



Wonderware®
Information Server
Administration Guide

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Welcome

This guide describes how to administer and maintain the Wonderware Information Server (formerly known as SuiteVoyager™). This guide describes the tools available to Wonderware Information Server administrators and the steps required to accomplish administrative tasks.

The Wonderware Information Server builds on the existing Wonderware Internet functionality, and provides even more power and configurability. Wonderware Information Server is tightly integrated with Microsoft® Internet Information Server™.

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. Working knowledge of Microsoft Internet Information Services, Microsoft SQL Server, and the supported Windows operating systems is required.

This administrator's guide assumes 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, or your Microsoft Windows Server operating system, see your Microsoft documentation.

Documentation Set

The Wonderware Information Server documentation set includes the following guides:

Wonderware Information Server Administration Guide. This guide describes how to install Wonderware Information Server, administer and maintain an installed Wonderware Information Server, and how to access factory information over the Internet/intranet via the Wonderware Information Server. The installation section includes hardware and software requirements and migration instructions. The administration section includes information on configuring data sources, managing security, and performing customizations, accessing factory information over the Internet/intranet via the Wonderware Information Server, and using the TableWeaver and reporting features.

Wonderware Information Server Win-XML Exporter Guide. This guide describes how to use the Wonderware Information Server Win-XML Exporter to convert InTouch application windows to web pages and publish them to the Wonderware Information Server software. This guide also describes how to best design InTouch windows so that they can be successfully converted.

ArchestrA Web Exporter Guide. This guide describes how to use the ArchestrA Web Exporter to publish ArchestrA Symbols and InTouch Windows to Wonderware Information Server. This guide also describes how to add, delete and modify WindowSets and TableWeaverSets of the project and preview them in the preview window of the ArchestrA Web Exporter.

All of these guides are provided in PDF form and can be printed. Also, information included in the administration and Win-XML exporter guides is provided in browser-based online Help, which can be accessed from the Wonderware Information Server software.

Documentation Conventions

This documentation uses the following conventions:

Convention	Used for
Initial Capitals	Paths and file names.
Bold	Menus, commands, dialog box names, and dialog box options.
Monospace	Code samples and display text.

Technical Support

Wonderware Technical Support offers a variety of support options to answer any questions on Wonderware products and their implementation.

Before you contact Technical Support, refer to the relevant section(s) in this documentation for a possible solution to the problem. If you need to contact technical support for help, have the following information ready:

- The type and version of the operating system you are using.
- Details of how to recreate the problem.
- The exact wording of the error messages you saw.
- Any relevant output listing from the Log Viewer or any other diagnostic applications.
- Details of what you did to try to solve the problem(s) and your results.
- If known, the Wonderware Technical Support case number assigned to your problem, if this is an ongoing problem.

Chapter 1

Getting Started

Most of the administration of the Wonderware Information Server can be accomplished via web pages on the site. From the site, you can easily perform administrative tasks such as setting up security for users, monitoring license usage, configuring data sources, customizing the site to reflect your company image, and providing access to a wide variety of factory information in the form of web applications and links.

Note: Report deployment and backing up and restoring are done through separate applications. For information on report deployment, see "Using Archedra Reporting" on page 93. For information on backing up and restoring, see "Creating and Restoring Backups" on page 85.

When you first open the Wonderware Information Server from a client, you see a message that you need to download and install the client setup. If you have pop-ups blocked, you need to allow pop-ups in your browser.

About the Wonderware Information Server Home Page

The Wonderware Information Server home page is automatically created after installing and configuring the Wonderware Information Server. The home page has pre-configured links to either administration and/or runtime functions. The links displayed are based on the role of the user that is logged on. For example, if you are currently logged on as an administrator, you are granted access to a page of links that administer the web site, as well as to the runtime functions.

The default URL to the Wonderware Information Server web site is:

`http://<WebServer>/<VirtualDirectoryName>`

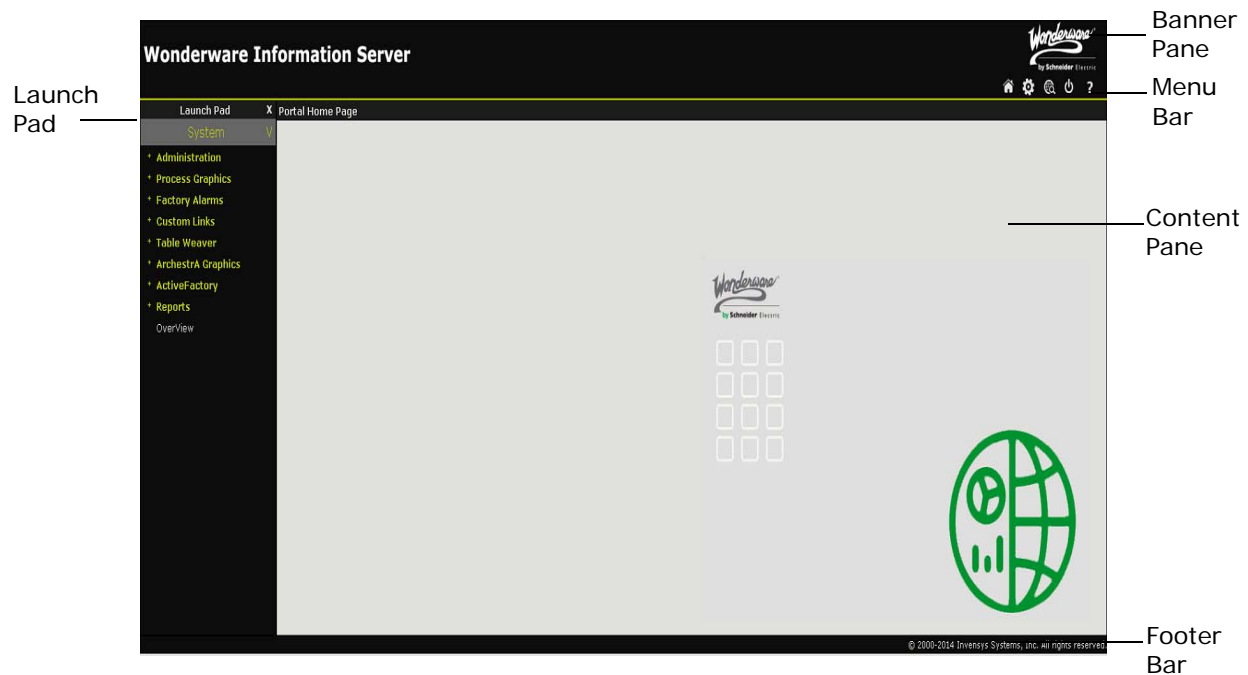
where

<WebServer> is the name of the web server on which Wonderware Information Server is installed

and

<VirtualDirectoryName> is the virtual directory name chosen for Wonderware Information Server at the time of configuration. The default name for this virtual directory is "Wonderware."

The following is an example of the home page:



The Wonderware Information Server home page consists of five main areas:

- Banner Pane
- Menu Bar
- Content Pane
- Footer Bar
- Launch Pad

The Internet Explorer shortcut menu is not available when you right-click on a page, with the exception of pages pertaining to custom links or third-party applications. Also, if you click a link in the navigation tree the link URL is not stored in the browser history. The Back toolbar button or the Back shortcut menu only enabled if there is a URL stored in the browser history.

Banner Pane

The banner is located at the top of the page and constantly appears unless the user double-clicks on the title bar of a given page. This maximizes the window to use all of the available space in the browser.

You can customize the banner by either replacing the logo that appears in the banner or replacing the entire banner itself. For more information, see "Customizing the Home Page" on page 74.

Menu Bar

The menu bar is located immediately below the banner area at the top of the home page:



The following table describes the menu bar options:

Option	Description
Home	Access the home page.
Help	Access the site user Help file.
About	Access the Wonderware Information Server version and copyright information.
Log Off	Log off the site. (This will close the session and release any client licenses for immediate reuse.)

The menu bar also shows a **Show Launch Pad** link visible at the far left when the Launch Pad is hidden.



For more information about the Launch Pad, see [Launch Pad](#) on page 16.

Content Pane

The content pane shows all the information for the site. You can maximize and minimize the content pane by double-clicking on the title bar.

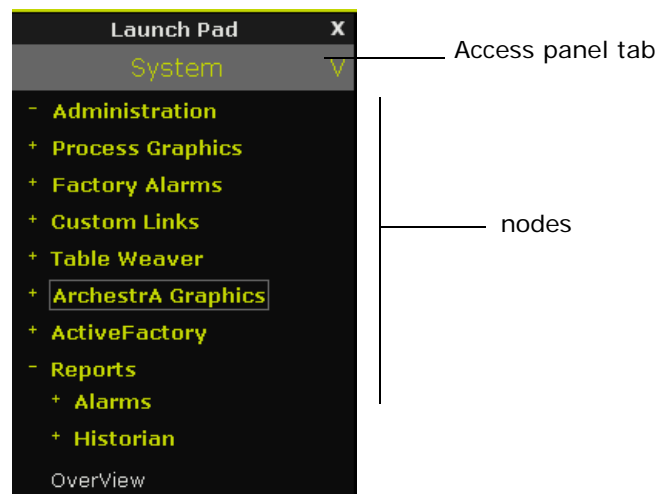
You can customize the content on the home page. For more information, see [Customizing the Home Page](#) on page 74.

Footer Bar

The footer bar shows the copyright information. You cannot change this information.

Launch Pad

The Launch Pad is located at the left side of the home page. The Launch Pad allows you to select access panels assigned to you and navigate to the various configuration pages, applications, and custom links.



The Launch Pad can include one or more access panels, which are collections of nodes that can be restricted to certain users. By default, there is one access panel, the **System** access panel. Each access panel includes a navigation tree, which is simply a hierarchy of nodes. For more information on access panels, see Chapter 6, "Configuring Access Panels." For more information on navigation trees, see "Navigation Trees" on page 18.

The **Administration** node provides access to configuration pages for all functionality. These nodes only appear to members of the Administrators role. For more information on administration nodes, see "Getting Started with Administrative Tasks" on page 18.

The **Process Graphics and Factory Alarms** nodes provide users access to pages related to applications, such as the converted and published InTouch browser-based windows and factory alarm pages.

The **Custom Links** node can be configured to include links to Internet/intranet web pages or documents residing on the web server. For more information, see "Creating Custom Links for Users" on page 76.

The **TableWeaver** node provides access to the TableWeaver, which lets you customize content and build content relationships for information from databases and related web pages. For more information, see Chapter 12, "TableWeaver."

The **Reports** node provides access to the Microsoft Reporting Services integrated reports. For more information, see "Using Arcestra Reporting" on page 93.

The **ActiveFactory** node provides access to the ActiveFactory reporting website feature, a preconfigured Wonderware Information Server component that lets you generate reports, trend history data, and build and execute SQL queries against data from the Wonderware Historian database. For more information, see Chapter 11, "ActiveFactory Reporting."

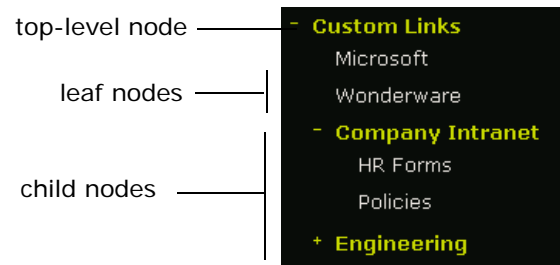
The **Arcestra Graphics** node provides access to view published WindowSet Displays that contain Arcestra Symbols.



Hide the Launch Pad by clicking the **Hide** button. To show it again, click the **Show Launch Pad** link at the far left of the menu bar.

Navigation Trees

A navigation tree consists of top-level nodes, "child" nodes, and "leaf" nodes. For example:



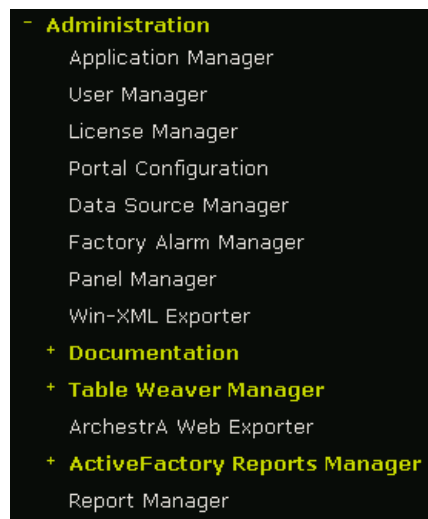
"Child" nodes are nodes that do not sit at the top level, but contain other nodes. A "leaf" node is a child node that contains a URL to a document, web page, web site, or other object, such as an InTouch browser-based windows, a chart, a data table, and so on.

To expand a collapsed node, either double-click it or select the plus sign icon to the left of the node name. You can collapse an expanded node by double-clicking on it or by selecting the minus sign icon.

Getting Started with Administrative Tasks

The **Administration** nodes provide access to configuration pages for security, data sources, applications, access panels, the license manager, customization, the Win-XML Exporter, the TableWeaver Manager, the Factory Alarm Manager, ActiveFactory Report Manager, the Microsoft Reporting Services Report Manager and the administration documentation.

None of the administration applications can be assigned to a custom access panel.



The following table briefly describes each link:

Link	Description
Application Manager	Configure or manage custom applications that have been integrated into the site.
User Manager	Assign users to system or application-specific roles. For more information, see Chapter 3, "Managing Security."
License Manager	View license and license usage information. For more information, see Chapter 2, "Managing Licensing."
Portal Configuration	Customize the site. For more information, see Chapter 7, "Customizing the Wonderware Information Server."
Data Source Manager	Manage the factory data providers and factory data source writeback privileges. For more information, see Chapter 4, "Configuring Data Sources."
Factory Alarm Manager	Configure current and history alarm information from the Wonderware InTouch HMI and the Wonderware Application Server alarm systems.
Panel Manager	Segregate objects, information, and links into access panels for users. For more information, see Chapter 6, "Configuring Access Panels."
Win-XML Exporter	Download the Wonderware Information Server Win-XML Exporter used for converting InTouch application windows. For more information, see your <i>Wonderware Information Server™ Win-XML Exporter Guide</i> or Help file.
Documentation	Access the complete Wonderware Information Server documentation set.
TableWeaver Manager	Present and navigate information from databases and related web pages in multiple formats. For more information, see Chapter 12, "TableWeaver."

Link	Description
ArchestrA Web Exporter	Download the ArchestrA Web Exporter to publish ArchestrA Symbols and InTouch windows to Wonderware Information Server. Download Microsoft Silverlight to view the published symbols and windows.
ActiveFactory Reports Manager	ActiveFactory Reports Manager allows you to view and delete Wonderware Information Server custom and pre-defined reports. For more information, see Chapter 11, "ActiveFactory Reporting."
Report Manager	Configure Wonderware Information Server reporting services and administer and update reports.

Chapter 2

Managing Licensing

Using the **License Manager** area of the Wonderware Information Server, you can view license details of Server, Tag Server Write back and Client licenses and monitor who is currently using a license.

About Wonderware Information Server Licensing

The Wonderware Information Server supports concurrent, named user, and name device licensing; that is, the licensing policy located on the server determines how many browsers can access Wonderware Information Server at any given time. All of the license information is managed by a dedicated license management component. When a client attempts to access Wonderware Information Server through Internet Explorer, Wonderware Information Server checks to see if a license is available and grants or denies access to the client depending on license availability.

You need enough client licenses for the number of users concurrently accessing the licensable areas of the Wonderware Information Server. Client access to these areas is on a first-come, first-served basis. For example, if the Wonderware Information Server is licensed for ten concurrent clients and an eleventh client attempts to access the server, a message appears at the client stating that there are no additional licenses available. However, if the eleventh client is an administrator, then he/she can access the administrative areas only.

A session is created when a client user accesses the Wonderware Information Server home page, and a license is issued for the use of the core Wonderware Information Server applications, such as Process Graphics, Factory Alarms, and Historical Data. A user can access these and all custom areas and still only use one license. All licenses are released for the user's session when the user clicks **Log Off** on the main menu bar. If a user closes the browser without logging off, the current license session times out after a certain length of time. By default, this is set to 20 minutes and can be changed by the web server administrator for the Wonderware Information Server application using the Internet Information Services console application.

The license management feature lets you monitor activity and usage on the Wonderware Information Server. Licensing information is displayed in text format to allow analysis of peak usage times and personnel.

For more information on creating connections, see About Wonderware Information Server Data Sources on page 45.

Helpful Hints

Before backing-up the Wonderware Information Server with ArcestrA Reports, change the server name in the SQL Server Reporting Services configuration to "localhost."

Viewing Active Licenses

You can view both the active licenses for the Wonderware Information Server and for any applications that have been integrated with the site. Active licenses indicate the license usage at the current time for each application.

To view active licenses

- 1 In the **System** access panel, expand **Administration** and then click **License Manager**. The **Active Licenses** page appears.

Active Licenses

This page displays the installed Portal and Client licenses along with information about the currently active issued client licenses.
Please select the Refresh button to update the currently issued active license information.

Usage Logging Configuration

Max records : Log License usage to database

Server Licenses

Feature	License Server	Type	Status	Expires
SVoyager_Portal	CONFIG11937VM0	device	acquired	1-mar-2010
ActiveFactory_RWS	CONFIG11937VM0	device	acquired	1-mar-2010

Tag Server Writeback

Tag Server Writeback is Licensed

Client Licenses

Feature	Type	User	Display	Date/Time Acquired
SVoyager	concurrent	wwuser	config11937vm0	2/11/2009 12:40:57 PM
SVoyager	concurrent	wwuser	config11937vm0	2/11/2009 12:41:28 PM

Different categories of license use appear:

- Server Licenses

Shows various server licenses used by the Wonderware Information server and their details including their Feature, License Server, Type, Status and Expiration Date.

- Tag Server Writeback

Shows the status (availability) of Tag Server Writeback license

- Client Licenses

Shows the Wonderware Information Server client licenses and ActiveFactory web client licenses in use with details including the Feature, Type, User, Display and Date/Time Acquired.

- 2 To change the maximum number of records displayed on this page, type the new value in the **Max records** box and then click **Refresh**.

Configuring License Usage Logging

Records of license use can be logged into the Wonderware Information Server administration database.

To turn logging on/off

- ◆ In the **System** access panel, expand **Administration** and then click **License Manager**. The **Active Licenses** page appears.

Click to select **Log License usage to database**.

 Log License usage to database

Tip The SQL Server administrator can trim the licensing history table by deleting records that are older than a given date.

Querying License History

The license history indicates prior license usage. It returns information on whether a user was allowed or denied access to an application, what time this occurred, how long a user had a license, who the user of the license is and how many licenses were available. This information enables the administrator to correctly configure the Wonderware Information Server with the appropriate number and type of licenses for the users.

To query license history

- 1 In the **System** access panel, expand **Administration** and then click **License Manager**. The **Active Licenses** page appears.
- 2 Click **Query License History**. The **Query License History** page appears.

Query License History

To display the Wonderware Information Server's historical license usage, enter the desired history time range and select the Show License History button to display the report.

March 2009						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
22	23	24	25	26	27	28
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

Start Date :

Time : << >>

Max records :

March 2009						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
22	23	24	25	26	27	28
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

End Date :

Time : << >>

- 3 Select the start and end dates for the query by using the calendars. You can also type in dates in the **Start Date** and **End Date** boxes. The valid format is: YYYY-MM-DD.

Note: All dates reflect the time of the Wonderware Information Server web server.

- 4 To specify an exact time of day for the query, type the start time and end time in the **Time** boxes. The valid 24-hour format is: HH-MM. You can use the arrow buttons to adjust the time in ten minute increments.
- 5 In the **Max records** box, type the number of license records to retrieve.
- 6 Click **Show License History**. The query is executed and the **License History** page appears with the results.

Viewing License History

The Wonderware Information Server keeps track of all license requests along with their response status (acquired/denied).

Note: You must have enabled license logging to use this feature. For more information, see [Configuring License Usage Logging](#) on page 24.

To view license history

- 1 In the **System** access panel, expand **Administration** and then click **License Manager**. The **Active Licenses** page appears.
- 2 Click **License History**. The **License History** page appears.

License History				
License records from Friday, February 13, 2009 12:00:00 AM to Friday, February 13, 2009 11:59:00 PM				
Licensed Transaction Log				
Feature	User	Display	Date/Time Acquired	Duration
SVoyager	SV	CONFIG11937VM0	2/13/2009 7:06:21 AM	00:00:00
Denied Transaction Log				
Feature	User	Display	Request Time	

3 This page shows historical data about license usage for the dates specified on the **Query License History** page. Column descriptions are:

- **Feature Name**
The type of license, such as Svoyager or Svoyager_portal.
- **User**
The Windows login ID of the license user.
- **Display**
The Display Name of the licensed application.
- **Issued Time**
The date and time the license was granted to the licensed application.
- **Duration**
The length of time the licensed application held the license.

The Denied Transaction Log shows historical data for denied license requests. Column descriptions are:

- **Feature Name**
The type of license, such as Svoyager or Svoyager_portal.
- **User**
The Windows login ID of the license user.
- **Display**
The Display Name of the licensed application.
- **Request Time**
The date and time the license request was made.

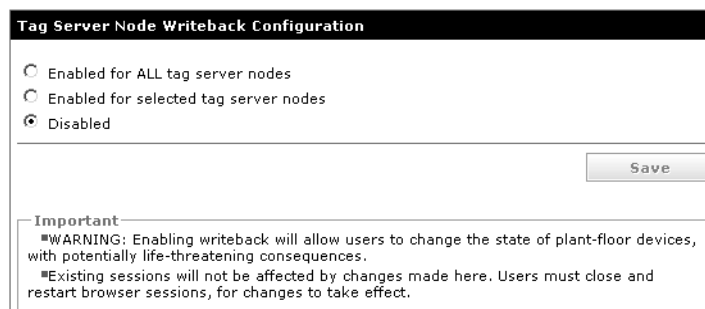
Enabling Tag Server Writeback

Tag server writeback is licensed by a separate license feature line.

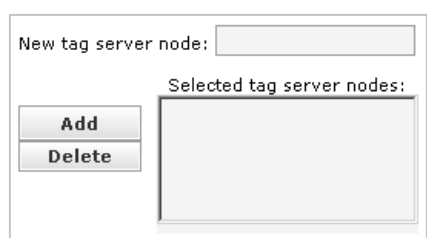
WARNING! Enabling writeback allows users to change the state of plant-floor devices. This can have potentially LIFE-THREATENING consequences!

To enable tag server writeback

- 1 In the **System** access panel, expand **Administration** and then click **License Manager**. The **Active Licenses** page appears.
- 2 Click **Tag Server Writeback**. The **Tag Server Writeback** page appears.



- 3 Click the appropriate option:
 - **Enabled for ALL tag server nodes**
Click to enable tag server writeback for all nodes.
 - **Enabled for selected tag server nodes**
The **New Tag Server Node** page appears.



Enter the name of the tag server node in the **New tag server node** box and click **Add**.

Note: This applies only to InTouch nodes. If a Galaxy Repository Node is deployed, you cannot writeback because the GR node details are not available. You are not allowed to write any values to the Galaxy node.

- **Disabled**

This is the default option. Tag server writeback is disabled for all Wonderware InTouch HMI nodes.

4 Click **Save**.

Changes to the tag server writeback do not go into effect until the sessions are ended and restarted. Existing sessions are not affected by this change until you restart the Wonderware Runtime RDB handler service.

For more information on how to use the Invensys License Manager, see the *Invensys License Manager guide*.

Chapter 3

Managing Security

Wonderware Information Server can be deployed in an Internet environment. Since this connects sensitive industrial information to the Internet and allows for the enabling of write-back to plant controllers, the need for tight security is paramount. Wonderware Information Server controls access to plant floor information at the site, user, and data source levels.

The first level of security is access to the Wonderware Information Server web server itself. Access to the Wonderware Information Server is achieved by tight integration with Microsoft Windows security (Kerberos) and the security mechanisms employed by Internet Information Services.

For additional security, the Wonderware Information Server also supports Secure Sockets Layer (SSL), password authentication, digital certificates, and Windows login dialog boxes. Wonderware Information Server is installed in a "safe state." This means that the user who installs and configures Wonderware Information Server will be the only person who has administrative privileges on Wonderware Information Server. This user will have administrative privileges and can add additional users. However, by default, the "Everyone" Windows group (all authenticated users from the same domain as the portal) is given "Read-Only" access.

The second level of security determines what casual users (or groups of users) will be able to do once they access the site. The administrator can grant specific users (or groups) privileges by assigning them to pre-configured security roles.

The third level of security is for write-back capability for factory data sources, such as those used for InTouch browser-based windows. Enabling write-back capability requires you to have a specific write-back license installed in the License Utility.

WARNING! Enabling write-back allows users to change the state of plant-floor devices with potentially life-threatening consequences.

Besides this, when you install and configure Wonderware Information Server, some pre-defined SQL Server user accounts (svSysAdmin, svUser and svSuper) are created to access information in the Wonderware Information Server database. Whenever you configure the Wonderware Information Server feature using the Configurator, a new random password is generated which is stored encrypted. This process is automated and does not require any user intervention.

WARNING! User names and Passwords for these pre-defined SQL Server accounts should not be changed. If the passwords for these SQL Server accounts is manually changed outside of the Configurator, it will break some features of Wonderware Information Server. In order to fix this issue, you must re-configure the Wonderware Information Server feature in the Configurator by running the "Configure" option, which will generate a new random password.

Securing Access to the Wonderware Information Server

The Wonderware Information Server uses the integrated Windows authentication (Kerberos) security mechanism provided with Microsoft Windows Server and Internet Information Services (IIS) to grant users access to the site itself.

IIS also offers a variety of ways to further restrict access to the web site. Using IIS, you can grant or deny access based on IP address, domain name, or computer name. Using NTFS, you can assign ACLs (Access Control Lists) to files directly on the system.

When Wonderware Information Server is installed, a COM+ package for Wonderware Information Server is added to the Windows Component Services administration console. This package integrates to the Windows Active Directory User database and authorizes users authenticated within the Windows domain to perform actions or execute links on the site through an MTS based role system attached to the COM+ package. Users can be assigned to roles either directly by using the Component Services console or by using the Wonderware Information Server User Manager.

For additional security, the Wonderware Information Server also supports Secure Sockets Layer (SSL), and digital certificates. To use digital certificates, you need to install a digital server certificate issued by a third-party company.

Tip The IIS documentation is located on the web server as an online help file and provides helpful information on upgrading, security settings, and other valuable information about the web server. Become familiar with this information to personalize your web server to your companies policies and requirements.

Types of Access for Internet Information Services

Access to the web server is divided into two different categories:

- Authenticated access
- Anonymous access

With authenticated access, users are allowed to access the site if they are valid members of the same Windows domain as the web server or a domain trusted by the web server domain and are a member of at least the Read-Only security role.

With anonymous access, everyone has access to the site, regardless of who they are, although they cannot access the administrative functions or write-back to factory data sources.

Important: Wonderware **does not** recommend anonymous access. The Wonderware Information Server supports both types of requests, but uses authenticated access by default. Wonderware Information Server also requires the default web site for the web server to enable integrated Windows authentication before write-back is allowed. This is configured automatically at the time of installation.

Authenticated access

Wonderware recommends that you use authenticated access to protect your web site from unknown users. The authenticated access method is divided into the following additional options:

- **Basic authentication**

Basic authentication sends passwords over the network as clear text. This type of authentication transmits the passwords across the network unencrypted, making it easier for hackers to intercept usernames and passwords. This type of authentication is not recommended.

To make this secure, Wonderware recommends that you use SSL and client certificates to authenticate users when using basic authentication. Client certificates are issued by trusted third-party organizations. This option may be required for some brands of proxy servers. For more information, see *Using Proxy Servers* on page 36.

- **Digest authentication for Windows domain servers**

This method requires the support of a Windows domain controller. This method sends a hash across the network, rather than a password, and works across proxy servers and firewalls.

- **Integrated Windows authentication**

This is the recommended and default setting for Wonderware Information Server. Integrated Windows authentication uses a cryptographic exchange with the user's Internet Explorer web browser to confirm the identity of the user. During installation, Wonderware Information Server is automatically configured to use the integrated Windows authentication security method. Using integrated Windows authentication is a good way to secure your web server and who has access to the Wonderware Information Server.

When a client tries to access Wonderware Information Server, IIS checks to make sure they are an authenticated user in your Windows domain before allowing them access to the site.

Integrated Windows authentication is very secure because it does not pass the username and password over the network. Instead, the user's browser provides the password to the web server through a cryptographic exchange with hashing.

For information on configuring authenticated access, see *Configuring Security for Internet Information Services* on page 34.

Anonymous access

Important: Wonderware does NOT recommend that you use anonymous access authentication, because this allows anyone to access your site.

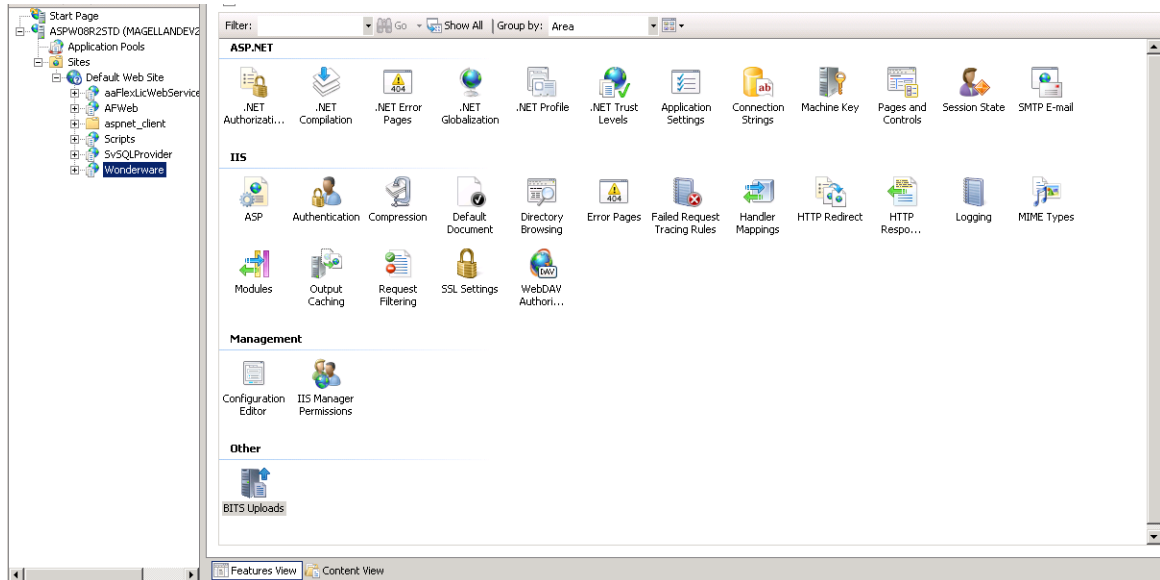
Use the IIS administration console to configure the web server to use anonymous access. For more information, see *Configuring Security for Internet Information Services* on page 34.

If you select anonymous access as the authentication method, then writeback from the site to the plant floor devices is disabled.

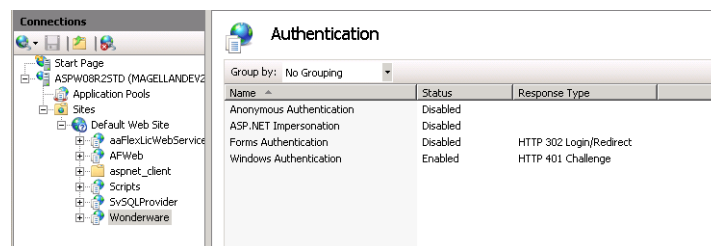
Configuring Security for Internet Information Services

To configure security for Internet Information Services

- 1 On the Windows **Start** menu, point to **Programs**, point to **Administrative Tools**, and then click **Internet Services Manager**. The **Internet Information Services** console appears.



- 2 Expand the computer name and then expand **Default Web Site**.
- 3 Select and right-click the **Wonderware** node, and then click **Switch to Features View**.
- 4 In the IIS section, right-click the **Authentication** feature, and then click **Open Feature**. The **Authentication Method** window appears.



- 5 Configure the access type. For more information, see "Types of Access for Internet Information Services" on page 32.

Firewall/DMZ Compatibility

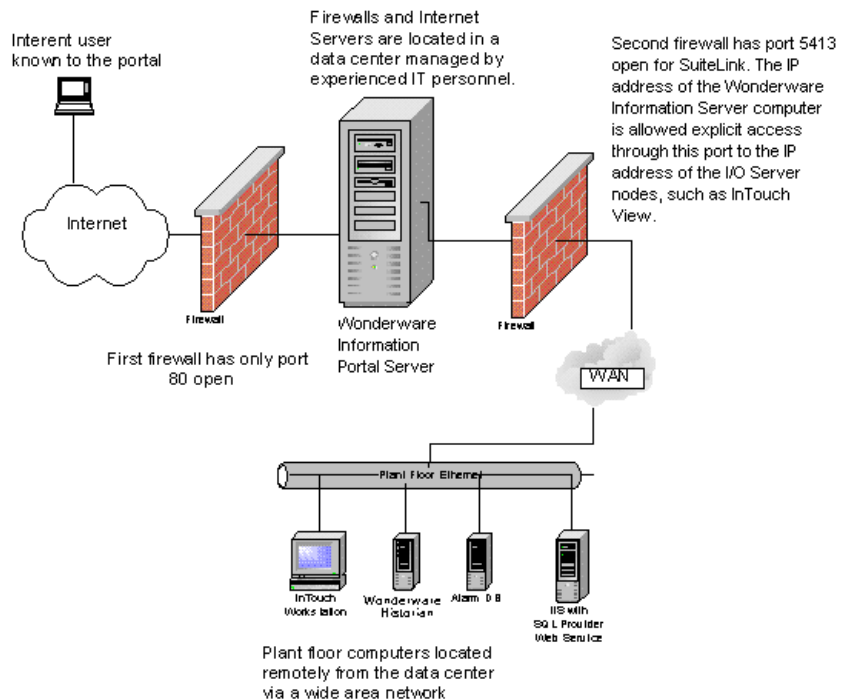
The Wonderware Information Server is designed to be "firewall compatible." It supports connections between itself and one or more clients through port 80 in a firewall, the standard HTTP port.

It is also DMZ-compatible. The web server can exist between one outward facing firewall and one inward facing firewall. In this configuration, the inner firewall needs to open the SuiteLink port 5413 to access the plant floor I/O Servers on the secure plant floor network.

If SSL is enabled on the node, you must open port 443.

If a remote database server is being used, the SQL TCP port 1433 should be opened.

For more information, see About Wonderware Information Server Data Sources on page 45. Using this technique, you provide the most security to your plant floor SQL Server installations.



For more information about your organization's firewall, contact your Internet administrator.

Using Proxy Servers

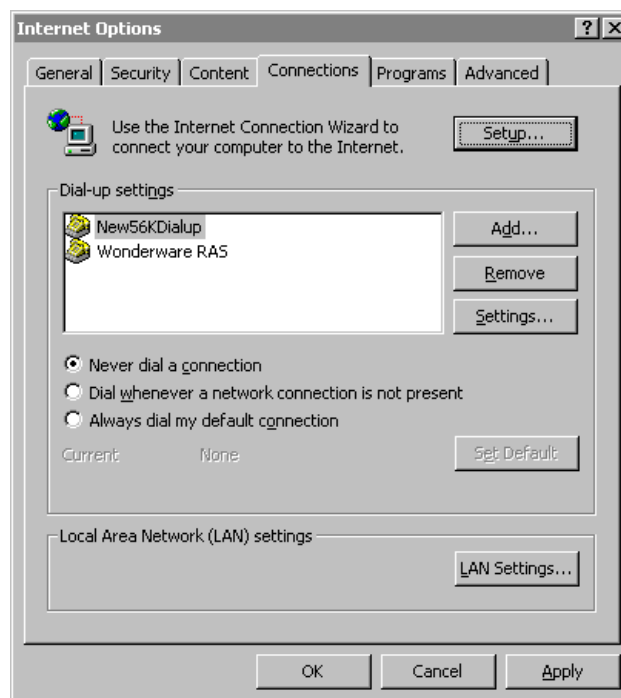
Wonderware Information Server supports most up-to-date proxy servers. In some cases, older proxy servers do not support the SOAP protocol. If the Wonderware Information Server web server resides on the Internet, and if the clients are behind this type of proxy server, failures occur within many of the applications that use XML method calls. Clients in an intranet setting should bypass the proxy server, a typical setting.

Wonderware Information Server is tested successfully with Microsoft proxy servers. If you are using another type of proxy server, you need to either configure the client to bypass the proxy server or have basic authentication enabled. It is recommended that you use SSL in this case. The bypass must be configured on the client computer.

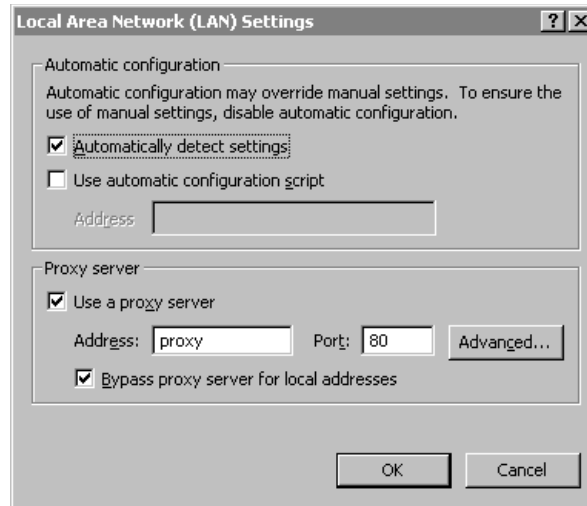
For information on enabling basic authentication, see *Types of Access for Internet Information Services* on page 32.

To configure Internet Explorer to bypass a proxy server

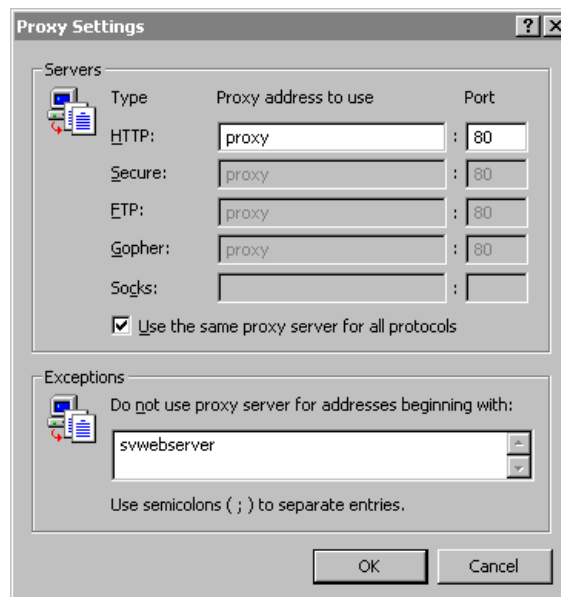
- 1 On the **Tools** menu, click **Internet Options**. The **Internet Options** dialog box appears.
- 2 Click the **Connections** tab.



- 3 Click **LAN Settings**. The **Local Area Network (LAN) Settings** dialog box appears.



- 4 Click **Automatically detect settings**.
- 5 Click **Use a proxy server**.
- 6 Click **Bypass proxy server for local addresses**.
- 7 Click **Advanced**. The **Proxy Settings** dialog box appears.



- 8 In the **Exceptions** window, type the name or URL of the web server computer on which Wonderware Information Server is installed.
- 9 Click **OK**.
- 10 Click **OK** to close the **Local Area Network (LAN) Settings** dialog box.
- 11 Click **OK** to close the **Internet Options** dialog box.

The client now bypasses the proxy server when accessing the Wonderware Information Server.

Giving Users Privileges Via Roles

The Wonderware Information Server administrator can give users privileges to read, write, or configure the Wonderware Information Server by assigning them to a pre-defined security role. Roles are authorization mechanisms used by applications within the site to determine user actions. A user assigned to a particular role inherits the authorization associated with that role, which may have a different context for different applications.

The pre-defined system roles apply to the entire Wonderware Information Server, except for the Reporting Services roles which are managed from the Reporting Services panel. For information on application-specific roles, see "Adding a User to a Role" on page 39.

The Wonderware Information Server includes the following pre-defined security roles:

Role	Privileges
Administrator	Has access to all information and has full administrative privileges, such as configuring applications and data sources, assigning users to roles, creating access panels, and customizing the site. Can write back values to factory data sources when running browser-based windows.
Engineer	If the System access panel has been enabled for all users, users in this role have user-level access to the site, but no administrative capabilities. Otherwise, a user in this role has the access assigned to them by the administrator (via custom access panels) and can write back values to factory data sources when running process graphics.

Role	Privileges
Read Only User	Has user-level access to the site, but no administrative capabilities. Cannot configure or customize the site, or create objects. Cannot write back values to factory data sources when running process graphics.
No Access User	No access to the Wonderware Information Server. Cannot access the home page, even if authenticated by IIS as a valid Windows domain user. The No Access User role overrides all the other roles. This means that if a user is assigned to both the Administrator role and the No Access role, the user has no access to the Wonderware Information Server.

Wonderware Information Server automatically detects all domain controllers on the network and lists users from each Windows domain. You simply select the users or groups to add to the pre-defined security roles. If you need to add a user to the domain, contact the domain administrator. By default, the Windows user group "Everyone" is automatically added to the Read Only role. You may remove the "Everyone" group and explicitly add users you want to have access to the Wonderware Information Server.

If you do not have a domain controller in the network, the "Everyone" group refers to all local users created on the Wonderware Information Server server computer. To add local users, see the Windows 2008 Server documentation.

Adding a User to a Role

Individual Windows users or groups may be added to each role. Users and groups must exist in the Windows security system, either in a trusted domain or on the local computer. For instructions on creating new Windows users, see your Microsoft documentation.

A single user or group can belong to multiple Wonderware Information Server roles.

Important: Make sure the users that you are adding to a role does not include any special characters such as: ', \$, space and so on. Users having letters with accents, é, à... are acceptable.

To add a user to a role

Note: To add or remove a user, you must be logged in as and have administrator privileges on the portal machine.

- 1 In the **System** access panel, expand **Administration** and then click **User Manager**. The **User Manager** page appears.

User Manager

Use this page to add or remove users from security roles. To add a user to a role, select the desired role, select the domain the user belongs to, highlight the user in the Domain Users list and select the Add button. To remove a user from a role, select the desired role, highlight the user in the Role Users list and select the Remove button.

Role: Administrator (System) Domain: LAN2000

User/Group Names:

Retrieve Users from Selected Domain

Role Users: LAN2\USER
WIS\aaReportsAdministrators

Domain Users:

<< Add Remove >>

Status: Domain List Loaded (6 domains)

- 2 In the **Role** list, click the role to which you want to add a user(s). A list of all users who are currently assigned to that role appears in the **Role Users** window.
- 3 In the **Domain** list, click the domain that contains the user(s) to add. Click **Retrieve Users from Selected Domain** to show a list of all users in that domain appears in the **Domain Users** window.
- 4 If you know the domain **User/Group Name**, you can type the name into the text box.
- 5 Select the user or user group you want to add.
- 6 Click **<< Add** to assign the user to the role. Or, click **Remove >>** to remove a user from a **User Role**.

Removing a User from a Role

Changes to the users access rights do not take effect until the user logs off. To effect changes immediately, you must stop and re-start the Internet Information Services. The exception to this rule is for process graphic windows. The user's security role is checked each time a new window is opened. The user does not need to log off to obtain a new role assignment.

To remove a user from a role

- 1 In the **System** access panel, expand **Administration** and then click **User Manager**. The **User Manager** page appears.
- 2 In the **Role** list, click the role to which you want to remove a user(s). A list of all users who are currently assigned to that role appears in the **Role Users** window.
- 3 Select the user you want to remove.
- 4 Click **Remove >>**.

Updating the Windows Login for Wonderware Information Server Components

Because Wonderware Information Server is designed to run without anyone logged on locally to the server, its COM+ components must run under the authority of a valid Windows account.

These components use the Windows login that was specified during the Wonderware Information Server configuration, obtained from the user configuration at the time of the Wonderware Information Server configuration. This can be done by re-configuring the Wonderware Information Server. This updates the COM+ user credentials, if the account expires or is deleted.

For Data Source Management a stored user, svSysAdminUser, is provided for linked server management.

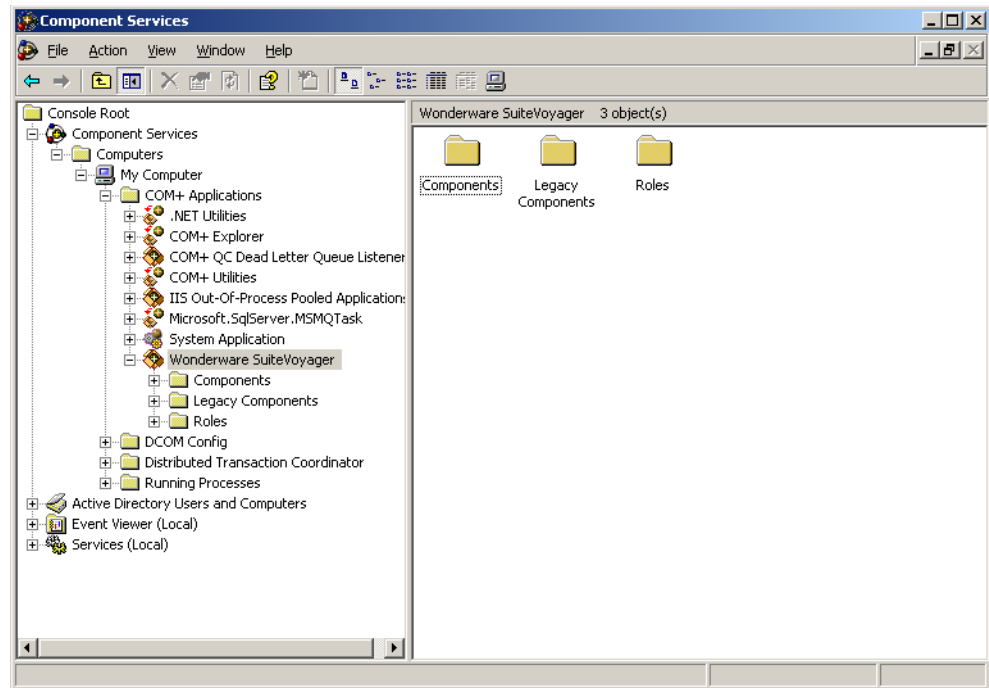
For example, in some organizations, Windows passwords are set to automatically expire. Also, you may want to manually change the Windows password from time to time for security purposes.

If the Windows login information has changed, you need to reconfigure it for Wonderware Information Server using the Windows Component Services console.

To reconfigure the login

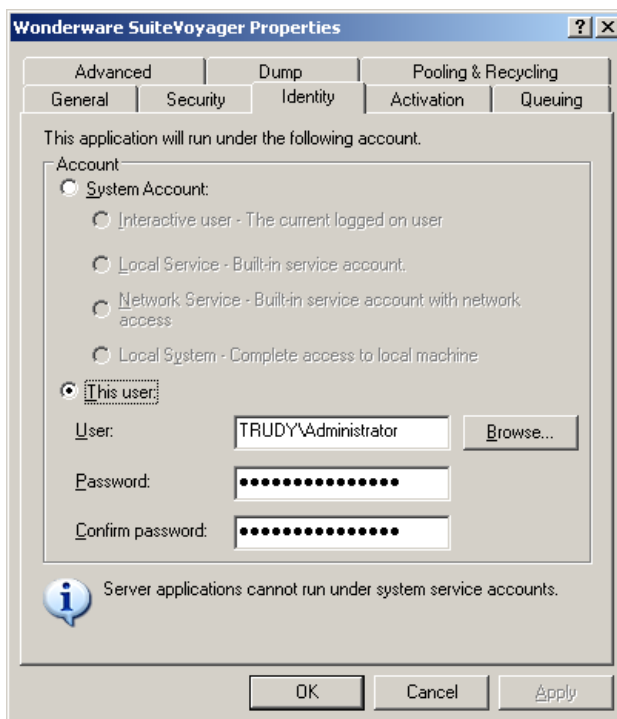
Note: You may also use the Wonderware Configurator tool to perform this task.

- 1 On the Windows **Start** menu, point to **Programs**, point to **Administrative Tools**, and then click **Component Services**. The **Component Services** console appears.



