FactoryWidgets™

Administrator's Guide

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FactoryWidgets™

Administrator's Guide

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1 INTRODUCTION

FactoryWidgets conveniently reside on your desktop and deliver easy-to-read, Wonderware Historian- and OPC-based, live data indicators, such as production rates, energy usage, goal attainment, yield, safety, and asset utilization— to name just a few.

- Suitable for desktop, laptop or shop floor message displays
- Do not need a Web browser to open
- Centrally-managed licensing
- Affordable pricing

Set up is simple. There is no complicated software to install on the client PC. FactoryWidgets leverage your investments in your manufacturing hardware and software. The WidgetServer component (included) is lightweight, installs in minutes, and connects to your Wonderware Historian and OPC data sources. FactoryWidgets are secure and read-only. Because the FactoryWidgets update on an interval specified by the user, they do not burden your network.

- Connect to Wonderware Historian and OPC data sources locally and throughout your enterprise
- Configure units of measure and title on each Factory Widget to match your business terminology
- Set colors on each Factory Widget to suit your needs
- Link FactoryWidgets to any content that is delivered to your Web browser, such as reports, dashboards, and HMI screens, to drill down to detail behind the data

2 SYSTEM REQUIREMENTS

To install and run FactoryWidgets, your system must meet the following requirements.

2.1 WidgetServer Requirements

- .NET Framework 3.5 SP1
- Access to Wonderware Historian (InSQL 9.0 or higher) and/or OPC DA servers
- Operating systems:
    - Windows Server 2003, Windows Server 2008, Windows Server 2008 r2 or higher
    - Windows XP Pro SP3, Windows Vista Business, Windows Vista Enterprise, Windows Vista Ultimate, Windows 7 Professional, Windows 7 Ultimate*
- 30 MB disk space to install and store configuration files
- 50 MB free memory not in use by operating system or other applications

* If you run the WidgetServer on a desktop class operating system, the operating system may limit the number of concurrent network connections to the WidgetServer to 10, which may limit the number of FactoryWidgets connected to the WidgetServer at one time to 10. Run the WidgetServer on a supported server class operating system to avoid these operating system-imposed limitations.

2.2 Client (Desktop) Requirements

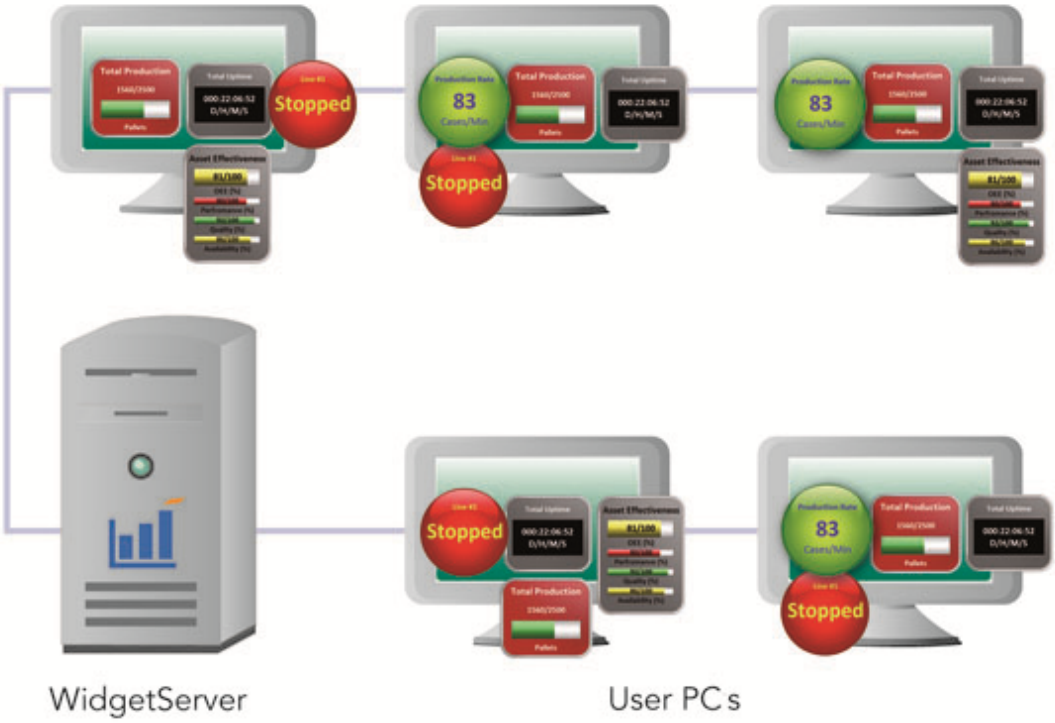
- Operating System: Windows Server 2008*, Windows Server 2008 r2*, Windows 7, Windows Vista, Windows XP (Service Pack 3)*
- Browser: Internet Explorer 7 or higher (installed)
- 10 MB free disk space
- 64 MB free memory not in use by operating system or other applications

***** The Windows Gadget Gallery and the Windows sidebar are not native to the Server 2008, Server 2008 r2 or XP operating systems. In order to install the sidebar and extract the FactoryWidgets to a computer running Windows Server 2008, Windows Server 2008 r2 or Windows XP, you must follow a few extra steps. See section **4.1** for information and steps.

3 WIDGETSERVER

The WidgetServer is a service that runs on a computer, connects to the Wonderware Historian or OPC data source, and serves the live data to the FactoryWidgets. The WidgetServer also manages the persistence (type, quantity used, user, etc.) of FactoryWidget instances and implements the FactoryWidget licensing.

Figure 1: WidgetServer serves live data to FactoryWidgets on desktops



→ ***Note***: *This document assumes Historian or OPC data sources are already installed and configured on your system. Configuring an OPC server is outside the scope of this document, however, this Software Toolbox link provides resources and recommendations for DCOM, OPCEnum and OPCServer settings:*

http://www.softwaretoolbox.com/dcom

3.1 Installing the WidgetServer

An installation wizard walks you through the steps to install the WidgetServer. If this is the first time you have installed the WidgetServer, proceed now to section **3.1.1, Installing a New WidgetServer**, on the next page.

If you have previously installed an earlier version of the WidgetServer, you may need to uninstall the previous version before installing the new version. Check the table below to determine if you need to uninstall the previous version.

Do you need to uninstall the previous WidgetServer before installing the new version?

What is your current WidgetServer version number?	What version are you upgrading to?	Do you need to uninstall the previous WidgetServer version before installing the new version?
3.1.0.*	3.1.1.*	No. Proceed **to section 3.1.1, Installing a New WidgetServer**.
3.1.1.*	3.1.1.*	Yes. Proceed to section **3.1.2, Upgrading WidgetServer from a Previous Version,** before installing the new version.
3.1.1.*	3.1.2.*	No. Proceed **to section 3.1.1, Installing a New WidgetServer**.
3.1*	3.2*	No. Proceed **to section 3.1.1, Installing a New WidgetServer**.
3.2.1*	3.2.2*	No. Proceed **to section 3.1.1, Installing a New WidgetServer**.
3.2.2*	3.2.3*	No. Proceed **to section 3.1.1, Installing a New WidgetServer**.
3.2.3*	3.2.6*	No. Proceed **to section 3.1.1, Installing a New WidgetServer**.

If you need to uninstall the previous version, but try to install a new version without uninstalling, you will see an error message similar to one of the following.

