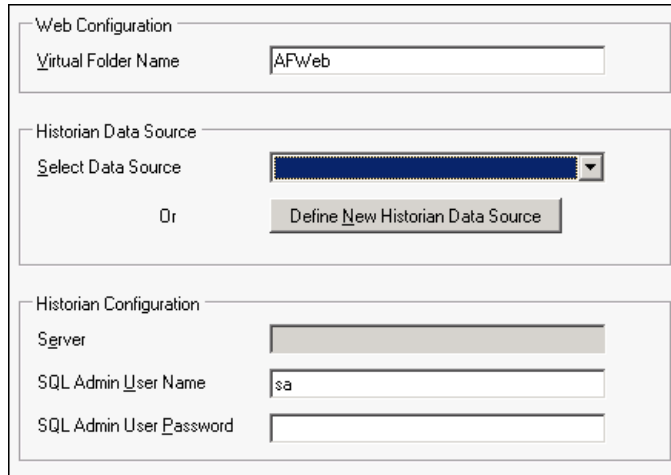
The Configurator:

- Creates and configures the ActiveFactory Reporting WebSite virtual directory.
- Excludes the virtual directory from SharePoint.
- Configures the Wonderware Historian database to support ActiveFactory Reporting.
- Generates and configures various ActiveFactory Reporting support files (.xml, .xsl, and so on).
- Configures the Windows service for reporting.

Be sure that Microsoft Excel is not running while you configure ActiveFactory Reporting.

### To configure ActiveFactory Reporting

- 1 Open the Configurator utility.
- 2 In the left pane, click **ActiveFactory Reporting**. The configuration options appear in the right pane.



The screenshot shows the configuration interface for ActiveFactory Reporting. It consists of three main sections:

- Web Configuration:** Contains a text box for 'Virtual Folder Name' with the value 'AFWeb'.
- Historian Data Source:** Contains a dropdown menu for 'Select Data Source' and a button labeled 'Define New Historian Data Source'.
- Historian Configuration:** Contains three text boxes: 'Server' (empty), 'SQL Admin User Name' (containing 'sa'), and 'SQL Admin User Password' (empty).

The pre-requisites are checked.

- 3 In the **Virtual Folder Name** box, type the report web site name.
- 4 In the **Historian Data Source** area, specify the name of the Wonderware Historian to use as the source of report data. You can either select an existing data source from the list or click **Define New Historian Data Source** to define a new one. For more information, see "Defining a New Historian Data Source" on page 148.

ActiveFactory Reporting does not support a data source that uses Windows authentication.

- 5 In the **Historian Configuration** area, provide an administrative SQL Server account that the Configurator will use to log on to the Wonderware Historian and configure the database to support ActiveFactory Reporting.
- 6 Click **Configure**. A green check appears in the left pane when ActiveFactory Reporting is successfully configured.

## Defining a New Historian Data Source

You can define a new Historian data source using the Configurator.

If you want to configure a data source to use Windows authentication, you must set up delegation between the middle server and the back end Historian server. This is done on the domain controller. For more information, see the Microsoft Web site.

<http://msdn2.microsoft.com/en-us/library/ms189580.aspx>.

### To define a new Historian data source

- 1 In the configuration pane, click **Define New Historian Data Source**. The **New Historian DataSource Form** page appears.

The screenshot shows a Windows-style dialog box titled "New Historian DataSource Form". It contains a "Data Source Details" section with the following fields and values:

- Data Source Name: Historian1
- Database Server Name: MyHistorian
- Database Name: Runtime
- Integrated Security: ☐
- Historian User Name: (empty)
- Historian User Password: (empty)
- Connection Timeout: 0
- Query Timeout: 0
- Provider: SQLNCLI
- Has HTTP mode: ☐
- URL Connection: (empty)

At the bottom of the dialog are "OK" and "Cancel" buttons.

- 2 Specify the Historian data source. Do the following:
  - a In the **Data Source Name** box, type name of the Wonderware Historian as you would like it to appear for Wonderware Information Server users.
  - b In the **Database Server Name** box, type the name of the Wonderware Historian.
  - c In the **Database Name** box, type Runtime.