- 2 Expand **Component Services** and then expand **Computers**.
- 3 Expand **My Computer**, and then expand **COM+ Applications**.
- 4 Right-click **Wonderware Information Server** and then click **Properties**. The **Wonderware Information Server Properties** dialog box appears.

- 5 Click the **Identity** tab.



- 6 In the **Password** and **Confirm Password** boxes, type the updated password.
- 7 Click **OK**.
For more information, see your Microsoft Windows documentation.

Chapter 4

Configuring Data Sources

Using the **Data Source Manager** area of Wonderware Information Server, you can configure the different data sources used by Wonderware Information Server.

About Wonderware Information Server Data Sources

All external data sources configured for Wonderware Information Server use a common definition and configuration, called a shared data source, regardless of the component accessing the database. Shared data sources are shared by Wonderware Information Server components such as ActiveFactory reports, TableWeaver, Factory Alarms, and ArcestrA reporting. This lets you have a single data source and use it in multiple components.

Adding Data Sources

Shared data sources are named and configured by the administrator and can then be referred to by name within Wonderware Information Server applications. Shared data source names must be unique within a Wonderware Information Server installation.

The Data Source Manager includes five predefined data source types:

- Alarm
- Historian
- Production
- OLE DB
- Other

Each data source type can have multiple named data source instances. However, only one of each data source instance can be defined as the default. The default data source is used by ArcestrA Reporting. For more information on ArcestrA Reporting, see "Using ArcestrA Reporting" on page 93.

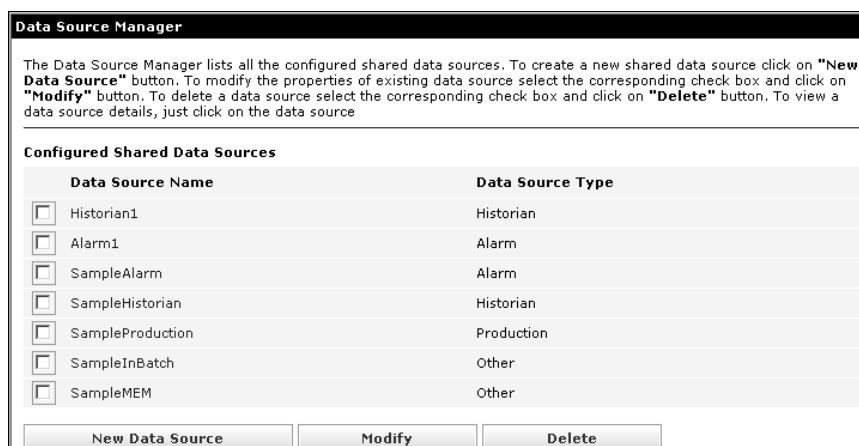
Note: The ArcestrA Reporting Services use the default data source for reporting. If the data source used for reporting is not the default, the report fails. Be careful when changing the Default Data Source setting. For more information, see "Using ArcestrA Reporting" on page 93.

Adding Alarm Data Sources

Wonderware Information Server supports the Distributed Alarm System, from the Wonderware Alarm Manager. Alarms can originate from InTouch or the Wonderware Application Server.

To add an alarm data source

- 1 In the **System** access panel, expand **Administration** and then click **Data Source Manager**. The **Data Source Manager** window appears.



- 2 Click **New Data Source**. The **Add Shared Data Source Manager** window appears.

Data Source Manager

Use this page to create a new shared data source. First select the type of data source you want to create. Enter all the information related to the data source and click on **"Save"** button to save the new shared data source. Optionally you can also click on **"Test Connection"** to test the connection validity. Click on **"Cancel"** button to cancel this operation.

Add New Shared Data Source

Data Source Type * : Select Connection Type

Save Cancel

- 3 In the **Data Source Type** list, select **Alarm**.

Data Source Manager

Use this page to create a new shared data source. First select the type of data source you want to create. Enter all the information related to the data source and click on **"Save"** button to save the new shared data source. Optionally you can also click on **"Test Connection"** to test the connection validity. Click on **"Cancel"** button to cancel this operation.

Add New Shared Data Source

Data Source Type * : Alarm

Save Cancel

The **Add New Shared Data Source** window appears.

Data Source Manager

Use this page to create a new shared data source. First select the type of data source you want to create. Enter all the information related to the data source and click on **"Save"** button to save the new shared data source. Optionally you can also click on **"Test Connection"** to test the connection validity. Click on **"Cancel"** button to cancel this operation.

Add New Shared Data Source

Data Source Type : Alarm

Data Source Name : Alarm2

Description : Enter the Alarm Data Source description here

ServerName :

Database : WWALMDB

Integrated Security :

User Name : wwUser

Password :

Default for this Data Source Type :

Connection Timeout(in Sec) : 0

Query Timeout(in Sec) : 0

Provider : SQLNCLI10

Save Cancel Test Connection

- 4 Enter information as follows:
- In the **Data Source Name** and **Description** boxes, type a unique name identifying the data source and a brief description. The data source name is the name you identify the database with (such as PrimaryAlarms or AlarmsTank 3) but it is not necessarily the actual database name.
 - In the **Server** box, type the server name. The server name is not preceded by backslashes.
 - In the **Database** box, type the name of the database as it appears on the server.

- 5 Select one of the following security settings:
 - Check the **Integrated Security** box to enable integrated Windows security for the data source.
 - Type the SQL User Name and Password to access the database.
- 6 Check the **Default for this Data Source Type** box to make this data source the default for this data source type. The Default shared data source is the data source used by the Arcestra Reports component.
- 7 In the **Connection Timeout(in Sec)** and the **Query Timeout(in Sec)** boxes, type values for the connection and query timeouts.
- 8 In the **Provider** box, type the name of the provider based on the SQL Server version installed. If, for example, you have SQL Server 2008 R2 installed, type SQLNCLI10. If you have SQL Server 2012 installed, type SQLNCLI11.

When you have typed the data source information in the window, click **Test Connection**. The test results appear at the bottom of the window. Click **Save** to save the data source and return to the **Data Source Manager** window.

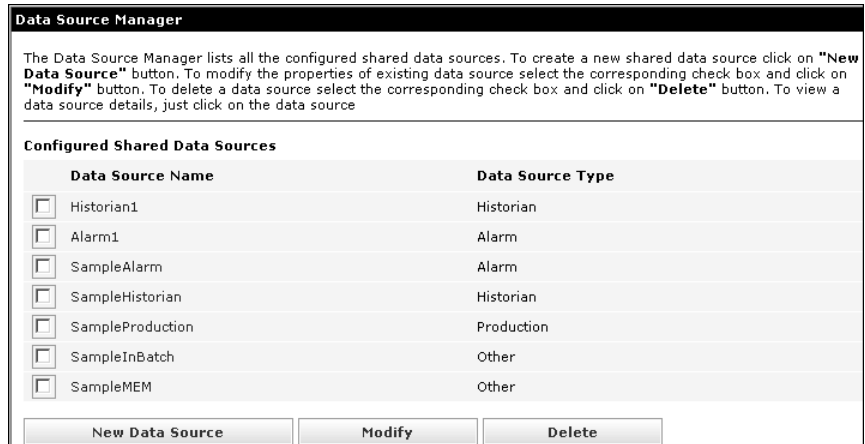
Adding Historian Data Sources

Wonderware Information Server uses the search engine, the tag finder, and the real-time trend to access Historian data. To use these features, you need to add the Wonderware Historian as a data provider. These features depend on the Wonderware Historian for tag definitions and values.

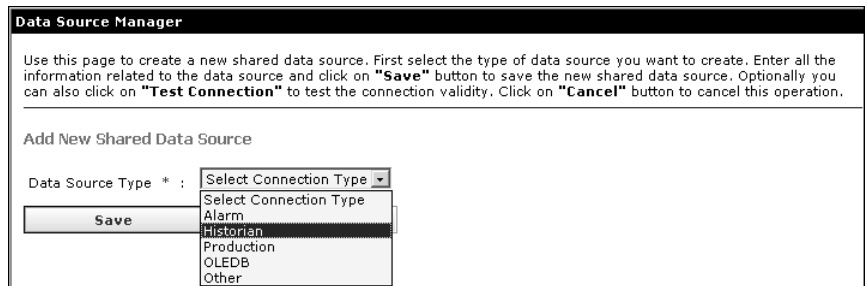
Any tag for which you want to retrieve history data must be defined in the Wonderware Historian database.

To add a historian data source

- 1 In the **System** access panel, expand **Administration** and then click **Data Source Manager**. The **Data Source Manager** window appears.



- 2 Click **New Data Source**. The **Add Shared Data Source Manager** window appears.
- 3 In the **Data Source Type** list, select **Historian**.



- 4 In the **Data Source Type** list, click **Alarm**. The **Add New Shared Data Source** window appears.

Data Source Manager

Use this page to create a new shared data source. First select the type of data source you want to create. Enter all the information related to the data source and click on "**Save**" button to save the new shared data source. Optionally you can also click on "**Test Connection**" to test the connection validity. Click on "**Cancel**" button to cancel this operation.

Add New Shared Data Source

Data Source Type : Historian

Data Source Name : Historian2

Description : Enter the Historian data source description here

ServerName :

Database : Runtime

Integrated Security :

User Name : wwUser

Password :

Default for this Data Source Type :

Connection Timeout(in Sec) : 0

Query Timeout(in Sec) : 0

Provider : SQLNCLI10

Has HTTP Mode :

URL Connection :

Save Cancel Test Connection

- 5 Enter information as follows:
- In the **Data Source Name** and **Description** boxes, type a unique name identifying the data source and a brief description. The data source name is the name you identify the database with (such as HistoryMain or InSQL) but it is not necessarily the actual database name.
 - In the **Server** box, type the server name. (The server name is not preceded by backslashes.)
 - In the **Database** box, type the name of the Wonderware Historian Runtime database as it appears on the server.
- 6 Select one of the following security settings:
- Check the **Integrated Security** box to enable integrated Windows security for the data source.
 - Type the SQL User Name and Password to access the database.
- 7 Check the **Default for this Data Source Type** box to make this data source the default for this data source type.
- 8 In the **Connection Timeout(in Sec)** and the **Query Timeout(in Sec)** boxes, type values for the connection and query timeouts.
- 9 In the **Provider** box, type the name of the provider based on the SQL Server version installed. If, for example, you have SQL Server 2008 R2 installed, type SQLNCLI10. If you have SQL Server 2012 installed, type SQLNCLI11.

After you type the data source information in the window, click **Test Connection**. The test results appear at the bottom of the window. Click **Save** to save the data source and return to the **Data Source Manager** window.

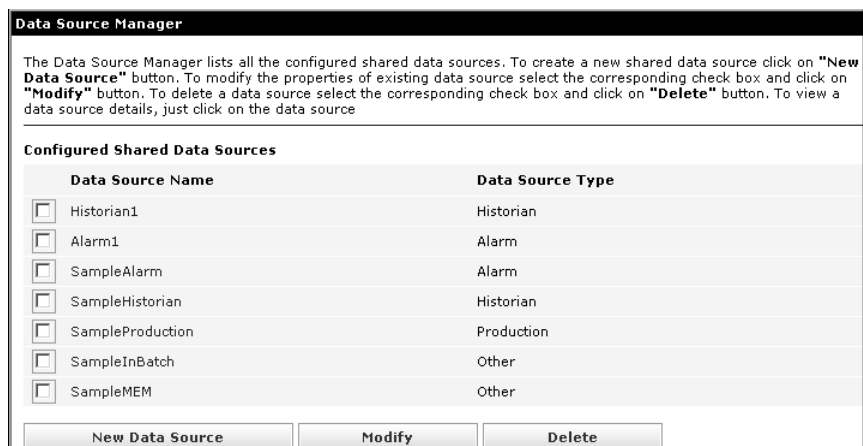
If you are using the ActiveFactory Web reporting feature, you must set the connection timeout for the data source to some other value than 0 (the default) so that Internet Explorer doesn't time out when Wonderware Information Server tries to connect to the Wonderware Historian database.

Adding Production Data Sources

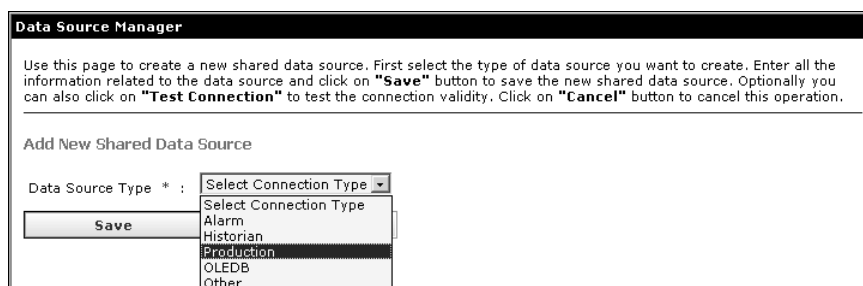
Production data sources are InTrack or InBatch databases. You can have one or more production data sources, depending on your system configuration.

To add a production data source

- 1 In the **System** access panel, expand **Administration** and then click **Data Source Manager**. The **Data Source Manager** window appears.



- 2 Click **New data Source**. The **Add Shared Data Source Manager** window appears.
- 3 In the **Data Source Type** list, select **Production**.



- 4 In the **Data Source Type** list, select **Production**. The **Add New Shared Data Source** window appears.

Data Source Manager

Use this page to create a new shared data source. First select the type of data source you want to create. Enter all the information related to the data source and click on **"Save"** button to save the new shared data source. Optionally you can also click on **"Test Connection"** to test the connection validity. Click on **"Cancel"** button to cancel this operation.

Add New Shared Data Source

Data Source Type : Production

Data Source Name : Production2

Description : Enter the Production data source description

ServerName :

Database : ProdDB

Integrated Security :

User Name :

Password :

Default for this Data Source Type :

Connection Timeout(in Sec) : 0

Query Timeout(in Sec) : 0

Provider : SQLNCLI

Save Cancel Test Connection

- 5 Enter information as follows:
- In the **Data Source Name** and **Description** boxes, type a unique name identifying the data source and a brief description. The data source name is the name you identify the database with (such as ProductionFloor or AssemblyTrack 1) but it is not necessarily the actual database name.
 - In the **Server** box, type the server name. The server name is not preceded by backslashes.
 - In the **Database** box, type the name of the database as it appears on the server.
- 6 Select one of the following security settings:
- Check the **Integrated Security** box to enable integrated Windows security for the data source.
 - Type the SQL User Name and Password to access the database.
- 7 Check the **Default for this Data Source Type** box to make this data source the default for this data source type.
- 8 In the **Connection Timeout(in Sec)** and the **Query Timeout(in Sec)** boxes, type values for the connection and query timeouts.
- 9 In the **Provider** box, type the name of the provider based on the SQL Server version installed. If, for example, you have SQL Server 2008 R2 installed, type SQLNCLI10. If you have SQL Server 2012 installed, type SQLNCLI11.
- 10 After you configure the data source information, click **Test Connection**. The test results appear at the bottom of the window.

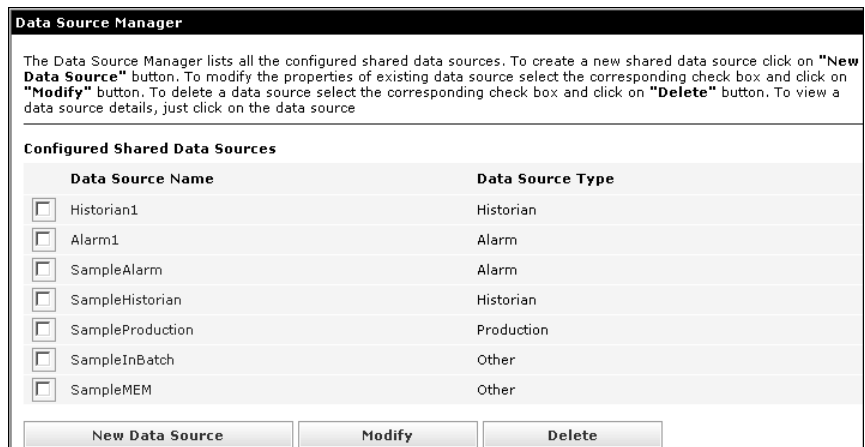
- 11 Click **Save** to save the data source and return to the **Data Source Manager** window.

Adding OLE DB Data Sources

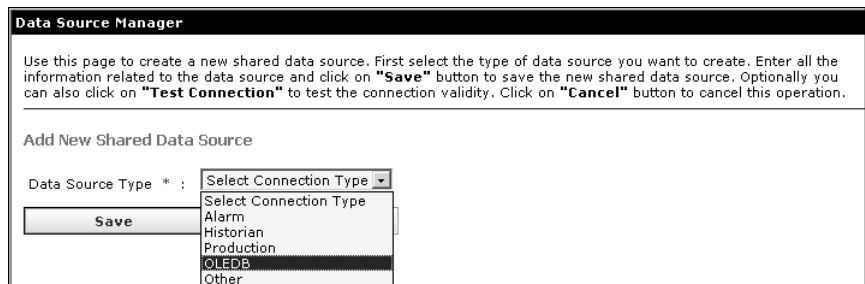
OLE DB data sources are used for setting up data sources using OLE DB compatible databases.

To add an OLE DB data source

- 1 In the **System** access panel, expand **Administration** and then click **Data Source Manager**. The **Data Source Manager** window appears.



- 2 Click **New data Source**. The **Add Shared Data Source Manager** window appears.



- 3 In the **Data Source Type** list, select **OLEDB**. The **Add New Shared Data Source** window appears.

- 4 Enter information as follows:
- In the **Data Source Name** boxes, type a unique name identifying the data source. The data source name is the name you identify the database with (such as LabMain or OracleMaintenance) but it is not necessarily the actual database name.
 - In the **User Name** and **Password** boxes, type the user name and password to access the database.
 - In the **Connection String** box, type a connection string for the database.
- 5 After you type the data source information in the window, click **Test Connection**. The test results appear at the bottom of the window.
- 6 Click **Save** to save the data source and return to the **Data Source Manager** window.

OLE DB Database Connection String Examples

You can connect to various OLE DB providers such as Oracle, standard SQL Server, and Access.

Connect to the Microsoft OLE DB provider for Oracle

```
Provider=msdaora;Data Source=MyOracleDB;User
Id=myUsername;Password=myPassword;
```

Connect to the Oracle OLE DB provider

```
Provider=OraOLEDB.Oracle;Data Source=MyOracleDB;User
Id=myUsername;Password=myPassword;
```

Connect to the SQL Server OLE DB provider

```
Provider=sqloledb;Data Source=myServerAddress;Initial
Catalog=myDataBase;User Id=myUsername;Password=myPassword;
```

Connect to the Microsoft Access OLE DB provider

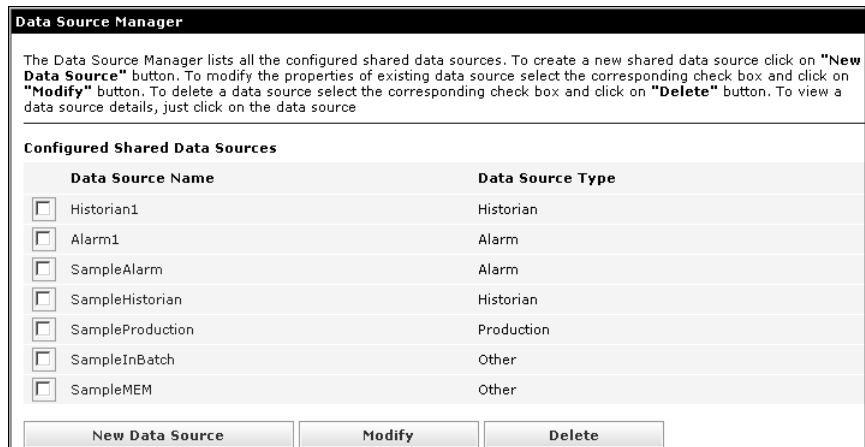
```
Provider=Microsoft.Jet.OLEDB.4.0;Data
Source=C:\mydatabase.mdb;User Id=admin;Password=;
```

Adding Other Data Sources

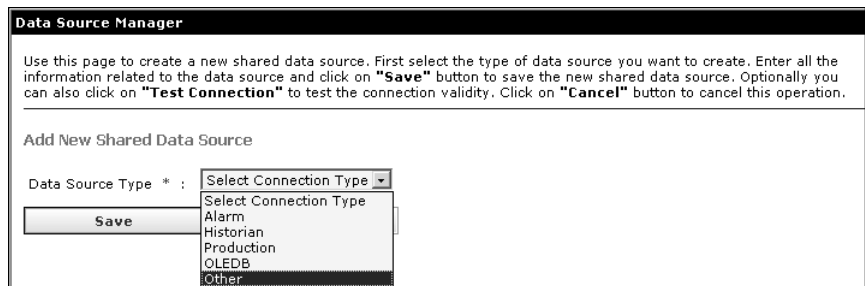
Other data sources are any Microsoft SQL databases.

To add an other data source

- 1 In the **System** access panel, expand **Administration** and then click **Data Source Manager**. The **Data Source Manager** window appears.



- 2 Click **New data Source**. The **Add Shared Data Source Manager** window appears.



- 3 In the **Data Source Type** list, select **Other**. The **Add New Shared Data Source** window appears.

- 4 Enter information as follows:
 - In the **Data Source Name** and **Description** boxes, type a unique name identifying the data source and a brief description. The data source name is the name you identify the database with, such as ProductionFloor or AssemblyTrack 1, but it is not necessarily the actual database name.
 - In the **Server** box, type the server name. (The server name is not preceded by backslashes.)
 - In the **Database** box, type the name of the database as it appears on the server.
- 5 Select one of the following security settings:
 - Check the **Integrated Security** box to enable integrated Windows security for the data source.
 - Type the SQL User Name and Password to access the database.
- 6 Check the **Default for this Data Source Type** box to make this data source the default for this data source type.
- 7 In the **Connection Timeout(in Sec)** and the **Query Timeout(in Sec)** fieldfields, type values for the connection and query timeouts.

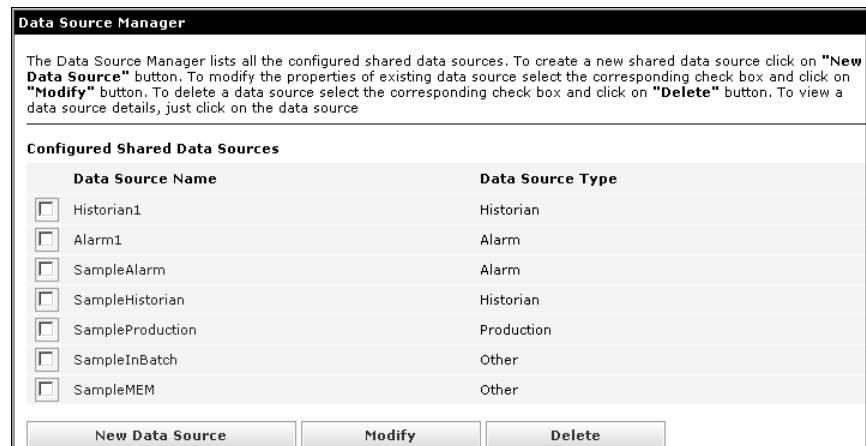
- 8 In the **Provider** box, type the name of the provider based on the SQL Server version installed. If, for example, you have SQL Server 2008 R2 installed, type SQLNCLI10. If you have SQL Server 2012 installed, type SQLNCLI11.
- 9 After you type the data source information in the window, click **Test Connection**. The test results appear at the bottom of the window.
- 10 Click **Save** to save the data source and return to the **Data Source Manager** window.

Editing Data Sources

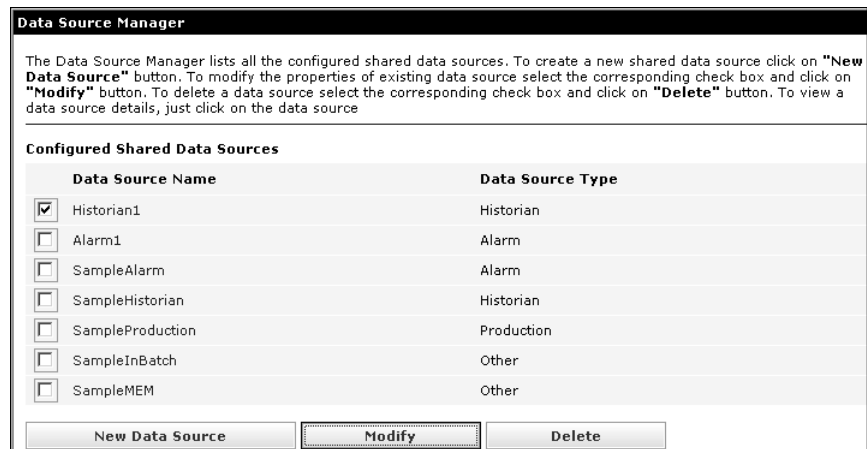
Data sources may need to be edited to update information.

To edit data source information

- 1 In the **System** access panel, expand **Administration** and then click **Data Source Manager**. The **Data Source Manager** window appears.



- 2 Place a check next to the name of the data source you want to modify. The information for the data source appears at the bottom of the **Data Source Manager** window.



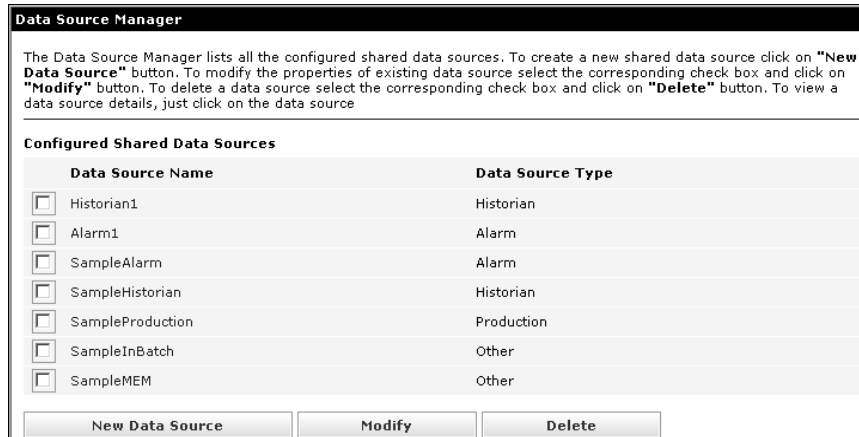
- 3 Select the check box for the respective Data Source and click **Modify**. The **Modify Shared Data Source** window appears. This window is the same as the **Add New Shared Data Source** window for that data type.
- 4 Change the information as needed.
After you type the data source information in the window, click **Test Connection**. The test results appear at the bottom of the window.
- 5 Click **Save** to save the data source and return to the **Data Source Manager** window.

Deleting Data Sources

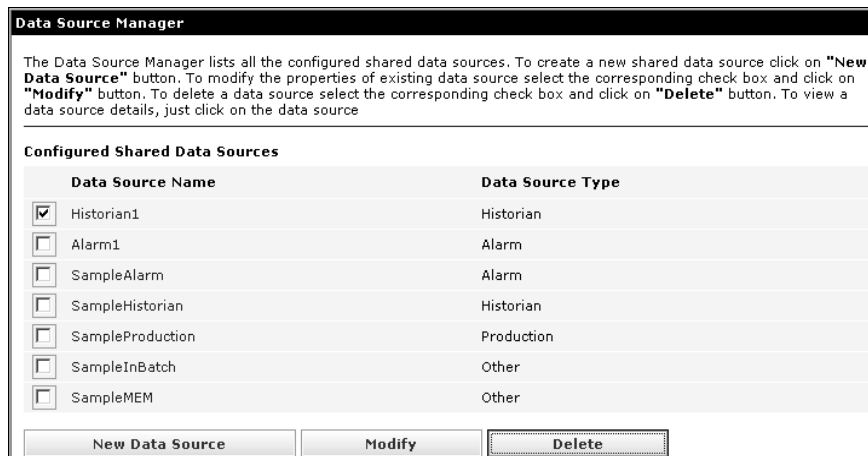
Outdated or unused data sources can be deleted. Deleting the entry for a data source in Wonderware Information Server only deletes the data source information; it does not delete the data source itself.

To delete a data source

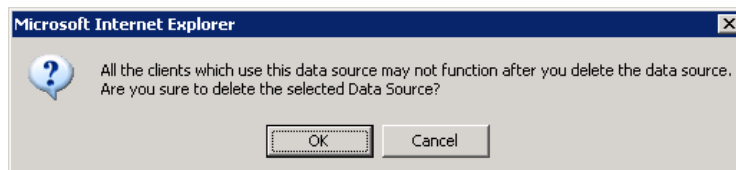
- 1 In the **System** access panel, expand **Administration** and then click **Data Source Manager**. The **Data Source Manager** window appears.



- 2 Place a check next to the name of the data source you want to delete.
- 3 Click **Delete**.



The confirmation message appears.



- 4 Click **Delete** to confirm the deletion.

Chapter 5

Process and ArcestrA Graphics, Factory Alarms, and OverView

Wonderware Information Server allows portal users to access manufacturing data in a variety of ways:

- By clicking the Process Graphics and ArcestrA Graphics links, users can access InTouch windows that have been published to the Wonderware Information Server.
- By downloading and using the OverView client, users can easily navigate manufacturing-related content, such as time series, work order, and alarm data.
- By clicking the Factory Alarms link, users can browse plant alarm systems, either by querying the live alarm systems from the alarm providers or the alarm history databases.

Creating and Viewing Process and ArcestrA Graphics

You can convert and publish InTouch application windows using the Win-XML Exporter application. These windows are accessible from the **Process Graphics** link in the Launch Pad.

The Win-XML Exporter can be installed from Wonderware Information Server. For more information about using the Win-XML Exporter, see the *Wonderware Information Server Win-XML Exporter Guide*.

You can convert and publish ArcestrA Symbols and InTouch windows using the ArcestrA Web Exporter to Wonderware Information Server. These windows are accessible from the **ArcestrA Graphics** link in the Launch Pad.

The ArcestrA Web Exporter can be installed from Wonderware Information Server. For more information about using the ArcestrA Web Exporter, see the *ArcestrA Web Exporter Guide*.

Accessing the OverView Client

You use the OverView client to easily navigate manufacturing-related content, such as time series, work order, and alarm data. The content is automatically combined from multiple data sources and is presented in data grids and trends with contextual navigation.

You must download and install the OverView client on a local computer.

To download and install the OverView client

- ◆ Click the **OverView** link in the Launch Pad.

To start the OverView client

- ◆ On the **Windows** taskbar, click **Start**, point to **Programs**, point to **Wonderware**, point to **Wonderware**, and then click **ArcestrA OverView**. The OverView client appears.

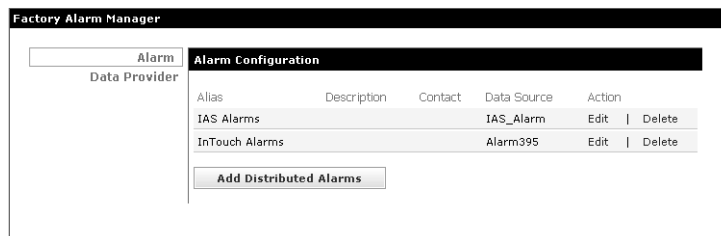
Configuring Factory Alarms

Wonderware Information Server supports both current and historical alarms from configured alarm data sources.

Unlike the InTouch HMI, where all the alarms in the sub-areas are also captured and shown along with the alarms for an area, in Wonderware Information Server the alarms reported in the sub-areas are not shown in the current alarm display for an area.

To configure factory alarms

- 1 In the **System** access panel, expand Administration and then click **Factory Alarm Manager**. The Factory Alarm Manager page appears.



- 2 Click **Add Distributed Alarms**. The alarm configuration page appears.

The screenshot shows the 'Factory Alarm Manager' window with the 'Add Distributed Alarms' form. The form includes the following fields:

- Alias *:
- Description:
- Data Source *:
- Contact Name:
- Distributed Alarm Query *:

At the bottom, there is a legend '* Required field' and two buttons: 'Add' and 'Cancel'.

- 3 Enter information in the boxes as follows:

Alias – Displayed name in the Factory Alarms Node.

Data Source – Select an alarm shared data source. This is the connection to your alarm history database. For more information on configuring an alarm shared data source, see Chapter 4, "Configuring Data Sources."

When configuring the Factory Alarm Manager for an alarm display using a data source machine that connects to a machine that have intouch and WIS on the same machine.

Example: \\wisqa06-app:10.91.44.28\intouch!\$system

where:

wisqa06-app - is the alarm data source machine, and

10.91.44.28 - is the IP address for the Vista machine

Distributed Alarm Query - The query string used to retrieve the current alarm records from the alarm provider. The Distributed Alarm Query can also be used as a filter. When you choose to see alarms for this provider, you can only see the alarms from the alarm groups specified in this query. You can add as many providers as required, but you must separate each query with a comma.

The syntax is:

\\<Server Name>\<Alarm Provider>!<Alarm Group>

For example:

\\MyServer\intouch!\$system

Or

\\MyServer\Galaxy!Area_001

4 Click **Add**.

Note: If you are using a fully-qualified domain name, then you need to enter the <DomainName>\<UserName> and Password in their respective boxes with the fully qualified url in WSDL, for example: <http://www.krypton1-svidc.com/.....wsdl>.

Chapter 6

Configuring Access Panels

An access panel is a logical grouping of navigation nodes (folders) and links that is only accessible to particular users assigned to it. Access panels allow you to segregate objects (for example, converted InTouch windows, alarm displays, and history reports) into groups of related information.

Each access panel can be configured to allow access by specific Windows users and user groups (for example, plant maintenance personnel, operators, or managers), so that each user or group sees only the objects that are pertinent to their area of the plant or their user group.

For example, an Operators access panel shows InTouch graphics for a particular portion of the plant floor to just the plant operators assigned to that panel. A Maintenance access panel shows only historical trends of plant equipment tags to plant maintenance personnel.

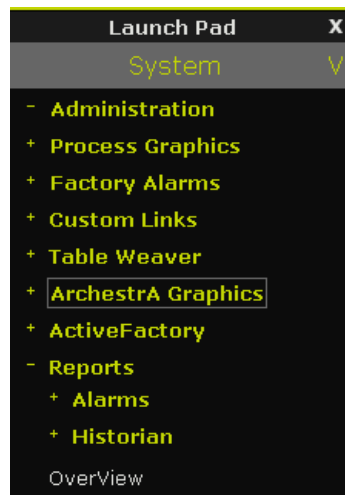
An access panel is accessible via a wide button-like tab that appears in the Launch Pad. By default, Wonderware Information Server includes a **System** access panel. You can add additional access panels and populate them with nodes and links from the **System** access panel and include additional customized links. By creating these additional access panels and dropping relevant application and custom links nodes into them, you can easily establish access panels for different limited access groups of users throughout the company.

Each access panel consists of three parts: a display name, a navigation tree, and a user access list.

About the System Access Panel

By default, Wonderware Information Server includes the **System** access panel. The **System** access panel shows all of the configuration and application folders and links that are available on the web site. The **System** access panel can be visible to all users or just to administrators, but the links within it to administration functions are only accessible to users assigned to the Administrators security role. Because administrators have access to everything in the web site, the entire hierarchy of configured folders and links are visible to them within the **System** access panel.

This access panel can be considered the "master" list of folders and links. The organization of the folders and links in the **System** access panel is fixed, except for the links pertaining to the applications installed on the Wonderware Information Server.

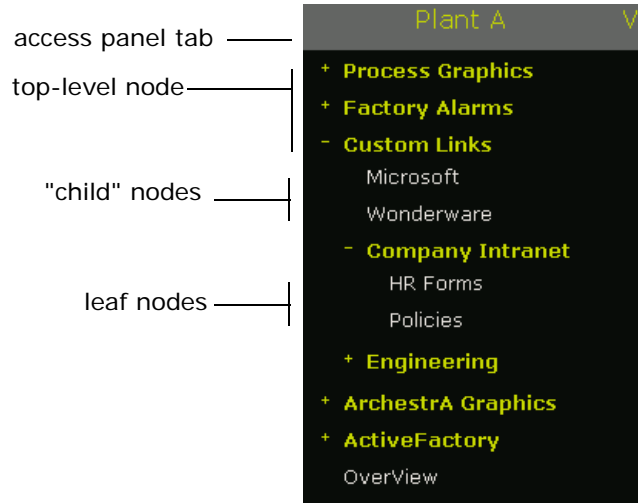


About Custom Access Panels

Custom access panels cannot contain nodes from under the main administration node in the **System** access panel, but may contain administrative nodes from other applications.

All role assignments apply within the custom access panels. Roles are assigned to users and users are assigned to panels. Once you are assigned to a panel, you are able to see all the nodes under that panel. However, if you are assigned to a panel with a read only role, you can not writeback in a process graphic window, if you view the graphic window.

Each access panel contains one navigation tree, which consists of a hierarchy of nodes pertaining to links and web site objects. However, all other access panels can have any number or arrangement of custom nodes and links. For example:



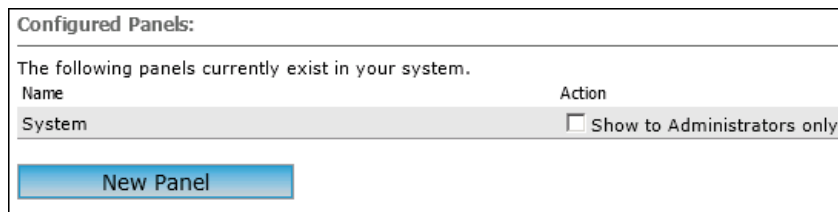
Creating a Custom Access Panel

Theoretically there is no limit to the number of custom access panels you can create. However, it is highly recommended that you not give any one user access to more than four panels, for performance reasons.

Note: If you are working in http: mode and then switch to https: mode, items added to the panel that have been defined to use http: protocol will no longer work. To fix these broken links, someone with administrator privileges must delete the items from the panel and then re-add them so that they have the https: protocol.

To create a custom access panel

- 1 In the **System** access panel, expand **Administration** and then click **Panel Manager**. The **Panel Manager** page appears.



- 2 Click **New Panel**. In the box that appears, type the access panel name that will appear on the tab (button) in the Launch Pad.

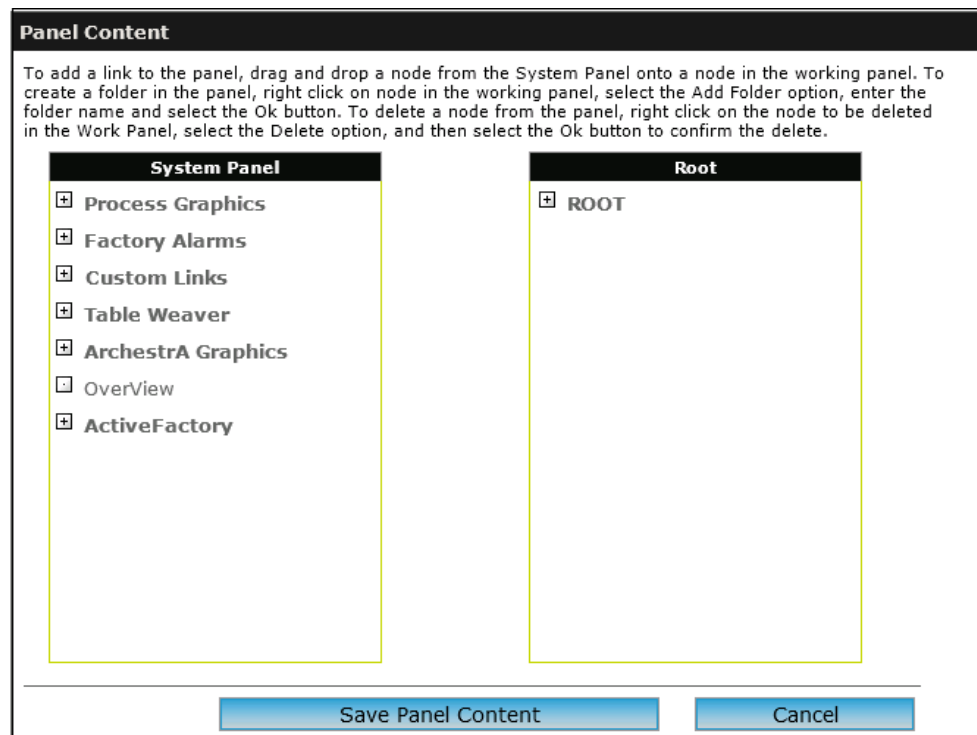
- 3 Press **Enter** on your keyboard. The new access panel appears in the list.
- 4 Go to Configuring the Navigation Tree for a Custom Access Panel on page 68.

Configuring the Navigation Tree for a Custom Access Panel

You must have already created a custom access panel to configure the navigation tree for it.

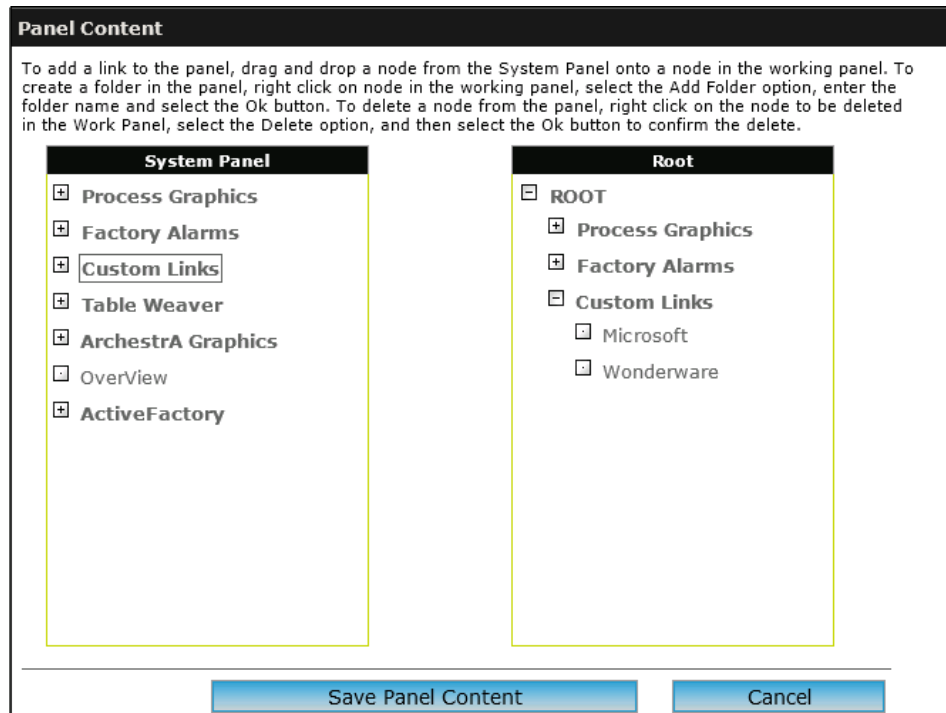
To configure the navigation tree

- 1 In the **Panel Manager** page, locate the panel for which you want to configure the navigation tree.
- 2 Click **Edit** in the **Action** column. The **Panel Content** page appears.



Note: The **System** access panel cannot be edited.

- 3 Drag the desired navigation node(s) from the **System** access panel node to the node in the user access panel that you want it to appear under.



- 4 To create a new folder (also called a "node") in the user access panel, right-click a folder in the tree and click **Add Folder**. In the dialog box that appears, type a name for the folder and click **OK**.
- 5 To delete a folder, right-click the folder to delete and click **Delete**. This also deletes all folders under it.
- 6 When you are done configuring the tree, click **Save Panel Content**.
- 7 Go to Configuring User Access for a Custom Access Panel on page 70.

Configuring User Access for a Custom Access Panel

It is highly recommended that you not give any one user access to more than four panels, for performance reasons.

To configure user access for Panel Manager

- 1 If you do not already have the **Panel Manager** open for a specific custom access panel, in the Launch Pad, click **Panel Manager**. In the list of configured access panels, locate the name of the panel for which you want to configure access, and then click **Edit** in the **Action** column.

- 2 In the **Panel Manager** page, click **Users**. The **Panel User Access** page appears
- 3 In the **Domain** list, select the domain that contains the user(s) or Windows security group(s) to add.
- 4 Click **Retrieve Users** from **Selected Domain** to show the list of all users of the domain in the **Domain Users** window.

- 5 Select the user(s) or group(s) you want to give access.
- 6 Click **Add** to grant access to the panel.

Note: You must have portal and portal node administrator privileges when adding and removing users.

To configure user access using User Manager

- 1 If you do not already have the **Panel Manager** open for a specific custom access panel, in the Launch Pad, click **User Manager node**. The **User Manager configuration** page appears.
- 2 In the **Domain** list, select the domain that contains the user(s) or Windows security group(s) to add.
- 3 Click **Retrieve Users** from **Selected Domain** button, to get a list of all users of the domain in the **Domain Users** window.
- 4 Select the user(s) or group(s) you want to give access.
- 5 Click **Add** to grant access to the panel.

Note: You must have portal and portal node administrator privileges when adding and removing users.

Renaming a Custom Access Panel

To rename an access panel

- 1 In the **System** access panel, expand **Administration** and then click **Panel Manager**. The **Panel Manager** page appears.
- 2 In the list of configured panels, locate the access panel to rename and then click **Rename** in the **Action** column.
- 3 In the box, type the new name for the access panel.
- 4 Press **Enter** on your keyboard.

Deleting a Custom Access Panel

Panel navigation trees are made up of custom folders, logical references to **System** access panel nodes, or copies of dynamically created **System** access panel nodes, so deleting a panel does not delete any application nodes, static or dynamic, in the **System** access panel.

To delete an access panel

- 1 In the **System** access panel, expand **Administration** and then click **Panel Manager**. The **Panel Manager** page appears.
- 2 In the list of configured panels, locate the access panel to delete and then click **Delete** in the **Action** column.

Hiding the System Access Panel from Non-Administrators

You can configure the **System** access panel so that it is hidden from all users except for those who are members of the **Administrators** security role. If you do not hide the **System** access panel, any user can click an administration link, only to see a message that he/she has no access.

If you have hidden the **System** access panel, non-administrative users can only see the administrative pages if they have been granted access through a custom access panel, which you must create.

To hide the System access panel

- 1 In the **System** access panel, expand **Administration** and then click **Panel Manager**. The **Panel Manager** page appears.
- 2 For the **System** access panel, click to select **Show to administrator only**.

Chapter 7

Customizing the Wonderware Information Server

You can completely customize the look and feel of the Wonderware Information Server home page, such as:

- Adding a custom logo or replacing the site banner.
- Replacing the default home page content.
- Creating links to published reports, documents, other web sites, or resources.

All of this is accomplished through a series of easy-to-use menus, without leaving Wonderware Information Server.

Changes made to the look and feel appear when the page is refreshed.

Customizing the Home Page

You can customize the following areas of the home page:

- Custom logo

You can specify a custom logo image to be placed in the banner area. Make the height of the image 64 pixels —anything smaller is stretched to 64 pixels and anything larger is cut off. The width is resolution dependent.

- Banner pane

The banner is located at the top of the home page and is constantly displayed. You can customize the banner by specifying a custom HTML or ASP page to appear in the banner area. If you replace the banner with an HTML page, then the page is resolution dependent on the width only. If you replace it with an ASP page, the page scales down to the banner pane. Make the height of the banner page content 66 pixels to avoid distortion.

Tip Use a banner that coordinates with the color scheme that you pick for the web site. For more information on available schemes, see Changing the Color Scheme on page 75.

- Content pane

You can change the default content that appears in the web site home page. You can specify an ASP or HTML file for the content.

For more information on the areas of the home pages, see About the Wonderware Information Server Home Page on page 14.

To customize the home page

- 1 In the **System** access panel, expand **Administration** and then click **Configuration**. The **Configuration** page appears.
- 2 Click **Home Page**. The **Home Page** customization page appears.

Home Page Save

This page allows the administrator to customize the SuiteVoyager banner and home page. A company logo can be uploaded to the SuiteVoyager portal to be displayed in the SuiteVoyager banner area or the SuiteVoyager banner can be replaced entirely with a custom ASP or HTML page. In addition, the SuiteVoyager home page can also be replaced by specifying a custom ASP or HTML page.

Custom Logo (bmp, gif, jpg, png)

File:

Custom Banner

Banner URL:

Home Page URL:

- 3 To change the logo, click **Custom Logo**. In the **File** box, type the path to the file to upload or click **Browse** to locate the file. The uploaded file is saved in the `c:\Inetpub\wwwroot\Wonderware\custom`.
- 4 To change the entire top banner, click **Custom Banner URL**. In the **Banner URL** box, type the path to a configured banner .asp page.
- 5 To change the content pane for the home page, in the **Home Page URL** box, type the path to a configured content .asp page.
- 6 Click **Save**.