Figure 2: Windows Installer alerts

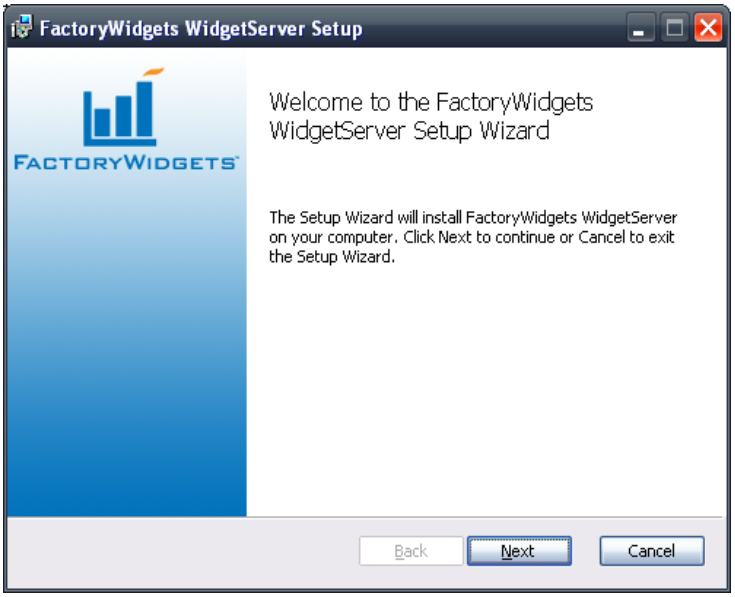
If you see this message, click **OK** and then proceed to section **3.1.2** to uninstall the previous version first before upgrading to the new version.

3.1.1 Installing a New WidgetServer

1. If you downloaded the installation file, double-click the setup file, **FactoryWidgets.msi** (Windows Installer Package file), to install the WidgetServer. If you received FactoryWidgets on a CD, the CD will play automatically when inserted into your CD drive. (If it does not, click **setup.exe** from the root directory of the CD.)

   The installation program starts and the Welcome window appears.

Figure 3: FactoryWidgets WidgetServer Setup Welcome

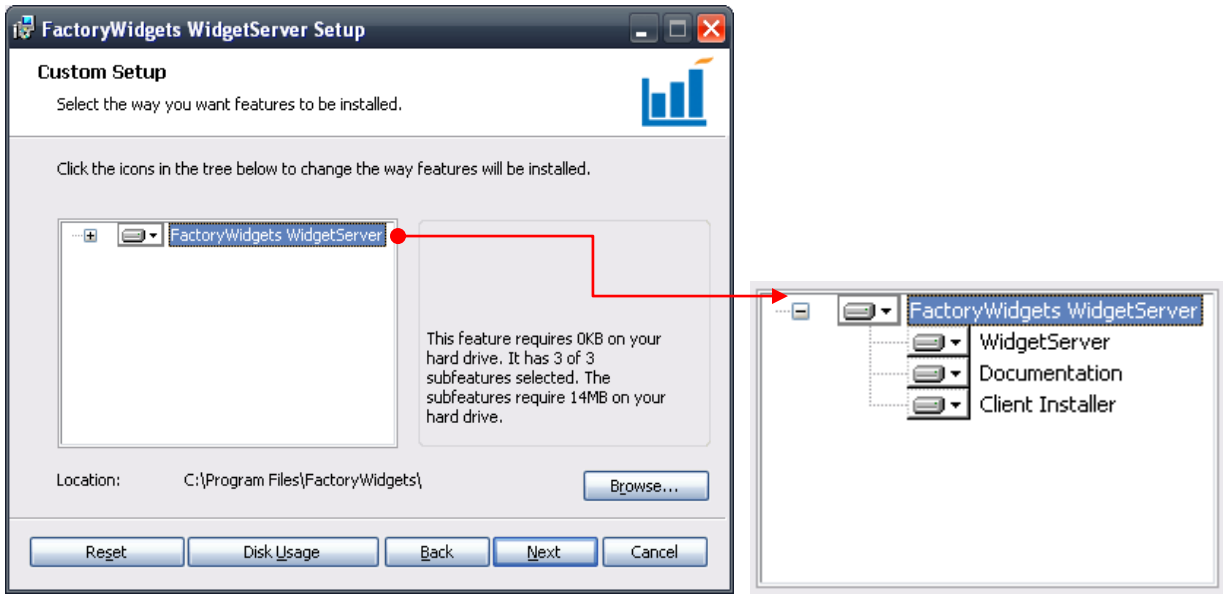


2. Click **Next**. The end-user license agreement appears.

Figure 4: End-User License Agreement

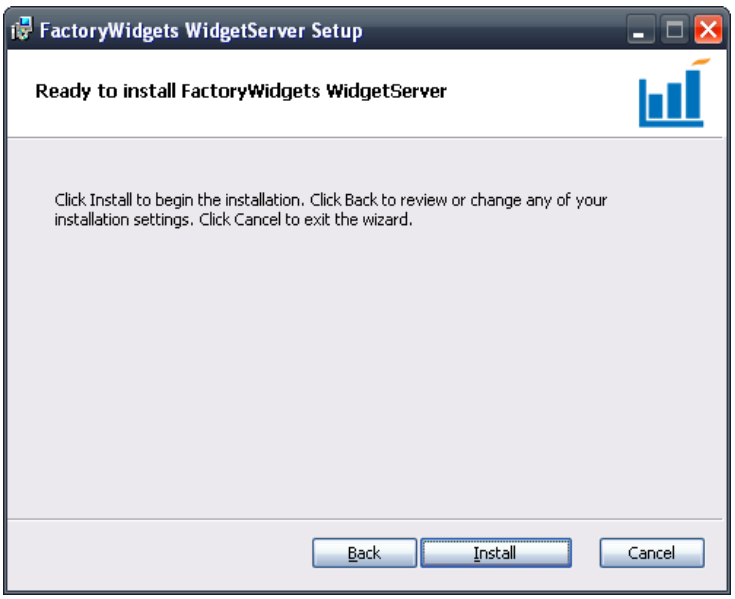
3. Review the agreement (you can click **Print** to print it out), then check to accept the terms of the license agreement, and click **Next**. The Custom Setup window appears.

Figure 5: Custom Setup



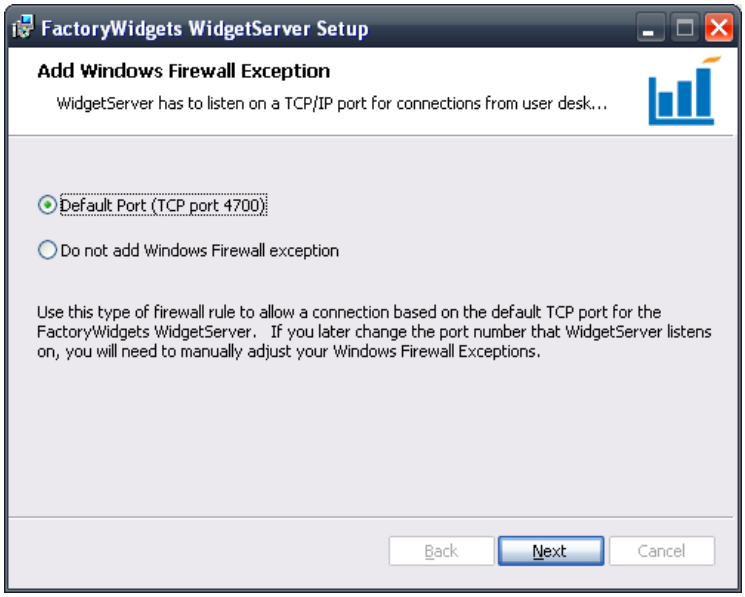
4. Click the plus sign (⊞) to expand the FactoryWidgets WidgetServer icon to see the components you are installing.
   - To install the components somewhere other than the default location listed, click **Browse** to select a different location, and then click **Next**.
   - Otherwise, just click **Next** to accept the default location and to continue.