- 3 Configure the account used to connect to the Historian. Do any of the following:
  - To use Windows authentication, select the **Integrated Security** check box.
  - To use SQL Server authentication, provide the user name and password in the **Historian User Name** and **Historian User Password** boxes.
- 4 Configure the data source timeouts. Do the following:
  - a In the **Connection Timeout** box, type the time, in seconds, that Wonderware Information Server should wait for the connection to the Historian to be established, before returning an error message.
  - b In the **Query Timeout** box, type the time, in seconds, that the Wonderware Information Server should wait for the results of a database query to the Historian to be returned, before returning an error message.
- 5 In the **Provider** box, type the provider name for SQL Server. For SQL Server 2005, type `SQLNCLI`. For SQL Server 2008, type `SQLNCLI10`.
- 6 If you want to access the Historian using HTTP instead of TCP/IP, do the following:
  - a Select the **Has HTTP mode** check box.
  - b In the **URL Connection** box, enter the web service URL.
- 7 Click **OK**.

## Configuring ArcestrA Reporting

The Configurator checks for the following pre-requisite before configuring ArcestrA Reporting:

- SQL Server Reporting Services is configured and working on the local computer

The Configurator:

- Creates and configures the ArcestrAReports virtual directory and sets up folder security for the IIS.
- Creates and configures the aaReports database in SQL Server.
- Creates Windows security groups. Also creates the aaReportsUser login ID.
- Creates any necessary Windows registry keys.
- Configures the aaReports data source for Wonderware Information Server.

- Creates the ArcestrA Reports folder under the root of the SQL Server Reporting Services web site.
- Deploys sample history and alarm reports.

### To configure ArcestrA Reporting

- 1 Open the Configurator utility.
- 2 In the left pane, click **ArcestrA Reporting**. The configuration options appear in the right pane.

The screenshot shows a configuration window with two main sections. The top section is titled 'Historian Data Source for Sample Reports' and contains a 'Select Data Source' dropdown menu, an 'Or' label, and a 'Define New Historian Data Source' button. The bottom section is titled 'Alarm Data Source for Sample Reports' and contains a 'Select Data Source' dropdown menu, an 'Or' label, and a 'Define New Alarm Data Source' button.

The pre-requisites are checked.

- 3 Select the **Deploy Sample Reports** to use the sample reports with a historian or alarm data source. If you do not select this check box, you can use ArcestrA Reporting for products that do not use a historian or alarm data source, such as the InBatch software.
- 4 In the **Historian Data Source for Sample Reports** area, specify the name of the data source for the report data. You can either select an existing data source from the list or click **Define New Historian Data Source** to define a new one. For more information, see "Defining a New Historian Data Source" on page 148.
- 5 In the **Alarm Data Source for Sample Reports** area, specify the name of the InTouch alarm database to use as the source of alarm data. You can either select an existing data source from the list or click **Define New Alarm Data Source** to define a new one. For more information, see "Defining a New Alarm Data Source" on page 150.
- 6 Click **Configure**. A green check appears in the left pane when ArcestrA Reporting is successfully configured.

## Defining a New Alarm Data Source

You can define a new alarm data source using the Configurator.

If you want to configure a data source to use Windows authentication, you must set up delegation between the middle server and the back end alarm server. This is done on the domain controller. For more information, see the Microsoft Web site.

<http://msdn2.microsoft.com/en-us/library/ms189580.aspx>.

## To define a new alarm data source

- 1 In the configuration pane, click **Define New Alarm Data Source**. The **New Alarm DataSource Form** page appears.

The screenshot shows a Windows-style dialog box titled "New Alarm DataSource Form". Inside, there is a group box labeled "Data Source Details". Below this group box are several labeled text input fields and a checkbox. The fields are: "Data Source Name" with the value "Alarm1", "Database Server Name" with "MyAlarmServer", "Database Name" with "\\WWALMDB", "Integrated Security" with an unchecked checkbox, "User Name" (empty), "Password" (empty), "Connection Timeout" with "0", "Query Timeout" with "0", and "Provider" with "SQLNCLI". At the bottom of the dialog are two buttons: "OK" and "Cancel".

- 2 Specify the alarm data source. Do the following:
  - a In the **Data Source Type** list, click **Alarm**.
  - b In the **Data Source Name** list, type name of the alarm data source as you would like it to appear for Wonderware Information Server users.
  - c In the **Description** box, type a description for the data source that is shown to Wonderware Information Server users.
  - d In the **ServerName** box, type the name of the computer that hosts the alarm database.
  - e In the **Database** box, type WWALMDB.
- 3 Configure the account used to connect to the alarm database. Do any of the following:
  - To use Windows authentication, select the **Integrated Security** check box.
  - To use SQL Server authentication, provide the user name and password in the **User Name** and **Password** boxes.
- 4 Select the **Default for this Data Source type** check box to make this defined data source the default alarm data source used by ArchedrA Reports.