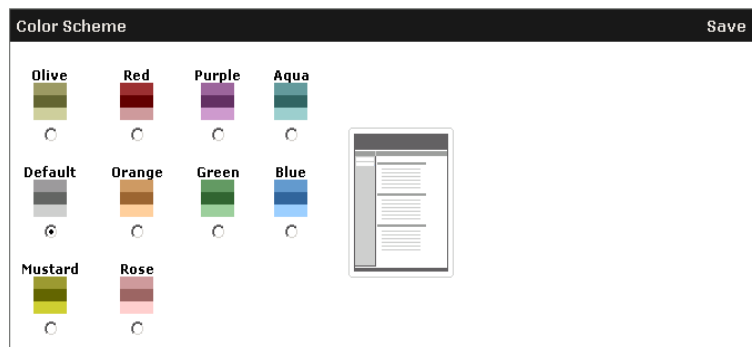
Changing the Color Scheme

You can change the color scheme to one of ten pre-configured schemes. The scheme controls the background colors for the menu bar, Launch Pad background, heading bars, and so on. You can view how a sample page looks with the new scheme before you implement your changes.

To apply the new color scheme, you must have administrative privileges on the computer on which the site is installed.

To change the color scheme

- 1 In the **System** access panel, expand **Administration** and then click **Configuration**. The **Configuration** page appears.
- 2 Click **Color Scheme**. The **Color Scheme** page appears.



- 3 Click the color scheme you want. The sample page thumbnail changes to preview your selection.
- 4 Click **Save**.

Creating Custom Links for Users

You can create a customized hierarchy of hyperlinks that appears in the access panel of the web site. These links can point to other web pages, send e-mail to a specified account, or open a document file. For example, to add a link to a legal disclaimer page, also called a "terms of use" page.

Valid document file formats include: .html, .asp, .doc, .xls, .bmp, and .dwg. When a user clicks a document link, the file opens in the appropriate editor, if installed on the client computer. Verify that your users have the appropriate editors on their client computers to open the document links that you post on the web site.

Client users must have a default e-mail application such as Microsoft Outlook configured for Internet Explorer to use a mailto link. If a user clicks on a mailto link in the navigation tree, the client e-mail application starts and opens a blank e-mail message with the sender address already configured.

For more information on the navigation tree, see Navigation Trees on page 18.

To create a custom link

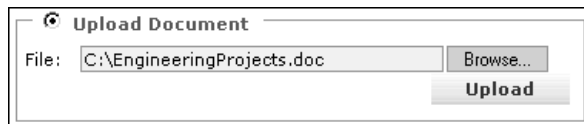
- 1 In the **System** access panel, expand **Administration** and then click **Configuration**. The **Configuration** page appears.
- 2 Click **Custom Links**. The **Custom Links** page appears.

- 3 To add a new node to the hierarchy, right-click the tree and click **Add Node**. The **Node Name** box becomes available.

- 4 In the **Node Name** box, type the name of the node as you want it to appear in the navigation tree. For example, "Projects."
- 5 In the **Node Type** box, click **LEAF** if this node is the bottom node in the branch. If you are planning on adding additional levels under this node in the hierarchy (one or more "child" nodes), click **NODE**.

Note: A leaf node cannot have a child node.

- 6 Create a web page link.
 - Click **HTTP** in the **Link Type** area.
 - In the **URL** box, type the address of the web page. When the user clicks the link, the web page appears in the contents pane; a new browser window is not opened. You can specify **HTTPS** in the URL.
- 7 Create an e-mail link.
 - Click **MAILTO** in the **Link Type** area.
 - In the **URL** box, type the e-mail address.
- 8 Create a document link.
 - Click **Upload Document**.
 - In the **File** box, type the path to the file to upload or click **Browse** to locate the file.
 - Click **Upload**. The file is copied to the correct location on the web server and the **URL** box is configured for you.



The screenshot shows a dialog box titled "Upload Document". It contains a "File:" label, a text input field with the path "C:\EngineeringProjects.doc", a "Browse..." button, and an "Upload" button.

- 9 Click **Update Node**. The new link appears under the selected category in the sample navigation tree to the right. Verify that the new link is correct.
- 10 To delete a link, right-click the link in the sample navigation tree and click **Delete**.
When you are finished creating all of your custom links, click **Save**.

Chapter 8

Maintenance Tasks

After you install and configure the Wonderware Information Server, you need to monitor the system and perform general maintenance tasks to ensure that your casual users continue to have the best access possible to the information on the site. Maintenance tasks include monitoring web server performance, monitoring usage, and obtaining feedback about the site itself.

Viewing Errors

Wonderware Information Server logs error messages to the Wonderware ArcestrA Logger, which is installed by default when you install Wonderware Information Server. You can customize the types of messages that are reported to the ArcestrA Logger using the LogFlag Editor utility.

For information on using the ArcestrA Logger and the LogFlag Editor, see the ArcestrA Logger documentation.

Monitoring Web Server Performance

Microsoft provides some free web monitoring tools that you can download from their web site. These tools allow you to test the performance and connectivity of your web server. In particular, they provide a web "stress" tool that enable you to duplicate performance on your web server with multiple users. The results enable you to plan for current and future upgrades and enhancements to your hardware and communications network.

Monitoring Usage

IIS automatically creates a log file to track user access to the site. This log file tells who was on the site, where they went in the site, how long they were on each page, and anything they looked at in the site. This file could be helpful for determining site usage and which areas are used more than others. The log file is stored under your `\WINNT\System32\LogFiles` directory.

However, the log file gets very large very quickly and you need to put a standard operating procedure into place for either purging or archiving this file. You can also turn the logging feature off if it is not helpful to you. For more information on IIS log files, see your IIS documentation.

Also, it is essential that you monitor site usage to determine if you have enough client licenses installed. If not, you may want to determine if the people that are logging on to the site during busy times could be asked to log in during slower times or if you need to purchase additional licenses. The License Manager is located under the Administration section of the Wonderware Information Server. For more information on the License Manager, see Chapter 2, "Managing Licensing."

Obtaining Feedback

As the administrator, provide users with an easy way to send feedback. This can easily be accomplished by creating an e-mail link using the Configuration area of the site. For more information, see *Creating Custom Links for Users* on page 76. Most intranet/Internet users are familiar with an e-mail link labeled "Contact Us." Creating this link provides a way for users to comment on the usefulness of the information they obtain, additional information they want to see, speed to access information, and any problems they encounter while navigating through the site.

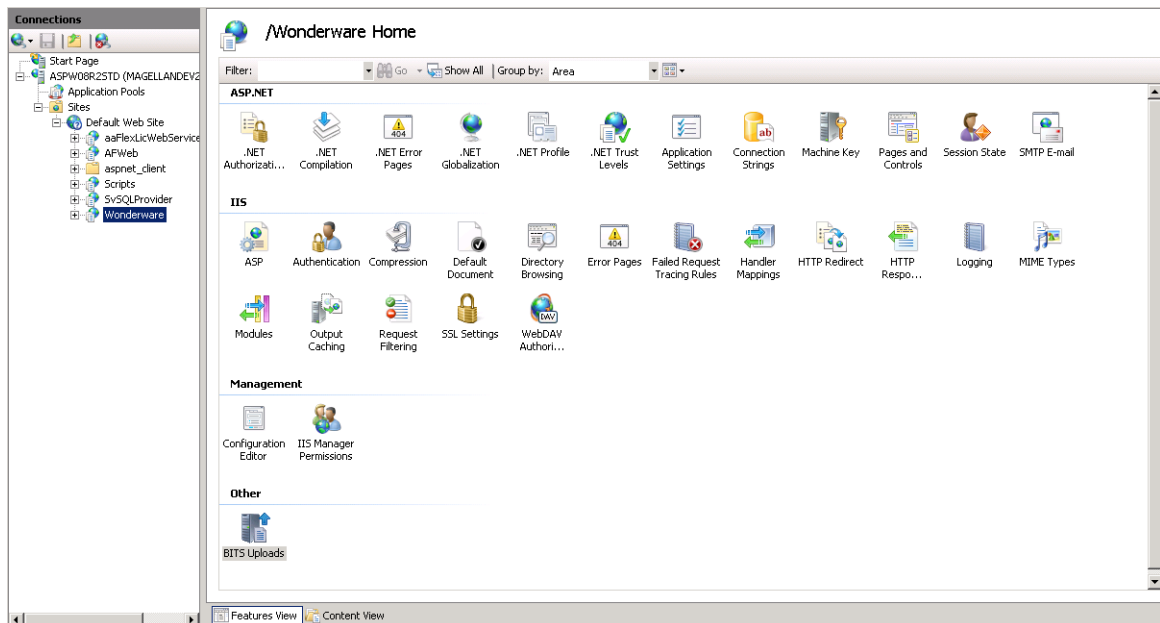
Obtaining good feedback helps you to design a useful, functional, and informative tool for the casual users in your company and help you tailor the information that Wonderware Information Server delivers to the organization.

Changing the Wonderware Information Server Timeout Values

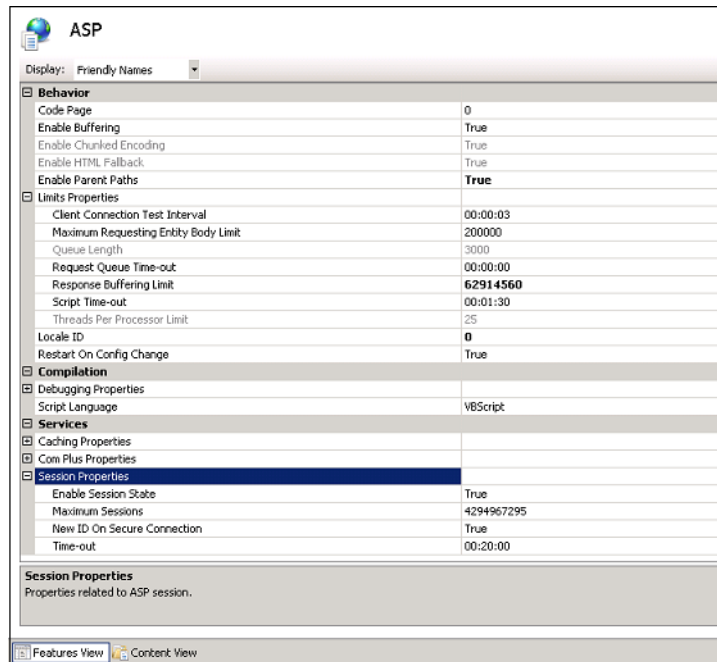
The Wonderware Information Server automatically times out the browser session after a default of 20 minutes without usage. In addition, ASP pages time out after 90 seconds. Typically, ASP pages contain form boxes for user input. These are the default settings that IIS issues to applications running on the web server.

To change the browser timeout settings

- 1 On the Windows **Start** menu, point to **Programs**, point to **Administrative Tools** and then click **Internet Information Manager**. The **Internet Information Services** console appears.
- 2 Expand the web server name and then expand **Default Web Site**.



- 3 Select and right-click the **Wonderware** node, and then click **Switch to Features View**.
- 4 In the IIS section, right-click the **ASP** feature, and then click **Open Feature**. The Application configuration window appears.



- 5 Expand the **Limits Properties** area, type the new timeout limit for scripts in the **Script Time-out** box.
- 6 Expand the **Session Properties** area, type the new timeout limit for client connection sessions in the **Time-out** box.

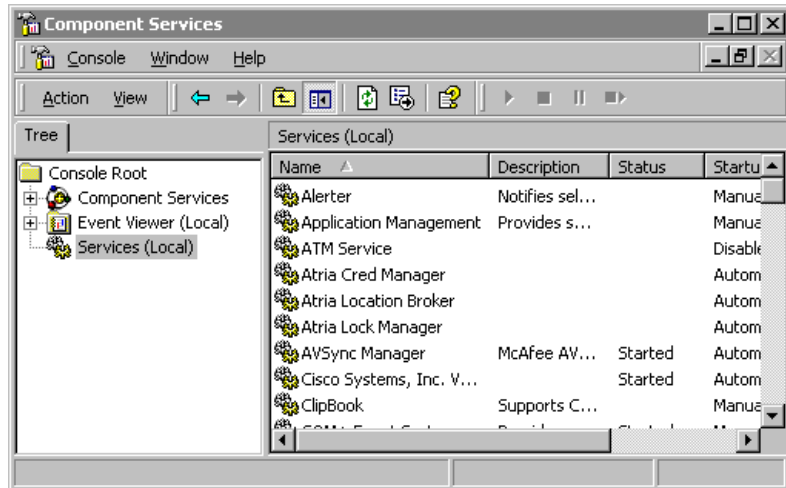
Viewing Wonderware Information Server Service Details

The following Wonderware Information Server processes are started as Windows services:

Task Service	Name	Description
wwsvalmsvc.exe	Wonderware Alarm Consumer	Handles distributed alarm information
Rdbhandler.exe	Wonderware Runtime DB Handler	Handles real-time data coming from InTouch and SuiteLink I/O sources
wwsvlicmgr.exe	Wonderware License Manager	Handles license information.

To view service details

- 1 On the Windows **Start** menu, point to **Programs**, point to **Administrative Tools**, and then click **Component Services**. The **Component Services** console appears.



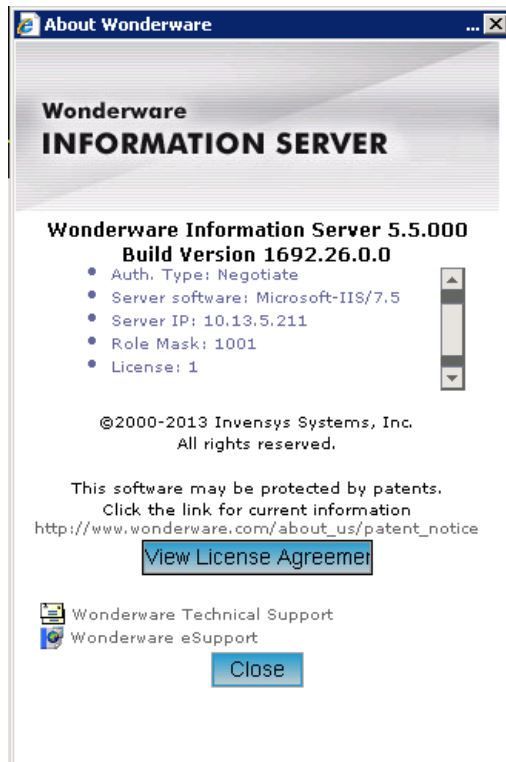
- 1 The status of each service appears in the **Status** column. From this dialog box, you can start, stop, pause, or continue a selected service.
- 2 To view or edit properties for a service, right-click the service and click **Properties**.

For more information on services, see your Microsoft documentation.

Viewing Wonderware Information Server Version Information

To view Wonderware Information Server version information

- 1 In the home page, click **About** on the menu bar. The **About Wonderware** dialog box appears.



- 2 Click **Wonderware Technical Support** to send an e-mail to the Technical Support team.
- 3 Click **Wonderware eSupport** to access the Technical Support web site.
- 4 Click **Close**.

Chapter 9

Creating and Restoring Backups

The Backup/Restore Manager lets you create backups of the Wonderware Information Server configuration. You can use a backup to restore the original site.

The Backup/Restore operation can be done only for the features that are installed and configured successfully. Installed and un-configured features are ignored during the Backup/Restore operation.

Requirements

The Backup/Restore Manager for Wonderware Information Server version 3.1 and greater is not compatible with previous versions of the software.

You can host the Wonderware Information Server configuration database on a remote SQL server node. The SQL server must be running under a network account with the correct permissions. These permissions are network share privileges that allow the Backup/Restore Manager to access the remote node's file system.

You must also be a local administrator of the Wonderware Information Server computer. In addition, the user credentials must also have SQL Server system administrator privileges.

You must install the SQL Server client connectivity components on the Wonderware Information Server computer.

What Is Contained in a Backup

A backup is a CAB file that contains:

- the Wonderware Information Server database
- Table Weaver content and configuration
- aaReports database
- Report Server database
- Report Server configuration
- ActiveFactory report content and configuration
- InTouch WindowSets
- Sample content, including InTouch windows, SmartSymbols, and Table Weaver content
- Windows registry entries that pertain to Wonderware Information Server

The Backup/Restore Manager does not back up:

- Any ActiveX control that runs within a process graphic
- The Wonderware Information Server license file

About Restoring Backups

You can only restore a backup to the Wonderware Information Server with the same virtual directory name for both the Wonderware Information Server and the ActiveFactory Reporting Website from which it was created.

The restoration process is as follows:

- The existing Wonderware Information Server database is deleted. If the database is corrupt, you must reinstall Wonderware Information Server to fix the database corruption before restoring the backup.
- A new Wonderware Information Server database is created.
- Information in the database is restored with information from the backup.
- All site customizations that are contained in the backup are restored. For more information, see "What Is Contained in a Backup" on page 86.

You must first disconnect all clients from Wonderware Information Server, then start the restoration process. The Internet Information Services (IIS) is stopped during the restoration process. Also, the Wonderware Information Server database is inaccessible until restoration is complete. However, all other databases in the same SQL Server continues to function and provide data to clients.

Typically, a system reboot is not required after the restoration process.

Note: You cannot create a backup from a Wonderware Information Server site on an operating system in one language and restore it to a Wonderware Information Server site on an operating system of a different language.

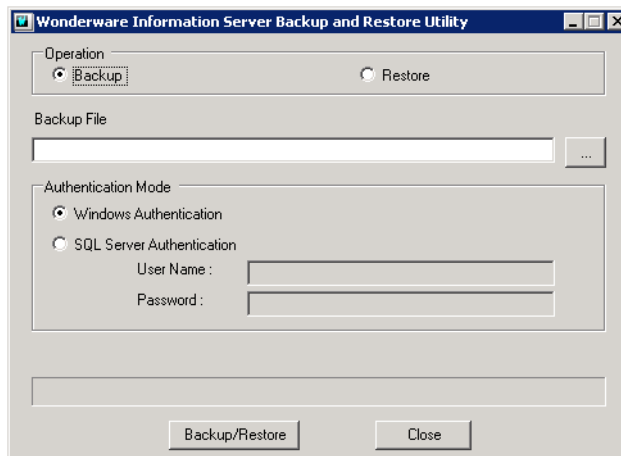
Creating a Backup

The Wonderware Information Server is accessible by clients during the backup process.

Note: If a backup already exists with the same name, it is overwritten automatically.

To create a backup

- 1 On the **Start** menu on the Windows Taskbar, point to **Programs**, **Wonderware**, then to **Information Server**, and then select **Backup and Restore**. The **Backup/Restore** dialog box appears.



- 2 Select **Backup**.
- 3 In the **Backup File** box, type or browse to the CAB backup file.
- 4 Select either **Windows Authentication** or **SQL Server Authentication**.
- 5 Click **Backup/Restore**. The status of each phase of the backup process appears in the **Backup Status** box.

For more information on error messages, see *Troubleshooting Backup Failures* on page 89.

When the backup is complete, a log file is created in the backup destination directory. The log file is named using the following convention: <backupname>_Backup.log. You can open the log file with any text editor.

Restoring a Backup

Before you restore, make sure you all open connections to the database are closed, and the Backup node and Restore node have the same configuration and features installed.

To restore a backup

- 1 On the **Start** menu on the Windows Taskbar, point to **Programs**, **Wonderware**, then to **Information Server**, and then select **Backup and Restore**. The **Backup/Restore** dialog box appears.
- 2 Select **Restore**.
- 3 Specify the complete path to the backup file or click the button next to the Backup File box to browse for the backup file. Select the .Cab file and click **Open**.
- 4 Select either Windows Authentication or SQL Server Authentication.
- 5 Click **Backup/Restore**.

When the restoration process begins, the **Restoration Status** dialog box appears.

If the restoration program could not restore an item, a message appears in the dialog box.

When the Restore is complete, click **Close**.

When the restoration is complete, a log file is created in the same location where the backup file (.cab) resided when you ran the restoration program. The log file is named using the following convention: <backupname>_Restore.txt. You can open the log file with any text editor.

Troubleshooting Backup Failures

A log file is created in the same location as the backup file. The log file has the same name as the backed up file, with the .log extension, such as MyBackup.log.

If a log file already exists with the same name, the existing log file is overwritten. An example of the log file is as follows:

```

JVH-Mar212007-WIS_Backup.log - Notepad
File Edit Format View Help
03/21/2007 5:52:13 PM Date/Time:03/21/2007 5:52:12 PM
03/21/2007 5:52:13 PM BACKUP_PATH:C:\WW\WIS-backups\
03/21/2007 5:52:13 PM BACKUP_NAME:JVH-Mar212007-WIS.cab
03/21/2007 5:52:13 PM User Name : TRUDY\Administrator
03/21/2007 5:52:13 PM wonderware Information Server version : 3.00
03/21/2007 5:52:13 PM
03/21/2007 5:52:13 PM Backup Process started....
03/21/2007 5:52:13 PM Creating temporary directory.....
03/21/2007 5:52:18 PM =====
03/21/2007 5:52:18 PM BEGIN: Portal configuration Backup
03/21/2007 5:52:18 PM =====
03/21/2007 5:52:18 PM Backing up Portal config.....
03/21/2007 5:52:18 PM Backing up color / logo / Home Page url ...
03/21/2007 5:52:18 PM Backup of color / logo / Home Page url is complete.....
03/21/2007 5:52:18 PM Backing up wonderware Information Server DB.....
03/21/2007 5:52:18 PM Before wonderware Information Server DB SQLServer Backup
03/21/2007 5:52:21 PM After wonderware Information Server DB SQLServer Backup
03/21/2007 5:52:21 PM Backup of wonderware Information Server DB is complete.....
03/21/2007 5:52:21 PM Backing up MTS users.....
03/21/2007 5:52:21 PM Backup of MTS users is complete....
03/21/2007 5:52:21 PM Backing up Registry and application information....
03/21/2007 5:52:22 PM Backup of Registry and application information is complete....
03/21/2007 5:52:22 PM Backup of Portal config is complete.....
03/21/2007 5:52:22 PM =====
03/21/2007 5:52:22 PM END: Portal backup is complete
03/21/2007 5:52:22 PM =====
03/21/2007 5:52:22 PM BEGIN: Table Weaver Backup
03/21/2007 5:52:22 PM =====
03/21/2007 5:52:22 PM Backing up table weaver.....
03/21/2007 5:52:37 PM Backup of table weaver is complete.....
03/21/2007 5:52:37 PM =====
03/21/2007 5:52:37 PM END: Table weaver backup is complete
03/21/2007 5:52:37 PM =====
03/21/2007 5:52:37 PM BEGIN: InTouch Backup
03/21/2007 5:52:37 PM =====
03/21/2007 5:52:37 PM Backing up Intouch windowSets,symbols....
03/21/2007 5:52:37 PM Backup of InTouch WindowSets,symbols is complete.....
03/21/2007 5:52:37 PM =====
03/21/2007 5:52:37 PM END: InTouch backup is complete
03/21/2007 5:52:37 PM =====
03/21/2007 5:52:37 PM BEGIN: Multiviews Backup
03/21/2007 5:52:37 PM =====
03/21/2007 5:52:37 PM Backing up Multiviews.....
    
```

The following list describes the error messages that can occur during the backup process.

MTS roles could not be backed up

CAUSE: You may not have the privilege to access the Microsoft Transaction Server (MTS) package for Wonderware Information Server.

SOLUTION: You must have the privilege to access the Wonderware Information Server MTS package. Check that you belong to the Administrators group on the Wonderware Information Server site computer.

InTouch windows could not be backed up

CAUSE: You may not have the privilege to copy files from the \inetpub\wwwroot\

SOLUTION: Make sure that you have the privilege to access this directory.

The database could not be backed up

CAUSE: The Wonderware Information Server database is currently locked.

SOLUTION: Make sure that the Wonderware Information Server database is not locked.

CAUSE: The SQL Server client components are not installed on the site.

SOLUTION: Make sure that the SQL Server client components are installed on the site.

Client session could not be backed up

CAUSE: Network mapped drive is not valid for the client.

SOLUTION: Log on to the server and copy the file locally.

Version information could not be retrieved

CAUSE: The version table (the SVInfo table) in the Wonderware Information Server database may be corrupted.

SOLUTION: To fix a corrupted table, reinstall Wonderware Information Server.

Registry entries could not be backed up

CAUSE: You may not have the privilege to access the Windows registry.

SOLUTION: Make sure you have the privilege to access the registry.

The .Cab file could not be created

CAUSE: The name for the backup is invalid.

SOLUTION: Make sure that the backup name does not contain any of the following characters: | / < > : * ? "

The export clsid could not be retrieved

CAUSE: The clsid for the backup could not be created.

SOLUTION: If the problem persists, contact technical support. You are asked to provide a detailed description of your backup scenario.

The backup failed with an unknown error

CAUSE: No obvious cause.

SOLUTION: If the problem persists, contact technical support. You are asked to provide a detailed description of your backup scenario.

Troubleshooting Restoration Problems

The restoration log file, named Backup file_Restore.txt, is created in the same location where the backup file (.cab) resides when you run the restoration program. This file contains status messages for all of the major steps that occur during the restoration process, so that you can troubleshoot the point of failure.

If a log file already exists with the same name, the existing log file is overwritten. An example file is as follows:

```

JVH-Mar212007-WIS_Restore.log - Notepad
File Edit Format View Help
03/21/2007 6:33:54 PM Date/Time:03/21/2007 6:33:54 PM
03/21/2007 6:33:54 PM RESTORE_PATH:C:\WV\WIS-backups\
03/21/2007 6:33:54 PM RESTORE_NAME:JVH-Mar212007-WIS.cab
03/21/2007 6:33:54 PM User Name : TRUDY\Administrator
03/21/2007 6:33:54 PM wonderware Information Server version : 3.00
03/21/2007 6:33:54 PM
03/21/2007 6:33:54 PM Restore Process started....
03/21/2007 6:33:54 PM Creating temporary directory....
03/21/2007 6:33:54 PM Extracting the .cab file. This process may take few minutes...
03/21/2007 6:34:09 PM Extraction of the .cab file is complete....
03/21/2007 6:34:10 PM =====
03/21/2007 6:34:10 PM BEGIN: Portal configuration Restore
03/21/2007 6:34:10 PM =====
03/21/2007 6:34:10 PM Restoring Portal config....
03/21/2007 6:34:10 PM Restoring up color / logo / Home Page url ....
03/21/2007 6:34:10 PM Restoration of color / logo / Home Page url is complete....
03/21/2007 6:34:10 PM Restoring wonderware Information Server DB....
03/21/2007 6:34:10 PM Before wonderware Information Server DB SQLServer Restore
03/21/2007 6:34:14 PM After wonderware Information server DB SQLServer Restore
03/21/2007 6:34:14 PM Before altering database to turn ON trustworthy
03/21/2007 6:34:14 PM After altering database to turn ON trustworthy
03/21/2007 6:34:14 PM Restoration of wonderware Information Server DB is complete....
03/21/2007 6:34:14 PM Restoring MTS users....
03/21/2007 6:34:17 PM Restoration of MTS users is complete....
03/21/2007 6:34:17 PM Restoring Registry and application information....
03/21/2007 6:34:17 PM Restoration of Registry and application information is complete.
03/21/2007 6:34:17 PM Restoration of Portal Config is complete....
03/21/2007 6:34:17 PM =====
03/21/2007 6:34:17 PM END: Portal Restore is complete
03/21/2007 6:34:17 PM =====
03/21/2007 6:34:17 PM BEGIN: Table weaver Restore
03/21/2007 6:34:17 PM =====
03/21/2007 6:34:17 PM Restoring table weaver....
03/21/2007 6:34:33 PM Restoration of table weaver is complete....
03/21/2007 6:34:33 PM =====
03/21/2007 6:34:33 PM END: Table weaver Restore is complete
03/21/2007 6:34:33 PM =====
03/21/2007 6:34:34 PM BEGIN: InTouch Restore
03/21/2007 6:34:34 PM =====
03/21/2007 6:34:34 PM Restoring Intouch windowSets,symbols....
03/21/2007 6:34:34 PM Restoration of InTouch windowSets,symbols is complete....
03/21/2007 6:34:34 PM =====
03/21/2007 6:34:34 PM END: InTouch Restore is complete
03/21/2007 6:34:34 PM =====
03/21/2007 6:34:34 PM BEGIN: Multiviews Restore
03/21/2007 6:34:34 PM =====
    
```

The RestoreSummary.txt file also includes a listing of any site user accounts that could not be restored. A typical cause for an unrestored user account is that the account is not in the domain of the computer to which you are restoring the backup. The user account may have been deleted from the domain after you created the backup.

If an error occurs during the restoration process, an error message is posted to the log file. These error messages are typically generated by software other than the restoration program, such as Microsoft SQL Server. Review any error messages and consult the appropriate software documentation to further troubleshoot the problem.

Chapter 10

Using ArcestrA Reporting

You can use Wonderware Information Server with the Microsoft SQL Server Reporting Services infrastructure. Before you start, you should be familiar with SQL Server Reporting Services terminology and concepts.

For general information on using SQL Server Reporting Services, see the Microsoft documentation.

Important: Before installing and using ArcestrA reports, be sure the collation settings of the Wonderware Alarm Database node, Historian Runtime database, and the databases on the Wonderware Information Server node match exactly. The aaReports database uses the default collation settings on the SQL Server when it is installed.

What is ArcestrA Reporting?

ArcestrA Reporting is a set of features that publish reports using Wonderware Application Server, Wonderware Historian, and other system data. ArcestrA Reporting integrates Microsoft SQL Server Reporting Services with Wonderware Information Server.

You can use ArcestrA Reporting features to provide reports on data stored by a variety of Wonderware products and to view these reports from Wonderware Information Server.

ArcestrA Reporting offers the following:

- **Common reporting database and data source:** All ArcestrA reports use the **aaReports** database as their data source. The reporting database contains replicated views pointing to “linked servers.” The linked servers, in turn, refer to the actual hosts and databases from which you want to retrieve data. The reporting database serves as a central access point to data from various databases and servers. For an example, see "Concept Example: Common Reporting Database" on page 95.

All default data sources defined in Wonderware Information Server are automatically added as linked servers that the views in the reporting database can refer to. For example, when you change the host name or database name, the corresponding linked server definition updates accordingly so that your reports automatically use the new data source.

The **aaReports** database resides on the same server as the Wonderware Information Server database.

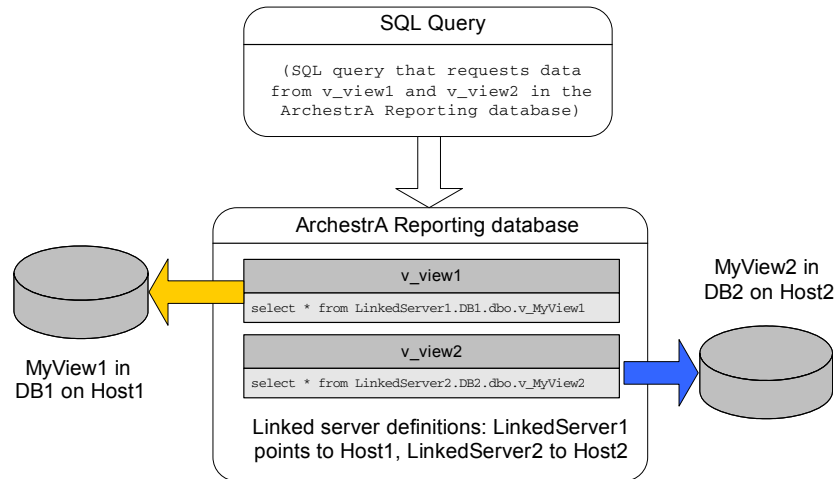
- **Report Deployment Utility:** The ArcestrA Reports Deployment utility helps to deploy reports to a Wonderware Information Server system. It automatically adds your report file to a SQL Server Reporting Services folder, executes a SQL script that replicates views from the database that contains the data you want to report on, and creates a linked server that points to that database.

Note: In this context, deployment refers to report configuration and publishing, not to Wonderware Information Server object deployment.

- **Integrated navigation:** Reports show as nodes in the Launch Pad and can be viewed within Wonderware Information Server.
- **Custom parameter input:** For passing Wonderware Historian tag names and start/end times to a report, you can use the Tag Picker and Time Picker instead of typing in values.
- **Executing reports from a script:** You can execute and print reports from a Wonderware Application Server script or a Wonderware Historian event action. You can also execute reports using a URL, for example, to open a parameterized report from a Table Weaver content unit.

Concept Example: Common Reporting Database

In the following example, a query is executed against the ArcestrA Reporting database that requests data from two views. In the ArcestrA Reporting database, these views exist only as “dummy” views that point to the “real” views located on two different computers.



Viewing Reports

All reports in the ArcestrA Reporting base folder that the current user is authorized to view are available as nodes in the Launch Pad of Wonderware Information Server. The SnapShot Reports are displayed as a node followed by datetime format items. To view a report, navigate to it just like you would access any other node.

To view a report

- 1 In the Launch Pad, expand the **Reports** node. A tree of reports and/or subfolders appears.
- 2 Navigate to the report you want to view. If a report is configured for snapshots, expand it to see the available snapshots.
- 3 Click the report or snapshot you want to view. If the report requires parameters, a parameter input page appears.

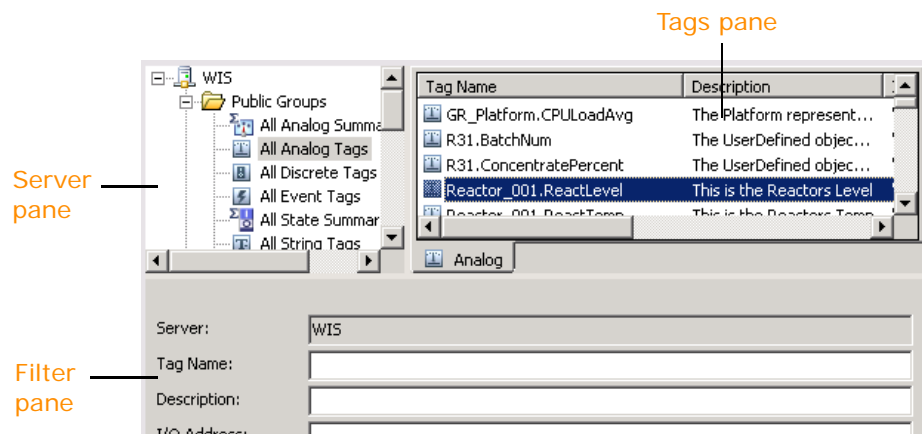
- 4 Enter parameter values as required. Depending on how the report is configured, the Tag Picker and/or Time Picker may be available.
 - If the report contains cascading parameters, select the “Parent” parameter, for example, a tag group.
 - Press the **Tab** or **Enter** keys, or click outside the field. The tags in that group appear in the next field.
 - You can also use wildcards to further narrow the search.
- 5 For more information, see "Using the Time Picker" on page 100. When you are done, click **Execute**.

The report is generated, and the results appear in the content pane.

Using the Tag Picker

The Tag Picker shows which tag groups and tags exist in the Wonderware Historian that is defined as the default data source for the “Historian” data source type.

Using the Tag Picker, you can quickly search the database for tags of a certain type and/or for tags that match a particular search pattern. You can then select the ones you want to include in a report.



The Tag Picker is comprised of the following three panes:

- Server pane
- Tags pane
- Filter pane

To show or hide the **Server** or **Filter** pane, right-click the Tag Picker and then click the name of the pane.

Using the Server Pane

The **Server** pane allows you to navigate through the folder structure (namespace) of the Wonderware Historian.

You can add groups just as you would add a new folder in the Windows Explorer. For example, you can create the "BoilerTags" group under in the existing "Private Groups" group. You can also delete, cut, copy, paste, and drag objects from one folder to another.

To add a group

- 1 Right-click on the folder under which you want to create a group and then click **New Group**.

A new folder appears in the Tag Picker.

- 2 Type a name for the folder and press ENTER.

To add a tag to a group

- 1 Select the system group folder that contains the tag that you want to add to your new group.
- 2 In the **Tags** pane, select the tag to add.
- 3 Do any of the following:
 - Drag the desired tag from the **Tags** pane into the folder.
 - Right-click on the desired tag in the **Tags** pane. Use the **Copy** and **Paste** commands in the shortcut menu to copy the tag to the target folder.

When you add tags to a new group, the original reference still appears in the default system group.

To delete a group or tag

- 1 Select the group or tag in the pane.
- 2 Do any of the following:
 - Right-click on the group or tag and then click **Delete**.
 - Press the DELETE key.

When you delete a private group or tag reference in a private group, the group folder, any subfolders that the group folder may contain, and all references to tags are deleted. The tags themselves are not deleted, and the original references still appear in the default system group. You cannot delete public folders or the tag references contained in them.

To rename a group

Note: You can rename a group that you have created in the Tag Picker. However, you cannot rename a public folder.

- 1 Select the group in the pane.
- 2 Do any of the following:
 - Right-click on the group and then click **Rename**.
 - Press the F2 key.
- 3 Type a new name for the group and press ENTER.

To view server details

- 1 In the **Server** pane, right-click on the server and then click **Server details**. The **Server Details** dialog box appears.
- 2 Click **OK**.

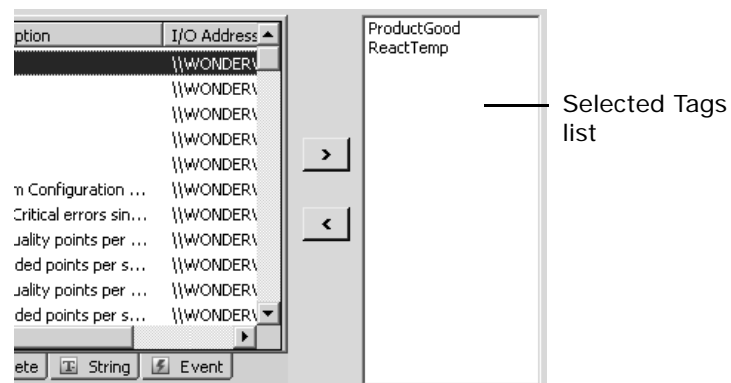
Using the Tags Pane

The **Tags** pane shows all the tags for the currently selected group in the **Server** pane.

To view only tags of a certain type, click the appropriate tab at the bottom of the pane.

To sort the table by a particular column, click the column heading.

Depending on the configuration of the report, the Tag Picker may show an additional **Selected Tags** list.



To add or remove tags from the **Selected Tags** list, use the > and < buttons. You can also drag the tags between the list panes.

Using the Filter Pane

Use the **Filter** pane to reduce the tags listed in the **Tags** pane according to criteria that you specify. You can filter the tags according to name, description, and I/O address. The filter mechanism allows for the following "wildcard" characters as part of the filter criteria:

Wildcard Character	Filter Function
%	Any string of zero or more characters.
_	Any single character.
[]	Any single character within the specified range or set. For example: <ul style="list-style-type: none"> • [a-f] • [abcdef]
[^]	Any single character not within the specified range or set. For example: <ul style="list-style-type: none"> • [^a - f] • [^abcdef]

For example, to find all tagnames ending with "level," type "%level."

When the **Server** pane and the **Filter** pane are both visible, the filter conditions apply to the selected group in the **Server** pane. When the **Server** pane is hidden, the filter applies to all tags on the Wonderware Historian.

To apply a filter

- 1 In the **Tag name** box, enter the string to match for the tagname.
- 2 In the **Description** box, enter the string to match for the description.
- 3 In the **I/O Address** box, enter the string to match for the I/O address.
- 4 Select the **Exact match** check box to search for tags that exactly match the entire string that you provided for the tagname and/or description options.

For example, if you specify "level" as the tagname and do not select **Exact match**, any tagname that contains the string "level" appears. For example, "ReactLevel," "ProdLevel," and "\$AccessLevel."

The **Exact match** option does not apply to the I/O address.

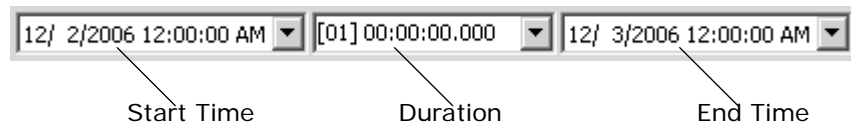
- 5 Click **Apply** to apply the filter criteria.
- 6 Click **Clear** to clear the **Filter** pane.

Using the Time Picker

The time picker allows you to select a time range by specifying a start time, end time, and/or duration.

To specify a time period

- ◆ On the Time toolbar, specify the start time, end time, and/or duration. To select a date from a calendar, click the down arrow on the start time or end time list. To select a predefined duration, click the down arrow on the duration list.



When you change one of the options, one of the other options is recalculated automatically. While you change the option, a blue frame appears around the option that will be recalculated as a result of the change.

The relation between changed and updated options is as follows:

You change	The time picker updates...
Start time	End time (based on duration)
End time	Start time (based on duration)
Duration	Start time (based on end time)

If you change multiple options in a row, which option is updated depends on which two other options you changed last. For example, if you change the start time and then the end time, the duration is calculated accordingly. If you change the start time and then the duration, the end time is calculated, and so on.

Managing Reports

You can manage reports from Wonderware Information Server using the standard functionality of SQL Server Reporting Services. For example, you can delete reports, configure default parameter values, set snapshot options, and so on.

To manage reports

- ◆ In the Launch Pad, expand the **Administration** node and click on **Report Manager**.

The SQL Server Reporting Services management page appears in the content pane. Use it just as you would use it when accessing it directly. For more information, see the Microsoft documentation.

Configuring Reporting Options

You can configure a number of options related to ArchestrA Reporting functionality. To do this, edit the `web.config` file located in the `ArchestrAReports` subfolder of the Wonderware Information Server virtual directory. You can configure the following options:

Option	Description
EncryptedSysAdminUserPassword	The password for the user name specified by the <code>SysAdminUserName</code> option. This value is stored in an encrypted format. If you want to change this value manually, you must use the encrypted version of the password. To get the encrypted version, configure a shared data source in Wonderware Information Server with the desired user name and password. Then, copy the encrypted password from the <code>DataSources</code> table in the Wonderware Information Server database on the Wonderware Information Server system and paste it as the value for this option.
HiddenReportPrefix	The prefix character for hidden reports. If a report's name starts with this character, it is not shown in the Launch Pad.
PrinterMapping	A mapping of Windows printer names to logical printer names. Logical printer names are used when you print a report from a Wonderware Application Server or Wonderware Historian script. To map a printer, specify a value in a format of "Logical name=Windows name." For example, a value of "Default=ACME Corp. SuperWriter" makes the printer that is installed under the name "ACME Corp. SuperWriter" available under the logical name "Default." To map multiple printers, separate the mappings using commas.
ReportManager	The URL of the Microsoft SQL Server Reporting Services website. For example, "http://localhost/Reports". Depending on your environment, you may need to use a fully-qualified URL. For example, "http://reporhost.mydomain.com/Reports". By default a relative URL is used, <code>/Reports</code> . This is a client-side redirection to <code>/Reports</code> .
SysAdminUserName	The user name that is used to connect to the ArchestrA Reporting database and configure the corresponding linked server when adding or editing a shared data source in Wonderware Information Server.

Understanding Reporting Security

ArcestrA Reporting security relies on the SQL Server Reporting Services (SSRS) role model. The SSRS role membership of Wonderware Information Server users determines whether they can view, execute or create reports. Users only see those reports in the Launch Pad that they are allowed to view based on their SSRS role.

Generally, a user's role membership is checked based on the account that was used to log on to Industrial Application Server. The only exception is creating a report using Report Builder. In this case, Report Builder always runs under the account that is currently logged on to the client computer. Therefore, role membership is checked based on that account, not the account that was used to log on to Industrial Application Server (which may be a different account).

When you install Wonderware Application Server, the following Windows user groups are configured on the Industrial Application Server computer:

- **aaReportsAdministrators:** This group is assigned the SSRS "Content Manager" role and the Industrial Application Server "Administrator" role.
- **aaReportsPowerUsers:** This group is assigned the SSRS "My Reports," "Report Builder," and "Publisher" roles and the Industrial Application Server "Engineer" role.
- **aaReportsUsers:** This group is assigned the SSRS "Browser" role and the Wonderware Application Server "Read-Only User" role.

You can add Windows user accounts to these groups to give them the desired level of access to reports.

Furthermore, an "aaReportsUsers" user with a password of "pwReportsUser" is created in the ArcestrA Reporting database to allow non-administrator access to the database.

Developing Reports

Because Wonderware Application Server uses the SQL Server Reporting Services infrastructure, you can use it to execute and view any report developed using SQL Server Reporting Services. There are, however, a number of additional features that extend standard Reporting Services. This section explains what these features are and how you can use them in your custom reports.

About Building Reports

Microsoft Report Builder uses the concept of a “Semantic Model” to build reports. Semantic models include the following elements:

- A report model is a metadata layer on top of a physical database that identifies business entities, fields, and roles. After publishing, you can develop reports without having to be familiar with database structures or understanding and writing SQL queries.
- Models are comprised of entities, which are sets of related report items that share the following:
 - Grouped together under a friendly name
 - Predefined relationships between these business entities
 - Predefined calculations.
- Models are defined using an XML language called Semantic Model Definition Language (SMDL). The file extension for report model files is .smdl.

For more information on developing reports for SQL Server Reporting Services, see the Microsoft documentation.

Creating Reports

You have two options for creating a new report for Wonderware Application Server: creating a simple ad-hoc report based on a semantic model, or developing a customized report in an external development environment and deploying it to Industrial Application Server.

Creating an Ad-hoc Report

You can create a simple ad-hoc report based on any semantic model available in Wonderware Application Server.

To create an ad-hoc report

- 1 Click **Administration** to expand the list and click **Report Manager**.
- 2 Click **Report Builder** in the top navigation bar. Microsoft Report Builder appears.
- 3 Select the model you want to use to create the report. A Historian model is provided by default.
- 4 Create your report using the fields provided by the model.
- 5 Run and/or save the report from Report Builder.

Note: For more information on using Report Builder, see the Microsoft documentation.

Creating a Custom Report

To create a more full-featured report, use SQL Server Business Intelligence Development Studio.

You can then deploy the report using the ArcestrA Reports Deployment utility. For more information, see "Deploying Reports" on page 119.

Follow these general guidelines when creating custom reports:

- Wonderware Information Server shows all reports under the **ArcestrA Reports** folder in SQL Server Reporting Services (the ArcestrA Reporting root folder). After you copy your report to that folder or a subfolder, it's available in Wonderware Application Server.
- You can hide reports in the Launch Pad by prefixing their name with a special character. By default, this character is the underscore. You can configure a different character. For more information, see the `HiddenReportPrefix` option in "Configuring Reporting Options" on page 101.
- If you want to package a report for deployment using the ArcestrA Reports Deployment utility, the report must use the `aaReports` datasource. The report must use a datasource called "aaReports" that points to the `aaReports` database. An error occurs during report deployment if the report is configured to use a data source other than `aaReports`.
- You can use **cascading parameters to restrict the values of other parameters. For example, you can restrict tagnames based on the group they belong to. Filtering a cascaded value is also supported. For more information on cascading parameters, see "To view a report" on page 95.**
- You can customize your report parameters to use Wonderware Information Server controls.

The following table describes custom inputs that show the controls

Parameter Name	Data Type	Parameter	Result
TagName	String	Multi Value	Tag Picker control appears with multi-tag selection.
TagName	String	Single Value	Tag Picker control appears with single-tag selection.
(TagName AND) PathName	String	Single Value	Path field appears in the Tag Picker.

Parameter Name	Data Type	Parameter	Result
StartDateTime	DateTime	Single Value	Time Picker control appears.
AND			
EndDateTime			
TimeZoneID	Integer	Single Value	Time Zone Picker control appears.
Duration	Integer	Single Value	This parameter will not appear in the parameter page, and will automatically be set to the Time Picker duration selected by the user.