Figure 6: Ready to install



5. When you are ready to install, click **Install**. Installation may take a few minutes.

Figure 7: Firewall exception

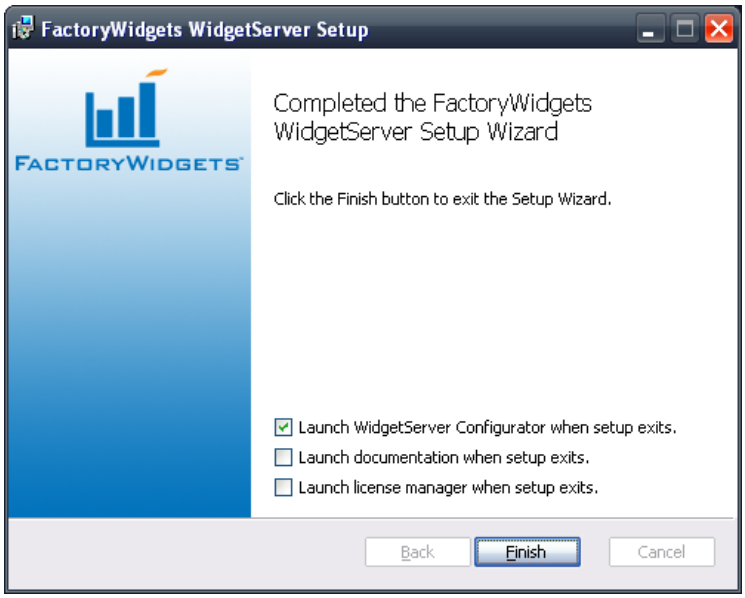


6. Select the appropriate firewall option:
   - **Default Port (TCP port 4700)** – Use this type of firewall rule to allow a connection based on the default TCP port for the FactoryWidgets WidgetServer. If you later change the port number on which the WidgetServer listens, you will need to manually adjust your Windows firewall exceptions.
   - **Do not add Windows Firewall exception** – Use this selection if you do not want to create a Windows Firewall exception at this time. Unless you are not running Windows Firewall, you will have to manually configure an exception in order for FactoryWidgets to connect to the

WidgetServer. The WidgetServer uses TCP port 4700 by default and you may change the port in the WidgetServer Configurator (which may be launched at the end of this install process).

After you have made your selection, click **Next** to complete the installation.

Figure 8: Finish the installation



7. Click **Finish**.

Continue to the next section to register your FactoryWidgets, and then configure your FactoryWidgets.

3.1.2 Upgrading WidgetServer from a Previous Version

If you have previously installed an earlier version of the WidgetServer, and you have determined that you must uninstall the previous version before installing the new version (using the table on **page 4**), use these steps.

Windows Server 2008 users:

1. Go to the start menu, click **Settings**, click **Control Panel**, and then click **Programs and Functions**.
2. Select **FactoryWidgets WidgetServer** in the list of programs, and then click **Uninstall**.

Windows Server 2003 users:

1. Go to the start menu, click **Control Panel**, and click **Add or Remove Programs**.
2. Select **FactoryWidgets WidgetServer** from the list of programs, and then click **Remove**.

After removing the previous version, return to section **3.1.1** to follow those steps to install the new version.

3.2 Registering your FactoryWidgets (Licensing)

If you purchased the FactoryWidgets in a download, you will receive an email with a serial number that you will need to "unlock" your FactoryWidgets in order to register and use them. If you received your FactoryWidgets on a CD, the serial number is displayed on the front of the CD case, as well as being delivered by email (provided you supplied a valid email address when ordering).

Registering your FactoryWidgets is a quick, two-step process:
Step one: Enter your serial number
Step two: Unlock and register FactoryWidgets

Step one: Enter your serial number

1. Open the License Manager by doing one of the following:

   - Open the WidgetServer Configurator, go to the **Help** menu, and select **License Manager**.

   OR

   - Go to your start menu, click **Programs** (Windows XP, Windows Server 2003 and 2008) or **All Programs** (Windows Vista, Windows 7), click **FactoryWidgets**, and then click **License Manager.**

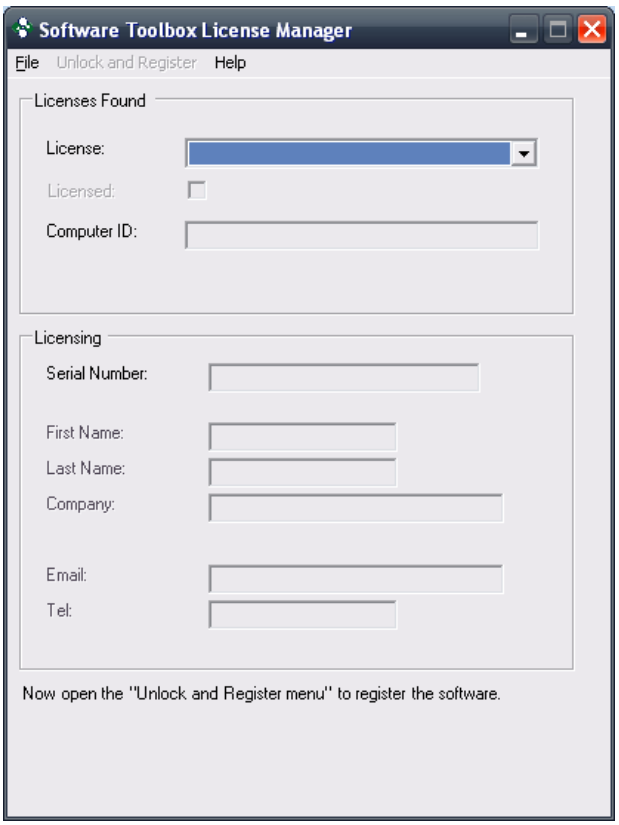
   → ***Note:*** *If you are opening License Manager from the start menu on a computer running Windows Vista, Windows 7, or Windows Server 2008, and User Account Control (UAC) is enabled, right-click* ***License Manager*** *from the start menu > Programs > FactoryWidgets menu, and then select* ***Run as Administrator****.*

2. Select **WidgetServer** from the **License** drop-down menu. Your computer ID number will appear in the **Computer ID** field.

3. Enter your serial number (provided in the download email) in the **Serial Number** field. Once the serial number is accepted, the other information boxes will clear for entry.

4. Enter your information in the personal information fields.

Figure 9: License Manager



Step two: Unlock and register FactoryWidgets

1. Go to the **Unlock and Register** menu in the License Manager to unlock and register your FactoryWidgets. You can unlock and register FactoryWidgets automatically if you have internet access, or you can unlock and register manually from the **Unlock and Register** menu if you do not have internet access.

2. For computers connected to the Internet, select **Automatically via Internet**. If you get a "success" message, you are now registered and can continue to the next section to configure your WidgetServer.