- 5 Configure the data source timeouts. Do the following:
  - a In the **Connection Timeout** box, type the time, in seconds, that Wonderware Information Server should wait for the connection to the alarm database to be established, before returning an error message.
  - b In the **Query Timeout** box, type the time, in seconds, that the Wonderware Information Server should wait for the results of an alarm query to be returned, before returning an error message.
- 6 In the **Provider** box, type the provider name for SQL Server. For SQL Server 2005, type `SQLNCLI`. For SQL Server 2008, type `SQLNCLI10`.
- 7 Click **OK**.

## Configuring MultiViews

The Configurator checks for the following pre-requisite before configuring MultiViews:

- A supported version of SharePoint is installed

The Configurator:

- Includes MultiViews navigation in the hierarchy.
- Deploys Web Parts.
- Creates sites and document libraries.

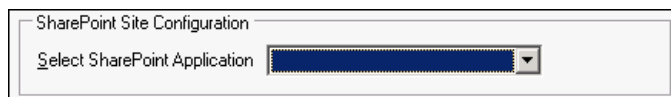
---

**Note:** The Multiviews feature is not supported on the 64-bit versions of Windows Server 2008.

---

### To configure MultiViews

- 1 Open the Configurator utility.
- 2 In the left pane, click **MultiViews**. The configuration option appears in the right pane.



The pre-requisites are checked.

- 3 In the **Select SharePoint Application** list, click the name of the SharePoint application to use for MultiViews.
- 4 Click **Configure**. A green check appears in the left pane when MultiViews is successfully configured.



## Configuring Sample Content

For the Process Graphics sample to update the live data, you must run InTouch WindowViewer on the Wonderware Information Server computer.

For the Trend Content Units to work, ActiveFactory Reporting feature must be installed and configured.

The Configurator:

- Creates the FactorySuiteSample database in SQL Server.
- Creates and configures Wonderware Information Server data sources for the samples.
- Creates and configures the sample, such as the InTouch applications, TableWeaver content units, Symbol Weaver content, and so on.

### To configure sample content

- 1 Open the Configurator utility.
- 2 In the left pane, click **Sample Content**. There are no configuration options.
- 3 Click **Configure**. A green check appears in the left pane when the sample content is successfully configured.

## Installing the ArcestrA Web Exporter

You must install the ArcestrA Integrated Development Environment (IDE) before installing the ArcestrA Web Exporter. After the installation, you can start the ArcestrA Web Exporter from the ArcestrA IDE toolbar, from the **Object** menu, or from the context menu of an InTouchViewApp object.

For more information on how to install the ArcestrA Web Exporter, see the *Wonderware ArcestrA Web Exporter Guide*.

There are certain requirements that must be met so that a published display can read and write data back to its data source. For more details, see the *Wonderware ArcestrA Web Exporter Guide*.

For more information, see the *Creating and Managing ArcestrA Graphics User's Guide* or the *InTouch HMI Visualization Guide*.

## Installing the Win-XML Exporter

For information on installing the Win-XML Exporter, see the *Wonderware Information Server Win-XML Exporter Guide*.

## Modifying Wonderware Information Server

When you modify the Wonderware Information Server installation, you add new features or remove existing features.

If you add a feature, the condition of all pre-requisite software is checked. If the checks pass, all the resources associated with that feature are copied to the Wonderware Information Server computer. You then use the Configurator to configure the feature.

If you remove a feature, all the configuration for that feature is returned to the original state.

Use the ArcestrA System Platform installation program to modify the installation. For more information, see "Modifying an Installation" on page 25.

## Repairing Wonderware Information Server

If you repair the Wonderware Information Server, any files that were part of the original installation are replaced if they are corrupt.

The configuration for any of the features is not changed. To change the configuration, you need to use the Configurator utility.

Use the ArcestrA System Platform installation program to repair the installation. For more information, see "Repairing an Installation" on page 28.

## Uninstalling Wonderware Information Server

If you uninstall Wonderware Information Server, the entire product is removed, including feature-related files and folders, COM+ packages, ASP files, and so on. However, the uninstall does not remove any user-created content, such as the user database, process graphics, content units, report files, and so on.