- Wonderware Application Server provides two report templates that you can use to create your own reports. The default installation location is:

```
Program Files/Wonderware/Wonderware InformationServer/
ArchestrAReports/SampleReports
/aaReportsTemplate.
```

The samples are also included on the installation CD at:

```
\\Wonderware\Program_ArchestrAReports\
ArchestrAReports\SampleReports\
aaReportsTemplate.
```

Working with Report Parameters

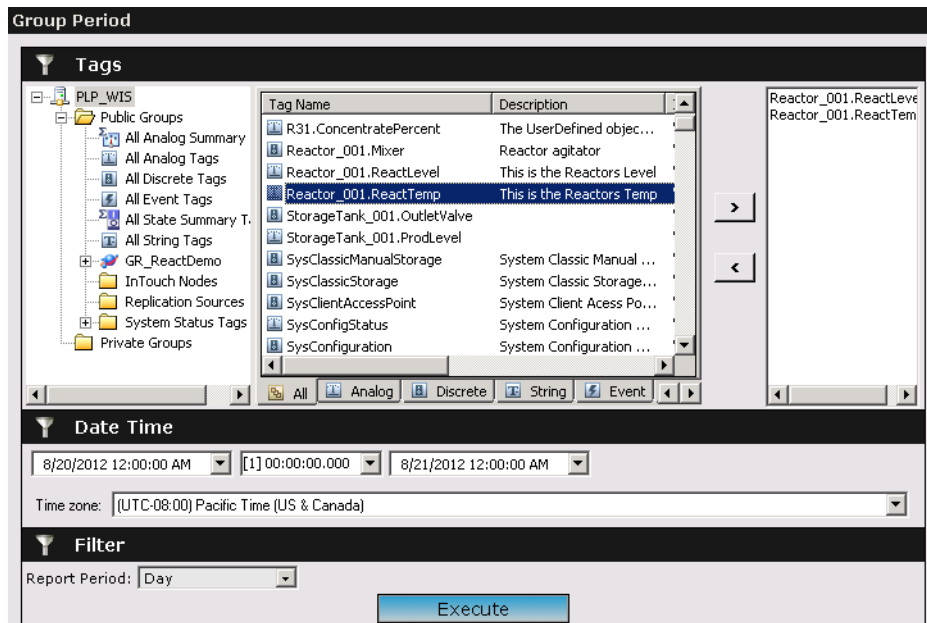
When you call a parameterized report from Wonderware Information Server, a custom parameter input page appears instead of the standard input controls provided by SQL Server Reporting Services.

For example, when executing a report from SQL Server Reporting Services, the input controls might look like this:

The screenshot shows a web-based form for report parameters. It includes the following elements:

- Start Datetime:** A text input field containing '12/2/2006' with a calendar icon to its right.
- End Datetime:** A text input field containing '12/3/2006' with a calendar icon to its right.
- TagName:** A text input field that is currently empty, with a dropdown arrow on the right.
- Report Period:** A dropdown menu currently set to 'Day'.
- Time Zone Id:** A text input field containing '-1'.
- View Report:** A rectangular button on the right side of the form.

When executing the same report from Wonderware Application Server, the parameter input page might look like this:



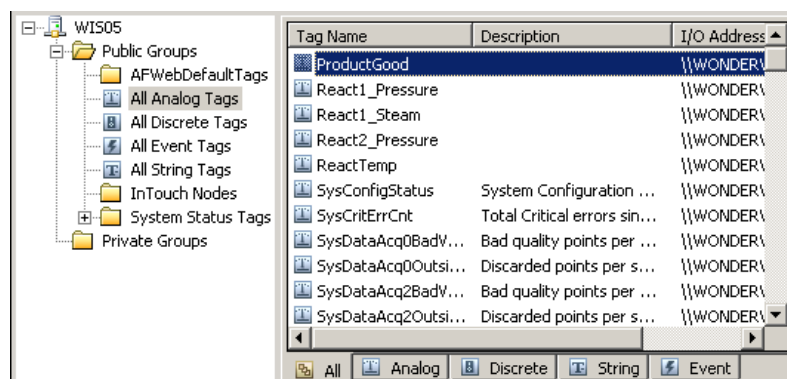
In most respects, this page works like the regular SQL Server Reporting Services parameter input pane. However, for certain types of parameters, you can use input controls instead of regular text boxes or lists. The following sections describe using the controls.

Using the Tag Picker for Parameter Input

For reports that require Wonderware Historian tagnames as parameters, you can use the Tag Picker to select tags from a list or to return the path of a selected folder in the folder hierarchy.

Note: One Wonderware Historian node is supported for Parameter Inputs.

The Tag Picker shows all tags stored on the Wonderware Historian that is defined as the default data source for the “Historian” data source type.



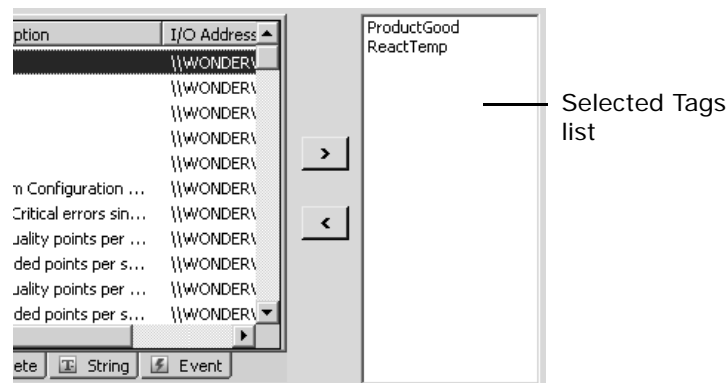
To use the Tag Picker to select tags

- ◆ Define a string parameter called `TagName` in your report. When you view the report in Wonderware Information Server, the Tag Picker appears instead of the regular text box for that parameter.

The `TagName` parameter can be a single-value or multi-value parameter.

For a single-value parameter, Wonderware Information Server passes the currently selected tagname to the `TagName` parameter when you execute the report.

For a multi-value parameter, the Tag Picker shows an additional **Selected Tags** list.



To add or remove tags from the **Selected Tags** list, use the > and < buttons. When you execute the report, Industrial Application Server passes all tagnames from the **Selected Tags** list to the `TagName` parameter.

To use the Tag Picker to select a folder path

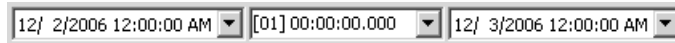
- ◆ Define a single-value string parameter called `PathName` in your report. When you view the report in Wonderware Application Server, the Tag Picker appears instead of the regular text box for that parameter.

When you execute the report, Wonderware Application Server passes the path to the currently selected tag folder to the `PathName` parameter. For example, `Hist1.Public Groups.All Analog Tags`.

Using the Time Picker for Parameter Input

For reports that require start and end date/time values as parameters, you can use the Time Picker to select a time range based on a start time, end time and/or duration.

The time values sent to the report parameters are in UTC.



The Wonderware Historian report manager uses local time.

To use the Time Picker to select a time period

The optional integer parameter `Duration`, when used in conjunction with the Time Picker, is set to the relative duration value selected in the middle Time Picker control. It may return a value documented in the `CalculateEndTimeUtc` function.

- ◆ Define two `DateTime` parameters called `StartDateTime` and `EndDateTime` in your report to pass values in UTC. Define two `DateTime` parameters called `StartDateTimeLocal` and `EndDateTimeLocal` in your report to pass values in Local. Be sure to define the parameters as datatype `DateTime`. When you view the report in Wonderware Application Server, the Time Picker appears instead of the regular text boxes for these parameters.

When you execute the report, Wonderware Application Server passes the currently selected start and end times to the `StartDateTime` and `EndDateTime` parameters.

Using the Time Zone Picker for Parameter Input

For reports that require a time zone as a parameter, you can use the Time Zone Picker to select a time zone from a list.



To use the Time Zone Picker to select a time zone

- ◆ Define an integer parameter called `TimeZoneId` in your report. When you view the report in Wonderware Application Server, the Time Zone Picker appears instead of the regular text box for that parameter.

To use a report parameter within a dataset, the parameter value must be mapped within the dataset definition. The report designer tries to do this automatically, but manual mapping may be needed.

By default, the Time Zone Picker shows all of the time zones defined on the client computer except for the installed Multilingual User Interface (MUI) language packs. When you install the MUI language pack, you must select **Apply display language to welcome screen and system accounts** check box in the **Install or uninstall display languages** screen to view the localized time zone. Alternately, you can update the Region and Language settings after installing the MUI language pack to view the localized time zone. For more information, see "Applying Region and Language Settings" on page 109.

Note: The Time Zone lists in the client and server Registry files must absolutely match. For example, orders, numbers, and names must be the same.

When you execute the report, Wonderware Application Server passes the ID of the currently selected time zone to the `TimeZoneId` parameter. You can then use custom SQL functions to calculate query times based on the time zone. For more information, see "Using Add-On Functions" on page 109.

Note: The `TimeZoneId` parameter only shows the Time Zone picker when the Time Picker is also shown.

Applying Region and Language Settings

You can update the region and language settings to view the Time Zone Picker after installing the MUI language pack.

To apply the region and language settings

- 1 Open the **Region and Language Settings** window.
- 2 Click the **Administrative** tab, and then click **Copy settings**. The Welcome screen and new user account settings page appears.
- 3 Select the **Welcome screen and system accounts** check box and then click **OK**.

After applying the settings, you should restart the computer.

Using Add-On Functions

The ArchestrA Reporting database contains a number of custom SQL functions that you can use in your reports. The following functions are available:

- `CalculateEndTimeUtc`
- `CalculateStartTimeUtc`
- `DateTimeLocalToUtc`
- `DateTimeToFileTime`

- DateTimeUtcToLocal
- FileTimeLocalToUtc
- FileTimeToDateTime
- FileTimeToDateTimeLocal
- FileTimeToString
- FileTimeToStringLocal
- FileTimeUtcToLocal
- IsDaylightSavingTime
- StringLocalToFileTime
- StringToFileTime
- TimeZoneDisplayName
- TimeZoneId
- TimeZoneName
- TimeZoneToUtc
- UtcToTimeZone

CalculateEndTimeUtc

Returns the end time of a specified relative duration at the Report Server node.

Syntax

```
CalculateEndTimeUtc(@when datetime, @duration int, @timeZoneID
int)
```

Parameters

when

The time to be returned if no valid duration parameter is specified.

duration

The relative duration. Valid values are:

Value	Description
1	The last minute.
2	The last five minutes.
3	The last ten minutes.
4	The last fifteen minutes.

Value	Description
5	The last 30 minutes.
6	The last hour.
7	The last two hours.
8	The last four hours.
9	The last eight hours.
10	The last twelve hours.
11	The last twenty-four hours.
12	The last two days.
13	The last week.
14	The last two weeks.
15	The last month.
16	The last three months.
33	0:00:00 of the previous day to 0:00:00 of the current day.
34	0:00:00 of the current day to the current time.
35	The start of the previous hour to the start of the current hour.
36	The start of the current hour to the current time.

timeZoneId

The time zone to return the end time for. -100 can be used to indicate ServerLocal.

Return Value

Returns the end time of the specified duration as a `datetime` value in UTC (Coordinated Universal Time).

CalculateStartTimeUtc

Returns the start time of a specified relative duration at the Report Server node.

Syntax

```
CalculateStartTimeUtc(@when datetime, @duration int,
    @timeZoneId int)
```

Parameters

when

The time to be returned if no valid `duration` parameter is specified.

duration

The relative duration. For more information on valid values, see "CalculateEndTimeUtc" on page 110.

timeZoneId

The time zone to return the end time for. `-100` can be used to indicate `ServerLocal`.

Return Value

Returns the start time of the specified duration as a `datetime` value in UTC (Coordinated Universal Time).

DateTimeLocalToUtc

Converts a `datetime` value that represents the local time on the ArcestrA Reporting database server to UTC (Coordinated Universal Time).

Syntax

```
DateTimeLocalToUtc(@dateTime datetime)
```

Parameters

dateTime

A `datetime` value representing the local time on the ArcestrA Reporting database server.

Return Value

Returns a `datetime` value.

DateTimeToFileTime

Converts a `datetime` value to a `FILETIME` value that represents the local time on the ArcestrA Reporting database server. `FILETIME` is a SQL Server `bigint` value representing the Microsoft Windows 32 `FILETIME` (the number of 100 nanosecond intervals since January 1, 1601)

Syntax

```
DateTimeToFileTime(@dateTime bigint)
```

Parameters

dateTime

A `bigint` value representing the local time on the ArcestrA Reporting database server.

Return Value

Returns a `bigint` value.

DateTimeUtcToLocal

Converts a `datetime` value that represents UTC (Coordinated Universal Time) to the local time on the ArcestrA Reporting database server .

Syntax

```
DateTimeUtcToLocal(@dateTime datetime)
```

Parameters

dateTime

A `datetime` value representing UTC.

Return Value

Returns a datetime value.

FileTimeLocalToUtc

Converts a FILETIME value that represents the local time on the Arcestra Reporting database server to UTC (Coordinated Universal Time).

Syntax

```
FileTimeLocalToUtc(@fileTime bigint)
```

Parameters

fileTime

A FILETIME value representing the local time on the Arcestra Reporting database server.

Return Value

Returns a bigint value.

FileTimeToDateTime

Converts a FILETIME value to a SQL datetime value.

Syntax

```
FileTimeToDateTime(@fileTime bigint)
```

Parameters

fileTime

A FILETIME value.

Return Value

Returns the corresponding datetime value. No time zone conversion is applied. The "corresponding datetime value" is rounded to the nearest available SQL Server time value, which has an accuracy of 3.33 milliseconds.

FileTimeToDateTimeLocal

Converts a FILETIME value to a SQL datetime value. The result represents the local time on the Arcestra Reporting database server.

Syntax

```
FileTimeToDateTimeLocal(@fileTime bigint)
```

Parameters*fileTime*

A FILETIME value representing Coordinated Universal Time (UTC).

Return Value

Returns the corresponding datetime value rounded to nearest 3.33 ms.

FileTimeToString

Converts a FILETIME value to a date/time string.

Syntax

```
FileTimeToString(@fileTime bigint, @format nvarchar(max))
```

Parameters*fileTime*

A FILETIME value.

format

The format for the date/time string. This must be a valid .NET Framework DateTime format string. If you pass NULL, the default format is used (yyyy-MM-dd HH:mm:ss.ffffff).

Return Value

Returns the value as a string. No time zone conversion is applied.

FileTimeToStringLocal

Converts a FILETIME value to a date/time string. The result represents the local time on the Arcestra Reporting database server.

Syntax

```
FileTimeToStringLocal(@fileTime bigint, @format nvarchar(max))
```

Parameters*fileTime*

A FILETIME value representing Coordinated Universal Time (UTC).

format

The format for the date/time string. This must be a valid .NET Framework DateTime format string. If you pass NULL, the default format is used (yyyy-MM-dd HH:mm:ss.ffffff).

Return Value

Returns the value as a string.

FileTimeUtcToLocal

Converts a FILETIME value that represents UTC (Coordinated Universal Time) to the local time on the ArcestrA Reporting database server.

Syntax

```
FileTimeUtcToLocal(@fileTime bigint)
```

Parameters

fileTime

A FILETIME value representing UTC.

Return Value

Returns a bigint value.

IsDaylightSavingTime

Returns whether a specific date/time falls within daylight saving time in a time zone.

Syntax

```
IsDaylightSavingTime(@when datetime, @timeZoneId int)
```

Parameters

when

The date/time value to check.

timeZoneId

The time zone ID. -100 can be used to indicate ServerLocal.

Return Value

Returns True if the date/time falls within daylight saving time in the specified time zone. Returns False otherwise.

StringLocalToFileTime

Converts a date/time string to a FILETIME value that represents the local time on the ArcestrA Reporting database server.

Syntax

```
StringToFileTime(@timeString nvarchar(max))
```

Parameters

timeString

A date/time string representing the local time on the ArcestrA Reporting database server. The date/time format must be valid in the current .NET Framework culture.

Return Value

Returns a bigint value.

StringToFileTime

Converts a date/time string to a FILETIME value that represents UTC (Coordinated Universal Time).

Syntax

```
StringToFileTime(@timeString nvarchar(max))
```

Parameters

timeString

A date/time string representing UTC. The date/time format must be valid in the current .NET Framework culture.

Return Value

Returns a bigint value.

TimeZoneDisplayName

Returns the long name of a time zone based on the time zone's ID.

Syntax

```
TimeZoneDisplayName(@timeZoneId int)
```

Parameters

timeZoneId

The time zone ID. -100 can be used to indicate ServerLocal.

Return Value

Returns the name of the time zone as a string. For example, "(GMT-08:00) Pacific Time (US & Canada); Tijuana."

TimeZoneId

Returns the ID of a time zone based on the time zone's short name.

Syntax

```
TimeZoneId(@timeZoneName nvarchar(255))
```

Parameters

timeZoneName

The time zone's name. For example, "Pacific Standard Time."

Return Value

Returns the time zone's ID as an integer.

TimeZoneName

Returns the short name of a time zone based on the time zone's ID.

Syntax

```
TimeZoneName(@timeZoneId int)
```

Parameters

timeZoneId

The time zone ID. -100 indicates the time zone of the server hosting the Arcestra Reporting database.

Return Value

Returns the name of the time zone as a string. For example, "Pacific Standard Time."

TimeZoneToUtc

Converts a UTC (Coordinated Universal Time) time to the local time in the specified time zone.

Syntax

```
TimeZoneToUtc(@when datetime, @timeZoneId int)
```

Parameters

when

The UTC time.

timeZoneId

The time zone ID. -100 can be used to indicate ServerLocal.

Return Value

Returns the local time in the specified time zone as a datetime value.

UtcToTimeZone

Converts a local time in the specified time zone to UTC (Coordinated Universal Time).

Syntax

```
UtcToTimeZone(@when datetime, @timeZoneId int)
```

Parameters

when

The local time.

timeZoneId

The time zone ID. -100 can be used to indicate ServerLocal.

Return Value

Returns the UTC time as a `datetime` value.

Deploying Reports

Conceptually, deploying a custom report on a Industrial Application Server system involves the following tasks:

- Create a default data source for a data source type in Industrial Application Server. This automatically adds a linked server.
- Use a SQL script to create any database objects needed for the report. For example, a view might be replicated in the ArcestrA Reporting database that points to the views in the target database through the linked server.
- Deploy the report to the SQL Server Report Server.

The **ArcestrA Report Deployment** utility facilitates this process. Using this utility, you can deploy an existing report package to your local Industrial Application Server system. The utility uses an existing Shared Data Source, or it can create a new Shared Data Source type and associated Shared Data Source when deploying the reports.

The report package doesn't contain specific information about database servers and names. Instead, it contains placeholders that are replaced with specific information when the report is deployed.

Note: To deploy the report package, you must select the XML file contained in the existing deployment package.

The general tasks for packaging and deploying a report are as follows:

- 1 Create the report. The report should only rely on views in the ArcestrA Reporting database. It should not refer directly to the target database that contains the data you want to report on.
- 2 Create a SQL script file that replicates any necessary views from the target database to the ArcestrA Reporting database. The SQL script does not refer to a specific server or database name. Instead, it uses placeholders that are replaced with the actual linked server information at deployment. For more information, see "Creating Database Objects" on page 120.
- 3 Create a configuration file for the ArcestrA Reports Deployment utility. The configuration file specifies where your report file is located, where it should be placed in the Reporting Services folder structure, and where the SQL script file from step 2 is located. For more information, see "Creating a Configuration File" on page 122.

- 4 Run the Arcestra Reports Deployment utility on the Wonderware Information Server. The utility specifies the configuration file and information for the linked server that should be used or created. For more information, see "Deploying Reports Using the Arcestra Reports Deployment Utility" on page 126.

If necessary, the utility creates a linked server using the information you provided. It executes the SQL script, replacing the placeholders with the actual linked server information. Finally, it uploads the specified report to the specified location.

Creating Database Objects

If your report requires additional items in the reporting database (for example, views or tables), you can create a SQL script that creates these objects. When you deploy your report, the **Arcestra Reports Deployment** utility automatically runs this script.

Your script can contain the following placeholders. When the script file is executed, these placeholders are replaced with the specific information that you provided when you started the utility.

Placeholder	Description
%ReportsDatabase%	The name of the reporting database.
%ReportsNode%	The node name of the reporting database.
%SourceDatabase%	The database name for the linked server that you provided when running the utility.
%SourceNode%	The node name for the linked server that you provided when running the utility.
%SourceUser%	The user name for the linked server that you provided when running the utility.
%SourcePassword%	The password for the linked server that you provided when running the utility.
%SourceName%	The name for the linked server that you provided when running the utility.
%SourcePrefix%	The prefix needed to refer to a table or view in the database specified by the linked server. This is the linked server name followed by the database name (for example, <code>LinkedServer1.MyDatabase</code>).

For example, your script could include the following SQL statement:

```
CREATE VIEW ProdPerf_Location as select * from
    %SourcePrefix%.dbo.ProdPerf_Location
```

When you run the utility, specifying “Server1” as the name of the linked server and “ProdDB” as the database name, the placeholder is replaced, and the following command is run:

```
create view ProdPerf_Location as select * from
    Server1.ProdDB.dbo.ProdPerf_Location
```

This statement creates a “pass-through” view that points to the original view, which is located in a different database on a different physical host. Because the pass-through view only refers to the linked server name, but not to a specific host name, you could move the database to a different host and edit the linked server definition accordingly. The replicated view would still work.

For more flexibility, you can rewrite the same statement as follows:

```
create view ProdPerf_Location as select * from
    OPENQUERY(%SourceName%, 'select * from ProdPerf_Location')
```

Note: Changing the database name only works for views using OPENQUERY to specify the database.

In this case, the following command is run:

```
create view [dbo].[ProdPerf_Location] as select * from
    OPENQUERY(Server1, 'select * from ProdPerf_Location')
```

In this case, because the view doesn’t refer to a specific host name or database name, you could change both the physical host as well as the database name. As long as you update the linked server definition accordingly, the view still works.

Sample report packages are located at:

```
C:\Program Files\Wonderware\WonderwareInformationServer
\ArchestrAReports\Samples.
```

Caution: Using OPENQUERY can have a severe performance impact on the Report Server. Check with your SQL Server Administrator before running the command.

Creating a Configuration File

For each set of reports that you want to deploy using the Arcestra Reports Deployment utility, you create a configuration file in XML format. The configuration file contains the following information:

- Any Report items, such as Reports, Models, Folders and so on, to be deployed to the SQL Report Server
- Any custom SQL script file to process against the reporting database (to replicate views etc.)

The following sections describe the structure and elements of the configuration file. For a sample, see "Sample Configuration File" on page 125.

Configuration File Structure

A configuration file has the following structure:

```
<XML header/>

<ReportSources>
  <SourceDatabase>
    <WebConfig>
    </WebConfig>
    <ReportServer>
    </ReportServer>
    <Reporting>
      <Folder>
        <Report/>
        <Model/>
      </Folder>
    </Reporting>
  </SourceDatabase>
</ReportSources>
```

- The `ReportSources` element contains one schema. For more information, see "ReportSources XML Element" on page 123.
- The `SourceDatabase` element contains one source database, represented by the `SourceDatabase` XML element. For more information, see "SourceDatabase XML Element" on page 123.

- The `SourceDatabase` element contains information on the following:
 - a** Information on the SQL script that should be run when deploying the report. This information is represented by the `ReportServer` XML element. For more information, see "ReportServer XML Element" on page 124.
 - b** Information on the reporting items that should be deployed. This information is represented by the `Reporting` XML element. For more information, see "Reporting XML Element" on page 124.
- The `ReportServer` element contains any of the following:
 - a** Folders that should be created under the Arcestra Reporting base folder. This information is represented by the `Folder` XML element.
 - b** Report and/or model files that should be uploaded. This information is represented by the `Report` and `Model` XML sub-elements.

A `Folder` element can contain `Report`, `Model`, or other `Folder` elements. This allows you to create folder trees. For more information, see "Reporting XML Element" on page 124.

For a sample configuration file, see "Sample Configuration File" on page 125.

ReportSources XML Element

This element references the `aaReportsSchema.xsd` used for reporting. It has one required attribute:

- `xmlns`: Specifies the `aaReportsSchema.xsd` schema namespace to be used.

The configuration file can only contain a single `ReportSources` element.

SourceDatabase XML Element

This element defines a source database. It is the container for three other elements:

- `ReportServer`: Specifies the SQL script that should be run when deploying the report. For more information, see "ReportServer XML Element" on page 124.
- `Reporting`: Specifies the reporting items that should be deployed. For more information, see "Reporting XML Element" on page 124.

It has one attribute:

- **name:** Specifies the name of the database. Used for informational purposes only.

WebConfig XML Element

This element is required and should be empty.

ReportServer XML Element

This element is required and can contain zero or one `Deploy` elements. The `Deploy` element specifies the SQL script that should be run when deploying the report.

- **Deploy:** Use this element to specify the path to the file in the `file` attribute. For example, to use a file named “DeployScript.sql,” specify `<Deploy file="DeployScript.sql" />`.

Reporting XML Element

This element is required and can contain zero or more `Folder`, `Report`, and `Model` sub-elements.

Use this element to specify the reporting items that should be deployed.

- **Folder:** Creates a folder. Specify the folder name and description using the `name` and `description` attributes. For example, to create a folder named “Folder 1” with a description of “My first folder,” specify `<Folder name="Folder 1" description="My first folder"></Folder>`.
- **Report:** Uploads a report file. Use the `name` attribute to specify the name under which the report should appear in Industrial Application Server. Specify the file path and report description using the `file` and `description` attributes. For example, to upload the report file “Report1.rdl” using a name of “My Report 1” with a description of “My first report,” specify `<Report name="My Report 1" file="Report1.rdl" description="My first report" />`.
- **Model:** Uploads a model file. Use the `name` attribute to specify the name under which the model should appear in Industrial Application Server. Specify the file path and model description using the `file` and `description` attributes. For example, to upload the model file “Model1.smdl” using a name of “My Model 1” with a description of “My first model,” specify `<Model name="My Model 1" file="Model1.smdl" description="My first model" />`.

Folder sub-elements can contain Report elements, Model elements, and other Folder elements. This allows you to create folder trees. Each item is created in the folder that corresponds to its Folder parent element. Items that don't have a Folder parent element are created in the Arcestra Reporting root folder.

For example, the following sample fragment uploads a report to the base folder, creates a folder named **Support** with a subfolder named **Models**, and uploads a model to the **Models** folder.

```
<Report name="Top-level report" file="TopReport.rdl" description="Report stored in the
base folder"/>

<Folder name="Support" description="Folder for support files">
  <Folder name="Models" description="Folder for model files">
    <Model name="Support Model" file="SupModel.smdl" description="Semantic Model for
top-level report"/>
  </Folder>
</Folder>
```

Sample Configuration File

A simple configuration example file might look like this:

```
<?xml version="1.0" encoding="utf-8"?>

<ReportSources xmlns = "aaReportsSchema.xsd">
  <SourceDatabase name="InSQL">
    <WebConfig/>
    <ReportServer>
      <Deploy file="insqldeploy.sql" />
    </ReportServer>
    <Reporting>
      <Folder name="Historian" description="Folder for Historian Reports">
        <Report name="Group Period" file="GroupPeriodReport.rdl"
description="Historian Group Period Report"/>
        <Model name="Historian Model" file="InSQL.smdl" description="Semantic
Model for Historian"/>
      </Folder>
    </Reporting>
  </SourceDatabase>
</ReportSources>
```

When you use this configuration file for deployment, the following happens:

- 1 A folder named “Historian” is created under the Arcestra Reporting base folder in SQL Server Reporting Services. The report file **GroupPeriodReport.rdl** and the model file **InSQL.smdl** are uploaded to this folder.
- 2 The SQL script file **insqldeploy.sql** is executed against the Arcestra Reporting database.

Deploying Reports Using the ArcestrA Reports Deployment Utility

When you start the ArcestrA Reports Deployment utility (`aaReportDBConfig.exe`) without passing any parameters, a graphical interface appears that lets you specify deployment information and start deployment.

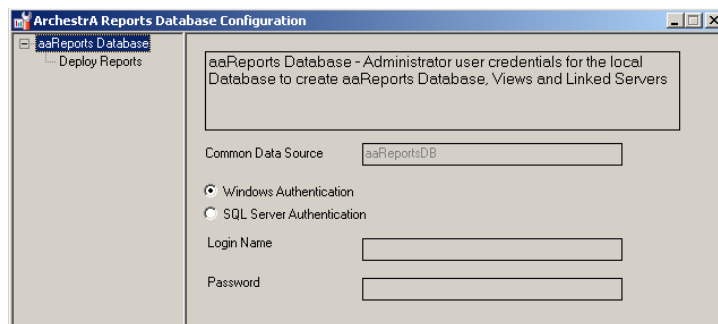
To deploy a report using the utility

To successfully deploy a report, you must configure security configuration settings required to connect with the `aaReports` database. You can select Windows Authentication, or SQL Authentication.

If Windows Authentication is used in both dialog boxes, security delegation must be enabled from Active Directory. If SQL Authentication is used in both dialog boxes, the SQL Server node security user credentials are used.

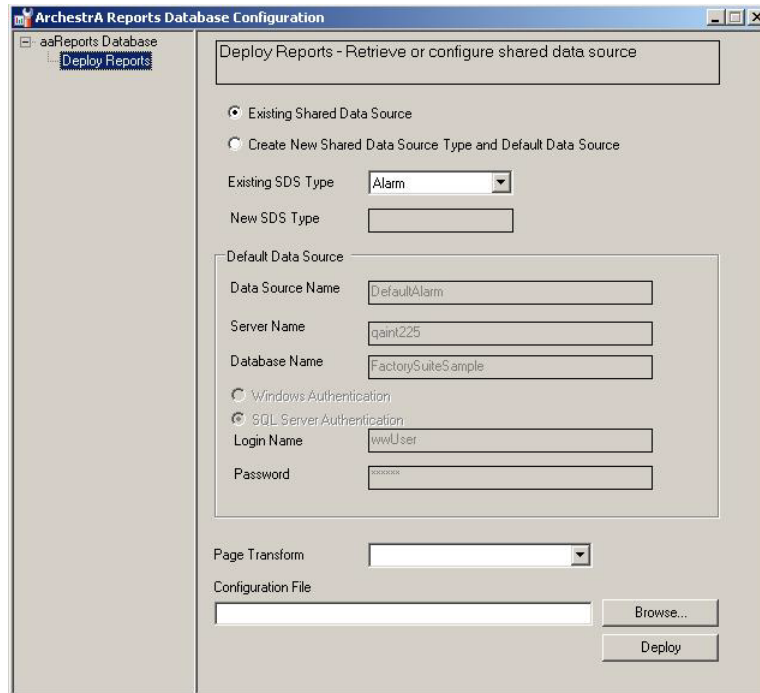
If the first dialog box is set to SQL Authentication, and the second dialog box is set to Windows authentication, the SQL Server user's credentials are used during the configuration process to access the Data Source Server.

- 1 Start the ArcestrA Reports Deployment utility from the **Wonderware/Information Server** group of the Windows **Start** menu. The **ArcestrA Reports Database Configuration** dialog box appears with the **aaReports Database** page active.



- 2 Specify the administrator credentials for connecting to the ArcestrA Reporting database.
 - **Windows Authentication** uses permissions supplied by the Active Directory.
 - If you selected **SQL Server Authentication**, specify the credentials of a SQL Server administrator account in the **Login Name** and **Password** boxes.

- 3 In the tree-view in the left pane, click **Deploy Reports**. The **Deploy Reports** page appears.



- 4 Specify whether to use an existing linked server for report deployment or to create a new one.
 - Select **Existing Shared Data Source** if you want to deploy your report using an existing data source defined in Industrial Application Server.
 - Select **Create New Shared Data Source Type and Default Data Source** if you want to create a new data source type, a default data source for that type, and a corresponding linked server.
- 5 If you selected **Existing Shared Data Source**, click the desired data source type in the **Existing SDS Type** list. In the **Default Data Source** area, the connection information for the default data source of the selected type appears.
- 6 If you selected to create a new data source type, enter its name in the **New SDS Type** box. In the **Default Data Source** area, enter the connection information for the new data source and linked server.
- 7 In the **Page Transform** list, specify whether the deployed report(s) should be converted to a different page size.

- 8 In the **Configuration File** box, enter the path to the .xml configuration file that you want to use for deployment. Click **Browse** to browse for the file.
- 9 Click **Deploy**.

The Arcestra Reports Deployment utility deploys your report(s) based on the information specified in the deployment file.

Preparing for Report Execution

You can execute reports from Wonderware Information Server and Wonderware Historian. Before executing reports from either source:

- Configure local or network printers.
- Configure Snapshot reporting.
- Import the Reports Library

Configure Printers

You can print your reports from the local printer or from one or more network printers. Add a local or network printer using standard printer configuration steps, on the portal machine.

Note: Printing is always executed from the Wonderware Information Server node.

Modify the web.config File for Printer Configuration

The web.config file contains the element key values for any printers. It must be modified to include any local or network printers configured on the Wonderware Information Server node.

To modify the web.config file

- 1 Locate the web.config file and open it using Notepad. The default location is:
`C:\Inetpub\wwwroot\Wonderware\ArcestraReports\web.config`
- 2 Locate the `<add key="PrinterMapping" value.../>` line and add the printer domain and printer name using the format shown in the following graphic. Separate multiple printer names using a comma.

The following graphic shows two printers.

```

web.config - Notepad
File Edit Format View Help
<?xml version="1.0"?>
<!--
  Note: As an alternative to hand editing this file you can use the
  web admin tool to configure settings for your application. Use
  the website->Asp.Net Configuration option in Visual Studio.
  A full list of settings and comments can be found in
  machine.config.comments usually located in
  \windows\Microsoft.Net\Framework\v2.x\Config
-->
<configuration>
  <appSettings>
    <add key="ArchestrAReportsBaseUrl" value="../../../ArchestrAReports" />
    <add key="RootReportCatalogName" value="/ArchestrA Reports" />
    <add key="ReportServiceswsdl" value="/ReportService2005.asmx" />
    <add key="ReportExecutionwsdl" value="/ReportExecution2005.asmx" />
    <add key="ReportBuilderApplication" value="/ReportBuilder/ReportBuilder.application" />
    <add key="ReportServer" value="http://QAINT295/ReportServer" />
    <add key="ReportManager" value="/Reports" />
    <add key="ServerReportFolders" value="SavedReports" />
    <add key="DefaultServerReportFolder" value="SavedReports" />
    <add key="DisplayErrorStackTrace" value="false" />
    <add key="IncludeErrorStackTrace" value="true" />
    <add key="LogUserInfo" value="false" />
    <add key="LogWebServiceMessage" value="false" />
    <add key="PrinterMapping" value="Default=\\DEVPRINT\PRT22LAB,PRT22NEL-D=\\devprint\PRT22NEL-D" />
    <add key="HiddenReportPrefix" value="" />
    <add key="TagPickerUseHttp" value="false" />
    <add key="TagPickerBaseUrlAddress" value="http://localhost/" />
    <add key="TagPickerVirtualDirectoryName" value="ReportingTags" />
  </appSettings>
  
```

3 Save and close the file.

WARNING! Do NOT save the file as a .txt file.

Configure Snapshot Reporting

You can trigger snapshot reports from both Wonderware Information Server and Wonderware Historian.

To ensure successful snapshot reporting, you must configure the aaReports Shared Data Source with the correct credentials.

To configure Wonderware Information Server for Snapshot Reports

- 1 On the Wonderware Information Server node, open Wonderware Information Server and navigate to **Administration/Report Manager/ArcestrA Reports/aaReports**.

The screenshot shows the 'Report Manager' web interface. The breadcrumb path is 'Home > ArcestrA Reports > aaReports'. The 'Properties' tab is active, showing the configuration for the 'aaReports' data source. The 'General' section includes fields for Name (aaReports), Description (Shared Data Source to aaReports for all ArcestrA Report items), and a checkbox for 'Enable this data source' which is checked. The 'Connection type' is set to 'Microsoft SQL Server' and the 'Connection string' is 'data source=QAIN295;initial catalog=aaReports'. Under 'Connect using', the 'Credentials stored securely in the report server' option is selected. The 'User name' field contains '<domain name>\<user name>' and the 'Password' field is masked with dots. The 'Use as Windows credentials when connecting to the data source' checkbox is checked. At the bottom, there are 'Apply', 'Move', and 'Delete' buttons.

- 2 Click the **Credentials stored securely in the report server** option and type the Domain/User Name and Password as shown in the previous graphic.
- 3 Click the **Use as Windows credentials when connecting to the data source** option, and **Apply**.

Executing Reports from Wonderware Application Server

You can trigger snapshots, and export and print parameterized reports by using Wonderware Application Server object scripts.

Once you have imported the script function library, a number of object classes are available for use in Wonderware Application Server scripts.

Import the ArchestrAReportsScripts.dll

The necessary objects for executing reports are provided as a separate library. To use them, import the reports library object first.

The screenshot shows the 'Report Manager' interface for 'SQL Server Reporting Services'. The breadcrumb path is 'Home > ArchestrA Reports > aaReports'. The 'Properties' tab is active, with sub-tabs for 'Properties', 'Dependent Items', and 'Subscriptions'. The 'General' section is expanded, showing the following configuration:

- Name:** aaReports
- Description:** Shared Data Source to aaReports for all ArchestrA Report Items
- Hide in list view
- Enable this data source
- Data Source Type:** Microsoft SQL Server
- Connection string:** data source=W2K8TEST;initial catalog=aaReports
- Connect using:**
 - Credentials supplied by the user running the report
 - Display the following text to prompt user for a user name and password:
 - Use as Windows credentials when connecting to the data source
 - Credentials stored securely in the report server
 - User name:
 - Password:
 - Use as Windows credentials when connecting to the data source
 - Impersonate the authenticated user after a connection has been made to the data source
 - Windows integrated security
 - Credentials are not required

To import the reports library for Wonderware Application Server

- 1 Open the Wonderware Application Server IDE.
- 2 On the main menu, click **Import/Script Function Library**.
- 3 Select ArchestrAReportsScripts.dll file. It is located on the installation CD at .\ArchestrAReportsLibrary\IAS.
- 4 Click **Open**.
- 5 Acknowledge the Success message by clicking **OK**.

The following sections explain the methods and properties of these objects. For examples of how to use them, see "Wonderware Application Server Report Execution Script Samples" on page 140.

Your script should perform the following actions in order to successfully execute a report:

- The script must be run **Asynchronously**. This is to ensure a large print operation will not impede your Application Engine execution cycles.
- Open a connection to the report server.
- Get an instance of the report you want to execute.

- Specify any required parameters and the report format.
- Trigger the report.
- Check the status of the report execution until the report succeeds.
- Clean up internal data structures.

ArcestrA.Reports.ReportServer Class

ReportServer objects have the following methods:

- Dispose Method
- GetParameterizedReport Method
- GetSnapshotReport Method
- Open Method

Dispose Method

This method disposes of the internal data structures for a ReportServer instance.

Syntax

```
Dispose();
```

Remarks

This method has no parameters or return value.

GetParameterizedReport Method

This method returns an report instance of the ParameterizedReport class.

Syntax

```
GetParameterizedReport(string reportPath);
```

Parameters

reportPath

The full path to the report. For example, "/ArcestrA Reports/Alarms/Alarm History Report".

Return Value

If successful, a ParameterizedReport instance of the requested report is returned.

GetSnapshotReport Method

This method returns an report instance of the `SnapshotReport` class.

Syntax

```
GetSnapshotReport (string reportPath);
```

Parameters

reportPath

The full path to the report. For example, "/Archestra Reports/Alarms/Alarm History Report".

Return Value

If successful, a `SnapshotReport` instance of the requested report is returned.

Open Method

This method specifies the report server node and base URL used to generate reports. Use this method to initialize the connection before requesting a report instance.

Syntax

```
Open (string url);
```

Parameters

url

The URL to the base folder used for Archestra Reporting. For example: `http://NODENAME/Wonderware/ArchestraReports`

Return Value

Returns `True` if the connection was established; otherwise, returns `False`.

Archestra.Reports.SnapshotReport Class

`SnapshotReport` objects have the following properties and methods:

- Dispose Method
- LastErrorString Property
- Status Property
- Timestamp Property
- Trigger Method

Dispose Method

This method disposes of the internal data structures for a `SnapshotReport` instance.

Syntax

```
Dispose();
```

Remarks

This method has no parameters or return value.

LastErrorString Property

This property returns an error message when a report creation request has failed (that is, if the `Status` property contains `Fail` or the `Trigger` method returns `False`).

Return Value

Returns a string.

Status Property

This property returns the current state of the `SnapshotReport` instance.

Return Value

Returns a `ReportStatus` value. For more information, see "ReportStatus Enumeration" on page 140.

Remarks

If the status is `Fail`, check the `LastErrorString` property for detailed error information.

Timestamp Property

This property returns the timestamp of the report snapshot if it was successfully created (that is, if the `Status` property of the report instance contains `Success`).

Return Value

Returns a string.

Trigger Method

This method triggers the creation of a report snapshot on the report server.

Syntax

```
Trigger();
```

Return Value

Returns True if a request for a report snapshot was successfully submitted to SQL Server Reporting Services. Returns False if an error occurred, for example, a snapshot is already in progress for this object. In case of an error, check the `LastErrorString` property for the error message.

Remarks

Each `SnapshotReport` instance allows only one report to be in progress at a time. That is, you can't generate multiple snapshots concurrently. To check if the creation of a snapshot has been completed, use the `Status` property.

Archestra.Reports.ParameterizedReport Class

`ParameterizedReport` objects have the following properties and methods:

- `Dispose` Method
- `FileSave` Method
- `FileSaveServer` Method
- `LastErrorString` Property
- `PrintServer` Method
- `SetParameter` Method
- `Status` Property

Dispose Method

This method disposes of the internal data structures for a `ParameterizedReport` instance.

Syntax

```
Dispose();
```

Remarks

This method has no parameters or return value.

FileSave Method

This method executes the report and saves the results on the local computer.

Syntax

```
FileSave(ReportFormat format, string fileName);
```

Parameters

format

The format in which the report should be saved. For more information, see "ReportFormat Enumeration" on page 139.

fileName

The full path and file name, including extension, where the report should be saved on the local computer. For example:

C:\Reports\Summary.pdf. If no path is specified, the report is saved in the default directory of the owner of the ArcestrA Bootstrap service. Usually, this is the <Windows>\System32 folder. If no extension is specified, an appropriate extension is added based on the specified report format.

Return Value

Returns True if a request for executing the report was successfully submitted to SQL Server Reporting Services. Returns False if an error occurred, for example, report generation is already in progress for this object. In case of an error, check the LastErrorString property for the error message.

Remarks

Each `ParameterizedReport` instance allows only one report to be in progress at a time. That is, you can't generate multiple reports concurrently. To check if the creation of a snapshot has been completed, use the `Status` property.

FileSaveServer Method

This method executes a report and saves the results in a folder on the Wonderware Information Server website.

Syntax

```
FileSaveServer(ReportFormat format, string fileName, string  
folderName);
```

Parameters

format

The format in which the report should be saved. For more information, see "ReportFormat Enumeration" on page 139.

fileName

The file name, including extension, under which the report should be saved. For example: Summary.pdf. If no extension is specified, an appropriate extension is added based on the specified report format.

folderName

The folder name on the server. For example: SavedReports. Specify NULL to save the report in the default folder. To save the report, the folder must exist on the web site and the user must be a member of the aaReportsPowerUsers or aaReportsAdministrators groups. For more information, see "Understanding Reporting Security" on page 102.

Return Value

Returns True if a request for executing the report was successfully submitted to SQL Server Reporting Services. Returns False if an error occurred, for example, report generation is already in progress for this object. In case of an error, check the LastErrorString property for the error message.

Remarks

Each ParameterizedReport instance allows only one report to be in progress at a time. That is, you can't generate multiple reports concurrently. To check if the creation of a snapshot has been completed, use the Status property.

LastErrorString Property

This property returns an error message when a report creation request has failed (that is, if the Status property contains Fail or one of the methods involved in generating reports returns False).

Return Value

Returns a string.

PrintServer Method

This method executes a report and prints the results on a specified printer.

Syntax

```
PrintServer(string printerName, bool landscape, Margins  
reportMargins);
```

Parameters

printerName

The logical name of the printer where the report should be printed. The printer mapping is defined in the web.config file. For more information, see "Configuring Reporting Options" on page 101.

landscape

The orientation of the printed report. Specify True for landscape, False for portrait.

reportMargins

The margins of the printed report. This parameter requires an object of the Margins system class. The Margins object has four properties: Top, Bottom, Left, and Right. Each property specifies the width of the respective margin in hundredths of an inch.

Return Value

Returns True if a request for executing the report was successfully submitted to SQL Server Reporting Services. Returns False if an error occurred, for example, report generation is already in progress for this object. In case of an error, check the LastErrorString property for the error message.

Remarks

Each ParameterizedReport instance allows only one report to be in progress at a time. That is, you can't generate multiple reports concurrently. To check if the creation of a snapshot has been completed, use the Status property.

SetParameter Method

This method is used to set a report parameter, supply the parameterName, and the parameterValue.

Syntax

```
SetParameter(string parameterName, string parameterValue);
```

Parameters

parameterName

The name of the report parameter.

parameterValue

The value for the report parameter.

Return Value

Returns True if the parameter was set successfully. Returns False if an error occurred. In case of an error, check the LastErrorString property for the error message.

Remarks

To specify more than one value for a multi-value parameter, call this method once for each value.

The parameter name and value are not validated until the report is executed.

Character-type parameters with a fixed length may require trailing spaces to be considered valid.

If a report parameter has a list of available labels and values, you must specify the value as the parameter name, not the label.

To specify a date/time value, use any format supported by the Microsoft .NET 2.0 DateTime structure.

Status Property

This property returns the current state of the `ParameterizedReport` instance.

Return Value

Returns a `ReportStatus` value. For more information, see "ReportStatus Enumeration" on page 140.

Remarks

If the status is `Fail`, check the `LastErrorString` property for detailed error information.

ReportFormat Enumeration

This enumeration specifies available formats for saving an executed report.

Value	Description
CSV	Comma-Separated Value (CSV) file
Excel	Microsoft Excel spreadsheet file
MHTML	Multipart HTML (web archive) file
PDF	Adobe Portable Document Format (PDF) file
XML	eXtensible Markup Language (XML) file

ReportStatus Enumeration

This enumeration specifies status codes for a report instance that is being processed.

Value	Description
Unknown	An internal error has occurred.
NotStarted	The report has been initialized, but processing has not started.
InProgress	Report processing is currently underway.
Success	The report was created successfully.
Fail	Report processing failed.

Wonderware Application Server Report Execution Script Samples

The following script samples show how to use the script functions together to save or print a report.

Additional sample scripts are located on the installation CD at \\ArcestrAReportsLibrary\IAS\Samples.

Note: Snapshot reports use default values for all parameters. If you try to generate a report from a report with user-supplied parameters, the report does not execute, and an error is generated. It may be appropriate to create a linked report using Report Manager to allow you to set default values for all report parameters.

Executing a Snapshot Report

Note: The ArcestrAReportsScripts.dll library file must be imported into your IAS Galaxy. See detailed import steps: "To import the reports library for Wonderware Application Server" on page 131.

"To import the reports library for Wonderware Application Server" on page 131, use a script like the following.

```
Dim reportServerName as string;
Dim reportNamePath as string;
Dim msg as string;
Dim statusCounter as boolean;
Dim counter as integer;
Dim statusDelay as integer;
Dim ret as System.Boolean;
Dim reportServer as ArcestrA.Reports.ReportServer;
Dim snapshotReport as ArcestrA.Reports.SnapshotReport;

' make connection
```

```

reportServer = new ArchestrA.Reports.ReportServer;
reportServerName = "http://<YOUR WIS NODE NAME>/Wonderware/ArchestrAReports";
reportServer.Open(reportServerName);

' setup report path and name
reportNamePath = "/ArchestrA Reports/Historian/<YOUR REPORT NAME>";

LogMessage("***** Execute Snapshot.");

LogMessage("Executing to Report Server: " + reportServerName);

' Note:
' For parameterized reports add default parameters to the report.
' User data source credentials required to execute this report must be stored
' in the report server database, configure in the aaReports data source.

statusCounter = true;
statusDelay = 3000;

LogMessage("***** Trigger a snapshot, Report: " + reportNamePath + ".");

snapshotReport = reportServer.GetSnapshotReport(reportNamePath);
ret = snapshotReport.Trigger();

IF(ret == false) THEN

    msg = "Snapshot trigger returned false - System Time: " +
        System.DateTime.Now.ToString();
    msg = msg + " - Error Detail: " + snapshotReport.LastErrorString;
    LogMessage(msg);
ELSE

    LogMessage("Successfully triggered report SnapShot - System Time: " +
        System.DateTime.Now.ToString());
    LogMessage("***** Start status check. ");
    counter = 1;
    WHILE(statusCounter == true)
        IF(snapshotReport.Status == ArchestrA.Reports.ReportStatus.InProgress)
            THEN
                LogMessage("SnapShot - InProgress - Pass# " + counter.ToString());
            ELSEIF(snapshotReport.Status == ArchestrA.Reports.ReportStatus.Success)
                THEN
                    LogMessage("Success - TimeStamp: " + snapshotReport.TimeStamp);
                    statusCounter = false;
            ELSEIF(snapshotReport.Status == ArchestrA.Reports.ReportStatus.Fail)
                THEN
                    LogMessage("Failed - Pass# " + counter.ToString() +
                        " - Error Detail: " + snapshotReport.LastErrorString);
                    statusCounter = false;
            ELSEIF(snapshotReport.Status ==

```

```
        ArcestrA.Reports.ReportStatus.NotStarted)
    THEN
        LogMessage("Not Started - Pass# " + counter.ToString());
ELSEIF(snapshotReport.Status == ArcestrA.Reports.ReportStatus.Unknown)
    THEN
        LogMessage("Unknown - Pass# " + counter.ToString());
ELSE
    LogMessage("Default Null Unknown - Pass# " + counter.ToString());
ENDIF;
System.Threading.Thread.Sleep(statusDelay);
counter = counter + 1;
' after 40 loops checking status, aborting
IF(counter > 40) then
    statusCounter = false;
    LogMessage("Aborting status check....");
ENDIF;
ENDWHILE;
ENDIF;
snapshotReport.Dispose();
LogMessage("***** End of Script Execution.");
reportServer.Dispose();
```

Executing a Parameterized Report and Saving It to a Local Location

Note: The ArcestrAReportsScripts.dll library file must be imported into your Application Server Galaxy. For more information, see "To import the reports library for Wonderware Application Server" on page 131.