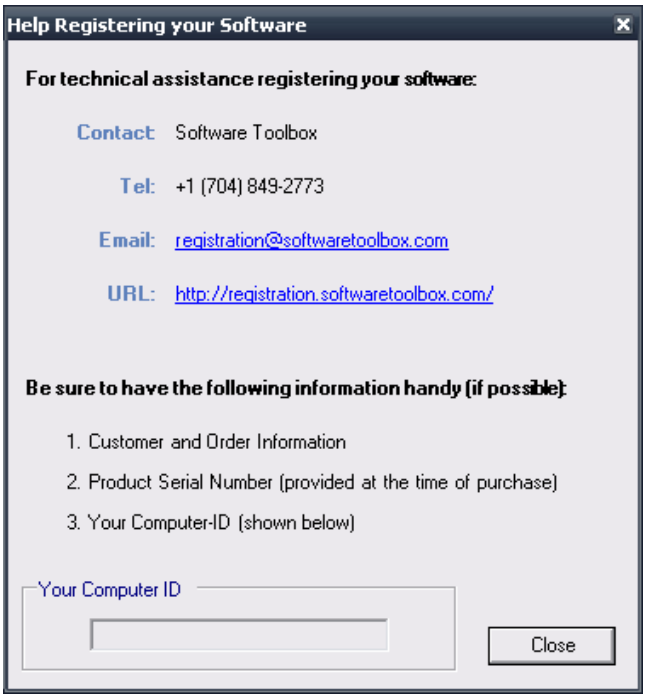
   If your registration did not go through successfully, or if your computer is not connected to the Internet, do the following:

   a. Copy down your Computer ID and your Serial number as shown in the License Manager screen.
   b. Go to a computer this is connected to the Internet and go to (FactoryWidgets do not need to be installed on this computer): http://registration.softwaretoolbox.com
   c. Click **Register Now,** then select **FactoryWidgets** from the list of products, and then complete the registration form for FactoryWidgets. When you submit the form, your unlock code will display on-screen.
   d. Record the code and return to the computer where you have the WidgetServer installed.
   e. Open License Manager again, if it is not still open, go to the **Unlock and Register** menu, and select **Manually**.

f. Enter the code you just received online in the **Unlock Code** field. Make sure there are no extra spaces after the number in the field, and then click **Register**. You are now registered.

→ ***Note:*** *If you still are unable to unlock and register your FactoryWidgets, click* ***Help*** *in the License Manager to contact support, or email support@softwaretoolbox.com.*

Figure 10: Contact support



→ ***Note****: For additional information about the license agreement, see the entire agreement in Appendix A of this document. It is also available online:*

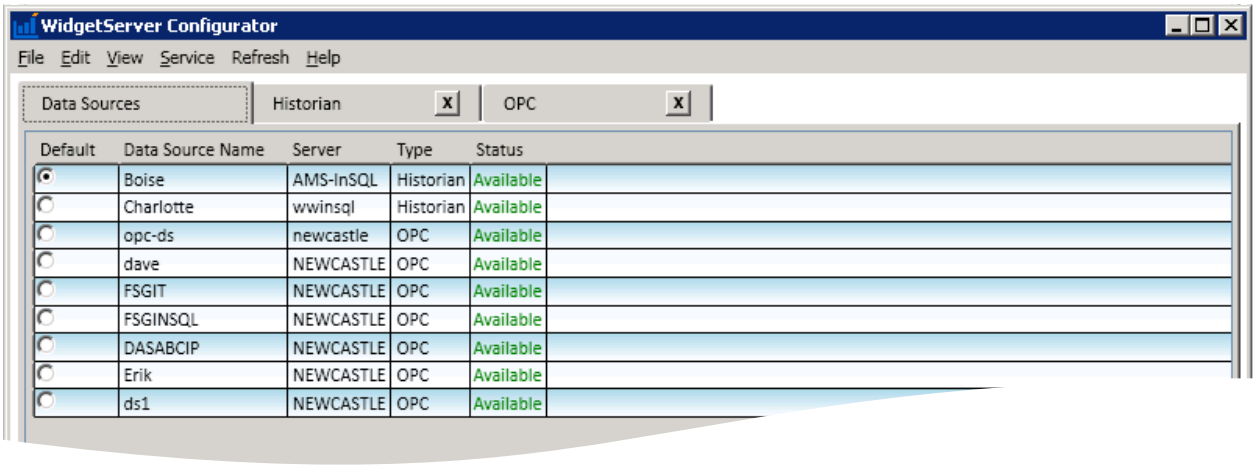
License Agreement: http://www.factorywidgets.com/eula

3.3 Configuring the WidgetServer

After you have installed and registered the WidgetServer, configure your WidgetServer to serve data to the FactoryWidgets, to test your data sources, and to administer your FactoryWidgets to your users per your licensing arrangement.

- Open the WidgetServer, if it is not already open: go to your **Start** menu, click **Program** or **All Programs**, click **FactoryWidgets**, and then click **WidgetServer Configurator**. The WidgetServer will open, showing the **Data Sources** tab, and the WidgetServer icon will display in your system tray ( ).

Figure 11: WidgetServer Configurator



The **Data Sources** tab displays upon first opening the WidgetServer Configurator. This tab displays all currently configured data sources: data source name, server name, server type and server status. The radio button is selected in the **Default** field of one of the rows; this indicates that the data source listed in this row is currently the default data source. You cannot edit the data in this tab, but you can sort the entries in each of the columns by clicking the column header.

If this is the first time you have installed the WidgetServer and you have not yet configured a data source, this tab will be empty.

You can modify the information that displays in this tab data source information in the **Historian** and **OPC** tabs, which are discussed later in this section.

→ ***Note**: When the WidgetServer Configurator opens, the status bar across the bottom of the window shows the service status, the license capacity, and the WidgetServer version.*

Figure 12: Status bar

3.3.1 WidgetServer Configurator Menu Options

The WidgetServer Configurator has six menus. Review these items below to understand the menu structure and which tasks you can accomplish from these menus.

File menu

From the **File** menu, you can click **Exit** to exit and close the WidgetServer Configurator.

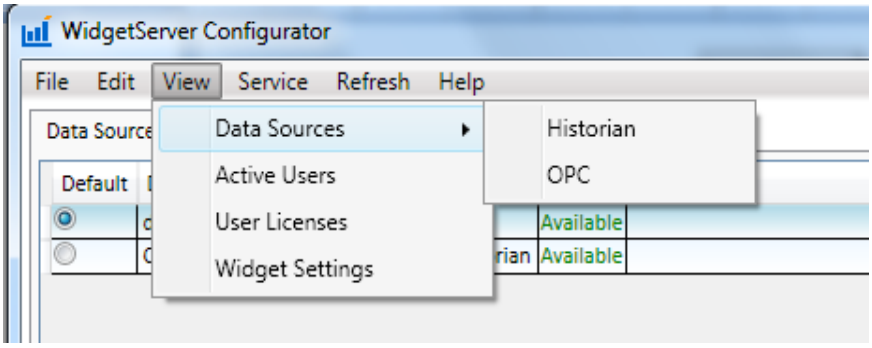
Edit menu

From the **Edit** menu, you can select **Options** to open the **Options** tab, where you can distribute the FactoryWidget licenses to users, and you can designate a server port, if necessary.

View menu

The **View** menu leads to several tabs where you will probably spend the majority of your time.