Use the ArchestrA System Platform installation program to uninstall the Wonderware Information Server. For more information, see "Uninstalling an ArchestrA System Platform Component" on page 30.

Uninstalling Wonderware Information Server does not require you to restart the computer after the uninstall is complete.

After you uninstall Wonderware Information Server, use the Windows Add/Remove Programs feature to uninstall each language pack. Language packs are named **Wonderware ActiveFactory <lang> Language**, where <lang> is French, German, Japanese, or Simplified Chinese.

You should not uninstall language packs if either Wonderware Information Server or ActiveFactory are still installed on the computer.

## Upgrading from a Previous Version

You can upgrade the following versions to Wonderware Information Server 4.5:

- Wonderware Information Server 3.1
- Wonderware Information Server 4.0
- Wonderware Information Server 4.0 with SP1

For versions older than these, you must uninstall the existing version and install Wonderware Information Server 4.5.

The upgrade program automatically backs up the product files, configuration, and user content before the upgrade occurs.

After the upgrade is completed, each feature has to be configured using the Configurator tool. Features that are not configured will not be available until the configuration is completed.

The following table provides a summary of the upgrade support:

Base release	Upgrade Support
ActiveFactory Reporting Website 8.5 or earlier only	Not supported. You must uninstall this version manually and then install Wonderware Information Server 4.5.
ActiveFactory Reporting Website 9.0 or 9.1	Not supported. You must uninstall this version manually and then install Wonderware Information Server 4.5.
Wonderware Information Server 3.0	Not supported. You must uninstall this version manually and then install Wonderware Information Server 4.5.
Wonderware Information Server 3.1 (all combinations of features)	Direct upgrade.
Wonderware Information Server 4.0 (all combinations of features)	Direct upgrade.
Wonderware Information Server 4.0 with SP1 (all combinations of features)	Direct upgrade.

When you upgrade from Wonderware Information Server 3.1, 4.0 or 4.0 with SP1 to Wonderware Information Server 4.5, the feature selection functionality will be unavailable. You can upgrade only the features that are already installed. If you want to install additional features, you must run the setup program again, after the upgrade, and select to modify the installation.

Existing ArchestrA Reports and sample content are migrated to Wonderware Information Server 4.5.

For detailed information on upgrading ActiveFactory components, see "Upgrading ActiveFactory Components" on page 157.

For information on installing or upgrading the Win-XML Exporter, see the *Wonderware Information Server Win-XML Exporter Guide*. For information on installing the ArchestrA Web Exporter, see the *ArchestrA Web Exporter Guide*.

## Upgrading ActiveFactory Components

The ActiveFactory Reporting WebSite 8.5 Migration Utility is not supported by Wonderware Information Server 4.5. You cannot upgrade directly from the ActiveFactory 8.5 Reporting WebSite to Wonderware Information Server 4.5.

If you are using the ActiveFactory 8.5 Reporting WebSite with SuiteVoyager 2.6, you must manually uninstall it before you install Wonderware Information Server 4.5. If you want to migrate the ActiveFactory 8.5 reports, you must first upgrade to the ActiveFactory 9.0/9.1 Reporting WebSite and then upgrade from ActiveFactory 9.0/9.1 Reporting WebSite to Wonderware Information Server 3.1 or 4.0. After that you can upgrade to Wonderware Information Server 4.5.

## Upgrading the Server from Wonderware Information Server 3.1, 4.0 or 4.0 with SP1

If the ActiveFactory desktop applications are installed on the Wonderware Information Server computer, you must manually uninstall them before upgrading Wonderware Information Server.

You may be required to restart the Wonderware Information Server computer after the installation program updates the files and before the Configurator runs.

For instructions on upgrading Wonderware Information Server, see "Upgrading an ArchestrA System Platform Component" on page 32.

## Installing the Product License

Wonderware Information Server requires you to set up a license server using the ArchestrA License Manager. The license server can be set up on the same computer as the Wonderware Information Server software or on a different computer.

For information on licensing and how to install licenses, including how to read license files and set up license servers, see the ArchestrA License Manager Guide and the online help. For additional information about specific licensing issues for Wonderware Information Server, see the Wonderware Information Server Administration Guide.

### To start the ArchestrA License Manager

On the **Start** menu on the Windows Taskbar, point to **Programs, Wonderware**, then to **Common**, and then select **ArchestrA License Manager**. The ArchestrA License Manager main window appears.



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