To execute a parameterized report and save the results on the local computer, use a script like the following.

```
Dim reportServerName as string;
Dim reportNamePath as string;
Dim reportExportName as String;
Dim enumTypeValue as integer;
Dim statusPassCount as integer;
Dim statusDelay as integer;
Dim doStatusPass as boolean;
Dim reportStoragePath as string;
Dim reportName as string;
Dim sMsg as string;
Dim fileFullName as string;
Dim reportServer as ArcestrA.Reports.ReportServer;
Dim parameterReport as ArcestrA.Reports.ParameterizedReport;
Dim snapshotReport as ArcestrA.Reports.SnapshotReport;
Dim ret as boolean;
Dim statusMaxPasses as integer;
Dim nodeName as string;
Dim dateNow as System.DateTime;
Dim storageDir as string;
```

```

statusMaxPasses = 40;
statusDelay = 3000;
nodeName = "<YOUR WIS NODE NAME>";
' make connection
reportServer = new ArcestrA.Reports.ReportServer;
reportServerName = "http://" + nodeName + "/Wonderware/ArcestrAReports";
ret = reportServer.Open(reportServerName);
LogMessage("***** Connecting to Report Server node");
IF(ret) THEN
    LogMessage("Successfully connected to: " + nodeName + ".");
ELSE
    LogMessage("Unable to connect to: " + nodeName + ".");
ENDIF;
' Save file local storage location
storageDir = "C:\Archestra\";
LogMessage("***** Execute Local Save");
LogMessage("Executing to Report Server: " + reportServerName);
doStatusPass = true;
' report name path
reportName = "Group Period";
' assemble the file path name
reportNamePath = "/ArcestrA Reports/Historian/" + reportName;
' assemble the export file storage location with report name
reportStoragePath = storageDir + reportName;
' Note: Group Period report cannot be exported to Excel format
fileFullName = reportStoragePath + ".CSV";
enumTypeValue = ArcestrA.Reports.ReportFormat.CSV;
' get an instance of the report
parameterReport = reportServer.GetParameterizedReport(reportNamePath);
.....
' send Tagname parameter to report
ret = parameterReport.SetParameter("TagName", "SysTimeHour");
if (ret) then
    LogMessage("TagName parameter successfully sent to report.");
ELSE

```

```
    LogMessage("Error - unable to send TagName parameter to report: " +
              parameterReport.LastErrorString);
ENDIF;
' call the save method
ret = parameterReport.FileSave(enumTypeValue, fileFullName);
IF (ret == false) THEN
    LogMessage("Error: - export call not succesfful: " +
              parameterReport.LastErrorString);
ELSE
    LogMessage("Export call successfully sent to report.");
    doStatusPass = true;
    statusPassCount = 1;
    ' loop to check the status of the export file
    WHILE(doStatusPass)
        IF(parameterReport.Status == ArcestrA.Reports.ReportStatus.Success)
            THEN
                LogMessage("Save - Pass#" + statusPassCount.ToString() +
                          "Successfully exported and saved locally as: " + fileFullName);
                doStatusPass = false;
            ELSEIF(parameterReport.Status == ArcestrA.Reports.ReportStatus.Fail)
                THEN
                    LogMessage("Save - Pass#" + statusPassCount.ToString() + " Status:
                              Failed - Error Detail: "
                              + parameterReport.LastErrorString);
                    doStatusPass = false;
            ELSEIF(parameterReport.Status ==
                  ArcestrA.Reports.ReportStatus.InProgress) THEN
                LogMessage("Save - Pass#" + statusPassCount.ToString() + " Status:
                          InProgress");
            ELSEIF(parameterReport.Status ==
                  ArcestrA.Reports.ReportStatus.Unknown) THEN
                LogMessage("Save - Pass#" + statusPassCount.ToString() + " Status:
                          Unknown");
            ELSEIF(parameterReport.Status ==
                  ArcestrA.Reports.ReportStatus.NotStarted) THEN
                LogMessage("Save - Pass#" + statusPassCount.ToString() + " Status:
                          Not Started");
        ELSE
            LogMessage("Save - Pass#" + statusPassCount.ToString() + " Status:
                      Unknown - " + parameterReport.Status.ToString() + " - Error
                      Detail: " + parameterReport.LastErrorString);
```



```

ENDIF;
' delay between each status check
System.Threading.Thread.Sleep(statusDelay);
' check if status takes too long to get a successful save
statusPassCount = statusPassCount + 1;
IF(statusPassCount > 40) THEN
    doStatusPass = false;
    LogMessage("Aborted status check..... ");
ENDIF;
ENDWHILE;
parameterReport.Dispose();
ENDIF;

LogMessage("***** End of Script Execution ");

' clean up the old data structures
reportServer.Dispose();

```

Executing a Parameterized Report and Saving the Report to a Remote Location

To execute a parameterized report and save the results on a remote computer, use a script like the following.

```

Dim reportServerName as string;
Dim reportNamePath as string;
Dim enumTypeValue as integer;
Dim statusPass as integer;
Dim statusDelay as integer;
Dim doStatusPass as boolean;
Dim fileName as string;
Dim reportName as string;
Dim sMsg as string;
Dim fileFullName as string;
Dim exportedFileName as string;
Dim reportServer as ArcestrA.Reports.ReportServer;
Dim parameterReport as ArcestrA.Reports.ParameterizedReport;
Dim snapshotReport as ArcestrA.Reports.SnapshotReport;
Dim ret as boolean;
Dim statusMaxPasses as integer;
Dim nodeName as string;
Dim folderName as string;

statusMaxPasses = 40;

statusDelay = 3000;

nodeName = "<YOUR NODE NAME>";

folderName = null;

' make connection

reportServer = new ArcestrA.Reports.ReportServer;

reportServerName = "http://" + nodeName + "/Wonderware/ArcestrAReports";

ret = reportServer.Open(reportServerName);

```

```
LogMessage("***** Connecting to Report Server node");
IF(ret) THEN
    LogMessage("Successfully connected to: " + nodeName + ".");
ELSE
    LogMessage("Unable to connect to: " + nodeName + ".");
ENDIF;

LogMessage("***** Execute Server Export");
LogMessage("Executing to Report Server: " + reportServerName);
doStatusPass = true;

' assemble the save file name and file type
reportName = "Group Period";
fileFullName = "\" + reportName + ".PDF";
reportNamePath = "/Arcestra Reports/Historian/" + reportName;
enumTypeValue = Arcestra.Reports.ReportFormat.PDF;

' get an instance of the report
parameterReport = reportServer.GetParameterizedReport(reportNamePath);
LogMessage("Save FilePathName: " + fileFullName);
LogMessage("Save format type: " + enumTypeValue.ToString());

' parameterized report save parameters, call the FileSave method
' with parameters, the export format type and full path file name to use.
.....

' send Tagname parameter to report
ret = parameterReport.SetParameter("TagName", "SysTimeHour");
IF (ret) then
    LogMessage("TagName parameter successfully sent to report.");
ELSE
    LogMessage("Error - unable to send TagName parameter to report: " +
        parameterReport.LastErrorString());
ENDIF;

ret = parameterReport.FileSaveServer(enumTypeValue, fileFullName, folderName);
sMsg = "Report [Export Type and file Path\Name] saved, command returned: " +
    ret.ToString() + " - ";
sMsg = sMsg + "System Time: " + System.DateTime.Now.ToString();
```

```

IF (ret == false) then
    sMsg = sMsg + " - Error: " + parameterReport.LastErrorString;
    LogMessage(sMsg);

ELSE
    LogMessage(sMsg);
    statusPass = 1;
    ' loop to check the status of the export file
    WHILE(doStatusPass)
        IF(parameterReport.Status == ArcestrA.Reports.ReportStatus.Success)

            THEN

                exportedFileName = fileFullName;
                exportedFileName = exportedFileName.Replace("\", "");
                LogMessage("Export - Pass#" + statusPass.ToString() + " Successfully
                    exported and saved on Server as: " + exportedFileName);
                doStatusPass = false;
            ELSEIF(parameterReport.Status == ArcestrA.Reports.ReportStatus.Fail)

                THEN

                    LogMessage("Export - Pass#" + statusPass.ToString() + " Status:
                        Failed - Error Detail: " + parameterReport.LastErrorString);
                    doStatusPass = false;
            ELSEIF(parameterReport.Status ==

                ArcestrA.Reports.ReportStatus.InProgress)

                THEN

                    LogMessage("Export - Pass#" + statusPass.ToString() + " Status:
                        InProgress");
            ELSEIF(parameterReport.Status ==

                ArcestrA.Reports.ReportStatus.Unknown) then

                LogMessage("Export - Pass#" + statusPass.ToString() + " Status:
                    Unknown");
            ELSEIF(parameterReport.Status ==

                ArcestrA.Reports.ReportStatus.NotStarted)

                THEN

                    LogMessage("Export - Pass#" + statusPass.ToString() +
                        " Status: Not Started");
        ELSE
            LogMessage("Export - Pass#" + statusPass.ToString() + " Status: Null
                Unknown - " + parameterReport.Status.ToString() + " - Error
                Detail: " + parameterReport.LastErrorString);
        ENDIF;
        ' delay between each status check
        System.Threading.Thread.Sleep(statusDelay);

        ' check if status takes too long to get a successful save
    
```

```

    statusPass = statusPass + 1;
    IF(statusPass > statusMaxPasses) THEN
        doStatusPass = false;
        LogMessage("Aborted status check..... ");
    ENDIF;
ENDWHILE;
parameterReport.Dispose();

ENDIF;
LogMessage("***** End of Script Execution ");

' clean up the old data structures
reportServer.Dispose();

```

Printing From Wonderware Information Server

Printing from Wonderware Information Server requires:

- The Application Server Bootstrap must be installed on the Wonderware Information Server node. Only the Bootstrap is needed.
- A Platform and any other objects containing your printing script, such as AppEngine, Area or UserDefined Object (UDO) must be deployed on your Wonderware Information Server node. In the Platform, identify the Wonderware Information Server node.

The printing script may be located in any of the deployed objects, including the Platform engine. However, it is most efficient to use the script on a child object for faster object redeployment.

Note: Ensure the Network Account User is the same on both the GR node and the Wonderware Information Server node.

- The ArcestraReportsScripts.dll library file must be imported into your Application Server Galaxy.

Note: See detailed import steps: "To import the reports library for Wonderware Application Server" on page 131

The following script example contains report parameters and generates a print job defining the report layout as "portrait."

```

Dim reportServerName as string;
Dim reportNamePath as string;
Dim enumTypeValue as integer;
Dim statusPass as integer;
Dim dateNow as System.DateTime;
Dim dateStart as System.DateTime;
Dim retPrintReport as boolean;
Dim statusDelay as integer;
Dim margins as Arcestra.Reports.aaReportingService.Margins;
Dim doStatusPass as boolean;
Dim reportStoragePath as string;
Dim reportName as string;
Dim sMsg as string;

```

```
Dim fileFullName as string;
Dim fileType as integer;
Dim reportServer as ArchestrA.Reports.ReportServer;
Dim parameterReport as ArchestrA.Reports.ParameterizedReport;
Dim ret as boolean;
Dim statusMaxPasses as integer;
Dim nodeName as string;
Dim retFileSave as boolean;
Dim landscape as boolean;

statusMaxPasses = 40;
statusDelay = 3000;
nodeName = "<YOUR WIS NODE NAME>";
landscape = true;

' DateTimes

dateNow = System.DateTime.Now;
dateStart = dateNow;
dateStart = dateStart.AddHours(-24);

' set report margins

margins = new Archestra.Reports.aaReportingService.Margins();
margins.top=20;
margins.bottom=20;
margins.left=200;
margins.right=200;

' set report name and path

reportName = "Group Period";
reportNamePath = "/ArchestrA Reports/Historian/" + reportName;
reportServer = new ArchestrA.Reports.ReportServer;
reportServerName = "http://" + nodeName + "/Wonderware/ArchestrAReports";

' open a connection to the report
ret = reportServer.Open(reportServerName);

IF(ret) then LogMessage("Successfully connected to: " + nodeName + ".");
ELSE LogMessage("Unable to connect to: " + nodeName + ".");
ENDIF;

' get an instance of the report
parameterReport = reportServer.GetParameterizedReport(reportNamePath);

' Apply tagname parameters

retFileSave = parameterReport.SetParameter("TagName", "SysTimeHour");

sMsg = "Report [Group] parameter saved, command returned: " +
        retFileSave.ToString() + " - ";

sMsg = sMsg + "System Time: " + System.DateTime.Now.ToString();

IF (retFileSave) THEN
    LogMessage(sMsg);
```

```
ELSE
    sMsg = sMsg + " - Error: " + parameterReport.LastErrorString;
    LogMessage(sMsg);
ENDIF;

retFileSave = parameterReport.SetParameter("TagName", "SysTimeMin");
sMsg = "Report [Group] parameter saved, command returned: " +
        retFileSave.ToString() + " - ";

sMsg = sMsg + "System Time: " + System.DateTime.Now.ToString();
IF (retFileSave) THEN
    LogMessage(sMsg);
ELSE
    sMsg = sMsg + " - Error: " + parameterReport.LastErrorString;
    LogMessage(sMsg);
ENDIF;

retFileSave = parameterReport.SetParameter("TagName", "SysTimeSec");
sMsg = "Report [Group] parameter saved, command returned:" +
        retFileSave.ToString() + " - ";

sMsg = sMsg + "System Time: " + System.DateTime.Now.ToString();
IF (retFileSave) THEN
    LogMessage(sMsg);
ELSE
    sMsg = sMsg + " - Error: " + parameterReport.LastErrorString;
    LogMessage(sMsg);
ENDIF;

' Apply StardateTime and EndDateTime
retFileSave = parameterReport.SetParameter("StartDateTime", dateStart.ToString());
sMsg = "Report [Group] parameter saved, command returned: " + retFileSave.ToString() +
        " - ";

sMsg = sMsg + "System Time: " + System.DateTime.Now.ToString();
IF (retFileSave) THEN
    LogMessage(sMsg);
ELSE
    sMsg = sMsg + " - Error: " + parameterReport.LastErrorString;
    LogMessage(sMsg);
ENDIF;

retFileSave = parameterReport.SetParameter("EndDateTime", dateNow.ToString());
sMsg = "Report [Group] parameter saved, command returned: " +
        retFileSave.ToString() + " - ";
```

```

sMsg = sMsg + "System Time: " + System.DateTime.Now.ToString();

IF (retFileSave) THEN
    LogMessage(sMsg);
ELSE
    sMsg = sMsg + " - Error: " + parameterReport.LastErrorString;
    LogMessage(sMsg);
ENDIF;

' Apply TimeZoneId

retFileSave = parameterReport.SetParameter("TimeZoneId", "-100");
sMsg = "Report [Group] parameter saved, command returned: " +
        retFileSave.ToString() + " - ";
sMsg = sMsg + "System Time: " + System.DateTime.Now.ToString();

IF (retFileSave) THEN
    LogMessage(sMsg);
ELSE
    sMsg = sMsg + " - Error: " + parameterReport.LastErrorString;
    LogMessage(sMsg);
ENDIF;

' Replace <PRINTERNAME> with the name of the printer set in the web.config file
retPrintReport = parameterReport.PrintServer("<PRINTERNAME>", landscape, margins);

' check status
doStatusPass = true;

IF (retPrintReport == false) THEN
    sMsg = sMsg + " - Error: " + parameterReport.LastErrorString;
    LogMessage(sMsg);
ELSE
    LogMessage(sMsg);
    statusPass = 1;
    ' loop to check the status of the export file
    WHILE(doStatusPass)
        IF(parameterReport.Status == ArchestrA.Reports.ReportStatus.Success)
            THEN
                LogMessage("Print - Pass#" + statusPass.ToString() + " successfully
                    printed report: " + reportNamePath);
                doStatusPass = false;
            ELSEIF(parameterReport.Status == ArchestrA.Reports.ReportStatus.Fail)
                THEN
                    LogMessage("Print - Pass#" + statusPass.ToString() +
                        " export status: Failed - Error Detail: " +
                        parameterReport.LastErrorString);
        
```

```
doStatusPass = false;
ELSEIF(parameterReport.Status ==
        Arcestra.Reports.ReportStatus.InProgress)
    THEN
    LogMessage("Print - Pass#" + statusPass.ToString() + " export status:
        InProgress");
ELSEIF(parameterReport.Status ==
        Arcestra.Reports.ReportStatus.Unknown)
    THEN
    LogMessage("Print - Pass#" + statusPass.ToString() +
        " export status: Unknown");
ELSEIF(parameterReport.Status ==
        Arcestra.Reports.ReportStatus.NotStarted)
    THEN
    LogMessage("Print - Pass#" + statusPass.ToString() + " export status:
        Not Started");
ELSE
    LogMessage("Print - Pass#" + statusPass.ToString() + " export status:
        Unknown - " + parameterReport.Status.ToString() + "
        - Error Detail: " + parameterReport.LastErrorString);
ENDIF;
' delay between each status check
System.Threading.Thread.Sleep(statusDelay);

' check if status takes too long to get a successful save
statusPass = statusPass + 1;
IF(statusPass > statusMaxPasses) THEN
    doStatusPass = false;
    LogMessage("Aborted status check..... ");
ENDIF;
ENDWHILE;
ENDIF;

margins = null;
parameterReport.Dispose();

reportServer.Dispose();
```


Executing Reports from Wonderware Historian Events

You can execute and print parameterized and snapshot reports by using Wonderware Historian events. Configure the event actions with SQL statements that execute reports on the Wonderware Information Server.

To execute Wonderware Information Server reports using Wonderware Historian, you must configure each server to communicate with the other. Communication between nodes is provided by running several configuration scripts on each node.

The following steps assume that Wonderware Information Server and Wonderware Historian are installed on different nodes.

Running the scripts on different nodes ensures the following:

- The Wonderware Historian node generates report snapshots and performs report exporting.
- The Wonderware Information Server prints the reports.

The necessary functions for executing reports are provided as separate libraries. To use them, install the libraries first.

Executing Snapshots and Exporting Reports

The following configuration task is necessary on the Wonderware Historian node.

To configure the Wonderware Historian node for Snapshot and exported reports

- 1 Copy the `InSqlEvents.dll` and the `InSqlEvents.XmlSerializers.dll` files to a local directory on the Wonderware Historian node.

The .dlls are located on the installation CD at:
`.\ArchestrAReportsLibrary\Historian.`

- 2 From Microsoft SQL Management Studio, locate and open the **ConfigureInSQLForAAREports.sql** file. It is located on the installation CD at: `.\ArchestrAReportsLibrary\Historian.`
- 3 Set the `@AssemblyPath` variable to the local directory containing the .dlls.
- 4 Execute the query. The script configures the required assemblies in the **Runtime** database.
- 5 Use a Wonderware Historian Event System action to execute a snapshot or export a report, using a Generic SQL Action script.

The following event script example creates a snapshot report:

```
/* This script will create a snapshot of a WIS report from an InSQL Generic SQL Action
Event */

EXEC ReportsTriggerSnapshot

@url = 'http://Wonderware/ArchestrAReports',
@path = '/ArchestrA Reports/Historian/<YOUR REPORT NAME>'
```

Printing Wonderware Historian Reports

Print all your reports from the Wonderware Information Server node. The following information describes configuration on both the Wonderware Information Server and the Wonderware Historian nodes.

To configure the Wonderware Information Server for report printing

- 1 Copy the `InSqlEvents.dll` and the `InSqlEvents.XmlSerializers.dll` files to a local directory on the Wonderware Information Server node.
The .dlls are located on the installation CD at:
`.\ArchestrAReportsLibrary\Historian.`
- 2 From Microsoft SQL Management Studio, locate and open the **ConfigureInSQLForAAREportsPrinting.sql** file. It is located on the installation CD at: `.\ArchestrAReportsLibrary\Historian.`
- 3 Set the `@AssemblyPath` variable to the local directory containing the .dlls.
- 4 Execute the query. The script configures the required assemblies in the **aaReports** database.

To configure the Wonderware Historian node for printing on the Wonderware Information Server node

- 1 On the Wonderware Historian node, create a Linked Server pointing to the Wonderware Information Server node. Using the **New Linked Server** window, do the following:
 - a In the **General** page, type the Linked Server name. The Linked Server name must be the network node name of the Wonderware Information Server.
 - b Click the **SQL Server** Server type option.
 - c In the **Security** page, click the **Be made using this security context** option and type the remote login and password. For example, `aaReportsUser/pwReportsUser`.
 - d In the **Server Options** page, change the **Rpc** and **Rpc Out** values to **True**.
- 2 Configure an event to trigger the report.

For example, you could configure a “Leading Edge” event that detects a discrete event, such as a water valve closing. The Event action script could look like the following example:

```
/* This script will print a simple WIS report from an InSQL Generic Action Event */
EXEC <LINKEDSERVERNODENAME>.aaReports.dbo.ReportsPrintServer
@url = 'http://<LINKEDSERVERNODENAME>/Wonderware/ArchestrAReports',
@path = '/ArchestrA Reports/Historian/<YOUR REPORT NAME>',
@parameters = '',
@printername = 'Default',
@landscape = 0,
@reportmargins = 'top=25,bottom=25,left=25,right=25'
```

SQL Functions for Executing Reports

A number of additional SQL functions are provided by the .dlls for use in event actions. The following sections explain each of these functions. For examples of how to use them, see "Examples for Executing Reports from Wonderware Historian" on page 159.

Use the following SQL functions to execute and print reports from an event action on the Wonderware Historian:

ReportsFileSave

This function executes a report and saves the results on the local computer.

Syntax

```
ReportsFileSave(@url nvarchar(255), @path nvarchar(255),
  @parameters nvarchar(4000), @reportFormat nvarchar(10),
  @localPath nvarchar(255))
```

Parameters

url

The URL to the base folder used for ArchestrA Reporting. For example: `http://localhost/Wonderware/ArchestrAReports`

path

The path of the report to be executed. For example: `/ArchestrA Reports/Alarms/Alarm History Report`

parameters

A comma-separated list of parameters to pass to the report. Parameter values containing commas must be enclosed in double quotes. To pass a double quote as part of a value, prefix it with a backslash (\). To pass a backslash, use two backslashes (\\). To

specify multiple parameter values, specify the parameter multiple times. To specify a date/time value, use any format supported by the Microsoft .NET 2.0 DateTime structure.

The following example parameter string specifies four TagName values (SysTimeHour, SysTimeMin, Has,Comma,Tag and Has\Backslash\Tag), a StartDate value of 7:42 AM on August 12, 2006, and a Text value of "Hello, World!":

```
@parameters='TagName=SysTimeHour,TagName=SysTimeMin,TagName="Has,Comma,Tag",TagName=Has\Backslash\Tag,StartDate=08/12/2006 07:42:00,Text="\Hello, World!\''
```

reportFormat

The format in which the report should be saved. Valid values are 'CSV', 'Excel', 'MHTML', 'PDF' and 'XML'. For more information, see "ReportFormat Enumeration" on page 139.

localPath

The full path and file name, including extension, where the report should be saved on the local computer. For example:

C:\Reports\Summary.pdf. If no path is specified, the report is saved in the default directory of the owner of the InSQL Event service. Usually, this is the <Windows>\System32 folder.

Return Value

Returns True if the report file was created. Returns False if an error occurred.

ReportsFileSaveServer

This function executes a report and saves the results in a folder on the Wonderware Information Server website.

Syntax

```
ReportsFileSaveServer(@url nvarchar(255), @path nvarchar(255),
    @parameters nvarchar(4000), @reportFormat nvarchar(10),
    @serverFile nvarchar(255), @serverFolder nvarchar(255))
```

Parameters

url

The URL to the base folder used for Arcestra Reporting. For example: <http://localhost/Wonderware/ArcestraReports>

path

The path of the report to be executed. For example: /Arcestra Reports/Alarms/Alarm History Report

parameters

A comma-separated list of parameters to pass to the report. Parameter values containing commas must be enclosed in double quotes. To pass a double quote as part of a value, prefix it with a

backslash (\). To pass a backslash, use two backslashes (\\). To specify multiple parameter values, specify the parameter multiple times. To specify a date/time value, use any format supported by the Microsoft .NET 2.0 DateTime structure.

The following example parameter string specifies four TagName values (SysTimeHour, SysTimeMin, Has,Comma,Tag and Has\Backslash\Tag), a StartDate value of 7:42 AM on August 12, 2006, and a Text value of "Hello, World!":

```
@parameters='TagName=SysTimeHour,TagName=SysTimeMin,TagName="Has,Comma,Tag",TagName=Has\\Backslash\\Tag,StartDate=08/12/2006 07:42:00,Text="\Hello, World!\'"
```

reportFormat

The format in which the report should be saved. Valid values are 'CSV', 'Excel', 'MHTML', 'PDF' and 'XML'. For more information, see "ReportFormat Enumeration" on page 139.

serverFile

The file name, including extension, under which the report should be saved. For example: Summary.pdf. If no extension is specified, an appropriate extension is added based on the specified report format.

serverFolder

The folder name on the server. For example: SavedReports. Specify NULL to save the report in the default folder. To save the report, the folder must exist on the web site and the user must be a member of the aaReportsPowerUsers or aaReportsAdministrators groups. For more information, see "Understanding Reporting Security" on page 102.

Return Value

Returns True if the report file was created. Returns False if an error occurred.

ReportsPrintServer

This method executes a report and prints the results on a specified printer.

Syntax

```
ReportsPrintServer(@url nvarchar(255), @path nvarchar(255),  
  @parameters nvarchar(4000), @printerName nvarchar(255),  
  @landscape bit, @reportMargins nvarchar(255))
```

Parameters

url

The URL to the base folder used for ArchestrA Reporting. For example: http://localhost/Wonderware/ArchestrAReports

path

The path of the report to be executed. For example: /Arcestra Reports/Alarms/Alarm History Report

parameters

A comma-separated list of parameters to pass to the report. Parameter values containing commas must be enclosed in double quotes. To pass a double quote as part of a value, prefix it with a backslash (\). To pass a backslash, use two backslashes (\). To specify multiple parameter values, specify the parameter multiple times. To specify a date/time value, use any format supported by the Microsoft .NET 2.0 DateTime structure.

The following example parameter string specifies four TagName values (SysTimeHour, SysTimeMin, Has,Comma,Tag and Has\Backslash\Tag), a StartDate value of 7:42 AM on August 12, 2006, and a Text value of "Hello, World!":

```
@parameters='TagName=SysTimeHour,TagName=SysTimeMin,TagName="Has,Comma,Tag",TagName=Has\\Backslash\\Tag,StartDateTime=08/12/2006 07:42:00,Text="\Hello, World!\"'
```

printerName

The logical name of the printer where the report should be printed. The printer mapping is defined in the **web.config** file. For more information, see "Configuring Reporting Options" on page 101.

landscape

The orientation of the printed report. Specify True for landscape, False for portrait.

reportMargins

The margins of the printed report. Specify a string in the following format:

```
@reportMargins='top=25,bottom=25,left=25,right=25'
```

Each number specifies the width of the respective margin in hundredths of an inch.

Return Value

Returns True if the report was printed. Returns False if an error occurred.

ReportsTriggerSnapshot

This function triggers the creation of a report snapshot on the report server.

Syntax

```
ReportsTriggerSnapshot(@url nvarchar(255), @path nvarchar(255))
```

Parameters*url*

The URL to the base folder used for ArcestrA Reporting. For example: `http://localhost/Wonderware/ArcestrAReports`

path

The path of the report to be executed. For example: `/ArcestrAReports/Alarms/Alarm History Report`

Return Value

Returns True the report snapshot was created. Returns False if an error occurred.

Examples for Executing Reports from Wonderware Historian

Printing an Wonderware Information Server (WIS) report from the Wonderware Historian requires the following:

- A Linked Server to the WIS server node.
- Assemblies (functions) in the aaReports database. The script executes from a Wonderware Historian Event tag. The Event tag calls a function in the aaReports database of your Wonderware Information Server.

For detailed configuration steps, see "Preparing for Report Execution" on page 128.

The following scripts show how to use the script functions together to export, save or print a report.

Exporting a Parameterized Report to the Wonderware Information Server Node

The following SQL script executes a parameterized report and saves the results as a MHTML file on the Wonderware Information Server computer.

```

DECLARE @endTime as datetime
DECLARE @beginTime as datetime
DECLARE @url as nvarchar(255)
DECLARE @path as nvarchar(255)
DECLARE @reportFormat as nvarchar(5)
DECLARE @parameters as nvarchar(4000)
DECLARE @reportTagName as nvarchar(32)
DECLARE @timePart nvarchar(23)
DECLARE @serverFile nvarchar(255)
DECLARE @serverFolder nvarchar(255)

SET @endTime=GetDate()

```

```
SET @beginTime=dateadd(mi, -720, @endTime)
--Replace "<WISNODENAME>" with the WIS Server name
SET @url='http://<WISNODENAME>/wonderware/ArcestraReports'
SET @path='/Arcestra Reports/Historian/Group Period'
SET @serverFolder='SavedReports'
SET @reportTagName='SysTimeMin'
SET @parameters='StartDateTime="'+convert(nvarchar(23), @beginTime,
126)+'"',EndDateTime="'+convert(nvarchar(23), @endTime,
126)+'"',TagName='+@reportTagName+',TimeZoneId=-100'
SET @reportFormat='MHTML'
--SET @reportFormat='CSV'
--SET @reportFormat='XML'
--SET @reportFormat='Excel'
--SET @reportFormat='PDF'
SET @timePart=convert(nvarchar(23), @endTime, 120)
SET @timePart=replace(@timePart, ':', '-')
SET @serverFile='InSQL_SavedReports_' + @timePart + '.' + @reportFormat
--SET @serverFile='InSQL_SavedReports_' + @timePart + '.XLS' -- if excel
EXEC dbo.ReportsFileSaveServer @url, @path, @parameters, @reportFormat, @serverFile,
@serverFolder
```

Triggering a Snapshot Report

The following SQL script creates a report snapshot and places it in a file.

```
DECLARE @url as nvarchar(255)
DECLARE @path as nvarchar(255)
--Replace "<WISNODENAME>" with the WIS Server name
SET @url='http://<WISNODENAME>/wonderware/ArcestraReports'
--Replace "<REPORTNAME>" with the name of a report
SET @path='/Arcestra Reports/<REPORTNAME>'
EXEC dbo.ReportsTriggerSnapshot @url, @path
```

Exporting a Parameterized Report to Local Node

The following SQL script executes a parameterized report and saves the results as a PDF file on the local computer.

```
-- declare variables for parameters
DECLARE @endTime as datetime
DECLARE @beginTime as datetime
```



```

DECLARE @beginTimeText as nvarchar(23)
DECLARE @endTimeText as nvarchar(23)
DECLARE @url as nvarchar(255)
DECLARE @path as nvarchar(255)
DECLARE @reportFormat as nvarchar(5)
DECLARE @parameters as nvarchar(4000)
DECLARE @localPath as nvarchar(255)
DECLARE @reportTagName as nvarchar(32)
-- set report times and convert to text
SET @endTime = GetDate()
SET @beginTime = dateadd(mi, -30, @endTime)
SET @beginTimeText = convert(nvarchar(23), @beginTime, 126)
SET @endTimeText = convert(nvarchar(23), @endTime, 126)
-- set the report server URL and report path
SET @url = 'http://MyServer1/Wonderware/ArchestrAReports'
SET @path='/ArchestrA Reports/Historian/Group Period'
-- set the parameters
SET @reportTagName='SysTimeMin'
SET @parameters='StartDateTime="' + @beginTimeText + '",EndDateTime="' + @endTimeText +
',TagName=' + @reportTagName + ', TimeZoneId=-100'
SET @reportFormat='PDF'
SET @localPath='C:\Archestra\TagSummaryExport' + '.' + @reportFormat
-- execute the report
EXEC dbo.ReportsFileSave @url=@url, @path=@path, @parameters=@parameters,
@reportFormat=@reportFormat, @localPath=@localPath

```

Printing a Parameterized Report

The following SQL script executes a parameterized report and prints the results to a designated printer.

```

DECLARE @endTime as datetime
DECLARE @beginTime as datetime
DECLARE @beginTimeText as nvarchar(23)
DECLARE @endTimeText as nvarchar(23)
DECLARE @url as nvarchar(255)
DECLARE @path as nvarchar(255)
DECLARE @parameters as nvarchar(4000)
DECLARE @reportTagName as nvarchar(32)
DECLARE @reportMargins as nvarchar(255)

```

```
DECLARE @printerName as nvarchar(100)
DECLARE @landscape as bit

SET @reportMargins = 'top=20,bottom=0,left=20,right=0'

SET @endTime = GetDate()

SET @beginTime = dateadd(mi, -30, @endTime)

SET @beginTimeText = convert(nvarchar(23), @beginTime, 126)

SET @endTimeText = convert(nvarchar(23), @endTime, 126)

--Replace "<WISNODENAME>" with the WIS Server name

SET @url = 'http://<WISNODENAME>/Wonderware/ArcestraReports'

SET @path='/Arcestra Reports/Historian/Group Period'

SET @reportTagName='SysTimeMin'

SET @parameters='StartDateTime="' + @beginTimeText + '",EndDateTime="' + @endTimeText +
',TagName="' + @reportTagName + ''

SET @reportTagName='SysTimeHour'

SET @parameters=@parameters + ',TagName="' + @reportTagName + ''

SET @parameters=@parameters + ', TimeZoneId=-100'

-- Replace '<PRINTERNAME>' with the printer name defined in the web.config file

SET @printerName= '<PRINTERNAME>'

SET @landscape = 0

--Replace "<LINKEDSERVER>" with the linked server name

EXEC <LINKEDSERVER>.aaReports.dbo.ReportsPrintServer @url, @path, @parameters,
@printerName, @landscape, @reportMargins
```

Executing Reports via a URL

You can execute reports using a URL, for example, to open a parameterized report from a Table Weaver content unit.

To execute a report using a URL

- ◆ Call the `ExecuteReport.aspx` page in the `ArcestraReports` subfolder of the Wonderware Information Server virtual directory. Pass the full path to the report in the SQL Server Reporting Services folder structure using the `ReportPath` parameter. Pass any other report parameters as additional URL parameters in the `name=value` format.

For example, assume you want to call a report named “My Report 1” in the ArcestrA Reporting base folder. The Wonderware Information Server is installed on the server named “Server1” using the virtual directory “Wonderware.” The report has five parameters of different data types: integer1, boolean1, float1, string1, and datetime1. To call the report and pass a value to each parameter, use the following URL:

```
http://Server1/Wonderware/ArcestrAReports/ExecuteReport.aspx?ReportPath=/ArcestrA
Reports/My Report 1&boolean1=true&integer1=100&string1=New String&datetime1=12/5/2006
10:10:10 AM&float1=3.1415
```

Enabling Secure Socket Layer (SSL) for ArcestrA Reports

When you want to provide reports outside the company ‘net, for example from home or other external locations, use Secure Socket Layers.

This section assumes you are familiar with the process of creating and providing certificates for SSL. It describes the manual configurations necessary for ArcestrA reports.

On the Wonderware Information Server node, modify the following config files:

web.config file

- ◆ Modify the “web.config” file located in C:\Inetpub\wwwroot\Wonderware\ArcestrAReports and add key as given below:

```
<add key="ReportServer"
value="https://<WebServer>/ReportServer" />
```

```
<add key="ReportManager" value="https://<WebServer>/Reports"
/>
```

- ◆ Change the ReportServer and ReportManager values from http://... to https://...

Reporting Services Configuration Files

If you used anything other than the NetBIOS name in the common name for the Web Server Certificate, then you'll need to make several changes to some configuration files to reflect the non-NetBIOS name in the URLs. Also, if you've used the NetBIOS name, you might find it helpful to change the embedded http:// URLs to your server over to https:// URLs. The following paragraphs detail these changes.

- RSReportServer.config

In RSReportServer.config, which you will find in \Program Files\Microsoft SQL Server\MSSQL.3\Reporting Services\ReportServer, you'll need to locate the <URLRoot> element and update the NetBIOS name to the DNS name, and also the http:// to https://.

Note: Take care to use the same case for the letters as you used in the certificate.

So, in our example here we needed to edit the <URLRoot> to be:

```
<UrlRoot>https://d1.internal.boost.net/ReportServer</UrlRoot>
```

The <Add Key= > line governs the master control over SSL:

```
<Add Key="SecureConnectionLevel" Value="2"/>
```

Acceptable values are:

- 3 Most secure—Use SSL for absolutely everything.
- 2 Secure—Use SSL for rendering and methods that pass credentials but don't insist on it for all SOAP calls.
- 1 Basic Security—Accepts http but rejects any calls that might be involved in the passing of credentials.
- 0 Least Secure—Don't use SSL at all.

2 is the value that the installation wizard will input if you install with the Use SSL check box selected, but we prefer to use 3 and ensure that the Report Manager is also using SSL.

- RSWebApplication.config

You'll find RSWebApplication.config in C:\Program Files\Microsoft SQL Server\MSSQL.3\Reporting Services\ReportManager. The change needed here is to update <ReportServerUrl> to include the name used in the certificate.

Note: If you specify a value for ReportServerUrl, you must remove the ReportServerVirtualDirectory value. For example, remove "ReportServer" from ReportServerVirtualDirectory, and add it to the end of the ReportServerUrl.

```
<ReportServerUrl>https://d1.internal.boost.net/ReportServer</ReportServerUrl>
```

Accessing Wonderware Information Server Content from an External Website

You can add a link to an enterprise portal (such as SPS, TopTier) to allow users to access Wonderware Information Server content from an external website.

If you are using integrated Windows Authentication, users within an intranet will not be required to log in.

Chapter 11

ActiveFactory Reporting

The ActiveFactory Reporting Website is a preconfigured Wonderware Information Server component that allows web users to:

- Generate reports using data from the Wonderware Historian databases.
- Trend history data from the Wonderware Historian databases.
- Build and execute SQL queries against data from the Wonderware Historian and other databases.

The ActiveFactory Reporting Website can be accessed both directly or through Wonderware Information Server. When accessing the site directly, a custom starting page appears from which users can access the various Reporting Website features. When accessing through Wonderware Information Server, the Reporting Website features appear under the **ActiveFactory** node in the Launch Pad.

Although not required, you may want to change some of the settings related to report publishing. This can be accomplished by editing a set of .xml files.

About Report Manager

The ActiveFactory Report Manager provides a organized way to manage reports. The ActiveFactory Report Manager is accessible through the Administration option within the Launch Pad. The ActiveFactory Report Manager allows you to mange the following report types:

- Static reports
- On demand reports
- Scheduled reports

The reports can be created and viewed from the Active Factory option within the system Launch Pad.

About Report Publishing

The following components are used during the publishing of reports to the ActiveFactory Reporting Website.

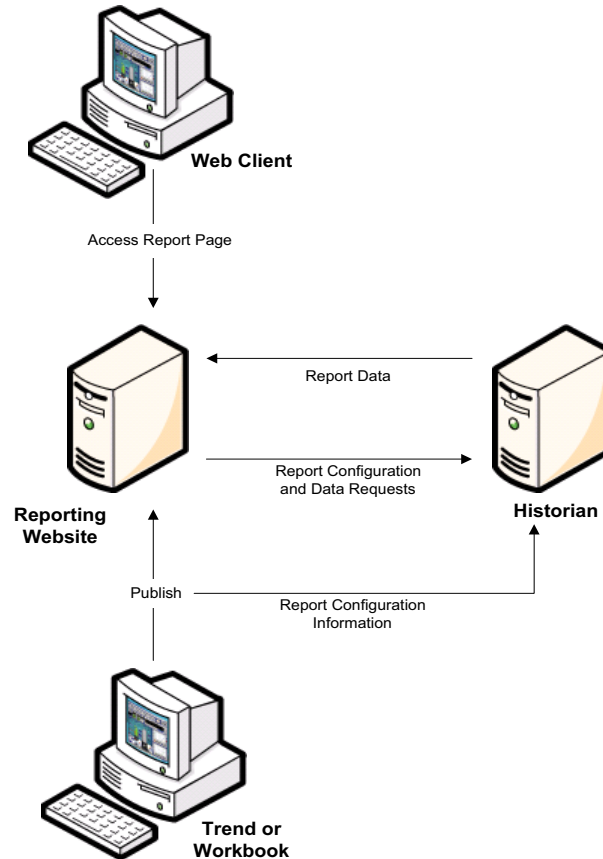
- Tables within the Wonderware Historian store report information. For more information, see Database Entities for Report Publishing on page 171.
- A set of folders located on the web server contain the published reports. For more information, see Report Publishing Folders on page 170.
- A set of XML files control the configuration and parameters for published reports. For more information, see Reporting Support Files on page 172.
- The Reporting Service (aaHistClientReportingService) is a Windows service that handles all of the report publishing tasks.

When a report is published to the website:

- 1** Information about the report is added to the Wonderware Historian database.
- 2** The report file is copied to the appropriate report folder on the Reporting Website computer by the Reporting Service. The Reporting Service periodically checks the Wonderware Historian database to see if new reports need to be published.

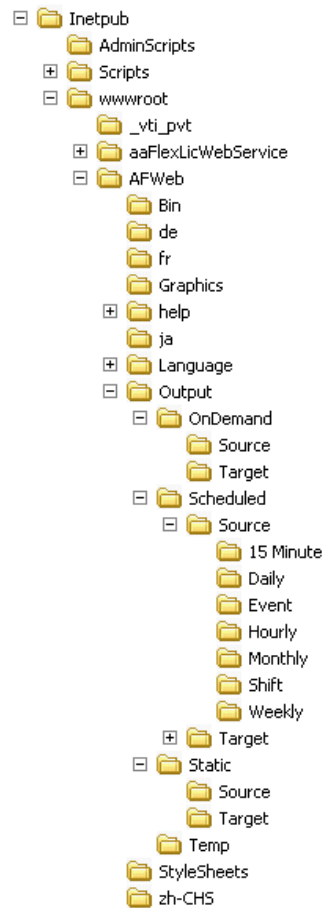
- 3 The website is configured to include the new report.
 - For a static report, the results are saved as an HTML file. When accessing the report, client users see the saved static data.
 - For an on-demand report, only the report definition is saved, but no data. Current data is retrieved from the database whenever a client user accesses the report.

The following diagram shows this process.



Report Publishing Folders

By default, all published reports reside in the following set of folders on the web server:

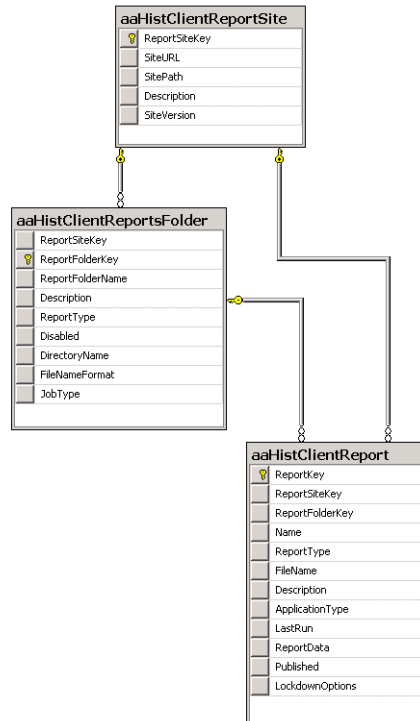


Each type of report (static, on demand, and scheduled) has its own folder. Within each of these folders are two subfolders: Source and Target. When a report is published, the Report Service copies the published report file to the \Source folder. The \Target folder is used during the actual generation of the report by the website user.

For scheduled reports, there is a subfolder for each time period.

Database Entities for Report Publishing

When the ActiveFactory Reporting Website or the ActiveFactory client software package is installed for the first time, three tables are added to the Runtime database of the Wonderware Historian.



- The aaHistClientReport table contains one row for each report that is published.
- The aaHistClientReportsFolder table contains one row for each report folder that appears under the main **Published Reports** navigation node.
- The aaHistClientReportSite table contains basic configuration information for the Reporting Website, such as the URL.

Also, the following stored procedures are created:

- aaManualTagInsert
- aaManualTagSingleValueInsert
- aaDiscreteTimeInState

These tables and stored procedures are for internal use only. Do not modify them.

Reporting Support Files

The following XML files are used by the Reporting Website:

- **ReportParameters.xml.** This file stores information related to the reports. There is a section for each report group (Pre-Defined, System Status, Summary Reports, and so on), as well as sections for each type of report in the report groups. For published reports, additional sections are included to contain information regarding the report name, file names and paths, the report type, and so on.
- If you add a custom report, report links are not available until you publish a report or manually update the ReportParameters.xml file in the c:\inetpub\wwwroot\afweb\language\en and c:\inetpub\wwwroot\afweb\language\en-us directories.
- **Configuration.config.** This file stores basic information for the website, such as schedules and archival rules for reports and the folders for scheduled, static, and on-demand reports.
- **ReportsDefinition.xml.** This file stores all of the query definitions for the pre-configured reports, as well as information regarding the style sheet files for these types of reports.
- **CustomFilter.xml** This file provides the ability to pass virtually any text parameter such as a batch ID, customer name or order number through the ActiveFactory Reporting Website to a published report for viewing and printing.

Note: For report folders containing Chinese characters to work correctly, you must save the Configuration.Config file using Notepad with Encoding = UTF-8, rather than ANSI or UNICODE encoding.

About Wonderware Historian Connections

A connection to a Wonderware Historian is required:

During the ActiveFactory Reporting Website configuration, do not modify the database or data source server location. This results in a problem when trying to access the ActiveFactory RWS. Database tables and stored procedures are not re-created during reconfiguration. You must manually remove and add features using the modify mode to rebuild all details on a different Historian server.

- You must manually remove and add features using the modify mode to rebuild all details on a different Historian server.
- When a predefined or dynamic report is generated.
- When a report is published.

The nature of the connection for each of these cases is slightly different, and it is important that you understand the differences between them.

Logins for Predefined and Dynamic Reports

For generating reports, the ActiveFactory Reporting Website can use any IndustrialSQL Server connection that is defined as a data source for the “Historian” data source type in Wonderware Information Server. By default, the ActiveFactory Reporting Website uses the Historian data source that you specified during configuration. Client users can select any other Historian data source by clicking the **Select InSQL** node in the Launch Pad.

Managing Scheduled Reports

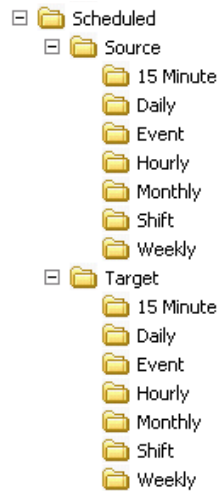
A scheduled report is a published report that is periodically re-generated according to a specified time schedule. For example, you may want a particular report to be run every 15 minutes and posted to the website.

The following default schedules are available for reports:

- 15Minute (every 15 minutes)
- Daily
- Event
- Hourly
- Monthly (Every 30 days)
- Shift
- Weekly

Scheduled Report Folders

Reports are saved to files in folders on the website server. Each time a scheduled report is run, the resulting file is placed into a particular folder on the website. The following schedule folders appear by default in the `<installation_path>\<report_website_name>\Output` folder.