Figure 13: View > Data Sources menu

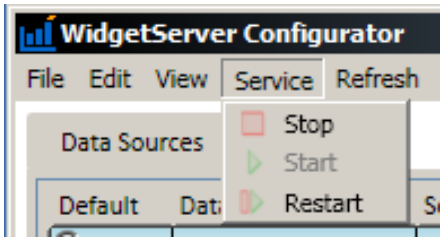


- Select **Data Sources** to open the **Historian** or **OPC** tabs, where you can configure and manage your Historian-based or OPC-based data sources.
- Depending up on the mode you elect to use to distribute your FactoryWidget licenses to users, you can click **Active Users** or **User Licenses** (or both) to open those respective tabs to distribute FactoryWidgets to users.
- Finally, click **Widget Settings** to open the **Widget Settings** tab, where you can manage FactoryWidget configurations.

Service menu

You can manually stop, start or restart service.

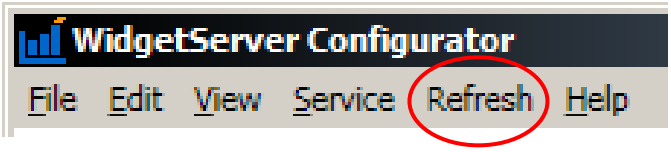
Figure 14: WidgetServer Configurator's Service menu



Refresh

Click **Refresh** to update to see the most recently saved configurations in the **Widget Settings** tab (**View** menu).

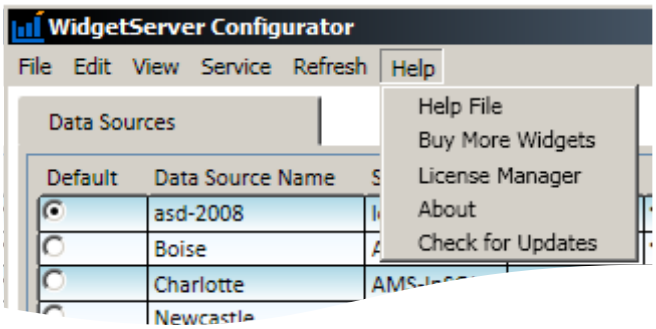
Figure 15: WidgetServer Configurator's Refresh button



Help menu

There are several options available from the **Help** menu.

Figure 16: WidgetServer Configurator's Help menu



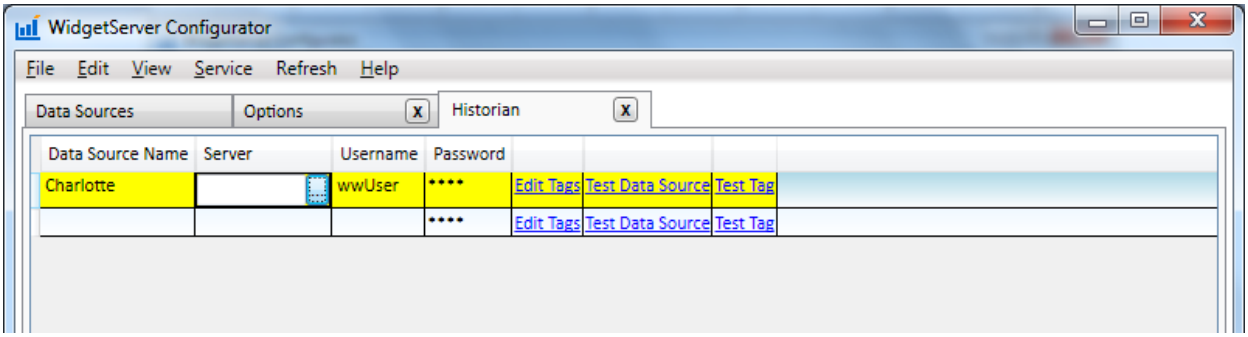
- Click **Help File** to access a PDF of this document, the *FactoryWidgets™ Administrator's Guide*.
- Click **Buy More Widgets** to purchase additional FactoryWidgets from the FactoryWidgets™ Web site.
- Click **License Manager** to register and activate your FactoryWidget licenses.
- Click **About** to see your WidgetServer version number.
- Click **Check for Updates** to see if there is an update to your current version of the WidgetServer.

3.3.2 Managing, Adding, and Deleting Historian-based Data Sources

FactoryWidgets communicate with Historian and OPC data sources. Each type of data source has its own tab under **Data Sources** in the **View** menu. Manage, add and delete Historian-based data sources in the **Historian** tab. You may also test tag names for use with your Historian-based data source(s), and associate friendly names to your valid tag names for use with the FactoryWidgets.

- Click the **View** menu, select **Data Sources**, and then click **Historian**.

Figure 17: Historian tab



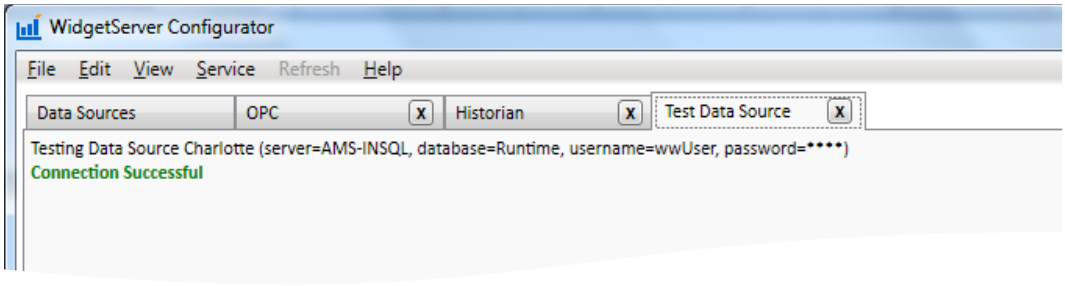
Field	Description
Data Source	Enter the name of your choice for the Wonderware Historian data source. The WidgetServer can access multiple Wonderware Historians, so if you have multiple data sources, you can enter "friendly" data source names that provide more context for you and your business.
Server	Enter or browse for the name of the server PC on which the Historian data source resides. If the WidgetServer is not installed on the same domain as the data source, you can enter the IP address of the server PC hosting the data source.
Username & Password	Enter the username and password. This is a SQL server login, not your Windows authentication login. → ***Note:*** *The suggested username/password are wwUser/wwUser. This is a profile that is installed with InSQL that has read-only rights.*

3.3.2.1 Testing a Data Source

One you have entered a row in the **Historian** tab that defines your data source, test the data source you have entered to verify that it is valid. If the data source makes a successful connection, a green "success" message appears, indicating the data source to which you connected is valid. If a red "failure" message displays, the data source is invalid. Check your data source and your spelling and try again.

- One you have entered a row in the **Historian** tab that defines your data source, server, and username and password, click **Test Data Source** in that same row to test the data source to verify that it is valid.

Figure 18: Test Data Source (successful test)



3.3.2.2 Making a Default Data Source

You must select one of your data sources to be your default. When you configure your FactoryWidgets, this data source is the automatic default in your FactoryWidgets (which means you do not have to re-enter the data source information in the FactoryWidgets), unless you indicate a different data source in the FactoryWidget itself.

To indicate a default data source, go to the **Data Sources** tab (the tab that always displays first when you open the WidgetServer Configurator), and click to select the radio button in the **Default** field, directly to the left of the data source, to set the data source in that row as the default data source.