Configuration Information for Scheduled Reports

Folder names, time periods, and descriptions for scheduled reports are stored in the Configuration.config file. There is a section for each available time period.

```
- <SCHEDULEDREPORTPATHS>
+ <!-- -->
- <EVENT>
  <FOLDERNAME>Event</FOLDERNAME>
  <TIMEINTERVAL>0,0,0</TIMEINTERVAL>
  <STARTTIME>-1,*,*,</STARTTIME>
  <!-- -1 => this never fires on its own -->
  <DESCRIPTION>Event</DESCRIPTION>
</EVENT>
- <FIFTEENMINUTE>
  <FOLDERNAME>15 Minute</FOLDERNAME>
  <TIMEINTERVAL>0,0,15</TIMEINTERVAL>
  <STARTTIME>*,*,*,0</STARTTIME>
  <DESCRIPTION>Every 15 minutes</DESCRIPTION>
</FIFTEENMINUTE>
- <HOURLY>
  <FOLDERNAME>Hourly</FOLDERNAME>
  <TIMEINTERVAL>0,1,0</TIMEINTERVAL>
  <STARTTIME>*,*,*,0</STARTTIME>
  <DESCRIPTION>Every hour</DESCRIPTION>
</HOURLY>
- <DAILY>
  <FOLDERNAME>Daily</FOLDERNAME>
  <TIMEINTERVAL>1,0,0</TIMEINTERVAL>
  <STARTTIME>*,*,*,0</STARTTIME>
  <DESCRIPTION>Every day</DESCRIPTION>
</DAILY>
- <WEEKLY>
  <FOLDERNAME>Weekly</FOLDERNAME>
  <TIMEINTERVAL>7,0,0</TIMEINTERVAL>
  <STARTTIME>*,1,0,0</STARTTIME>
  <DESCRIPTION>Every week</DESCRIPTION>
</WEEKLY>
- <MONTHLY Description="Beginning of the month">
  <FOLDERNAME>Monthly</FOLDERNAME>
  <TIMEINTERVAL>31,0,0</TIMEINTERVAL>
  <STARTTIME>1,*,*,</STARTTIME>
  <DESCRIPTION>Beginning of every month</DESCRIPTION>
</MONTHLY>
- <SHIFT>
  <FOLDERNAME>Shift</FOLDERNAME>
  <TIMEINTERVAL>0,8,0</TIMEINTERVAL>
  <STARTTIME>*,*,6,0</STARTTIME>
  <DESCRIPTION>Every shift</DESCRIPTION>
</SHIFT>
</SCHEDULEDREPORTPATHS>
```

The <TIMEINTERVAL> element controls how often the report is run. The value notation for this element is:

Days, Hours, Minutes, Seconds

A time interval of 7,0,0,0 is every 7 days, 0 hours, 0 minutes, and 0 seconds. In other words, one time a week.

The <STARTTIME> element controls the time at which a particular report runs for the first time. A published report first runs at the start time and then periodically at the interval specified using the <INTERVAL> element. The value notation for the <STARTTIME> element is:

DayOfMonth,DayOfWeek,HourOfDay,MinutesOfHour

If you want a parameter to be ignored, use an asterisk (*) in place of a value. If any of the parameters are blank, the entire schedule is ignored.

Use the following values for the DayOfWeek parameter: Sunday = 0; Monday = 1; Tuesday = 2; Wednesday = 3; Thursday = 4; Friday = 5; Saturday = 6.

If the DayOfMonth parameter exceeds the number of actual days in current month, then the maximum number of days in the month is used. For example, if the DayOfMonth is set to 31, the scheduled report runs on the following dates:

1/31, 2/28 (or 2/29, depending if it is the leap year), 3/31, 4/30, 5/31,
and so on

If you specify values for both the DayOfWeek or DayOfMonth parameters, then they must not be in conflict, or else the schedule does not run. For example, if you set the DayOfWeek to Monday and the DayOfMonth to the first day, there is a conflict if Monday is not the first day of the month. In other words, the combination of these two parameters must be true for the schedule to run.

Example report schedules are:

- Monthly at 5:00 p.m. on the last day of the month:
 <TIMEINTERVAL>31,0,0</TIMEINTERVAL>
 <STARTTIME>31,* ,17,0</STARTTIME>
- Monthly at midnight on the first day of the month:
 <TIMEINTERVAL>31,0,0</TIMEINTERVAL>
 <STARTTIME>1,* ,0,0</STARTTIME>
- Each Monday morning at 7:00 a.m.:
 <TIMEINTERVAL>7,0,0</TIMEINTERVAL>
 <STARTTIME>*,2,7,0</STARTTIME>
- Daily at 8:00 a.m.:
 <TIMEINTERVAL>1,0,0</TIMEINTERVAL>
 <STARTTIME>*,*,8,0</STARTTIME>
- Every eight hours starting at 6:00 a.m.:
 <TIMEINTERVAL>0,8,0</TIMEINTERVAL>
 <STARTTIME>*,*,6,0</STARTTIME>
- Hourly at 30 minutes past the hour:
 <TIMEINTERVAL>0,1,0</TIMEINTERVAL>
 <STARTTIME>*,*,*,30</STARTTIME>

Configuration Information for SQL Agent Scheduled Reports

A set of report group types must be provided to allow an SQL Server Agent to trigger when a report is executed.

Scheduled Report paths and Archiving rules are configured in the Configuration.config file located at C:\Inetpub\wwwroot\AFWeb.

- 1 Backup the Configuration.Config file.
- 2 Open the Configuration.Config file with Notepad.
- 3 Locate the WEEKLY element.
- 4 Make a copy of the WEEKLY archival rule element.
- 5 Modify the name and description of the new weekly archival rule. In this example, it is called WEEKLYAgent.

For example:

```
<WEEKLYAgent Description="Rule that applies to all reports
  assigned to the WEEKLY schedule using sql server agent.">
  <DIRECTORYNAME>
    <FORMATSTRING>MM (MMM)</FORMATSTRING>
  </DIRECTORYNAME>
  <FILENAME>
    <FORMATSTRING>'Week of' dd-MM-yyyy</FORMATSTRING>
  </FILENAME>
  <OLDERTHAN>365,0,0</OLDERTHAN>
  <!-- 365 = one year -->
  <KEEPCOUNT>520</KEEPCOUNT>
  <!-- 520 = ten years' worth of weekly reports -->
</WEEKLYAgent>
```

- 6 Create a copy of the Example Report for WEEKLY and name it WEEKLYAgent. You need this Report Folder Name later.

For example:

```
<WEEKLYAgent>
  <DIRECTORYNAME>
    <FORMATSTRING>'Weeks of 'MMM-yyyy</FORMATSTRING>
  </DIRECTORYNAME>
  <FILENAME>
    <FORMATSTRING>'Week of' dd-MM-yyyy</FORMATSTRING>
  </FILENAME>
</WEEKLYAgent>
```

- 7 Create a copy of the WEEKLY Scheduled Report Path and modify the settings so it mimics the behavior of an Event report type.

For example:

```
<WEEKLYAgent>
  <FOLDERNAME>Weekly</FOLDERNAME>
  <TIMEINTERVAL>0,0,0</TIMEINTERVAL> <!-- Change time interval
to Event settings -->
  <STARTTIME>-1,*,*</STARTTIME>
  <!-- -1 => this never fires on its own -->
  <DESCRIPTION>Every week (SQL Server Agent)</DESCRIPTION>
</WEEKLYAgent>
```

- 8 Save the Configuration.Config file. Within 30 seconds, the aahistclientReportingService rereads this file and identifies the new group. It is then accessible when publishing from ActiveFactory Workbook.

If the new Group does not appear, you may have a error in the file. Look at the OS event viewer.

Adding or Changing Scheduled Reports

You can add a new schedule, change the default schedules, or delete a schedule manually, or using an SQL Agent.

To add a new schedule manually

- 1 Use an XML editor to open the Configuration.config file.
- 2 Add a new entry in the <SCHEDULEDREPORTPATHS> element. The <FOLDERNAME> element reflect the name of the new schedule.

For example, to add a 45-minute schedule in a new 45Minute folder, add this element:

```
<45MINUTE>
  <FOLDERNAME>45Minute</FOLDERNAME>
  <TIMEINTERVAL>0,0,45,0</TIMEINTERVAL>
  <DESCRIPTION>Every 45 minutes</DESCRIPTION>
</45MINUTE>
```

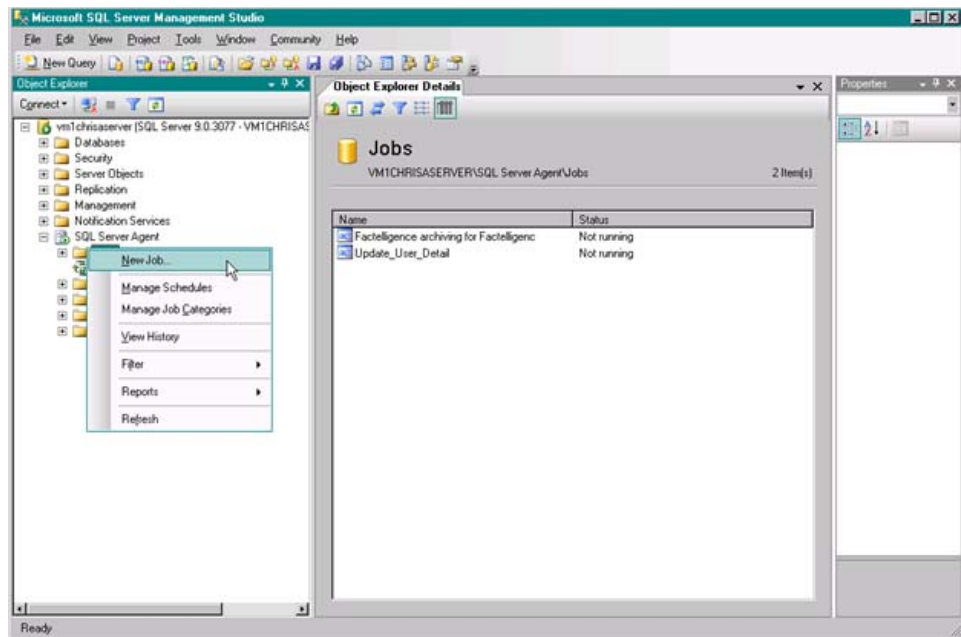
- 3 Save the file.
- 4 Optionally edit the archival rules for the new schedule type. For more information, see Managing Report Archives on page 180. The new schedule is available for publishing from Workbook.

To change a schedule, follow the same procedure, but edit existing entries instead of adding to the files.

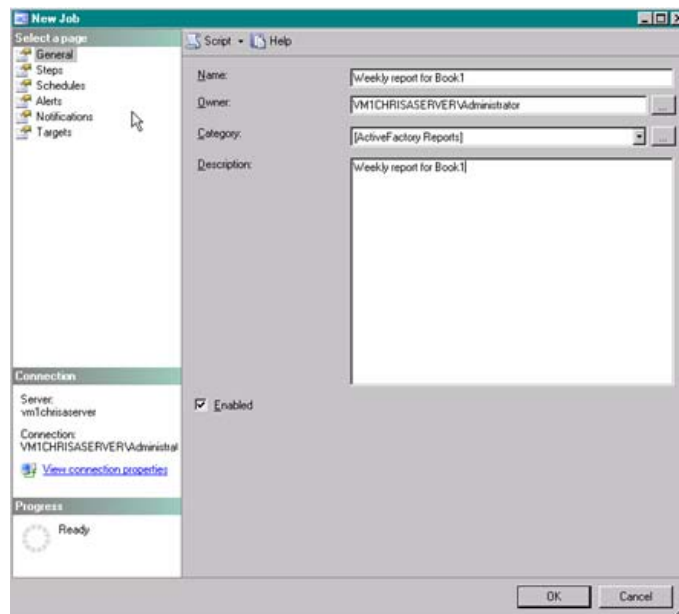
To delete a schedule, simply delete the entry from the file.

To add a new schedule using an SQL Agent

- 1 Using Microsoft SQL Server Management Studio, create a new Job for the SQL Server Agent.



- 2 Provide the General page information for the job.



- 3 Select the Steps page and create a new step.

- 4 Provide the Transact SQL script below. Modify the ReportFolderName and ReportName with the names you have noted in previous steps.

```
UPDATE aaHistClientReport SET LastRun='1753-1-1', Published=0
FROM aaHistClientReport r, aaHistClientReportsFolder f
WHERE r.Name = 'Book1'
AND r.ReportFolderKey = f.ReportFolderKey
AND f.ReportFolderName = 'WEEKLYAgent'
AND r.ReportSiteKey = 1
```

- 5 Select the Schedules page, then create a new schedule. In the example, we created a weekly scheduled report. You can create any schedule you like.

Note: The query provided to trigger a report can also be used with the Wonderware Historian event subsystem.

Managing Report Archives

When a scheduled report is run, the resulting report file is saved to disk on the web server. You may or may not want to keep every report that is generated. You can use the archiving feature of the Reporting Website to configure which scheduled reports to keep and for how long.

About the Archival Rules

The archival rules determine how long a report is kept and what name is given to each result file for a scheduled report.

The archival rules are set in the Configuration.config file in the element between the <ARCHIVALRULES> and </ARCHIVALRULES> tags. The <ARCHIVALRULES> element contains the <DEFAULT> and <EXAMPLEREPORT> elements. To add archival rules for a specific report, add another element under the <ARCHIVALRULES> element and name it according to your report. You can use the <EXAMPLEREPORT> element as a starting point for your custom archival rules. For more information, see Adding a Report-Specific Archival Rule on page 185.

```
- <REPORTS>
- <ARCHIVALRULES>
  + <!-- -->
  - <DEFAULT>
    + <DEFAULTRULE>
    + <TEMPFILE>
    + <EVENT>
    + <FIFTEENMINUTE>
    + <HOURLY>
    + <SHIFT>
    + <DAILY>
    + <WEEKLY>
    + <MONTHLY>
    </DEFAULT>
  + <!-- -->
  + <EXAMPLEREPORT>
</ARCHIVALRULES>
- <SCHEDULEDREPORTPATHS>
```

The <DEFAULT> element is only used if no other rules are found.

```

- <REPORTS>
- <ARCHIVALRULES>
+ <!-- -->
- <DEFAULT>
- <DEFAULTRULE>
+ <!-- -->
- <DIRECTORYNAME>
  <FORMATSTRING>'Generated on' yyyy-MM-dd HH mm
  ss</FORMATSTRING>
</DIRECTORYNAME>
- <FILENAME>
  <FORMATSTRING>yyyy MM dd HH mm
  ss</FORMATSTRING>
</FILENAME>
</DEFAULTRULE>
- <TEMPFILE>
  <OLDERTHAN>0,1,0</OLDERTHAN>
  <KEEPCOUNT>100</KEEPCOUNT>
</TEMPFILE>
+ <EVENT>
- <FIFTEENMINUTE>
- <DIRECTORYNAME>
  <FORMATSTRING>dd (dddd)</FORMATSTRING>
</DIRECTORYNAME>
- <FILENAME>
  <FORMATSTRING>'15-Minute' dd (dddd)
  HH.mm</FORMATSTRING>
</FILENAME>
  <OLDERTHAN>7,0,0</OLDERTHAN>
  <!-- 7 = one week -->
  <KEEPCOUNT>672</KEEPCOUNT>
  <!-- 672 = one week's worth of 15-minute reports -->
</FIFTEENMINUTE>
+ <HOURLY>
+ <SHIFT>
+ <DAILY>
+ <WEEKLY>
+ <MONTHLY>
</DEFAULT>

```

The <DIRECTORYNAME> and <FILENAME> tags control the name of the directory in which the scheduled report is saved and the name that is given to the report, respectively.

The <FORMATSTRING> tag controls the format of the report name or the report folder. For more information, see [Editing Format Strings for Scheduled Reports](#) on page 183.

Information in the <OLDERTHAN> element controls how old a report must be before it can be deleted. The value notation for this element is: days, hours, minutes, seconds.

The <KEEPCOUNT> tag controls how many versions of the same scheduled report to keep at any one time. For example, if you set this value to three, when the fourth scheduled report is created, the oldest report is deleted, thus maintaining a total of three.

The following archival procedure is followed:

- 1 All reports that are older than the <OLDERTHAN> time interval are deleted first.
- 2 If, after all reports older than the <OLDERTHAN> time interval are deleted and the number of remaining reports is greater than the amount specified by the <KEEPCOUNT> tag, then reports are deleted until the number of remaining reports is equal to the amount specified by the <KEEPCOUNT> tag. The reports are deleted in the order of when they were published, oldest to newest.

The <DEFAULT> element contains all of the information about archival rules for reports, including default values. If no archive information is found for a specific report, the system uses the information in the <DEFAULT> element. This allows for flexibility in the application of the archival rules. For example, keep daily reports for one week and weekly reports for three months.

The reports are published under the schedule that they were published under. The saved reports are in the target folder. Each report may have its own folder under the schedule as specified in the configuration.config file.

Editing Format Strings for Scheduled Reports

The format string for a scheduled report controls the format of the report name. For example.

```
<FORMATSTRING>'Generated on Day' ddd</FORMATSTRING>
```

Any text that is contained in single quotes is output exactly as is. The variables that can be used are any of the culture-specific format characters. For example:

```
ss = second
```

```
mm = minute
```

```
hh = hour
```

```
dd = day
```

```
yyyy = year
```

The <FORMATSTRING > element can specify the folders where published reports are saved. To use a nested folder structure, each folder must be separated from its predecessor by the / (forward slash) character.

You can change the format strings for scheduled reports by editing the Configuration.config file. There are three options for setting the format strings:

- In the <DEFAULTRULE> element, change the <FORMATSTRING> tag to have the format you want. This is the lowest priority rule to be executed and only executes if no other rules are found.
- For a preconfigured schedule rule (for example, <FIFTEEMINUTE>), change the <FORMATSTRING> tag to have the format you want. This is the next to lowest priority rule to be executed and only executes if no other rules are found.
- Add a rule and edit the <FORMATSTRING> tag to have the format you want. This is the highest priority rule to be executed. For more information, see Adding a Default Archival Rule on page 184.

Adding a Default Archival Rule

You may want to add a default archival rule for scheduled reports. For example, create a "45 Minute" archival rule for reports.

For more information on adding a scheduled report, see Adding or Changing Scheduled Reports on page 178.

To add a default archival rule

- 1 Use an XML editor to open the Configuration.config file.
- 2 Add a new element in the <DEFAULT> element.

For example, the following element specifies an archival rule for a 45Minute folder that deletes any files older than 10 days:

```
<45MINUTE>
  <OLDERTHAN>10,0,0,0</OLDERTHAN>
  <DIRECTORYNAME>
    <FORMATSTRING>'Generated on Day' ddd</FORMATSTRING>
  </DIRECTORYNAME>
  <FILENAME>
    <FORMATSTRING>yyyy MM dd HH mm ss</FORMATSTRING>
  </FILENAME>
</45MINUTE>
```

- 3 Save the file.

Adding a Report-Specific Archival Rule

You may want to add an archival rule that only applies to a single report folder. For example, you added a "Shift1" scheduled report folder by editing the <SCHEDULEDREPORTPATHS> element of the Configuration.config file. For more information, see Adding or Changing Scheduled Reports on page 178.

For example, the following element is an archival rule for a Shift1 folder for an eight-hour shift report that deletes any files older than 2 days:

```
<SHIFT1>
  <8HOUR>
    <OLDERTHAN>2,0,0,0</OLDERTHAN>
    <DIRECTORYNAME>
      <FORMATSTRING>'Generated on Day' ddd</FORMATSTRING>
    </DIRECTORYNAME>
    <FILENAME>
      <FORMATSTRING>yyyy MM dd HH mm ss</FORMATSTRING>
    </FILENAME>
  </8HOUR>
</SHIFT1>
```

To add a report-specific archival rule

- 1 Use an XML editor to open the Configuration.config file.
- 2 Copy the entire <EXAMPLEREPORT> element and paste it after the <EXAMPLEREPORT> element. Be sure that the copied element is at the same level as the original <EXAMPLEREPORT> element.
- 3 Rename the element tags in the new element to reflect the report folder name.
For example, change <EXAMPLEREPORT>
</EXAMPLEREPORT> to <SHIFT1> </SHIFT1>.
- 4 Modify the entries as required.
- 5 Save the file.

Managing Temporary Files for Scheduled Reports

Each time a pre-defined report is generated, a tmpXXX.xml file is created in the following default folder:

C:\Inetpub\wwwroot*<report_website_name>*\Output\Temp

These temporary files are deleted according to rules that are specified in the Configuration.config file.

```
- <TEMPFILE>
  <OLDERTHAN>14,0,0</OLDERTHAN>
  <KEEPCOUNT>100</KEEPCOUNT>
</TEMPFILE>
```

Within the <ARCHIVALRULES> element of the Configuration.config file, there is a <TEMPFILE> element. Two rules govern how long temp files are kept in the \Temp folder:

- <OLDERTHAN> specifies the age at which to delete a temporary file. The value notation for this element is: days, hours, minutes.
- <KEEPCOUNT> specifies how many files to keep at any given time.

The OLDERTHAN element has higher priority. KEEPCOUNT is always applied after OLDERTHAN.

In the following example, any temporary files older than a day are deleted. Also, no more than two temporary files are stored at any time.

```
- <TEMPFILE>
  <OLDERTHAN>1,0,0</OLDERTHAN>
  <KEEPCOUNT>2</KEEPCOUNT>
</TEMPFILE>
```

The cleanup operation is handled by the aaHistClientReportingService. The cleanup operates every 30 seconds or the same interval as what is specified in the <INTERVAL> element. For more information, see Adjusting Settings for Report Generation on page 201.

Removing a Report from a Schedule

To remove a report from a schedule

- 1 In the **System** access panel, expand **Administration** and then click **ActiveFactory Report Manager**. The **ActiveFactory Report Manager** page appears.
- 2 Click **Scheduled Reports**. The **Scheduled Reports Types** page appears.

- 3 In the **Scheduled Reports Types List** page, select the type of report you want to remove from the schedule. The **Scheduled Reports List** page appears.
- 4 Select the check box next to the report(s) you want to remove from the schedule.
- 5 Click **Remove from Schedule**.

Removing a Report from a Schedule and Deleting All Instances of the Report

To remove a report from a schedule and delete all instances of the report

- 1 In the **System** access panel, expand **Administration** and then click **ActiveFactory Report Manager**. The **ActiveFactory Report Manager** page appears.
- 2 Click **Scheduled Reports**. The **Scheduled Reports Types** page appears.
- 3 In the **Scheduled Reports Types List** page, select the type of report. The **Scheduled Reports List** page appears.
- 4 Select the check box next to the report(s).
- 5 Click **Delete**.

Deleting an Instance of a Scheduled Report

To delete an instance of a scheduled report

- 1 In the **System** access panel, expand **Administration** and then click **ActiveFactory Report Manager**. The **ActiveFactory Report Manager** page appears.
- 2 Click **Scheduled Reports**. The **Scheduled Reports Types** page appears.
- 3 In the **Scheduled Reports Types List** page, select the type of report you want to delete. The **Scheduled Reports List** page appears.
- 4 Select the report(s) you want to delete. The **Scheduled Reports Instances List** appears.
- 5 Select the check box next to the report instance(s) you want to delete.
- 6 Click **Delete Instances**.

Creating Custom Folders for Static and On Demand Reports

By default, all static reports are saved to the following folder:

```
<installation_path>\<report_website_name>\Output\Static
```

All on demand reports are saved to the following folder:

```
<installation_path>\<report_website_name>\Output\OnDemand
```

You can create custom folders for reports.

To create a custom static folder

- 1 Using an XML editor, navigate to C:\Inetpub\wwwroot\AFWeb and open the Configuration.config file.
- 2 Add a new element called <STATICREPORTPATHS> after the <SCHEDULEDREPORTPATHS> element. The <STATICREPORTPATHS> element must be on the same level in the XML hierarchy as the <SCHEDULEDREPORTPATHS> element.
- 3 In the <STATICREPORTPATHS> element, add an element for the custom folder you want to create. The element notation is as follows, where <report_name> is the actual name of the report or any other unique text within the <STATICREPORTPATHS> element or <ONDEMANDREPORTPATHS> element:

```
<report_name>  
  <FOLDERNAME>Type the folder name here</FOLDERNAME>  
  <DESCRIPTION>Type the description here</DESCRIPTION>  
</report_name>
```

WARNING! The <FOLDERNAME> element should not be repeated twice inside the <report_name> element.

The description for the custom folder appears in the publishing dialog box for ActiveFactory Trend and ActiveFactory Workbook.

To create a nested subfolder, include a forward slash (/) in the folder name.

For example, the following element adds three custom static folders to the list. The aaHistClientReportingService creates these folders, which are named STATICONE, STATICTWO, and STATICTWOA. The second static folder (StaticTwo) contains a nested subfolder called "A."

The source files for the published reports is stored in
 ...Output\Static\Source\StaticOne,
 ...Output\Static\Source\StaticTwo and
 ...Output\Static\Source\StaticTwo\A for STATICONE,
 STATICTWO and STATICTWOA, respectively. The generated
 reports are stored in a similar structure under
 ...Output\Static\Target\.

```
<STATICREPORTPATHS>
  <STATICONE>
    <FOLDERNAME>StaticOne</FOLDERNAME>
    <DESCRIPTION>First static folder</DESCRIPTION>
  </STATICONE>
  <STATICTWO>
    <FOLDERNAME>StaticTwo</FOLDERNAME>
    <DESCRIPTION>Second static folder</DESCRIPTION>
  </STATICTWO>
  <STATICTWOA>
    <FOLDERNAME>StaticTwo/A</FOLDERNAME>
    <DESCRIPTION>Static folder nested under
      StaticTwo</DESCRIPTION>
  </STATICTWOA>
</STATICREPORTPATHS>
```

4 Save the file.

To create a custom on-demand folder

- 1 Using an XML editor, navigate to C:\Inetpub\wwwroot\AFWeb and open the Configuration.config file.
- 2 Add a new element called <ONDEMANDREPORTPATHS> after the <SCHEDULEDREPORTPATHS> element. The <ONDEMANDREPORTPATHS> element must be on the same level in the XML hierarchy as the <SCHEDULEDREPORTPATHS> element.
- 3 In the <ONDEMANDREPORTPATHS> element, add a element for the custom folder you want to create. The element notation is the same as for adding a custom static folder. For example, the following element adds an on-demand folder named “OnDemandOne”:

```
<ONDEMANDREPORTPATHS>
  <ONDEMANDONE>
    <FOLDERNAME>OnDemandOne</FOLDERNAME>
    <DESCRIPTION>First on-demand folder</DESCRIPTION>
  </ONDEMANDONE>
</ONDEMANDREPORTPATHS>
```

4 Save the file.

Any custom folders you create appear in the publishing dialog box for ActiveFactory Trend and ActiveFactory Workbook. The folder structure in the publishing dialog box appears flat, but the reports are published to the hierarchy that you created.

A custom folder becomes visible in the ActiveFactory Reports node only when a report is published to that folder.

Using Custom Filters In Reports

A custom filter provides the ability to pass virtually any parameter information from the Wonderware Historian database to a published report for viewing and printing.

There are three procedures required to use a custom filter.

- Publish a report with custom parameters
- Configure custom parameters
- Localize custom parameter captions

Publish a report with custom parameters

- 1** Using the ActiveFactory Excel add-in, create a report using a text parameter. At runtime, the parameter value is placed in a cell within the Excel spreadsheet before viewing.
 - a** On the Excel sheet, rename the first sheet “FilterInfo”, rename the second sheet “Report”, and delete the third sheet.
 - b** Give the “FilterInfo” sheet a descriptive title.
- 2** Use the Excel Define Name function to create the named cell. For example "AFBindingSAMPLEREPORTPARAMETER", and "AFBindingSAMPLEREPORTTEXTPARAMETER".
- 3** Select a cell to input the "AFBindingSAMPLEREPORTTEXTPARAMETER" named cell range and map it to the Defined Name "AFBindingSAMPLEREPORTTEXTPARAMETER" with a constant value.
- 4** Add an Excel function to build the criteria for a history function. For example: =CONCATENATE(" AND Value > ", AFBindingSAMPLEREPORTTEXTPARAMETER). Use the constant value you entered in the above step in the " AND Value > " function.
- 5** Enter the name of the tag to be used by the history function. For example, "SysTimeSec".
- 6** Use the ActiveFactory options on the Excel menu to format and create the history function. See the ActiveFactory User Guide for details.

- 7 Modify the history function in the formula bar. Replace the criteria argument with a reference to the cell containing the concatenated criteria. For example, replace the " AND Value > " (including the quotes and the constant value that you have assigned) with the reference by clicking the cell on the "FilterInfo" sheet.
- 8 Press CTRL + SHIFT + ENTER.
- 9 On the "FilterInfo" sheet, insert a value in the cell that is mapped with "AFBindingSAMPLEREPORTTEXTPARAMETER" range to ensure that the function executes as expected.
- 10 Publish the spreadsheet as an "on demand" report to the Information Server site using the ActiveFactory menu. See the Wonderware Historian Client documentation for details.

Note: Some cells in the formula array may show a #N/A error. This occurs because the formula array size is larger than the required size for the current result. Click Refresh Function to resize the function.

Configure custom parameters

- 1 Using a text or XML editor, open the CustomFilter.xml file located at the root of the AFWeb virtual directory for example, at c:\Inetpub\wwwroot\AFWeb.
- 2 For each published report using a custom filter, add a <Filter> element as shown above. The child elements are described below:
 - **ReportId:** The filename of the published spreadsheet, without the path, but including the extension like "My Batch Report.xls."
 - **FilterInput:** Describes an individual parameter in the report. The only supported type is "SingleLine." Repeat this child element for each parameter in the report.
 - **Caption:** Either the language-neutral text used to label the data entry form which prompts you to enter a value like "Please enter a batch ID:," or a unique name defined in the aspx.xml.
 - **DefaultValue:** The default value for the parameter. The field in the parameter page displays this value at runtime.
 - **AFBindingParameter:** The name of the cell range used in the spreadsheet, but without the AFBinding prefix.
- 3 Refresh the portal and access the CustomFilterReport again.

For example,

```
<CustomFilters>
<Filter>
<ReportId>CustomFilterReport.xls</ReportId>
< FilterInput type="SingleLine">
<Caption>Specify Input for Custom Filter</Caption>
```

```

<DefaultValue>30</DefaultValue>
<AFBindingParameter>SAMPLEREPORTTEXTPARAMETER</AFBindingParameter>
</FilterInput>
</Filter>
</CustomFilters>

```

Localize custom parameter captions

The label for the parameter that is configured in the CustomFilter.xml file is shown to all users of the report, regardless of their browser language. For applications that require a localized label:

- 1 Use a placeholder name for the Caption element in CustomFilter.xml instead of the actual caption to display.
- 2 Edit the aspx.xml file located in the associated Languages subfolder of the AFWeb virtual directory and add a <loctext> element for each caption and each language. The value of the ID attribute must match the placeholder used in step 1, and the text value of the element is the caption used for that language.

```

<loctext id="LocalizableCustomerNameCaption">Please enter customer name here:</loctext>

```

```

<CustomFilters>
  <Filter>
    <ReportId>My Batch Report.xls</ReportId>
    <FilterInput type="SingleLine">
      <Caption>Please enter a batch ID:</Caption>
      <DefaultValue></DefaultValue>
      <AFBindingParameter>BatchID</AFBindingParameter>
    </FilterInput>
    <FilterInput type="SingleLine">
      <Caption>LocalizableCustomerNameCaption</Caption>
      <DefaultValue></DefaultValue>
      <AFBindingParameter>CustomerName</AFBindingParameter>
    </FilterInput>
  </Filter>
</CustomFilters>

```

Customizing the ActiveFactory Reporting Website Banner

Note: The following customizations have no effect when accessing the ActiveFactory Reporting Website through Wonderware Information Server.

When accessing the ActiveFactory Reporting Website directly, a navigation banner appears along the top of the page. You can customize this banner by editing the Header.xml file. You can replace the banner logo with your own image, as well as add menu items. You can also localize the banner settings.

The Header.xml file is located in the \Language\en-US folder of the ActiveFactory Reporting Website virtual directory. By default, the path for this directory is:

```
\inetpub\wwwroot\<report_website_name>\Language\en-US
```

Important: Any customizations that you make for the ActiveFactory Reporting Website banner may not be preserved during upgrades to future releases.

Adding a Custom Logo

To add a custom logo

- 1 Locate the <BannerImg> element within the Header.xml file.
- 2 In the <URL></URL> sub-element, type the URL of the image you want to display in the ActiveFactory Reporting Website banner.

The URL can be either an absolute or a relative URL. A relative URL are relative to the ActiveFactory virtual root directory. The recommended image size is 295x83 pixels. The maximum height is 83 pixels.

For example, to use the MyLogo.gif file located in the graphics folder of the website, add the content as follows:

```
<URL>graphics/MyLogo.gif</URL>
```

- 3 In the <AlternateText></AlternateText> sub-element, type the text to be displayed for the graphic.

This text appears when 1) a website user moves the mouse over the image, 2) if image file is not found at the specified URL, 3) the image file is being loaded, and 4) if the image download option has been turned off in Internet Explorer.

For example: <AlternateText>CompanyA logo</AlternateText>

- 4 Save the .xml file.

Adding Menu Items

To add a new menu item

- 1 Locate the <MenuItem> element within the Header.xml file.
- 2 In the <Name></Name> element, type the name of the menu item.
- 3 In the <URL></URL> element, type the relative or absolute URL of the web page to be displayed when the menu item is clicked.

A relative URL is relative to the ActiveFactory virtual root directory.

- 4 In the <Target></Target> element, specify the location in which the target content appears.

To open the web page in the content element of the ActiveFactory Reporting Website, leave this element blank.

To open the web page in the main Internet Explorer window currently used by the ActiveFactory Reporting Website, type `_top`.

To open the web page in a separate Internet Explorer window, type any text. It does not matter what text you use, as long as the element is filled.

- 5 Save the .xml file.

Note: The <ImageURL> element is for future use.

The following example code shows how to add a "MyMenu" menu item that display the contents of the MyMenu.htm file in the content element of the ActiveFactory Reporting Website:

```
<MenuItem>
  <Name>MyMenu</Name>
  <URL>MyMenu.htm</URL>
  <Target></Target>
  <ImageURL></ImageURL>
</MenuItem>
```

The following example code shows how to add a "Wonderware" menu item that displays the home page for the Wonderware website in a separate browser window:

```
<MenuItem>
  <Name>Wonderware</Name>
  <URL>http://www.wonderware.com</URL>
  <Target>Wonderware</Target>
  <ImageURL></ImageURL>
</MenuItem>
```

Adding Multiple Menu Items

To add multiple menu items

- 1 Copy the existing <MenuItem> element and paste it into the <Menu> element (between the <Menu> and </Menu> tags).
Paste the copied element at the same level as the existing <MenuItem> element in the XML hierarchy.
- 2 Change the content of the <Name>, <URL>, and <Target> elements.
- 3 Repeat Steps 1 and 2 for any additional menu items.
- 4 Save the .xml file.

Localizing Banner Customizations

To localize customizations to the banner

- 1 Locate the appropriate language folder in the ActiveFactory Reporting Website virtual directory.
For example, the folder used for Japanese is `\inetpub\wwwroot\AFWeb\Language\ja`.
- 2 Copy the Header.xml file in the appropriate language folder.
- 3 In the Header.xml file, translate the element content into the appropriate language.
- 4 If you want to load different web pages for the different language, change any URLs to point to the language-specific files.
- 5 Save the .xml file.

Adding Custom Reports

You can create a custom report and include it in the list of pre-configured reports on the Reporting Website. Custom reports can include:

- Static reports generated from .html or .txt files.
- On-demand query reports generated from .sql files.
- A "dynamic" report that executes a query against the historian, but does not use an .sql file.

For all types of custom reports, the Reporting Service handles the conversions to XML for display in the web browser.

If you add a custom report, report links are not available until you publish a report or manually update the ReportParameters.xml file in the `c:\inetpub\wwwroot\afweb` folder and the appropriate language folders, as well. For example, the `c:\inetpub\wwwroot\afweb\language\en` and `c:\inetpub\wwwroot\afweb\language\en-us` folders.

Adding a Custom Static Report

To add a custom static report

- 1 Create the static report file. The static report file can be an .html or .txt file.
- 2 Copy the report file to the `\Static\Source` folder. For more information, see Report Publishing Folders on page 170.

- 3 Open the ReportParameters.xml file and add an additional <REPORT> element to contain the new report. Be sure to add the <REPORT> element under the "Static Reports" element. For example:

```
<Name>Published Reports</Name>
<ReportGroup>
  <Name>Static Reports</Name>
  <ReportType>1</ReportType>
  <Report>
    <Name>SystemTimeAnalysis</Name>
    <ApplicationType>3</ApplicationType>
    <Id>http://QAINT063/AFWeb/Output/Static/Source/Operat
orSchedule.html</Id>
    <Filename></Filename>
    <ProcessReport>1</ProcessReport>
    <LockdownOptions></LockdownOptions>
    <ArchiveID />
  </Report>
```

- 4 Set the <ApplicationType> element to 3.
- 5 Save the ReportParameters.xml file.
- 6 In the reporting website, expand the **Static Reports** folder. The custom report is added to the list of reports.



- 7 Select the report and click **Generate Report**. The custom report page appears in the report display pane.

Deleting a Static Report

To delete a static report

- 1 In the **System** access panel, expand **Administration** and then click **ActiveFactory Report Manager**. The **ActiveFactory Report Manager** page appears.
- 2 Click **Static Reports**. The **Static Reports List** page appears.
- 3 Select the check box next to the report(s) you want to delete.
- 4 Click **Delete**.

Adding an On-Demand, Custom SQL Report

If you have an existing .sql file, you can add it to the list of on-demand reports so that website users can generate the resulting data at any time.

To add a query report

- 1 Create the .sql file.

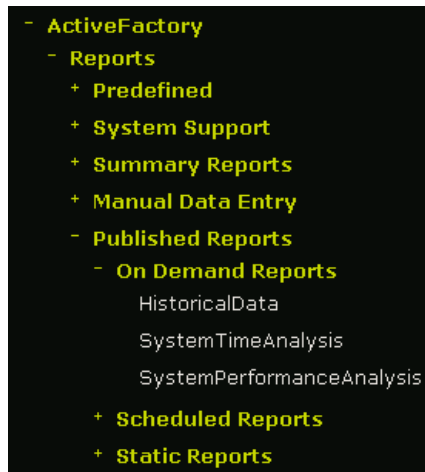
Note: Test the SQL statement in the file using a database query tool and verify the results before publishing the query to the website.

- 2 Copy the report file to the \OnDemand\Source folder. For more information, see Report Publishing Folders on page 170.
- 3 Open the ReportParameters.xml file and add an additional <REPORT> element to contain the new report. Be sure to add the <REPORT> element under the "On Demand Reports" element. For example:

```
<Name>On Demand Reports</Name>
<ReportType>2</ReportType>
(...)
entries for existing published reports
(...)
<Report>
  <Name>HistoricalData</Name>
  <ApplicationType>4</ApplicationType>
  <Id>C:\inetpub\wwwroot\AFWeb/Output/OnDemand/Source/HistoricalData_OnDemandSQL.sql</Id>
  <Filename></Filename>
  <ProcessReport>2</ProcessReport>
  <LockdownOptions></LockdownOptions>
  <ArchiveID />
</Report>
```

- 4 Set the <ApplicationType> element to 4.
- 5 Save the ReportParameters.xml file.

- In the reporting website, expand the **On Demand Reports** folder. The custom SQL report is added to the list of reports.



- Select the report and click **Generate Report**. The custom report page appears in the report display pane.

By default, the results are formatted according to the `rwsqReport.xml` stylesheet. All report stylesheets are located in the `C:\Inetpub\wwwroot\<report_website_name>\StyleSheets` folder.

You can specify your own stylesheet by adding an XML reference to the stylesheet in the `.sql` file. For example:

```
<?xml-stylesheet type="text/xsl"
  href="../../../StyleSheets/test.xml" ?>
```

Be sure to reference the folder in which your stylesheet is located. The stylesheet reference must be the first text found in the `.sql` file.

Deleting an On Demand Report

To delete an On Demand report

- In the **System** access panel, expand **Administration** and then click **ActiveFactory Report Manager**. The **ActiveFactory Report Manager** page appears.
- Click **On Demand Reports**. The **On Demand Reports List** page appears.
- Select the check box next to the report(s) you want to delete.
- Click **Delete**.

Adding a Custom Dynamic Report

This type of report is "dynamic" in the sense that it retrieves information from the historian, but is not contained in an .sql file.

To add a custom dynamic report

- 1 Create an .xsl stylesheet to format the raw data from your query for display on the website.
- 2 Copy the stylesheet into the \Stylesheets folder for the Reporting Website. By default, this path is
C:\Inetpub\wwwroot\AFWeb\StyleSheets.
- 3 Open the ReportsDefinition.xml file and add an additional element to specify the parameters for the new report.

In the following example, "MyCustomReport" is the identifier for the report. The StyleSheet element is set to the value of a custom .xsl file. Include the database query in the <QUERY> element.

```
<?xml version="1.0" ?>
- <Report>
- <MyCustomReport StyleSheet="MyStyleSheet.xsl">
  <Query Header="Employees" RowName="Result">USE Northwind SELECT *
    FROM Employees WHERE City = 'London'</Query>
  </MyCustomReport>
- <TagStatus StyleSheet="rwtagValue.xsl">
- <AnalogTag>
  <Query Header="TagName" RowName="Result">SELECT TagName =
    Tag.TagName, Description,AnalogTag.MinRaw,
    AnalogTag.MaxRaw,DateTime, EngineeringUnit.Unit,vValue FROM
    AnalogTag, EngineeringUnit, v_Live INNER JOIN Tag ON
    Tag.TagName = v_Live.TagName WHERE Tag.TagName IN ('%
    TagNameParam%') And Tag.TagName = AnalogTag.TagName AND
    (AnalogTag.EUKey = EngineeringUnit.EUKey)</Query>
  </AnalogTag>
```

- 4 Save the ReportsDefinition.xml file.
- 5 Open the ReportParameters.xml file and add an additional <REPORTGROUP> element to contain your new custom report, or add the report to an existing element.

The first <NAME> tag controls the top-level name in the **Reports** area in the **Configuration** pane of the website.

The second <NAME> tag controls the second-level name in the **Reports** area.

For the <ID> tag, specify the name that you gave the report in the ReportsDefinition.xml file.

For example,

```
<?xml version="1.0" encoding="utf-8" ?>
- <Reports>
- <ReportGroup>
  <Name>Custom Reports</Name>
  - <Report>
    <Name>Custom Reports</Name>
    <Id>MyCustomReport</Id>
  </Report>
</ReportGroup>
- <ReportGroup>
  <Name>Predefined</Name>
  - <Report>
    <Name>Tag Value</Name>
    <Id>TagStatus</Id>
    <Analog>Yes</Analog>
```

6 Save the ReportParameters.xml file.

The new report is added to the list of reports displayed in the website.

Triggering a Report using a Wonderware Historian Event Action

You can use generic SQL event actions to trigger the running of reports for the ActiveFactory Reporting Website.

To set up an event-based report

- 1 In the Configuration.config file, create a scheduled report entry that does not include a frequency. For example, MyEventGroup.
- 2 Publish a report to the report group you created. For example, MyReport1.
- 3 In the Wonderware Historian, create an event tag and configure it to use the generic SQL action. Use the following Transact-SQL statement for the action script, substituting the names of the report folder and the published report that you created in steps 1 and 2, respectively.

```
EXEC ExecAFWorkbook '<ReportName>', '<ReportFolder>',
<IsPublished value should be 0 or 1>, <provide value of
SiteID>, '<LastRunDate>'
```

Where:

- <ReportName> = is the name of the scheduled report.
- <ReportFolder> = is the name of the report folder .
- <IsPublished value should be 0 or 1> = whether the report is published. Provide 0 for publishing.

- <provide value of SiteID> = the provider site ID, which is available in configuration.config file with tag <SiteID>
- <LastRunDate> = The provider date time value. This is an optional parameter.

For example:

```
EXEC ExecAFWorkbook 'RptSysTimeMin', 'HOURLY', 0, 136,
'1753-01-01 00:00:00.000'
```

```
UPDATE aaHistClientReport SET LastRun='1753-1-1',
Published=0 FROM aaHistClientReport r,
aaHistClientReportsFolder f
    WHERE r.Name = 'ReportName'
    AND r.ReportFolderKey = f.ReportFolderKey
    AND f.ReportFolderName = 'ReportFolder'
    AND r.ReportSiteKey = 1
```

You can omit the AND r.ReportSiteKey clause if there is only one website; otherwise, use the appropriate site ID from the aaHistClientReportSite table.

Adjusting Settings for Report Generation

Depending on the publishing environment and the complexity of the reports, report generation may exceed various timeout limits enforced by Microsoft ASP .NET and Internet Information Services. If a timeout limit is exceeded, an ASP error is shown.

The key timeouts are as follows. For more information on these timeouts, see the Microsoft documentation. If you receive an ASP error for a report, adjust these settings until the report can successfully be generated.

Note: The location and content of the following reference information may change.

- Scripttimeout

<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/iissdk/html/429c1800-7d19-4011-a1ca-482a43b1abef.asp>

- Session.timeout

<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/iissdk/html/429c1800-7d19-4011-a1ca-482a43b1abef.asp>

- Executiontimeout
<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/cpgenre/html/gngrfhttpruntimesection.asp>
- Responsedeadlockinterval
<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/cpgenre/html/gngrfProcessmodelSection.asp>

Another setting that you may want to adjust is the polling interval for report publishing. By default, the reporting service processes and posts published reports every 30 seconds. Typically, published reports take between four and five seconds to appear in the website, but they can take up to 30 seconds to appear. When the service first starts up, reports can take up to one minute to appear.

You can adjust the polling interval by editing the following tag in the Configuration.config file.

```
<INTERVAL>30000</INTERVAL>
```

The polling interval is in milliseconds.

The interval also determines when to clean up temporary files that are created during publishing. For more information, see *Managing Temporary Files for Scheduled Reports* on page 186.

Controlling ActiveFactory Trend using URL Parameters

You can integrate ActiveFactory Trend into a custom application and control it by passing URL parameters.

To open ActiveFactory Trend from a custom application

- ◆ Call the Trend.aspx file in the Reporting Website's virtual directory. Pass any required parameters in the following format:
`http://hostname/VirtualDir/Trend.aspx?SV=true&Par1=Value1&Par2=Value2&...`

Where Par1=Value1 etc. are the parameter/value pairs that you want to use. Always pass the SV=true parameter. Otherwise, session timeout errors occur.

The following sections describe available parameters.

Connecting to a Historian

Use the following parameters to connect to IndustrialSQL Server.

Name	Description
Server	The server name of the IndustrialSQL Server.
User	The user name to connect to the historian. If omitted, Windows integrated security is used.
Password	The password to connect to the historian.
BaseURL	The base URL to use when accessing the historian via HTTP.
VirDir	The virtual directory to use when accessing the historian via HTTP.

Trend uses HTTP to access the historian whenever you specify values for both the BaseURL and VirDir parameters. Otherwise, it uses a regular SQL Server connection.

Specifying the Tags to Show

To specify the tags to show in the trend, use the Tags parameter. To specify multiple tags, separate tag names by semicolons. For example, to show the SysTimeSec and SysTimeMin tags, pass the following:

```
Tags=SysTimeSec;SysTimeMin
```

Adding Groups of Tags to a Trend

You can use the group name parameter to specify one or more tag groups that exist in the Historian namespace. The Historian namespace consists of the Public and Private groups (folders) and all subgroups (subfolders). All of the tags contained in a group you specify are automatically added to the trend chart. This is useful if you have a group of tags that you typically trend at the same time on the trend chart. In the URL, you would simply specify the group, instead of having to specify each individual tag.

You use periods to designate levels in the grouping hierarchy. For example, if you created a group called MainGroup in the Public Groups folder, you would specify to trend all of the tags in that group as follows. HISTORIAN1 is the name of the Historian from which to retrieve the trend data.

```
http://<servername>/<sitename>/Trend.aspx?SV
=true&groups=HISTORIAN1.Public%20Groups.MainGroup
```

Only tags that are directly contained within the specified group are added. Any tags contained within subgroups are not automatically added.