→***Note**: You can only have one default data source.*

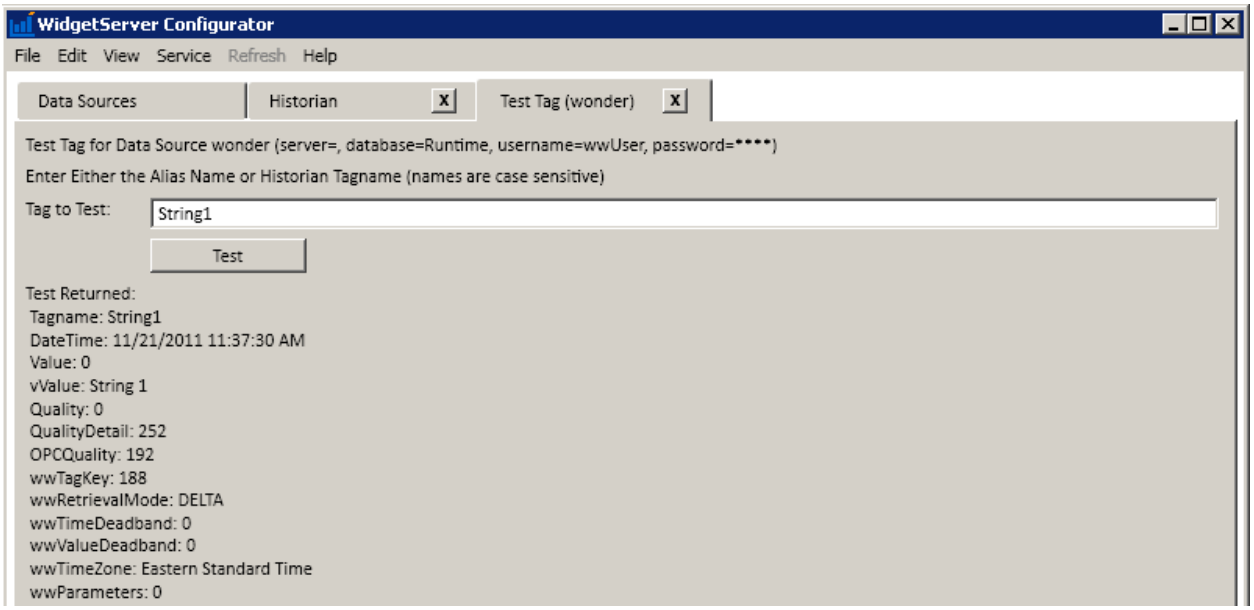
3.3.2.3 Testing a Tag

After you have verified your data source and have made a successful connection, test the tags that you want to use with that data source.

1. In the same row in the **Historian** tab where you tested the data source, now click **Test Tag** to make sure the tags you want to use with this data source are valid.
2. In the **Test Tag** tab, enter either the Alias name or the Historian tag name and click **Test**.

If the tag name is valid, the parameters associated with that tag will display. If the tag name is not valid, a "Tag Not Found" message displays. An invalid tag name is either not in use with the data source with which you are testing the tag, or the tag name contains a typo. Double-check the spelling of the tag name and try again. NOTE: All tag names are case sensitive.

Figure 19: Test Tag (successful test)

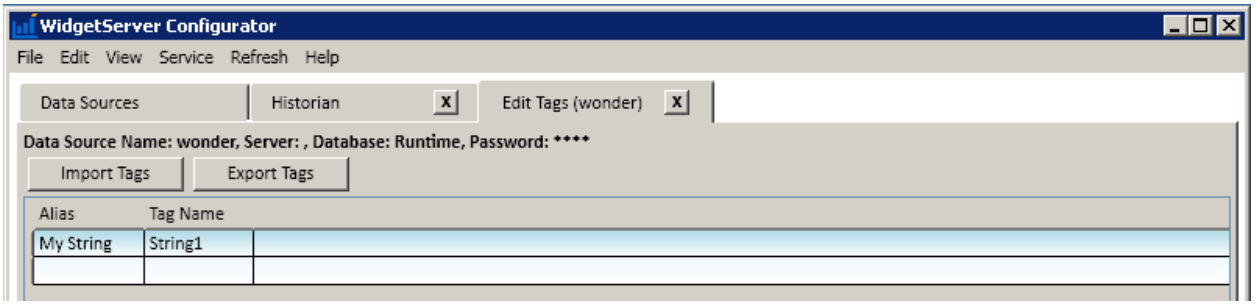


3.3.2.4 Editing a Tag

After you have verified a valid tag name for use with the data source, you can assign a friendly name or "Alias" to that tag.

1. In the same row in the **Historian** tab where you have tested your data source and tested your tags, click **Edit Tags.**
2. Enter a friendly name in the **Alias** field and enter the existing tag name in the **Tag Name** field. Then, press Enter.

Figure 20: Edit Tags tab

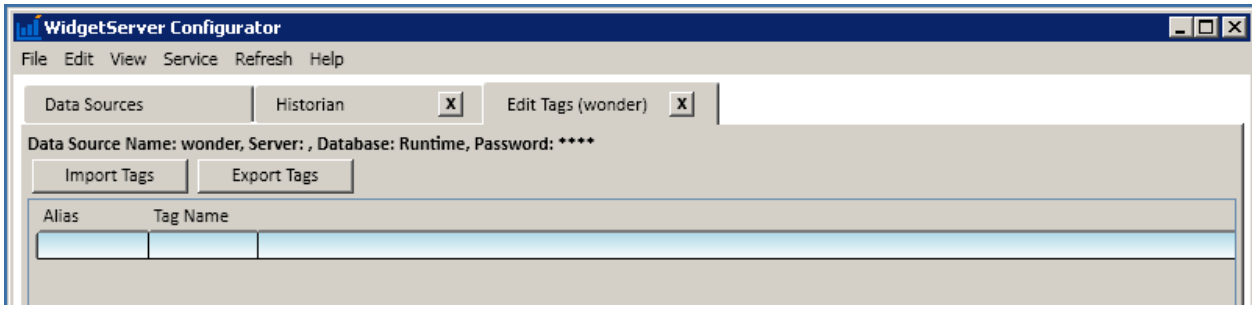


Now, you can use the Alias name in the FactoryWidgets. To double-check that the Alias name is correctly associated with a tag, test the Alias name with **Test Tag**.

3.3.2.5 Importing and Exporting Tags

Because many systems have hundreds, or even thousands, of tags, entering them into Historian data sources can be cumbersome and time-consuming. Many systems engineers use tools such as Excel or other text editors to create lists of tags, in comma-separated-variable (*.csv) format, for use in their HMI or PLC programs. The same technique can be used with FactoryWidgets. Once you have created the .csv file, you can import that file into the WidgetServer Configurator so that you do not have to manually enter each tag.