For example, consider the following grouping hierarchy:

- MainGroup (with tags Tag1, Tag2)
 - SubGroup1 (with tags Tag3, Tag4)
 - SubGroup2 (with tags Tag5, Tag6)

When you specify the MainGroup group, then only the Tag1 and Tag2 tags are added. Tag3, Tag4, Tag5, and Tag6 are not added.

For the group parameter string, the semicolon (;), the period (.), and the ampersand (&) are reserved characters. If a group name includes one of these characters, the group name will not be detected, and tags will not be added to trend.

To add tags from a private group, you must also provide valid user credentials using the user and password parameters in the URL.

Case sensitivity of the group value depends on the case sensitivity of the Historian server you specify in the URL.

Specifying Multiple Groups in a Single URL

You can specify multiple groups by concatenating them together using an semicolon (;). The following URL specifies to trend all tags in both the SubGroup1 and SubGroup2 folders:

```
http://<servername>/<sitename>/Trend.aspx?SV=true&groups=HISTORIAN1.Public%20Groups.MainGroup.SubGroup1;HISTORIAN1.Public%20Groups.MainGroup.SubGroup2
```

If a tag is present in more than one group, it will added to the trend chart multiple times.

If you specify the same group name multiple times in the groups parameters string, the trend will be populated with all of the tags in that group the equivalent number of times. For example, if you specify the 'Public Groups.All Analog Tags.MixerTankGroup' group twice, then all tags in the 'Public Groups. All Analog Tags.MixerTankGroup' group will be shown twice in the Trend.

If you specify multiple groups, and tags from certain groups cannot be added (for example, you specified a non-existent group or cannot access to private group), then the tags from the remaining groups will be used.

Using the Tags and Groups Parameters Together in a Single URL

The tags and groups parameters can be used together in the same URL. For example, the following URL specifies to trend the SysTimeSec tag, the SysTimeMin tag, all of the tags in the SubGroup1 folder, and all of the tags in the SubGroup2 folder.

```
http://<servername>/<sitename>/Trend.aspx?SV
=true&tags=systimesec;systimemin&groups=HISTORIAN1.Public%2
0Groups.MainGroup.SubGroup1;HISTORIAN1.Public%20Groups.MainG
roup.SubGroup2
```

Using the Groups Parameters to Specify the Server

There are two ways to specify a Historian server name: by using the server parameter or by specifying the server as part of the group parameter string. If you do not specify the server name using either the server parameter or groups parameter, then the default Historian server is used.

If you specify the server using the server parameter, but not in the groups parameter, then the server specified in the server parameter is used. In the following example, the control will log on to the Historian1 server and all of the tags in the All Event Tags group from the Historian1 server are added to the trend.

```
http://<servername>/<sitename>/Trend.aspx?SV=true&Server=Histor
ian1&groups=.Public%20Groups.All Event Tags
```

If you specify a server using the server parameter, and also in the groups parameter, the server parameter value is overwritten with the values specified in the groups parameter. In the following example, only the Historian2 server is used, and all of the tags in the All Event Tags group from the Historian2 server are added to the trend control. The server parameter value is overwritten with “Historian2.” The designation of the Historian1 server is ignored.

```
http://<servername>/<sitename>/Trend.aspx?SV=true&Server=Histor
ian1&groups=Historian2.Public%20Groups.All Event Tags
```

If you specify a server using the server parameter, and also specify multiple servers in the groups parameter, then only the first server name specified in the groups parameter is used. In the following example, only the Historian2 server is used, and all of the tags in the All Event Tags and All Analog Tags groups from Historian2 are added to the trend control. The server parameter value is overwritten with “Historian2.” The designations of the Historian1 server and Historian3 server are ignored.

```
http://<servername>/<sitename>/Trend.aspx?SV=true&Server=Histor
ian1&groups=Historian2.Public Groups.All
EventTags;Historian3.Public Groups.All Analog Tags
```

If you specify a server using the server parameter, and also specify multiple servers for less than all the groups specified by the groups parameter, then only the first server name specified in the groups parameter is used. In the following example, only the Historian2 server is used, and all of the tags in the All Event Tags, All Discrete Tags, and All Analog Tags groups from Historian2 are added to the trend control. The server parameter value is overwritten with “Historian2.” The designations of the Historian1 server and Historian3 server are ignored.

```
http://<servername>/<sitename>/Trend.aspx?SV=true&Server=Historian1&groups=Historian2.Public Groups.All EventTags;.Public Groups.All Discrete Tags;Historian3.Public Groups.All Analog Tags
```

Showing Information as a Scatter Plot

To show the information as a scatter plot instead of a standard Trend, use the xAxis parameter. To use multiple tags, separate tag names by semicolons. To see a trend as a scatter plot, pass the xAxis parameter in a query for each tag specified in the Tags parameter.

For example:

```
Tags=TagName1;TagName2;TagName3&xAxis=null;TagName1;TagName1
```

results in the following scatter plot:

Tags Specified in Query	Y-axis	X-axis
TagName1	TagName1	null
TagName2	TagName2	TagName1
TagName3	TagName3	TagName1

Showing Target Regions

To show a defined target region for a tag, use the TargetRegionUrls and URL parameters. To use multiple tags, separate tag names by semicolons. To view the target region, pass the TargetRegionUrls parameter as a query for each tag specified in the Tags parameter. The URL parameter give the relative path of the CSV file.

For example:

```
Tags=TagName1;TagName2;TagName3&TargetRegionUrls=null;MyTarget2.csv;http://somewebsite/calctargets.aspx?tag=TagName3
```

results in the following:

Tags Specified in Query	CSV File URL
TagName1	null
TagName2	MyTarget2csv, a file stored in the /AFWeb virtual directory
TagName3	http://somewebsite/calctargets.aspx?tag=TagName3

Specifying the Time Period

Use the following parameters to specify the time period to show in the trend.

Name	Description
Start	The start time in the following format: YYYY-MM-DD hh:mm:ss.s
StartUTC	The start time in UTC format.
End	The end time in the following format: YYYY-MM-DD hh:mm:ss.s
EndUTC	The end time in UTC format.
Duration	The duration in seconds.
DateMode	Determines whether to show absolute or relative times. Specify 1 for relative time, 0 for absolute time.
LiveMode	Determines whether the trend automatically advances in time ("live" mode) after the trend opens.

To specify a time period, use one of the following combinations of parameters:

- **Start time and end time.** In this case, the duration parameter is ignored.
- **Start time and duration.** If you specify only the start time, but no duration, the duration is set to five minutes.
- **End time and duration.** The start time is set to the end time minus the duration. If you specify only the end time, but no duration, the duration is set to five minutes.

- **Duration only.** In this case, the start time is set to the current time minus the duration.
- **No parameter.** The time period is set to the last five minutes.

All time parameters are relative to the client computer's time zone.

The following example shows how to trend the SysTimeMin tag in "live" mode:

```
http://<servername>/<sitename>/trend.aspx?SV=1&Tags=SysTimeMin&
LiveMode=true
```

The values specified in the Start and End query string parameters are always considered to be in the local time zone.

If you use the StartUTC and EndUTC query string parameters, the Trend control converts these values into the local time zone before setting these values to the start time and end time fields.

- If both the StartUTC and EndUTC parameters are specified, then the Trend control only considers these values.
- If the StartUTC and EndUTC parameters are passed along with the Start and End parameters, then the Trend control gives higher precedence to the StartUTC and EndUTC parameters.
- If you specify only the StartUTC parameter and not the EndUTC parameter, the Trend control ignores the StartUTC parameter, and vice versa.

Example 1:

Both the StartUTC and EndUTC parameters are specified.

```
http://<servername>/<sitename>/Trend.aspx?SV=true&StartUTC=<
YYYY-MM-DD hh:mm:ss.s>&EndUTC=<YYYY-MM-DD hh:mm:ss.s>
```

The Trend control converts these values into the local time zone before setting start time and end time fields.

Example 2:

Only one parameter, either StartUTC or EndUTC, is specified.

```
http://<servername>/<sitename>/Trend.aspx?SV=true&StartUTC=<
YYYY-MM-DD hh:mm:ss.s>
```

The Trend control ignores the StartUTC parameter and sets the default values to the start time and end time fields.

```
http://<servername>/<sitename>/Trend.aspx?SV=true&EndUTC=<YYYY-
MM-DD hh:mm:ss.s>
```


The Trend control ignores the EndUTC parameter and sets the default values to the start time and end time fields.

```
http://<servername>/<sitename>/Trend.aspx?SV=true&StartUTC=<
  YYYY-MM-DD hh:mm:ss.s>&Start=< YYYY-MM-DD
  hh:mm:ss.s>&End=<YYYY-MM-DD hh:mm:ss.s>
```

The Trend control ignores the StartUTC parameter and considers values specified in Start and End parameters to set the start time and end time.

Example 3:

The StartUTC and EndUTC parameters are specified along with the Start and End parameters.

```
http://<servername>/<sitename>/Trend.aspx?SV=true&StartUTC=<
  YYYY-MM-DD hh:mm:ss.s>&EndUTC=<YYYY-MM-DD hh:mm:ss.s>&Start=<
  YYYY-MM-DD hh:mm:ss.s>&End=<YYYY-MM-DD hh:mm:ss.s>
```

The Trend control gives higher precedence to the StartUTC and EndUTC parameters and ignores the Start and End parameters.

```
http://<servername>/<sitename>/Trend.aspx?SV=true&StartUTC=<
  YYYY-MM-DD hh:mm:ss.s>&EndUTC=<YYYY-MM-DD hh:mm:ss.s>&Start=<
  YYYY-MM-DD hh:mm:ss.s>&Duration=<some number>
```

The Trend control gives higher precedence to the StartUTC and EndUTC parameters and ignores the Start and Duration parameters.

Enabling User Interaction

By default, all user controls in the trend are visible. Use the LockdownOptions parameter to hide individual controls. Pass the values of the controls you want to hide, separated by commas. Values are as follows:

Value	Description
TagPickerVisible	Hide the Tag Picker.
TimebarVisible	Hide the time toolbar.
ToolbarVisible	Hide the main toolbar.
AllowGridEditing	Hide the Tag List.
AllowContextMenu	Hide the shortcut menu.

For example, to hide the Tag Picker and main toolbar, pass the following:

```
LockdownOptions=
  TagPickerVisible=False,ToolbarVisible=False
```

Opening a Trend File

Use the `FileName` parameter to open an existing trend file. Pass the path to the file either as a local path on the client computer or as a URL. To specify a backslash (\) character, prefix it with another backslash.

For example, to open a trend file saved on the client computer as `C:\Trends\Trend1.aaTrend`, pass the following:

```
FileName=C:\\Trends\\Trend1.aaTrend
```

To open a trend file that was published to the Reporting Website, pass a value like the following:

```
FileName=http://Server1/afweb/output/ondemand/source/trend1.aa  
rend
```

Configuring HTTPS Access

You can allow users to access the ActiveFactory Reporting Website using HTTPS instead of HTTP. However, some configuration is required.

To configure the website for HTTPS access

- 1 Configure Internet Information Services (IIS) to use HTTPS.
For more information, see the IIS documentation.
- 2 Use SQL Server Enterprise Manager to modify the URL contained in the `SiteURL` column in the `aaHistClientReportSite` table of the Runtime database. Change the URL to indicate `https` to match how the IIS is configured. For example, change `http://Server01/AFWeb` to `https://Server01/AFWeb`.

For more information on using data sources other than InTouch, see the Wonderware Information Server Win-XML User's Guide.

Managing Licensing

The ActiveFactory Reporting Website software supports session-based licensing for clients. Each connection to the ActiveFactory Reporting Website from a web browser counts as a session, unless the computer from which the connection is made has an ActiveFactory desktop license installed.

If all available client sessions are being used, no sessions are freed up until:

- A website user logs off using the **Logoff** link in the menu bar. If the user simply closes the web browser, the session is still in use.
- The IIS session timeout for a current logon lapses. A session is automatically terminated if the website user has not requested or refreshed a web page by the end of the timeout period. By default, the session timeout is 20 minutes. You can configure the session timeout by using the Internet Information Services console that is available within the Windows Administrative Tools program group.

Chapter 12

TableWeaver

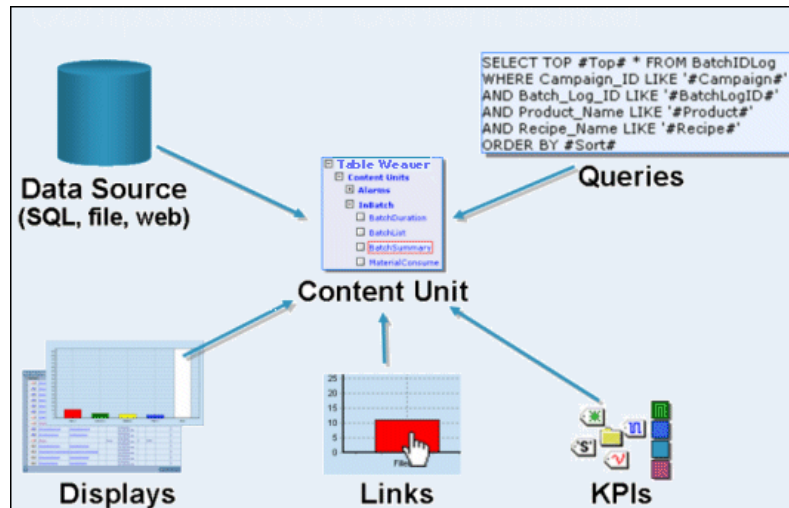
The Table Weaver feature makes it easy to present and navigate information from databases and related webpages. It provides you with the building blocks for customizing contents, allowing you to establish content relationships, provide contextual navigation, and configure information displays in multiple formats. The Table Weaver Manager consists of six components, each giving you the flexibility to build the content according to your needs.

About the Table Weaver Manager

The Table Weaver Manager consists of the following components:

- Data sources
- Queries
- Content units
- Displays
- Links
- Key performance indicators (KPIs)

Each component is defined to build the content unit component which brings all the defined settings into one content. These components are defined independently to make it easy to reuse portions of definition units across multiple content unit definitions.

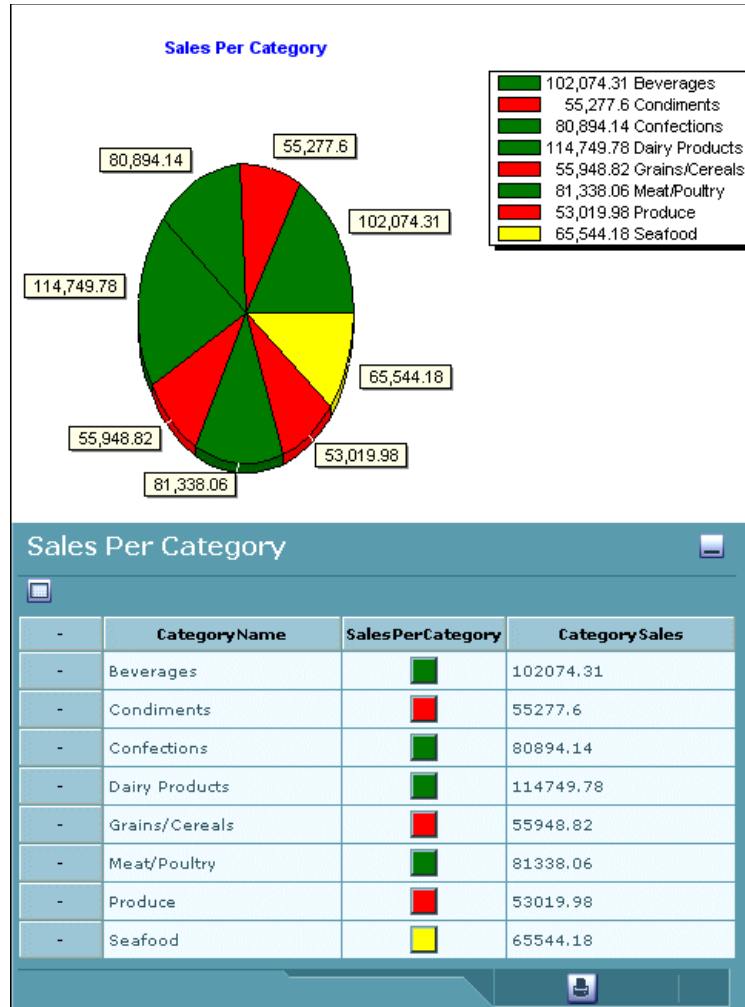


Data source and query definition units are required to define a content unit. The data source defines the source of data or information. The query defines the conditions to retrieve the data from the data source. These definition units can define a content unit that displays the result in a display format or as XML by default.

Display formats are defined in the display's definition unit. It defines how data retrieved from a data source is visualized to the user. The display types supported are:

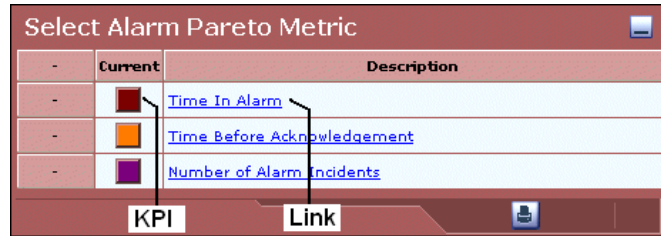
- Chart
- Tabular
- Web Content
- Filter Entry
- SmartSymbol

Each display type contains its own set of configuration options that allow you to customize the display. For example, the Sales per Category chart and table are both configured from the same data source and query, but the different display format configurations provide different representations of the content.



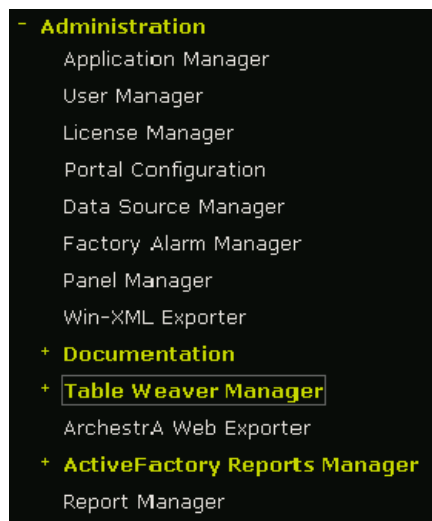
Displays, links, and KPIs are optional components. Links provide more navigation between a content unit and other contents. They provide related information regarding the selected item.

KPIs are visual indicators that express a value as either a color or an icon. Each KPI has one or more targets with its own set of target conditions that display visual indicators when the target condition is met.



Getting Started with Table Weaver Manager

The Table Weaver Manager allows you to define data sources, queries, displays, links, KPIs, and content units. The Table Weaver Manager is located under the System access panel in the Administration node.



Each Table Weaver Manager component is separated into its own subsection in the Table Weaver Manager node. For each subsection, you can define the content for the specific definition unit.



Note: After clicking an Table Weaver component, the URL link is stored in the Internet Explorer History browser.

For more information on how to define a specific Table Weaver component, see "Adding Data Sources" on page 45, "Defining a Query" on page 228, "Defining a Content Unit" on page 222, "Defining a Display" on page 236, "Defining a Link Collection" on page 256, "Defining a KPI Collection" on page 251.

Common Definition Unit Options

All Table Weaver definition unit pages contain a common set of options. The following table provides a brief description of each option.

User Option	Description
New Folder	Creates a new folder in the current definition list page.
New	Create a new definition unit.
Delete	Deletes the selected definition unit(s) and/or folder(s).
Copy	Copies the selected definition unit. Copies can be placed in the same or different folder.
Cancel	Cancels all actions and returns to the parent page.
Save	Saves changes for a new or existing definition unit. A dialog box appears to confirm the save or inform you of missing information that is required.
Reset	Resets all properties to their original values.

For more information on the common definition unit options, see "Creating a New Folder" on page 218, "Copying a Definition Unit" on page 219, "Editing a Definition Unit" on page 221, and "Deleting a Definition Unit" on page 221.

Creating a New Folder

You can organize definition units by creating folders. As you define different definition units, storing definition units within folders makes it easier to later find what you are looking for.

To create a new folder

- 1 In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2 Select a Table Weaver definition unit page. The corresponding definition unit list page appears.

- 3 Click **New Folder**. The **New Folder** section appears.

- 4 In the **Folder Name** box, type a name for the folder. This name appears on the definition unit list page. The folder name must be unique in the current folder and cannot contain spaces or special characters (\ / : * ? < > & | ' " %).
- 5 Click **Save**.

Deleting a Folder

To delete a folder

- 1 In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2 Select a Table Weaver definition unit page. The corresponding definition unit list page appears.
- 3 Select the check box next to the folder(s) you want to delete. You can delete folder(s) and definition unit ID(s) at the same time. For more information on deleting a definition unit ID, see "Deleting a Definition Unit" on page 221.
- 4 Click **Delete**. You are prompted to verify the deletion.
- 5 Click **OK**.

Copying a Definition Unit

The copy option is available for all Table Weaver Manager definition units. Folders cannot be copied. Copies can be placed in the root folder or in another defined folder.

A definition unit can only be copied into a folder one at a time.

To copy a definition unit

- 1 In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2 Select a definition unit. The corresponding definition list page appears.

3 Click the check box next to the definition unit ID you want to copy.

Link Collection List - Northwind			Home >> Parent Link Collection List >> Link Collection List		
Link Collection ID	Type	Description			
<input type="checkbox"/> ProductInfo		Details about this product			
<input type="checkbox"/> ProductLink					
<input type="checkbox"/> SalesPerCategory		Sales Per Category			
<input type="checkbox"/> SupplierInfo		SupplierInfo			
<input type="checkbox"/> SupplierLinks		Supplier's products			
<input type="checkbox"/> SupplierProduct		Supplier Products			
<input checked="" type="checkbox"/> SuppliersList		List of Suppliers			
<input type="button" value="New Folder"/> <input type="button" value="New"/> <input type="button" value="Delete"/> <input type="button" value="Copy"/> <input type="button" value="Cancel"/>					

Note: Only one definition unit can be copied at a time.

4 Click **Copy**. The **Copy Definition Object** window appears.

The dialog box titled "New Link ID for SuppliersList" contains a text input field labeled "Link ID :". Below the input field are two buttons: "Save" and "Cancel". At the bottom of the dialog, there is a label "Copy to another folder..." and a "Browse" button.

5 You can copy the definition unit to the current folder or to a different folder.

- To put the copy in the current folder, type a name for the copied definition unit. The name must not contain spaces or special characters (\ / : * ? < > & | ' "). Click **Save**.
- To copy the definition unit to another folder, click **Browse**. The list of available folders in the definition unit list page appears.

The dialog box shows a list of folders under "Current Path : Root": Alarms, InBatch, InSQL, InTrack, and Northwind. Below the list is a section titled "New Link ID for SuppliersList in the Current Path" with a text input field labeled "Link ID :". At the bottom are "Save" and "Cancel" buttons.

6 Select a folder provided in the window. If no folders are available, click **Cancel** and go back to step 5. Type in a name in the **definition unit ID** box. The definition unit ID must be unique in the selected folder. Click **Save**.

Editing a Definition Unit

To edit a definition unit

- 1 In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2 Select a definition unit. The corresponding definition unit list page appears.
- 3 Select a definition unit ID and make edits.
- 4 Click **Save**.

Deleting a Definition Unit

To delete a definition unit

- 1 In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2 Select a Table Weaver definition unit. The corresponding definition unit list page appears.
- 3 Select the check box next to the definition unit ID(s) you want to delete. You can delete definition unit(s) and folder(s) at the same time.

Queries		
Query List		Home >> Query List
Query ID	Type	Description
<input type="checkbox"/> Alarms		5 Items
<input type="checkbox"/> General		2 Items
<input type="checkbox"/> InBatch		10 Items
<input type="button" value="New Folder"/>	<input type="button" value="New"/>	<input type="button" value="Delete"/> <input type="button" value="Copy"/> <input type="button" value="Cancel"/>

- 4 Click **Delete**. You are prompted to verify the deletion.
- 5 Click **OK**.

Defining Content Units

The content unit is a collection of associated data source, query, display, link, and KPI definitions. It is the core definition item of Table Weaver Manager. The content unit is self-contained and ready for processing to render content to its users.

Note: A content unit configured with a SmartSymbol display, linked to another content unit with an image, shows the link on the window contents itself, rather than external to the window.

Defining a Content Unit

A content unit requires a data source and query definition. Other Table Weaver Manager definition units are options that enhance the display of the content.

To define a content unit

- 1 In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2 Click **Content Unit**. The **Content Unit List** page appears.
- 3 Click **New**. The **Content Unit** page appears.

Content Unit - Home >> Content Unit List >> Content Unit

Definition

Content Unit ID: *

Description:

Data Source: * ...

Query: * ...

Link Collection: ...

Display: ...

KPI Collection: ...

Options

Alternate Display: Filter, Table, TableVertical, WebContent, \Alarms\IncidentChart >> <<

Primary/Standalone:

Refresh Timing: seconds

Attach Image

Preview Parameters

Parameters:

Save Reset Cancel

- 4 Enter the information for the new content unit as follows.
 - In the **Content Unit ID** box, type a name for the content unit. The content unit ID must be unique in the current folder and cannot have spaces or special characters (\ / ? & : " " < > | * %). This name appears on the **Content Unit List** page.
 - In the **Description** box, type a description for the content unit. This description appears on the **Content Unit List** page and on the **Table Weaver** navigation panel. Users can see the description(s) of the content unit(s) on the **Table Weaver** navigation panel.
 - In the **Data Source** list, select the data source to link to the content unit. The data source list contains all defined data sources from the shared data source configuration. You can view the details of the selected data source using the browse button placed next to the **Data Source** list.

Note: You can edit query, link, display, and KPI definition components by using the browse button placed next to each definition component list. To edit data sources, you must go to the Data Source Manager. For information on using the Data Source Manager, see Chapter 4, "Configuring Data Sources."

- In the **Query** list, select the query to link to the content unit. The query list contains all defined queries from the query definition.

The selected data source and query must belong to the same data source type.
- In the **Link Collection** list, select the link collection to attach to the content unit. The link collection list contains all defined links from the link collection definition. For more information on link collection, see "Defining a Link Collection" on page 256.

The selected link matches the selected data source and query combination.
- In the **Display** list, select the display definition to link to the content unit. The display list contains all defined displays from the display definition. When no display is selected, the content unit displays the data in XML.

Web content displays must be used for web content data sources and queries. Table and chart displays can be used for database data sources and queries, but the data for chart displays must include the selected columns.

- In the **KPI Collection** list, select the KPI collection to attach to the content unit. The selected KPI collection contains individual KPIs with target conditions for the specific content unit. For more information on KPIs, see "Defining KPIs" on page 250.

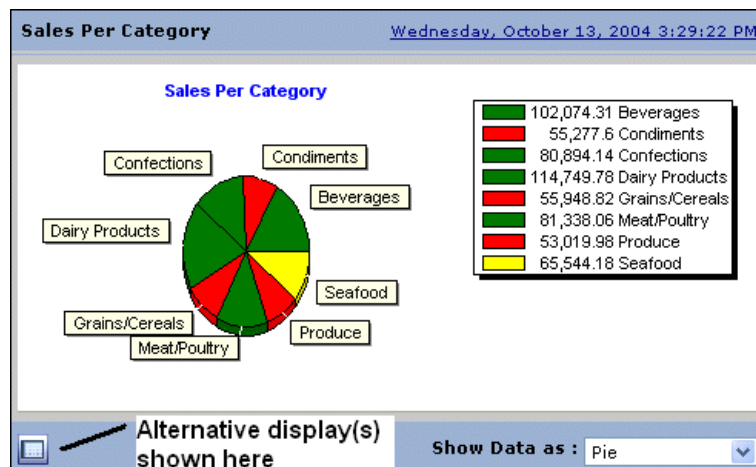
The selected link and KPI definitions match the selected data source and query combination.

Note: You cannot configure KPIs for SmartSymbol content units.

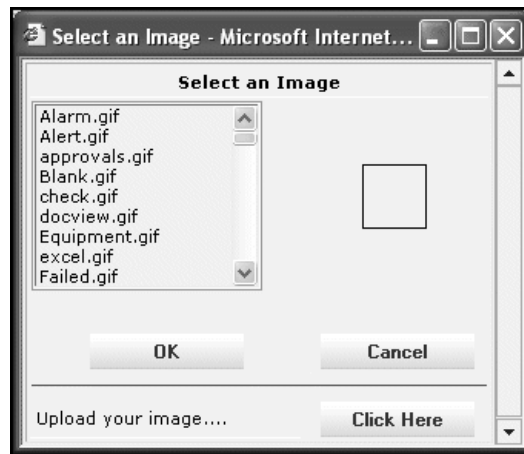
In addition to the required information, you can set a number of options for content units.

- 5 In the **Alternative Display** list, select alternative displays for the content unit. The alternative display allows you to view your content unit in different display formats. You must use the double right arrow button to move the selected display format name(s) into the alternative display box.

For example, the Sales Per Category content unit shows a chart with an alternative tabular display available for the same content.



- 6 To attach an image to the selected display format(s), select the display and click **Attach Image**. The **Select an Image** window appears.



- 7 Select an image from the list in the Image Library or upload your own image. Only images with an extension of .gif, .jpg, .jpeg are allowed to be uploaded. There is no limit on the size of uploaded images. The uploaded images are stored in /<Wonderware Information Server Virtual Directory>/useng/main/contentbuilder/Imagelib. Previews for both the images from the list and an uploaded image can be viewed in the box to the right of the list. Click **OK** to attach the image as an icon for the selected alternative display.
- 8 Select the **Primary** check box to specify the content unit as a primary content unit. Only primary content units are listed in the Table Weaver navigation panel. A primary content unit is a content unit that is self-contained and does not require any information from other content units. **Secondary content units require parameter values from an associated link collection and are only accessed by "drilling through" from another content unit.** The primary check box is selected by default.

Note: You must refresh the Table Weaver node on the navigation panel to view newly created content unit folders and/or primary content units.

- 9 In the **Refresh Timing** box, type a numeric value to indicate the time interval (seconds) to refresh the content unit. The browser refreshes the content automatically based on the refresh timing value. If the box is left blank, the browser does not refresh.
- 10 Click **Save**.

Previewing a Content Unit

A content unit can be previewed allowing you to verify that it is properly defined.

To preview a content unit

- 1 In the **Content Unit List** page, select a content unit ID.
- 2 In the **Parameters** box, type in the parameters and their values to pass to the query linked to the content unit. Separate multiple parameters with a semicolon. For example, param1 = foo¶m2 = foobar. The parameters are for preview only. The value in the parameters box is not stored.
- 3 Click **Preview**.

Copying, Editing, Deleting a Content Unit

To copy a content unit, see "Copying a Definition Unit" on page 219.

To edit a content unit, see "Editing a Definition Unit" on page 221.

To delete a content unit, see "Deleting a Definition Unit" on page 221.

Exporting a Content Unit

It is possible to export one or more selected content units and/or content unit folders from the Content Unit List page. Exporting a content unit exports all definition units associated with the content unit. Exporting a folder exports all contained folders, content units, and the associated elements for each content unit.

To export a content unit

- 1 In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2 Click **Content Unit**. The **Content Unit List** page appears.
- 3 Select the check box next to the content units and/or content unit folders you want to export. If a specific content unit or folder is not selected, then all content units and folders in the current folder are exported.
- 4 Click **Export**. The **Export Content Units** page appears.

The screenshot shows a dialog box titled "Export Content Units". It has two input fields: "Export Name: *" with a text box and "Export Image:" with a checkbox. At the bottom, there are three buttons: "Export", "Reset", and "Close".

- 5 In the **Export Name** box, type a name for the export. This name is the folder name for the exported content located at <Wonderware Information Server Program files Installation Directory>\Export. The export name(s) import content unit(s).
- 6 Select the **Export Image** check box if you want to export the images selected in the content unit/folder files. Images are exported to <Wonderware Information Server Program files Installation Directory>\Export\ImageLib.
- 7 Click **Export**.

Importing a Content Unit

To import a content unit

- 1 In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2 Click **Content Unit**. The **Content Unit List** page appears.
- 3 Click **Import**. The **Import Content Unit(s)** window appears.

The screenshot shows a dialog box titled "Import Parameters". It has three input fields: "Import From: *" with a dropdown arrow, "Overwrite Files:" with an unchecked checkbox, and "Import Image:" with an unchecked checkbox. Below these fields are two buttons: "Import" and "Close". At the bottom left, there is a note: "* Required field".

- 4 Select the export name(s) available from the **Import From** list.
- 5 Select the **Overwrite Files** check box if you want to overwrite existing content unit/folder files with the corresponding files from the selected export.
- 6 Select the **Import Image** check box if you want to import the images from the selected export.
- 7 Click **Import**.

Defining Queries

A query describes the particular information to be retrieved from a data source. For example, a query includes the data source type (database or web content), SQL statement, and parameters to pass. A query is one of the two mandatory definition units required to define a content unit.

To use a query in a content unit, there must be a corresponding data source with the same type. Use a database query with a database data source, and a web content query with a web content data source. Database and web content queries allow parameter variables to be passed to the query or data source.

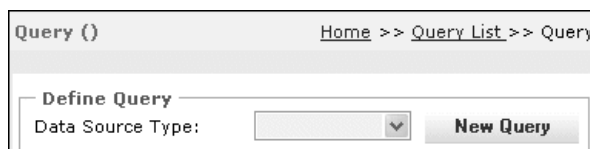
Note: If you are working in http: mode and then switch to https: mode, items added to the panel that are defined to use http: protocol no longer work. To fix these broken links, someone with administrator privileges must delete the items from the panel and then re-add them so that they have the https: protocol.

For more information on the different query types, see "Defining a Database Query" on page 229, and "Defining a Web Content Query" on page 231.

Defining a Query

To define a query

- 1 In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2 Click **Query**. The **Query List** page appears.
- 3 Click **New**. The **Query** page appears.



- 4 In the **Data Source Type** list, select a data source type. The properties from the selected data source type appear.
- 5 For more information on defining queries for each type of data source, go to "Defining a Database Query" on page 229, and "Defining a Web Content Query" on page 231.

Defining a Database Query

A database query includes information such as the data source, the query ID, and the SQL statement, which is executed against the database. Parameters can be defined for the query that can be dynamically populated at execution time.

To define a database query

- 1 In the **Data Source Type** list, click **Database**. The **ODBC Query Properties** area appears.

The screenshot shows the 'Define Query' dialog box. At the top, 'Data Source Type' is set to 'Database' with a 'New Query' button. Below is the 'ODBC Query Properties' section with the following fields:

- Query ID: * (text box)
- Description: * (text box)
- SQL Query: * (large text area)
- Field Captions: (text box)
- Page Size: (text box)

Below the ODBC properties is a 'Parameter' section containing a table:

Name	Value	More...
<input type="text"/>	<input type="text"/>	<input type="button" value="More..."/>

At the bottom of the dialog are 'Save', 'Reset', and 'Cancel' buttons. A note at the bottom left states '* Required field'.

- 2 In the **Query ID** box, type a name for the query. The name must be unique in the current folder and not contain spaces or special characters (\ / : * ? < > & | ' "). This name appears in the **Query List** page.
- 3 In the **Description** box, type a description for the query. This description appears in the **Query List** page.
- 4 In the **SQL Query** box, type a script or statement to be executed by the database. For information on SQL queries, see "Examples of Database Queries" on page 231.

- 5 In the **Field Captions** box, type a caption that replaces the field name, which is provided by the data source. Captions must be separated by a semicolon. If the Field Captions box is left blank, the field name provided by the data source is used. Information is taken in the same order as provided by data source. Another option is to set the field caption in the SQL query. Most OLE DB providers support using the AS clause within the query to set the displayed name.

For example, the following SQL query from the Northwind database includes the field caption name within the query:

```
SELECT ProductId as [Product ID], SupplierId as [Supplier], UnitPrice as [Price] from Products
```

- 6 In the **Page Size** box, type a numeric value to limit the number of records that are returned from the result. For example, if the numeric value 10 is typed in the box, only the first 10 records are returned. The page size is only considered if the value is a positive number.

This option has precedence over the transact SQL's TOP functionality. For example, the following transact SQL query with page size set to 10 only returns the first 10 records of the query result.

```
SELECT TOP 50 * FROM products
```

- 7 In the **Parameters** area, configure the values to be passed through the parameters defined in the SQL Query. Parameter names are case sensitive. For more information on configuring parameter name and value for queries, see "Examples of Database Queries" on page 231 and "Examples of Web Content Queries" on page 234.
 - a In the **Name** box, specify the name of the parameter in the SQL query.
 - b In the **Value** box, specify the value that you want to pass in the parameter. This is the default value for a database query parameter. It can be replaced by the value configured in a link parameter.

It is possible to have multiple name-value parameter pairs. Click **More** to add more parameters.

- 8 Click **Save**.

Examples of Database Queries

The database query allows you to pass in parameters defined in the query. For example, you want to create a query that retrieves the product names that start with a "c" using data from the Products table in the Northwind database. Type in the following values for the configuration options:

```
SQL Query: SELECT * From Products Where ProductName
Like '#ID#'
```

Parameter Name: ID

Parameter Value: c%

With no other defined parameters, the runtime query is:

```
SELECT * FROM Products Where ProductName Like 'c%'
```

SQL Stored Procedure:

```
EXEC custordersdetail #OrderParam#
```

Defining a Web Content Query

The web content query allows you to configure a query to retrieve content from the Web. The web content can either be in the form of web pages or a list of URL links.

To define a Web Content query

- 1 In the **Data Source Type** list, click **Web Content**. The **Web Link Definition** area appears.

- 2 In the **ID** box, type a name for the query. The name must be unique in the current folder and not contain spaces or special characters (\ / : * ? < > & | ' "). This name appears in the **Query list** page.
- 3 In the **Description** box, type a description for the query. This description appears in the **Query list** page.
- 4 In the **Link Type** list, select **List** or **Page** to define the link type.
 - A **List** link type defines the link as a link, allowing multiple web content links within a query definition.
 - A **Page** link type defines the link as content, allowing only one link definition per query.

Defining a Page Link Type

When you are defining a query, you can pass parameters to the target URL using the GET or the POST method. The method you select is dependent on the target URL's requirements for passing parameter values.

- The GET method passes parameters as name-value pairs as part of the URL query string. These parameters appear in the URL and are visible when you open the content unit.
- The POST method passes parameters through a customized form. These parameter values do not appear in the URL but they are available for the target URL page to process.

To define a page link type

- 1 The **Web Link Definition** area selects **Page** as the **Link Type** by default. The **Link Definition** area appears.

Link Definition		Parameters	
Method: *	GET	Name	Value
URL: *			
		More...	
Save		Reset	
Cancel			
* Required field			

- 2 In the **Method** list, select **GET** or **POST** for the http method of the link.
- 3 In the **URL** box, type the http URL of the link.
- 4 In the optional **Parameters** area, type the name and value of the parameter to pass to the URL. Parameters for the **GET** method are passed as a query string. Parameters for the **POST** method are passed as a form post. Click **More** to add more parameters to the query.
- 5 Click **Save**.

Configuring a Page Link Definition for Arcestra Reporting

Create a Link Definition that has WebSource as Target and the type the following URL:

```
../../../../../../../../ArcestraReports/ExecuteReport.aspx
```

This string delivers the correct .aspx file, relative to the content unit.

Do not use the relative path to the page from the Table Weaver's virtual folder.

Link Definition																						
Definition																						
Name *	ReportLinkDef																					
Description :																						
Binding :	Record																					
Entity :																						
Target :	WebSource																					
URL :	../../../../ArchestraReports/ExecuteReport.aspx																					
Image :	<input type="button" value="Attach Image"/>																					
Position *	Last																					
Column Position :																						
New Window :	<input checked="" type="checkbox"/>																					
Parameters																						
	<table border="1"> <thead> <tr> <th>Name</th> <th>Value</th> <th>More...</th> </tr> </thead> <tbody> <tr> <td>ReportPath</td> <td>#ReportPath#</td> <td></td> </tr> <tr> <td>boolean1</td> <td>#bool1#</td> <td></td> </tr> <tr> <td>integer1</td> <td>#integer1#</td> <td></td> </tr> <tr> <td>float1</td> <td>#float1#</td> <td></td> </tr> <tr> <td>datetime1</td> <td>#datetime1#</td> <td></td> </tr> <tr> <td>string1</td> <td>#string1#</td> <td></td> </tr> </tbody> </table>	Name	Value	More...	ReportPath	#ReportPath#		boolean1	#bool1#		integer1	#integer1#		float1	#float1#		datetime1	#datetime1#		string1	#string1#	
Name	Value	More...																				
ReportPath	#ReportPath#																					
boolean1	#bool1#																					
integer1	#integer1#																					
float1	#float1#																					
datetime1	#datetime1#																					
string1	#string1#																					

In the **Parameters** area, add Parameters for each Archestra Report parameter.

The Parameter's **Name** and **Value** are appended to the URL.

Defining a List Link Type

The web content query differs from the Custom Links feature configured under Configuration in that it allows parameter passing and includes the POST method to retrieve the web link.

To define a list link type

- 1 Select **List** from the **Link Type** list. Click **Save**. The **Web Link Collection** area appears.

- 2 Click **New Link**. The **Link Definition** area appears.

Link Definition							
Name *							
Method *	GET						
URL *							
Parameters							
	<table border="1"> <thead> <tr> <th>Name</th> <th>Value</th> <th>More...</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Name	Value	More...			
Name	Value	More...					

- 3 In the **Name** box, type a name for the link. This name appears in the web link collection for the defined web query.
- 4 In the **Method** list, click **GET** or **POST** for the http method of the link.
- 5 In the **URL** box, type the http URL of the link.

- 6 In the optional **Parameters** box, type the name and value of the parameter to pass to the URL. Parameters for the **GET** method are passed as query a string. Parameters for the **POST** method are passed as a form post. Click **More** to add more parameters to the query.
- 7 Click **Save**. To add more links, click **New Link** from the **Web Link Collection** area.

Examples of Web Content Queries

For web content queries that use the list type, you can define multiple links in a query definition. For example, you want to define a list of links of search engines. Type the following values for the configuration options:

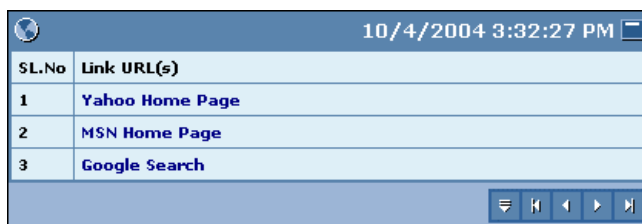
Link Type: List

Method: GET

URL: `http://www.google.com/search`

Click **New Link** in the **Web Link Collection** properties to add another link to the web content query. The **Link Type** list is unavailable because the query definition is already defined as a list type. There is no limit to the number of links defined in a web content query.

The web content display of the web links displays the links in a list. For more information on web content displays, see "Defining a Web Content Display" on page 249.



The screenshot shows a web browser window with a date and time display of 10/4/2004 3:32:27 PM. Below the browser title bar is a table with three columns: 'SL.No', 'Link URL(s)', and an empty column. The table contains three rows of data:

SL.No	Link URL(s)	
1	Yahoo Home Page	
2	MSN Home Page	
3	Google Search	

At the bottom right of the table, there are navigation icons: a dropdown arrow, a refresh icon, a left arrow, a right arrow, and a stop icon.

With an appropriate data source and display, this query displays a tabular list of all links defined in the query. Each link is identified by the name specified in the query. Clicking on any item in the list launches the respective content.

For web content queries that use the page link type, only one link definition can be defined in a web content query. For example, to show the content of the Google search page in the French language through the Table Weaver. Type in the following values for the configuration options:

Link Type: Page

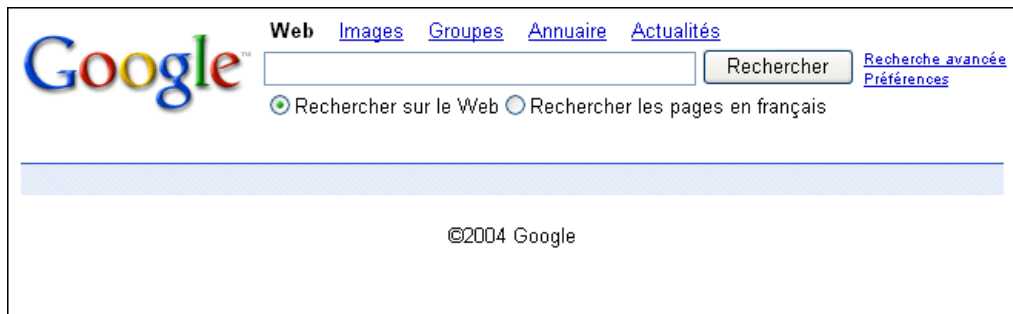
Method: GET

URL: <http://www.google.com/search>

Parameter Name: hl

Parameter Value: fr

With an appropriate content unit and display, this query shows the Google search page in French.



Copying, Editing, Deleting a Query

To copy a query, see "Copying a Definition Unit" on page 219.

To edit a query, see "Editing a Definition Unit" on page 221.

To delete a query, see "Deleting a Definition Unit" on page 221.

Defining Displays

Displays define the visual presentation of the data returned by a query. They transform the raw data returned by the query into a graphical representation, which is then displayed. You can configure different types of displays supported by Table Weaver to display the content of the content unit.

TableWeaver displays support:

- Hyperlinks to related information
- Value-based color or image selection (KPIs)
- Reusable and parameterized queries
- Web data sources

Wonderware Information Server provides the following display types:

- Chart
- Filter Entry
- SmartSymbol
- Tabular
- Web Content

Defining a Display

To define a display

- 1 In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2 Click **Display**. The **Display List** page appears.
- 3 Click **New**. The **Display** page appears.

The image shows a screenshot of a software interface titled "Define Display". It contains a "Display Type:" label followed by a dropdown menu with a downward arrow. To the right of the dropdown is a button labeled "New Display".

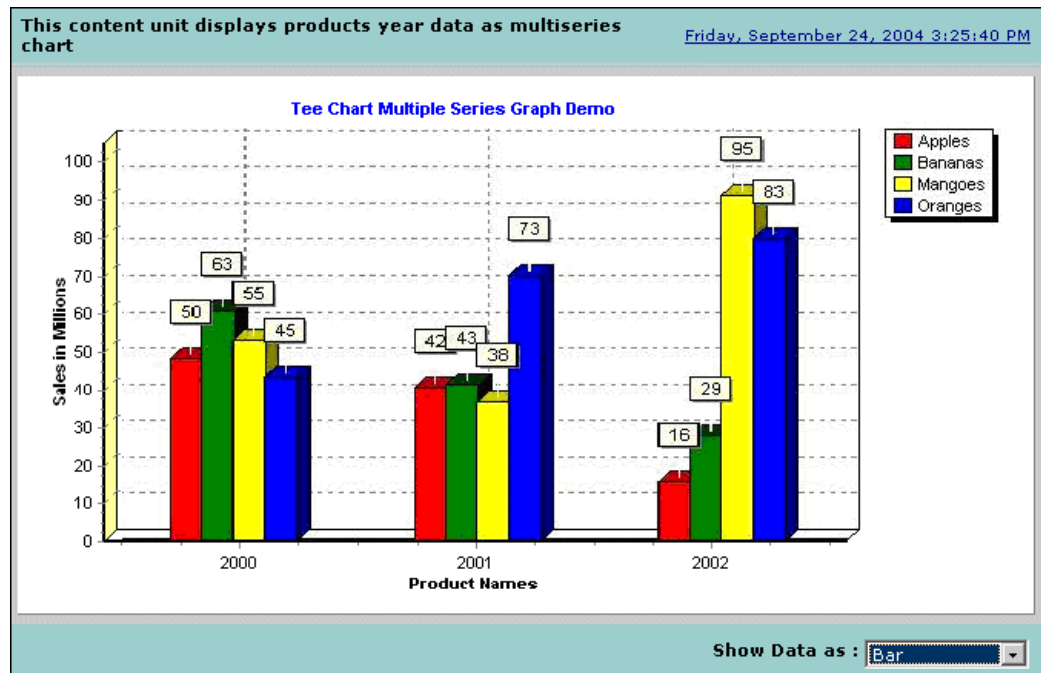
- 4 In the **Display Type** list, select and click a display type. The properties from the selected display type appear.

Information on defining chart, filter entry, SmartSymbol, tabular, and web content displays appear in the following sections.

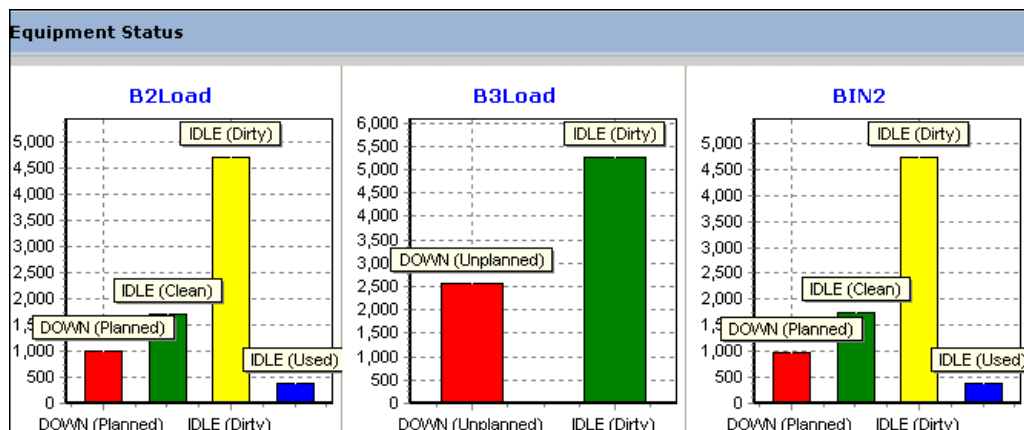
Defining a Chart Display

You can define several charts in Wonderware Information Server.

- **Single Series**
The single series graph shows a graph with two data fields (x-axis, y-axis). The single series graph can select all of the chart types.
- **Multiple Series**
The multiple series graph shows a graph with three data fields (x-axis, y-axis, series) with the option to display the graph as a single or separate multi-series graph.
- **Separate Graph per Series**
Identifies whether the series data is shown as a single graph or separate graphs. This option is only applicable for multiple series. For example, the Tee Chart shows a multiple series single graph.



The Equipment Status bar chart displays a multiple series graph with the separate graph per series option.



- **Default Chart**
All outputs are plotted on a graph with an x-axis and y-axis, except for the pie chart. The chart types for multiple series graph are limited to bar, horizontal bar, stacked bar, stacked bar percentage and fast line. The chart default is set to line.

Type of Chart	Description
Line	Outputs all points by drawing a line between them (that is, a trend graph).
Bar	Outputs a series of vertical bars, with the top edge of each bar indicating the point value.
Horizontal Bar	Outputs a series of horizontal bars, with the right edge of each bar indicating the point value.
Stacked Bar	Outputs a series of stacked bars, with the height of each bar indicating the point value. Subsequent series are stacked to the prior series. For example, if the series values for a point are 4, 5, and 11, then there are bars from 0-4, 4-9, and 9-20.
Stacked Bar Percentage	Outputs a series of stacked bars, with the height of each bar indicating the percentage of the total from all series.
Area	Outputs all points by drawing a line between them and then filling the area defined by the line and the bottom side of the chart.
Point	Outputs all points by drawing individual point markers.
Pie	Outputs all points by drawing slices that form an ellipse (oblong circle).
Fast Line	Outputs all points by drawing a line between them (that is, a trend graph). A fast line chart is drawn more quickly than a normal line chart, but it is not clickable and does not support marks.
Volume	Outputs a series of thin vertical lines, with the top edge of each bar indicating the point value.

To define a chart display

- 1 Click **Chart** from the **Display Type** list. The **Chart Properties** area appears.
- 2 In the **Display ID** box, type a name for the display. The name must be unique in the current folder and cannot not contain spaces or special characters (\ / : * ? < > & | ' "). This name appears in the **Display List** page.
- 3 In the **Description** box, type a description that appears in the **Display List** page.
- 4 Configure the **Graph Type** options for the chart.

Note: In a Multiple series graph, to display the data by date/time, you must check the **Skip Display Sorting** check box. This sorts the queried data based on the Date/Time. This option is only applicable for multiple series.

Graph Type

Single Series

Multiple Series

Separate Graph per Series

Skip Display Sorting

Default Chart: Line

- 5 Configure the **Control** options for the chart.
 - a In the **X-Axis Data Field** box, type the data field name from the data set that is used for the x-axis. The name appears in the chart results.

Control

X-Axis Data Field: *

Y-Axis Data Field: *

Series Data Field: *

- b In the **Y-Axis Data Field** box, type the data field name from the data set that is used for the y-axis. The name appears in the chart results.
 - c In the **Series Data Field** box, type the data value to group the data for a multi-series chart. This option is only applicable for multiple series charts.
- 6 Configure the **Appearance** options for the chart.

Appearance

Header:

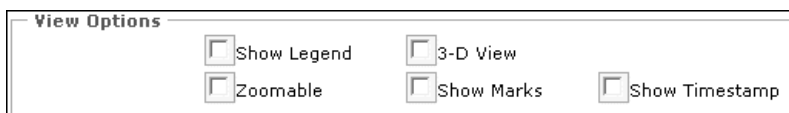
X-Axis Caption:

Y-Axis Caption:

Size %(Width, Height): 100 100

- **Header**
Specifies the header of the chart. You can type in a name or include a parameter value with #param# syntax. This header appears above the chart.
- **X-Axis Caption**
The caption that appears on the x-axis of the chart.
- **Y-Axis Caption**
The caption that appears on the y-axis of the chart.
- **Size %(Width, Height)**
Sets the size of the width and height of the chart to be displayed in percentage. The value must be positive integers. The default size is (100, 100)

7 Configure the **View Options** for the chart.

A dialog box titled "View Options" with a thin border. It contains five checkboxes arranged in two rows. The first row has "Show Legend" and "3-D View". The second row has "Zoomable", "Show Marks", and "Show Timestamp". All checkboxes are currently unchecked.

<input type="checkbox"/> Show Legend	<input type="checkbox"/> 3-D View	
<input type="checkbox"/> Zoomable	<input type="checkbox"/> Show Marks	<input type="checkbox"/> Show Timestamp

- **Show Legend**
Shows or hides the chart legend to the right of the chart. The legend lists all item values in the chart.
- **3-D View**
Specifies the chart as a three-dimensional graphic.
- **Zoomable**
Zoom in or out on the chart display.
- **Show Marks**
Shows or hides the marker for each data point on the graph.
- **Show Timestamp**
Shows the data retrieval timestamp on the chart in client time zone.

8 Click **Save**.

Single Series Chart Example

For charts that use a single series, provide data field names for the **X-Axis Data Field** and **Y-Axis Data Field**. For example, to create a chart that displays the sales per category using sample Product Sales data. The SQL query defined for this example is the following:

```
SELECT CategoryName, Sum(ProductSales) AS CategorySales
FROM "Product Sales for 1997" GROUP BY CategoryName
```

In defining the chart display, type in the following values for the configuration options:

X-Axis Data Field: CategoryName

Y-Axis Data Field: CategorySales

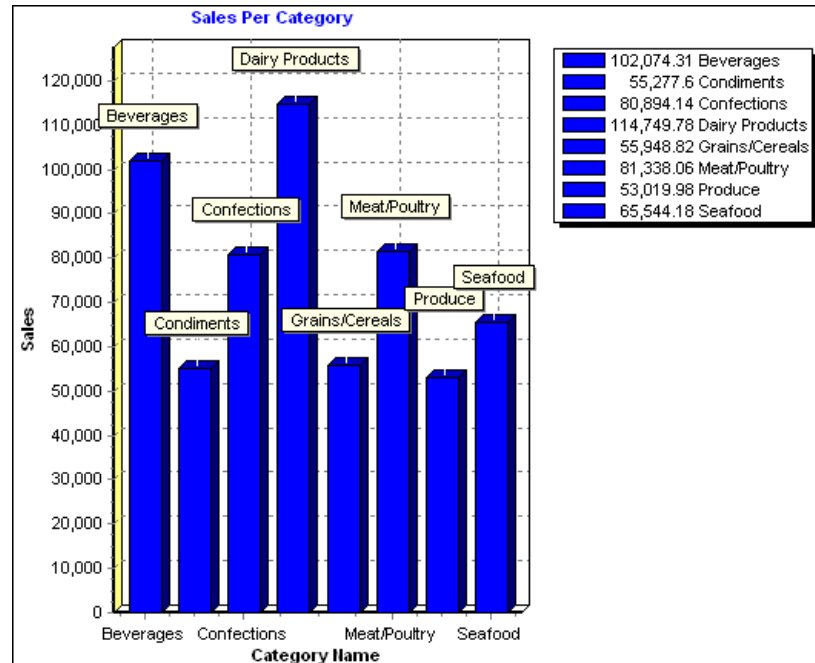
Header: Sales Per Category

X-Axis Caption: Category Name

Y-Axis Caption: Sales

Size %(Width, Height): 100, 100

The resulting chart displays Category Name values graphed along the x-axis of the chart and the Sales values graphed along the y-axis of the chart. The header appears at the top of the chart and the captions are shown along the indicated axis. In this display, the **Show Marks**, **3-D View**, and **Show Legend** options are selected.



Multiple Series Chart Example

For charts that use a multiple series, you need to provide data field names for the **X-Axis**, **Y-Axis**, and **Series Data Field**. For example, you want to create a chart that displays the sales per category using sample Product Sales. The SQL query defined for this example is the following:

```
SELECT ProductName, ProductID AS _ProductID, SupplierID
AS _SupplierID, 'ReorderLevel' AS Series, ReorderLevel AS
'Measure', ReorderLevel, UnitsInStock FROM Products
```

```
UNION
```

```
SELECT ProductName, ProductID, SupplierID, 'InStock',
UnitsInStock, ReorderLevel, UnitsInStock FROM Products
```

In defining the chart display, type in the following values for the configuration options:

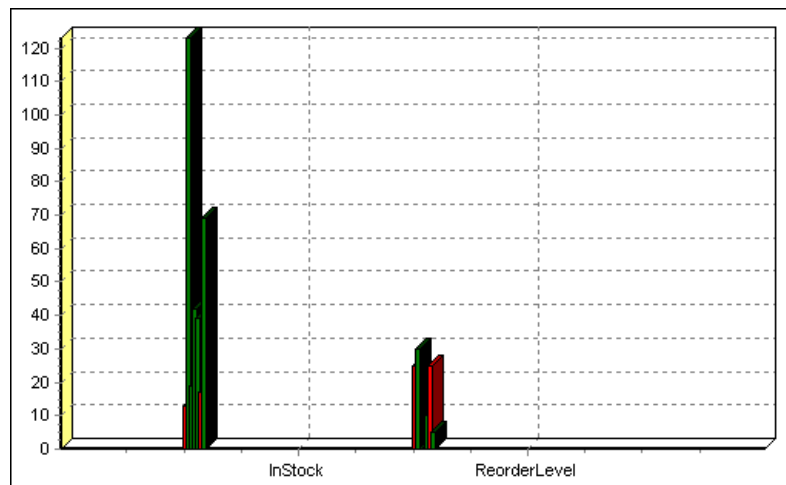
```
X-Axis Data Field: ProductName
```

```
Y-Axis Data Field: Measure
```

```
Series Data Field: Series
```

```
Size %(Width, Height): 100, 100
```

The resulting chart displays the count of InStock and ReOrderLevel units for all the Products. This is a multiple series single graph with links on each product bar to more detailed product information.



Defining a Filter Entry Display

The display is based on the links associated with the content unit. It provides a user input box with a list of associated links. Selecting a link from this list opens additional input fields for each defined link parameter for the selected link.

The user must provide values for these parameters which are then passed to the link target. The target content is filtered based on the data received from the user.

To define a filter entry display

- 1 In the **Display Type** list, click **Filter Entry**. The **Filter Tabular Display Properties** area appears.

The screenshot shows a dialog box titled "Filter Tabular Display Properties". It has three input fields: "Display ID: *" with an asterisk indicating it is required, "Description:", and "Show TimeStamp:" with a checkbox. Below the fields are three buttons: "Save", "Reset", and "Cancel". At the bottom left, there is a note: "* Required field".

- 2 In the **Display ID** box, type a name for the display. The name must not contain spaces or special characters (`\ / : * ? < > & | ' "`). This name appears in the **Display List** page.
- 3 In the **Description** box, type a description for the display. This description appears in the **Display List** page.
- 4 Select the **Show Timestamp** check box to show the date and time the data is retrieved. The date and time is displayed in the site's user time zone.
- 5 Click **Save**.

Filter Entry Example

The filter entry display filters the data in the content unit based on user input. It shows the available links to filter and provides an input box in which users can type the specific value for the link parameter. For example, you want to define a filter display for sample orders and suppliers. The number of links available in the filter display depends on the link definition unit. You want to create two links for the filter, one for order, the other for supplier. For the order link, type the following values for the configuration options:

Description: Order detail link

Binding: Field

Entity: OrderID

Parameter Name: OrderID

Create a supplier link in the same link collection as the order link.
Type the following values for the configuration options:

Description: Show suppliers details

Binding: Field

Entity: CustomerID

Parameter Name: CustomerID

Type in the following SQL query for the query definition unit:

```
SELECT Orders.OrderID, Orders.CustomerID,
Orders.EmployeeID, Orders.OrderDate, Orders.RequiredDate,
Orders.ShippedDate, (convert(int, (Orders.ShippedDate -
Orders.OrderDate))) AS LeadTime, Orders.ShipVia,
Orders.Freight, Orders.ShipName, Orders.ShipAddress,
Orders.ShipCity, Orders.ShipRegion,
Orders.ShipPostalCode, Orders.ShipCountry,
Customers.CompanyName, Customers.Address, Customers.City,
Customers.Region, Customers.PostalCode, Customers.Country
FROM Customers INNER JOIN Orders ON Customers.CustomerID
= Orders.CustomerID
```

With a general defined filter entry display, the links defined in the link definition unit appear in the **Select the Link to apply filter** list. Parameter names appears when a link is selected. For this example, the OrderID and CustomerID parameter names appears for the order and supplier links, respectively.

The user can type in a parameter value and find any related information based on the data inputted. If you click **Go** without inputting a value, the filter result shows data dependent on the configuration of the default parameter.

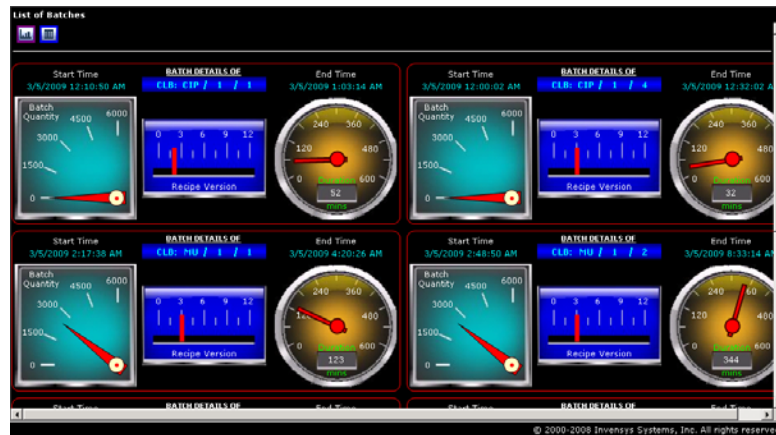
Defining a SmartSymbol Display

You can publish SmartSymbols from InTouch Windows. For more information, see Publishing Symbol Sets in *Win-XML Exporter Guide*.

Before you start, make sure you published the SmartSymbol set you want to use.

Note: When an InTouch window is published as a SmartSymbol, the title bar space becomes part of the SmartSymbol, and the SmartSymbol display is configured with more than one row. The gap between the rows appears to be more than one-pixel, however, the gap is one pixel.

If the same window is published without the title bar, the gap between the rows is exactly one-pixel.



To create a symbol in WindowMaker and export it to Wonderware Information Server

- 1 Create a Symbol and add it to a window in WindowMaker.

Note: The symbol does not have to be a SmartSymbol, it can be a simple graphic within a window.

- 2 Open the WinXML Exporter downloaded from the Wonderware Information Server site, as if you were publishing the window.
- 3 Right-click on the topmost node, like the project node, and select New TableWeaverSet.
- 4 Open the InTouch Application.
- 5 In the pane of available InTouch windows, select the window to be converted.

- 6 Drag the window on to the TableWeaverSet name in the project. The conversion to XML is performed automatically.
- 7 Right click the TableWeaverSet and publish.
- 8 Select the Symbol from the available TableWeaverSet dropdown and complete the associated form.
- 9 Create or modify a Content Unit to use the new symbol.

To define a SmartSymbol display

- 1 In the **Display Type** list, click **SmartSymbol**. The **SmartSymbol Display Properties** area appears.

Define Display
Display Type: SmartSymbol

Identification
Display ID : *
Description :

Symbol and Layout
Symbol : *
Total Number of Symbols : *
Symbols in a Row : *

Tagname - Data Field Mappings

Tagname	Data Field
<input type="text"/>	<input type="text"/>

* Required field

- 2 In the **Display ID** box, type a name for the display. The name must be unique in the current folder and cannot contain spaces or special characters (\ / : * ? < > & | ' "). This name appears in the **Display List** page.
- 3 In the **Description** box, type a description for the display. This name appears in the **Display List** page.
- 4 In the **Symbol** list, select a symbol.
- 5 In the **Total Number of Symbols** box, type the total number of symbols. When the data returned by the query is greater than this number, the data is truncated to this limit.
- 6 In the **Symbols in a Row** box, type the number of symbols to appear in each row. When the data returned by the associated query is greater than this limit, the data appears in the next row. The **Tagname** box displays the tags defined in the selected symbol. The **Tagname** box cannot be edited.
- 7 In the **Data Field** box, type the name of the corresponding data field. The **Tagname** acquires the value of the data field and is used for animation of the symbol.
- 8 Click **Save**.

Defining a Tabular Display

To define a tabular display

- 1 In the **Display Type** list, click **Tabular**. The **Tabular Display Properties** area appears.

Tabular Display Properties

Display ID: *

Description:

Enable Numbering:

Show Timestamp:

Rows per view: *

Color Scheme: ▼

Hidden Columns: (Separate Column Names with ";")

Display type: ▼

* Required field

- 2 In the **Display ID** box, type a name for the display. The name must be unique in the current folder and cannot contain spaces or special characters (\ / : * ? < > & | ' "). This name appears in the **Display List** page.
- 3 In the **Description** box, type a description for the display. This name appears in the **Display List** page.
- 4 To number the rows in the display, click **Enable Numbering**.

Table of all products Tuesday, October 05, 2004 10:32:33 AM

Enable Numbering
 Show Timestamp

SL.No	ProductID	ProductName	QuantityPerUnit	UnitPrice	UnitsInStock	UnitsOnOrder	ReorderLevel
1	1	Chai	10 boxes x 20 bags	18	39	0	10
2	2	Chang	24 - 12 oz bottles	19	17	40	25
3	3	Aniseed Syrup	12 - 550 ml bottles	10	13	70	25
4	4	Chef Anton's Cajun Seasoning	48 - 6 oz jars	22	53	0	0
5	5	Chef Anton's Gumbo Mix	36 boxes	21.35	0	0	0

- 5 To show the date and time the display was viewed, click **Show Timestamp**. The date and time is displayed in the client's time zone.
- 6 In the **Rows per view** box, type a numeric value that limits the number of rows to be presented in a single view. A zero value displays all data items in the table.

- 7 In the **Color Scheme** list, select a color scheme for the display. The default color scheme is blue.
- 8 In the **Hidden Columns** box, type the name of the column(s) in the table to hide from the table display. Hide columns that perform KPI calculations. Separate each column name with a semicolon.
- 9 In the **Display Type** list, select **Horizontal** or **Vertical** to determine the orientation of the table. Use the vertical orientation when there are lots of columns and few rows from the query results.
- 10 Click **Save**.

Tabular Display Example

A tabular display distributes the data based on the configuration options indicated in the Tabular Display Properties area. For example, you want to create a horizontal table that hides specific columns and displays only 4 rows per table view. Type in the following values for the configuration options:

Rows per view: 4

Hidden Columns: Supplier

Display type: Horizontal

Using the Northwind database and query, the content unit shows a table based on the configuration set in the display definition unit.

Supplier Information									
ContactName	ContactTitle	Address	City	Region	PostalCode	Country	Phone	Fax	
Charlotte Cooper	Purchasing Manager	49 Gilbert St.	London		EC1 4SD	UK	(171) 555-2222		
Shelley Burke	Order Administrator	P.O. Box 78934	New Orleans	LA	70117	USA	(100) 555-4822		
Regina Murphy	Sales Representative	707 Oxford Rd.	Ann Arbor	MI	48104	USA	(313) 555-5735	(313) 555-3349	
Yoshi Nagase	Marketing Manager	9-8 Sekimai Musashino-shi	Tokyo		100	Japan	(03) 3555-5011		
Antonio del Valle Saavedra	Export Administrator	Calle del Rosal 4	Oviedo	Asturias	33007	Spain	(98) 598 76 54		

Defining a Web Content Display

A web content display uses a web content query to display web content based on URL links. Web content displays can be shown as a table list of web links or a web content page. For more information on the difference between web link types, see "Defining a Web Content Query" on page 231.

To define a web content display

- 1 In the **Display Type** list, click **Web Content**. The **Web Display Properties** area appears.

The screenshot shows a dialog box titled "Web Content Display Properties". It contains the following fields and controls:

- Display ID: ***: A text input field.
- Description:**: A text input field.
- Title:**: A text input field.
- Enable Numbering:**: A checkbox.
- Open Link in New Window:**: A checkbox.
- Show Timestamp:**: A checkbox.
- No.Of Links per view: ***: A text input field containing the number "0".

At the bottom of the dialog are three buttons: "Save", "Reset", and "Cancel". Below the dialog box, there is a note: "* Required field".

- 2 In the **Display ID** box, type a name for the display. The name must be unique in the current folder and cannot contain spaces or special characters (\ / : * ? < > & | ' "). This name appears in the **Display List** page.
- 3 In the **Description** box, type a description for the display. This description appears in the **Display List** page.
- 4 In the **Title** box, type a title for the display. The title appears on the top of the display.

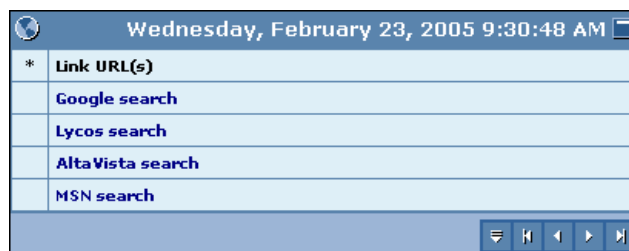
Note: All web display configuration options after **Title** are only used for a web query with a list link type.

- 5 To number the rows in the display, select the **Enable Numbering** check box.
- 6 Select the **Open Link in New Window** check box to open each link in a new window instead of opening the web content in the same window.
- 7 Select the **Show Timestamp** check box to show the date and time the data was retrieved. The date and time is displayed in the site's user time zone.
- 8 In the **No. of Links per view** box, type the number of links to be presented in a single view. A zero value shows all links in the view.
- 9 Click **Save**.

Web Content Display Example

Web content displays can show the URL webpage or a list of web links. For example, you want to show a list of search engines web links.

Using the data from the web content query example from "Defining Queries" on page 228 the resulting Search Engines display shows the list of search engines web links with the **Enable Numbering**, **Open Link in New Window**, and **Show Timestamp** options selected.



The screenshot shows a browser window titled "Wednesday, February 23, 2005 9:30:48 AM". The main content is a table with a header row and four data rows. The header row is labeled "* Link URL(s)". The data rows contain the following text: "Google search", "Lycos search", "AltaVista search", and "MSN search". The table has a light blue background and a dark blue border. At the bottom right of the table, there are navigation icons: a dropdown arrow, a refresh icon, a left arrow, a right arrow, and a close icon.

* Link URL(s)
Google search
Lycos search
AltaVista search
MSN search

Copying, Editing, Deleting a Display

To copy a display, see "Copying a Definition Unit" on page 219.

To edit a display, see "Editing a Definition Unit" on page 221.

To delete a display, see "Deleting a Definition Unit" on page 221.

Defining KPIs

Key Performance Indicators (KPIs) are visual indicators that express a value as either a color or an image. Each KPI has one or more targets with their own set of target conditions that display visual indicators associated with the target when all target conditions are met.

Using the **KPIs** area of the Table Weaver Manager, you can configure the KPI and target conditions to display visual indicators in the displays when the target conditions are met.

Defining a KPI Collection

A KPI collection is a set of KPIs that is associated with one or more content units. All KPIs must be defined in a KPI collection.

To define a KPI collection

- 1 In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2 Click **KPI**. The **KPI Collection List** page appears.

KPI Collection ID	Type	Description
<input type="checkbox"/> Alarm	Folder	2 Items
<input type="checkbox"/> InBatch	Folder	2 Items
<input type="checkbox"/> InSQL	Folder	3 Items
<input type="checkbox"/> InTrack	Folder	1 Items
<input type="checkbox"/> Northwind	Folder	3 Items

- 3 Click **New**. The **KPI Collection** page appears.

- 4 In the **ID** box, type an identifier for the KPI Collection. The KPI Collection ID must be unique in the current folder and cannot contain spaces or special characters (\ / ? : * < > & | "" %). This ID appears on the **KPI Collection List** page.
- 5 In the **Description** box, type a description for the collection. This description appears on the **KPI Collection List** page.
- 6 Click **Save**. The **KPI List** for the newly created KPI Collection appears. For more information on how to create a KPI, see "Creating a KPI" on page 252.

Copying or Deleting a KPI Collection

For information on copying a KPI Collection, see "Copying a Definition Unit" on page 219.

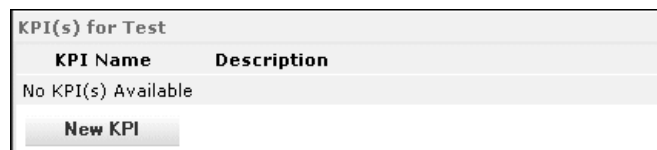
For information on deleting a KPI Collection, see "Deleting a Definition Unit" on page 221.

Creating a KPI

A KPI is part of a KPI collection. You can configure multiple KPIs in a KPI collection.

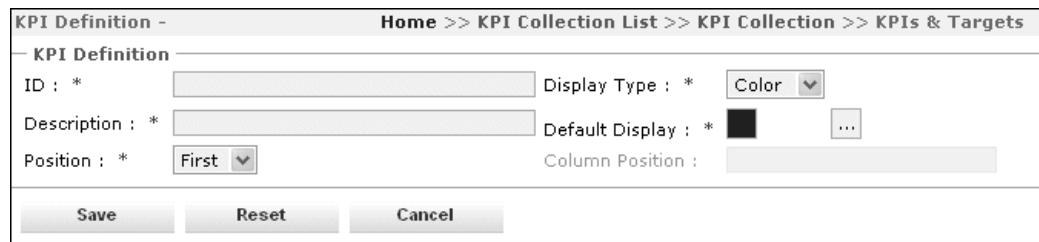
To create a KPI

- 1 Select a KPI collection from the **KPI Collection List** page.



KPI(s) for Test	
KPI Name	Description
No KPI(s) Available	
<input type="button" value="New KPI"/>	

- 2 Click **New KPI**. The **KPI Definition** properties appear.



KPI Definition - Home >> KPI Collection List >> KPI Collection >> KPIs & Targets

KPI Definition

















ID : * Display Type : *

Description : * Default Display : *

Position : * Column Position :

- 3 In the **Name** box, type a name for the KPI. The name must be unique in the current KPI Collection. The name appears in the **KPI Collection** page.
- 4 In the **Description** box, type a description for the KPI. The description appears in the **KPI Collection** page.
- 5 In the **Position** list, click **First**, **After** or **Last** to indicate the position of the KPI in the view. If the **After** position is selected, the **Column Position** box is enabled for you to type the name of the field column for the KPI to be after.

In this example, the KPI named SalesPerCategory is positioned after CategoryName.

-	SalesPerCategory	CategoryName	SalesPerCategory	CategorySales
-		Beverages		102074.31
-		Condiments		55277.6
-		Confections		80894.14
-		Dairy Products		114749.78
-		Grains/Cereals		55948.82
-		Meat/Poultry		81338.06
-		Produce		53019.98
-		Seafood		65544.18

- 6 In the **Display Type** list, select **Color** or **Image** to indicate the display of the KPI. The selected color or image appears in the display as a default indicator when none of the KPI targets are met. For more information about KPI target conditions, see "Defining a KPI Target" on page 254.
- 7 If you selected **Color** in the **Display Type** list, the **Default Display** opens a color picker dialog box for a default color display. The selected color appears as default when the KPI target condition is not met.
- 8 If you selected **Image** in the **Display Type** list, the **Attach Image** button allows you to select an image for the KPI. You can select an image from the default list or attach an image from your local drive.
- 9 Click **Save**.

Editing a KPI

To edit a KPI

- 1 Select a KPI collection from the **KPI Collection List** page.
- 2 Select the KPI you want to edit. All information in the KPI definition can be modified except the KPI name. You must define a new KPI to modify the KPI name.
- 3 Click **Save**.

Deleting a KPI

To delete a KPI

- 1 In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2 Click **KPI**. The **KPI Collection List** page appears.
- 3 In the **KPI Collection List** page, select the KPI collection ID that contains the KPI(s).
- 4 Select the check box next to the KPI(s).
- 5 Click **Delete**. You are prompted to verify the deletion.
- 6 Click **OK**.

Defining a KPI Target

A KPI can include multiple targets, each with its own set of target conditions. You can configure the target display based on the KPI display selection of color or image. The target display appears in the content unit display(s) when the target conditions are met.

To define a KPI target

- 1 Select a KPI collection from the **KPI Collection List** page.
- 2 Select a KPI definition from the KPI collection.
- 3 Click **New Target**. The **Target Definition** area appears.

The screenshot shows a dialog box titled "Target Definition". It has three input fields: "ID : *" with an asterisk, "Description :", and "Display : *" with an asterisk. The "Display" field contains a small black square and a button with three dots. Below the fields are three buttons: "Save", "Reset", and "Cancel". At the bottom, there is a legend: "* Required Field".

- 4 In the **ID** box, type an ID name for the target. Target ID name must be unique within the selected KPI definition.
- 5 In the **Description** box, type a description for the KPI target.
- 6 Based on the display type selected for the KPI, the **Display** box provides the same display type with the proper display options. If the KPI is defined with a color display, a color picker dialog box appears for you to select the color of the target definition. If the KPI is defined with an image display, you can attach an image to the target definition.

- In the **Conditions** area, set target condition. Type a field and value in the **Field** and **Value** boxes, respectively, and select an operator from the list. Each target condition is evaluated with the data returned from the data source. Click **More** to add multiple conditions to the target.

Note: Multiple conditions are linked together with an AND.

- Click **Save**.

Editing a KPI Target

To edit a KPI target

- Click a KPI collection from the **KPI Collection List** page.
- Select a KPI definition from the KPI collection.
- Select a target from the KPI target collection.

- Edit the **Target Definition** properties. All information in the target definition can be modified except the target name. You must create a new KPI target to modify the target name.
- Click **Save**.

Deleting a KPI Target

To delete a KPI target

- Click a KPI collection from the KPI Collection List page.
- Select a KPI definition from the KPI collection.

- 3 Select the KPI target that you want to delete.

Target ID	Description
<input type="checkbox"/> Good	Good
<input type="checkbox"/> Average	Average
<input checked="" type="checkbox"/> Bad	Bad

New Target Delete

- 4 Click **Delete**. You are prompted to verify the deletion.
- 5 Click **OK**.

Defining Links

A link is the way of connecting various contents to the content unit. Links are an optional definition unit of a content unit definition.

While processing a content unit that has a link association, Table Weaver processes the link definition and put the link information into the data obtained by running a query on the data source. The display definition unit takes the processed data and provide hyperlinks to access related contents.

Using the **Links** node of the Table Weaver Manager, you can define links to connect to various content.

Defining a Link Collection

All links are part of a link collection. A link collection can contain one or more links.

To define a link collection

- 1 In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2 Click **Link**. The **Link Collection List** page appears.
- 3 Click **New**. The **Link Collection** page appears.

Links Collection () Home >> Links List >> Links Collection

Links Collection Definition

ID : *

Description : *

Save Reset Cancel

* Required field

- 4 In the **ID** box, type a name for the link collection. The name must be unique in the current folder and cannot contain spaces or special characters (\ / : * ? < > & | ' "). This link appears on the **Link Collection List** page.
- 5 In the **Description** box, type a description for the link. This description appears on the **Link Collection List** page.
- 6 Click **Save**. You can now define links within the link collection.

Copying, Editing, Deleting a Link Collection

To copy a link collection, see "Copying a Definition Unit" on page 219.

To edit a link collection, see "Editing a Definition Unit" on page 221.

To delete a link collection, see "Deleting a Definition Unit" on page 221.

Defining a Link

Note: If you are working in http: mode and then switch to https: mode, items added to the panel that have been defined to use http: protocol will no longer work. To fix these broken links, someone with administrator privileges must delete the items from the panel and then re-add them so that they have the https: protocol.

To define a link

- 1 The link must be part of a link collection. Click a defined link collection from the **Link Collection list** page.

Links Collection (SuppliersList)		Home >> Links List >> Links Collection	
Links Collection Definition			
ID : *	<input type="text" value="SuppliersList"/>		
Description : *	<input type="text" value="List of Suppliers"/>		
<input type="button" value="Save"/>		<input type="button" value="Reset"/>	
<input type="button" value="Cancel"/>			
Link ID	Description		
<input type="checkbox"/>	SuppliersList	List of Suppliers	
<input type="button" value="New Link"/>		<input type="button" value="Delete"/>	
* Required field			

- 2 Click **New Link**. The **Definition** area appears.

- 3 In the **Name** box, type a name for the link. The name must not contain spaces or special characters (\ / : * ? < > & | ' "). This link appears on the selected link collection list page.
- 4 In the **Description** box, type a description for the link. This description appears on the selected link collection list page and as mouse-over text in the display.
- 5 In the **Binding** list, click the type of the link. The link can be bound to a **Record** (data row), a **Field** (specific data column), or a **KPI**.

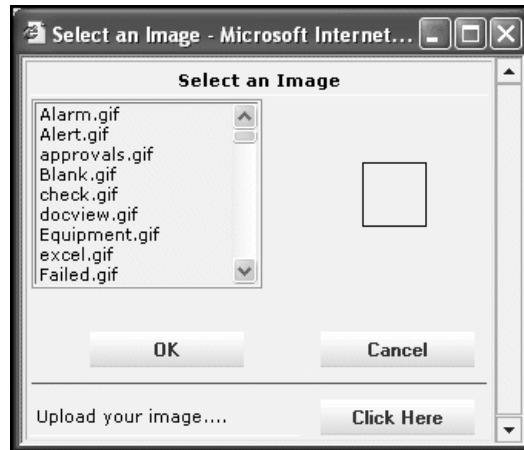
Note: If the content unit is SmartSymbol, you can only bind to a **Record**.

- 6 To bind the link to a KPI, a KPI collection must be selected for the content unit. The link is bound to a record by default.

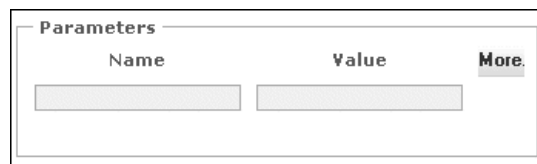
Filter display for order						
SL.No	Lead Time	OrderID	CustomerID	EmployeeID	OrderDate	RequiredDate
1		10643	KPI KI	6	8/25/1997	9/22/1997
2		10692	ALFKI	4	10/3/1997	10/31/1997
3		10777	ALFKI	4	10/13/1997	11/24/1997
4		10835	ALFKI	1	1/15/1998	2/12/1998

- 7 To bind to a specific column, type in the name of the column in the **Entity** box. To bind to a KPI, type the name of the KPI in a KPI Collection.

- 8 In the **Target** list, select **Content Unit** or **Web Source** to indicate the target of the link. If content unit is selected, a **Content Unit** list appears. If web source is selected, a **URL** box appears for you to type the URL link.
- 9 In the **URL** box, type the URL of the target. If the target is a content unit, select the name of the target content unit from the provided list.
- 10 To attach an image to the link, click **Attach Image**. The **Select an Image** window appears.



- 11 Select an image from the default list or upload an image from the local drive or network path. Previews for both the images from the default list and an uploaded image can be viewed in the right-hand box. Click **OK**.
- 12 In the **Position** list, click **First**, **After** or **Last** to indicate the position of the link in the view. If the **After** position is selected, type the name of the column that the link(s) place after in the **PositionColumn** box.
- 13 Select the **New Window** check box to open the link in a new window.
- 14 In the **Parameters** box, configure the values to be passed through the parameters defined in the SQL Query. Click **More** to pass multiple name-value parameter pairs. Parameter names are case sensitive. For more information on configuring link parameters, see "Example of Link Parameters" on page 261.



- **Name**
Name of the parameter in the SQL query.
- **Value**
Value that you want to pass in the parameter. To pass a value from the associated data source, specify the appropriate column name enclosed with the # symbol.

15 Click **Save**.

Editing a Link

To edit a link

- 1** In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2** Click **Link**. The **Link Collection List** page appears.
- 3** In the **Link Collection List** page, select a link collection ID.
- 4** Click the link name and start editing.
- 5** Click **Save**.

Deleting a Link


To delete a link

- 1** In the **System** access panel, expand **Administration** and then click **Table Weaver Manager**. The **Table Weaver Manager** page appears.
- 2** Click **Link**. The **Link Collection List** page appears.
- 3** In the **Link Collection List** page, select the link collection ID that contains the link(s).
- 4** Select the check box next to the link(s).
- 5** Click **Delete**. You are prompted to verify the deletion.
- 6** Click **OK**.

Example of Link Parameters

Link parameters can pass multiple parameter values to targeted queries to show detailed information in the display.

For example, you have a tabular display that shows the number of suppliers from each country. You want to apply links to all the country names to show an individual tabular display of the details for each supplier in the selected country.

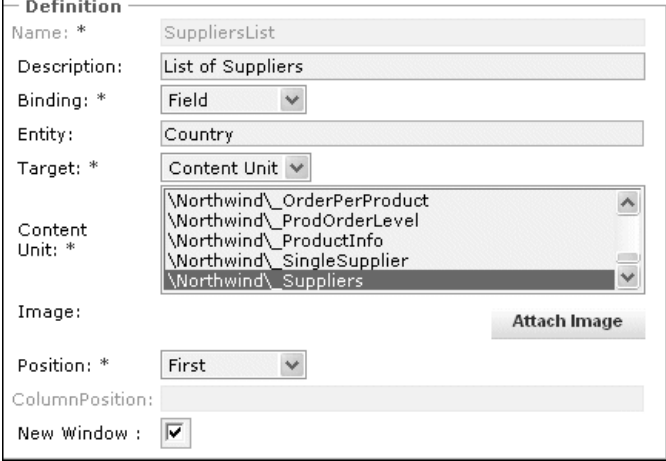


The screenshot shows a table with the following data:

-	Country	NoOfSuppliers
-	Australia	2
-	Brazil	1
-	Canada	2
-	Denmark	1
-	Finland	1
-	France	3
-	Germany	3
-	Italy	2
-	Japan	2
-	Netherlands	1
-	Norway	1
-	Singapore	1
-	Spain	1
-	Sweden	2
-	UK	2
-	USA	4

A callout box with the text "Links to suppliers in Australia" points to the "Australia" link in the first row of the table.

Based on the link definition, hyperlinks are listed for all the countries listed in the table. The hyperlinks connect to another tabular display that shows specific information about the suppliers for the selected country. The links are configured in the link definition which specifies the binding, entity, and target of the link.



Definition

Name: * SuppliersList

Description: List of Suppliers

Binding: * Field

Entity: Country

Target: * Content Unit

Content Unit: *
 \Northwind_OrderPerProduct
 \Northwind_ProdOrderLevel
 \Northwind_ProductInfo
 \Northwind_SingleSupplier
 \Northwind_Suppliers

Image: Attach Image

Position: * First

ColumnPosition:

New Window:

The link is bound to a field with the Country entity and targets a content unit that passes a parameter value to a database query.



Name	Value	More
Country	#Country#	

The link parameter passes in the #Country# parameter value to the targeted content unit database query. In the database query properties, the SQL query searches through the Country column for the value of the selected country. The value of #Country# becomes the name of the country link selected by the user.



ODBC Query Properties

Query ID: * SupplierPerCountry

Description: * Supplier Per Country

SQL Query: *
 Select SupplierID,CompanyName,ContactName,City,Phone
 from Suppliers Where Country=#Country#

Field

Captions:

Page Size:

The parameter value passed into the database query returns a tabular display of the suppliers for the selected country. Clicking the Australia hyperlink shows the supplier(s) information for Australia.



-	Products	CompanyName	ContactName	City	Phone
-		Pavlova, Ltd.	Ian Devling	Melbourne	(03) 444-2343
-		G'day, Mate	Wendy Mackenzie	Sydney	(02) 555-5914

Glossary

access control list	A list of user accounts and user groups and their privileges that is associated with a particular resource.
access panel	An access panel is a named navigation tree that is displayed in the Launch Pad area of the Wonderware Information Server and can be assigned to different users. Multiple access panels can be displayed in the Launch Pad.
Active Server Pages (ASP)	Active Server Pages (ASP) is an environment that allows you to build applications that include scripts, HTML pages, and ActiveX components. Active Server Pages do not have to be compiled before they run. The Wonderware Information Server uses Active Server Pages for the visualization of distributed alarms over the intranet/Internet and for ad-hoc Wonderware Historian queries for reports and trending.
asymmetric encryption	Asymmetric encryption is a data security mechanism in which one key encrypts and a different key decrypts.
back door	A back door is a security hole in a compromised system that allows continued access to the system by an intruder, even if the original attack is discovered.
Bastion host	A Bastion host is a designated Internet firewall system specifically armored and protected against attacks.
binding	Binding is an IP address:port number combination that Internet Information Server associates with a server certificate.
browser	A web browser is a software application that locates and opens web pages over the Internet/intranet. An example of a web browser is Internet Explorer.
certification authority	A certification authority is a mutually-trusted, third-party company that issues certificates for digital IDs.

circuit-level gateway	A circuit-level gateway is a specialized function that relays TCP connections without performing any additional packet processing or filtering.
client certificate	A client certificate is piece of digital ID for the users accessing your site. It contains information about the user and is "signed" with a digital signature from the certification authority that issued it.
component	A component is a portion of an application, such as an ASP page, OCX, and so on. Components work together to deliver features.
Component Object Model (COM)	The Component Object Model (COM) is a way for software components to communicate with each other, even between different computers using different operating systems. COM is based on the use of encapsulated objects that communicate through defined interfaces.
content unit	The basic unit that could be processed to get the defined content. A self contained definition unit comprising of an instance of a data source, a query, optionally a link, a KPI, and a display.
data source	The data source defines the connection information to a database, including the database host name, database name, user name, password, and other optional parameters.
default web site	A default web site is the web site that is bound to port 80.
definition unit	A generic term used for various definition units of TableWeaver subsystem.
definition unit list	The list of definition unit names for one of the six subcomponents of the content unit.
digital certificate	A digital certificate resides on the web server and communicates the web site's authenticity to client web browsers, so that the clients know that they are communicating with a non-fraudulent site. Also, digital certificates use SSL to encrypt the data that is exchanged between the server and clients.
digital signature	A digital signature is a hash of a message that is encrypted with the sender's private key.
display	Definition unit that captures the how to visualize aspect of Data.
Extensible Markup Language (XML)	Extensible Markup Language (XML) is a specification for web documents that allows developers to create custom tags. These custom tags enable the definition, transmission, validation, and interpretation of the data contained within them. XML allows for the separation of the actual content from the attributes that describe the content, such as the structure.
Extensible Stylesheet Language (XSL)	Extensible Stylesheet Language (XSL) is a specification that applies a template to web pages to describe how they appear. Additional features specify how web pages print and the ability to transfer XML documents across different applications.

firewall	An Internet firewall is a system or group of systems that enforces an access control policy between an organization's network and the Internet.
hashing	Hashing is the process where a copy of a plain text message is run through a mathematical operation that results in a hash value (usually 160 bits long). It is computationally infeasible to derive the original message from the hash value.
hyperlink	A hyperlink is a portion of clickable text on a web page that points to another web page, a web site, an integrated application, or some other object, such as a report or a document.
Internet Information Server (IIS)	Microsoft Internet Information Server (IIS) is designed to allow you to design, build and manage web sites and applications and also publish and share data over the intranet/Internet. The Wonderware Information Server is dependent on the capabilities of Microsoft Internet Information Server.
IP address	An IP address is a 32-bit Internet protocol address to identify a computer on a TCP/IP network. An IP address is normally written as four decimal numbers delimited by periods (.). For example, 153.171.133.12
IP router	An IP router is a computer, or other device, that "knows" which IP addresses it services or routes to.
key bit-length (or bit-strength)	The key bit-length is the length, in binary bits, of a key. Messages encrypted by longer keys are significantly harder to break than with shorter keys.
key pair	A key pair is a pair of unique values that establish an SSL connection, encrypt data being transmitted, or both. In public key cryptography, there is a private key and a public key. Messages that the private key encrypts can only be decrypted with the public key, and vice-versa.
KPI	A visual indicator that indicates the specific state of the data. With the context of Wonderware Information Server, a KPI is an image or an color cube that indicates the condition of each data.
Launch Pad	The Launch Pad is an area of the Wonderware Information Server that contains one or more access panels for browsing the web site pages and applications.
link	A link refers directly to an integrated application, another web site or content unit.
manufacturing information site	A manufacturing information site is a web site that aggregates information from multiple facility computers and displays it to a client user with a common interface and navigation tools. Resources are provided to enable search capabilities, data analysis, process visualization and interaction, and e-mail.

navigation panel	A browsable hierarchy of links to web pages, applications, and other web sites.
node	A node is an element on the hierarchical tree structure, and may be an intermediate node or a leaf node. A leaf node contains a link to an application, another web site, or some other object.
panel access list	The panel access list is the list of users or groups assigned to a particular access panel instance. The list defines which domain users see and have access to that panel.
navigation tree	A navigation tree is a browsable hierarchy of links to web pages, applications, and other web sites. A navigation tree can be customized and named.
network ID	A network ID is a base IP address that is used as a starting point from which to compare the IP addresses of incoming requests.
node	1) A node is an item on a navigation tree, and may be an intermediate node or a "leaf" node. A "leaf" node contains a link to an application, another web site, or some other object, such as a report or a document. 2) "Node" is another term for a computer running a Wonderware application. For example, an InTouch node.
packet filtering	Packet filtering is a mechanism that allows a router to make a permit/deny decision for each packet. The decision is based on the packet header information that is made available to the IP forwarding process.
proxy service	A proxy service is special-purpose, application-level code installed on an Internet firewall gateway. The proxy service allows the network administrator to permit or deny specific applications or specific features of an application.
public key encryption	Public key encryption is a common encryption method that uses an asymmetric key pair to encrypt and decrypt messages.
query	Definition unit that captures the what aspect of data.
report package	An XML file that defines the various report items that need to be deployed to the SQL Reporting Server.
roles	A role is a single unit against which you can apply user permissions. System roles are used throughout the site to define and limit a functionality for users. System roles may also be used by integrated applications, along with the specific application roles. An application role specifies what user can use a particular integrated application. These roles are configured and assigned to users just like any other role in the web site, but they are unique to the application that defined them; they cannot be used with any other application or by the main web site security mechanism.

Secure Socket Layer (SSL)	Secure Socket Layer (SSL) is a protocol for secure connections over the intranet/Internet. SSL provides server and client authentication, data encryption, and message integrity.
server certificate	A server certificate is a digital ID for your server. It contains information about the server and is signed with a digital signature from the certification authority that issued it. It also contains a key used in forming an SSL connection. You must have a server certificate bound to your server to use SSL.
session key	A session key is an encryption key created during the SSL connection establishment. This key is known only to the user and the server and is used for symmetric encryption.
subnet mask	A subnet mask is a number that specifies which bits of the network ID is used in a bit-wise AND operation with IP addresses that accompany requests.
symmetric encryption	Symmetric encryption is a data security mechanism in which the same key is encrypts and decrypts messages.
uniform resource locator (URL)	A Uniform Resource Locator (URL) is an address that specifies where a particular resource is located on the intranet/Internet. For example, http://www.wonderware.com .
Vector Markup Language (VML)	Vector Markup Language is an XML application by which graphical elements and primitives are rendered by Internet Explorer. Using this technology, the InTouch Win-XML Exporter generates a set of instructions to the Internet Explorer rendering engine to paint InTouch graphics in a browser.
web server	A computer with server software installed on it that delivers web pages to an intranet/Internet.

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