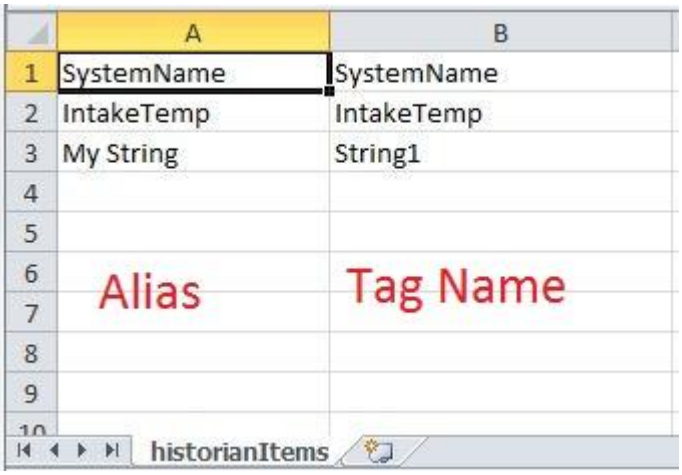
Figure 21: Import and Export buttons on the Edit Tags tab



To import tag names to the WidgetServer Configurator:

1. Create the .csv file.

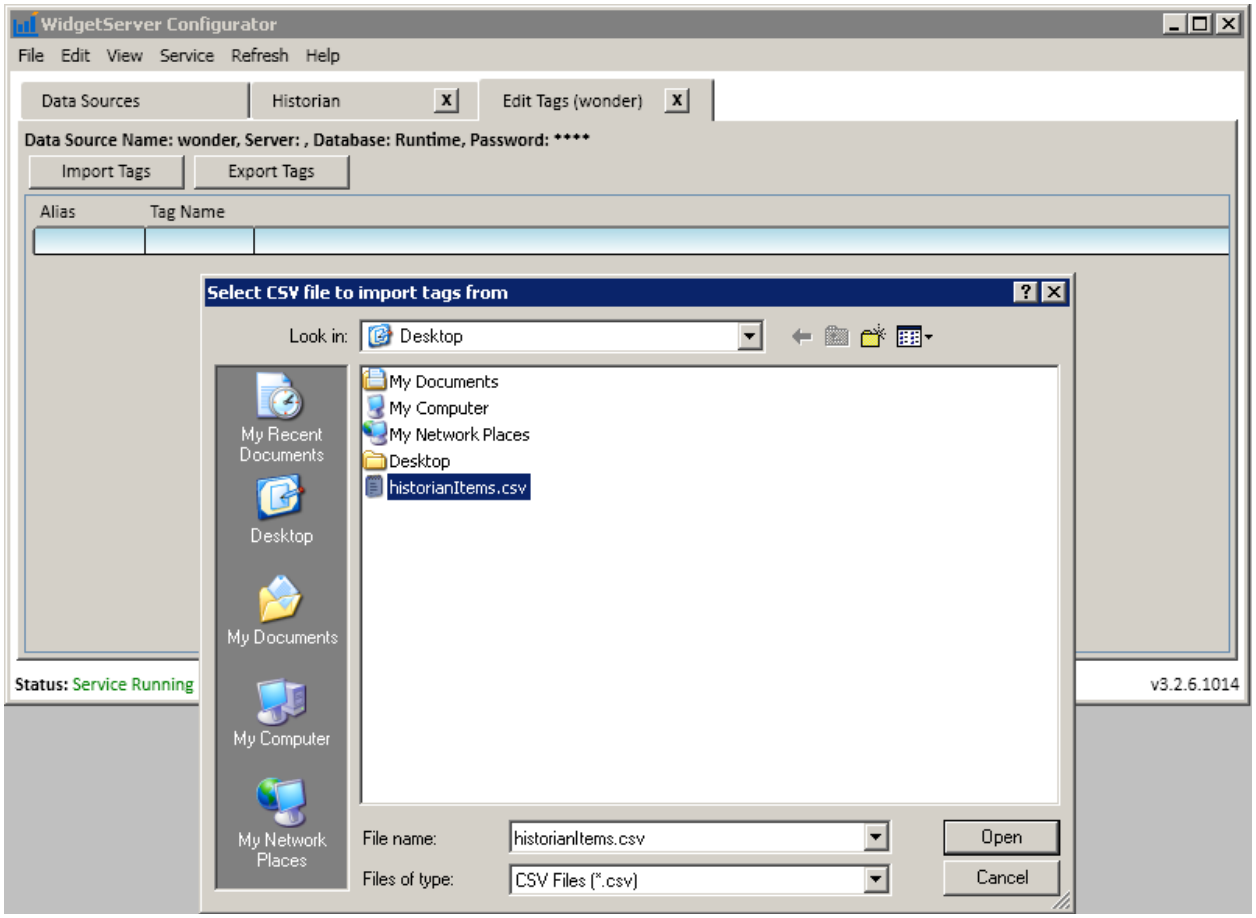
Figure 22: Example Excel file of tag names to be imported



→***Note**: The example shows Excel as the text editor, with spreadsheets saved in *.csv format. If using Excel, Alias Names must be in Column A and Tag Names in Column B. Spreadsheet columns must not have headers.*

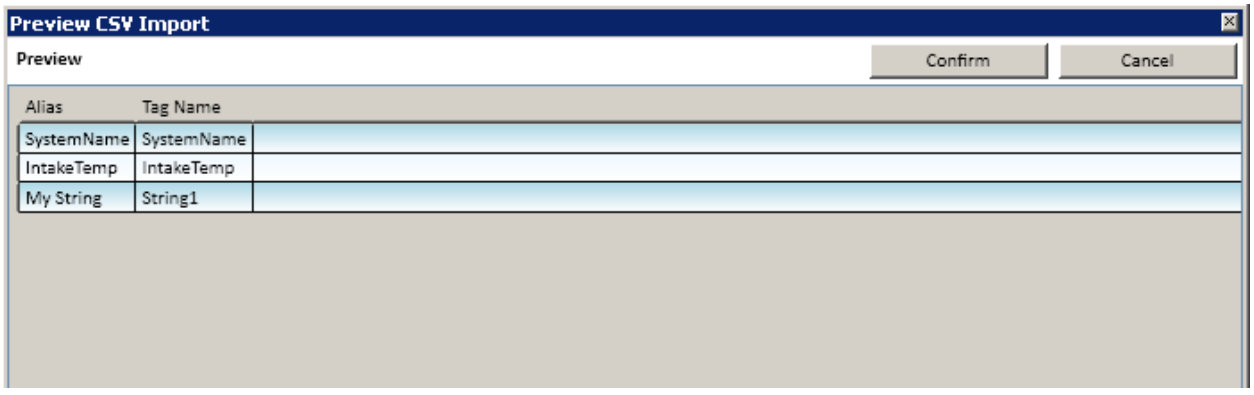
2. Click **Import Tags** in the **Edit Tags** tab and browse to locate the .csv file. Once located, click **Open**.

Figure 23: Browse to locate .csv file to import



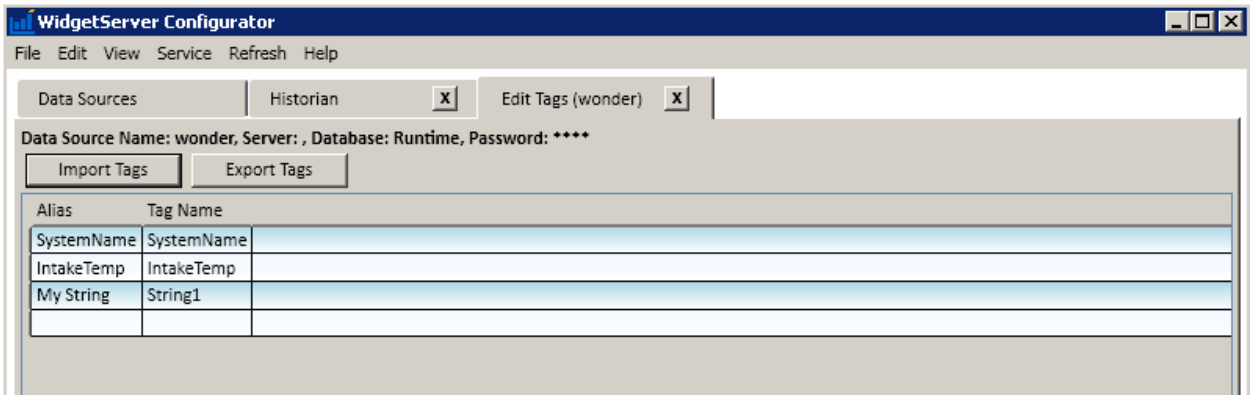
3. A preview of what will be imported is presented to you asking you to Confirm or Cancel. **Click Confirm**.

Figure 24: Successfully imported tag names



4. When the file has imported successfully the tags will be displayed in the **Edit Tags** tab.

Figure 25: Successfully imported tag names



To export tag names from the WidgetServer Configurator:

1. In the **Edit Tags** tab, click **Export Tags** to export your current tags for a selected data source. Browse to select the location where you want to save the .csv file and click **Save**.

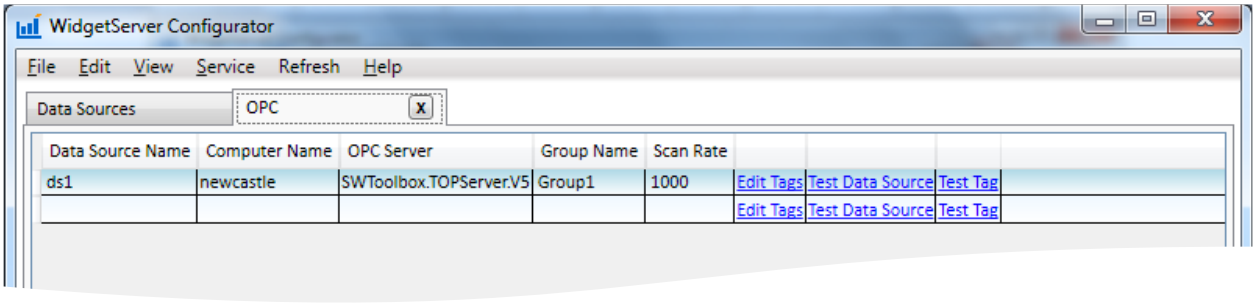
2. When the .csv files has successfully saved, a message displays, "Exported Tags Successfully." Click **OK**.

3.3.3 Managing, Adding, and Deleting OPC-based Data Sources

FactoryWidgets communicate with Historian and OPC data sources. Each type of data source has its own tab under **Data Sources** in the **View** menu. Manage, add and delete OPC-based data sources in the **OPC** tab. You may also test tag names for use with your OPC-based data source(s), and associate friendly names to your valid tag names for use with the FactoryWidgets.

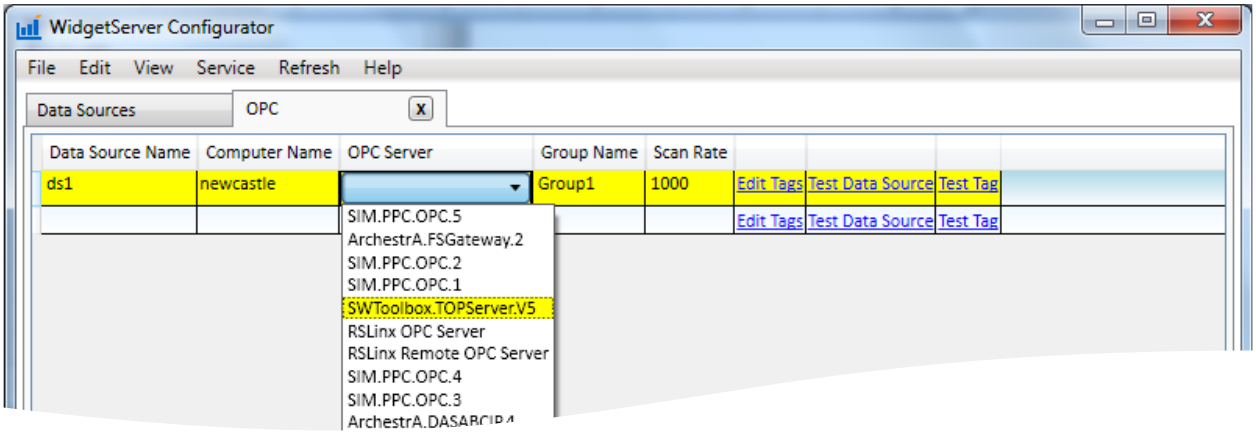
- Click the **View** menu, select **Data Sources**, and then click **OPC**.

Figure 26: OPC tab



Field	Description
Data Source	Enter the name of your choice for the OPC data source. If you have multiple data sources, you can enter "friendly" data source names that provide more context for you and your business.
Computer Name	Enter or browse for the name of the computer on which the OPC server resides. If the WidgetServer is not installed on the same domain as the data source, enter the IP address of the server PC hosting the data source.
OPC Server	Select the OPC server from the drop-down list.

Figure 27: Select an OPC server



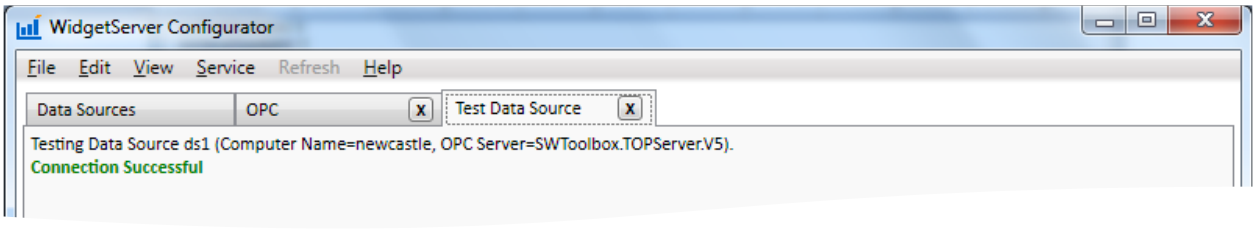
Field	Description
Group Name	The group name increments chronologically. You can modify the group names to your needs if you use groups.
Scan Rate	The scan rate defaults to 1000 milliseconds. You can modify this rate at which the OPC server checks for new data.

3.3.3.1 Testing a Data Source

One you have entered a row in the **OPC** tab that defines your data source, you can test the data source you have entered to verify that it is valid. If the data source makes a successful connection, a green "success" message appears, indicating the data source to which you connected is valid. If a red "failure" message displays, the data source is invalid. Check your data source and your spelling and try again.

- One you have entered a row in the **Historian** tab that defines your data source, computer name, OPC server, and optionally, a group name and scan rate, click **Test Data Source** in that same row to verify that it is valid.

Figure 28: Test Data Source (successful test)



3.3.3.2 Making a Default Data Source

You must select one of your data sources to be your default. When you configure your FactoryWidgets, this data source is the automatic default in your FactoryWidgets (which means you do not have to re-enter the data source information in the FactoryWidgets), unless you indicate a different data source in the FactoryWidget itself.

To indicate a default data source, go to the **Data Sources** tab (the tab that always displays first when you open the WidgetServer Configurator), and click to select the radio button in the **Default** field, directly to the left of the data source, to set the data source in that row as the default data source.

→***Note**: You can only have one default data source.*

3.3.3.3 Testing a Tag

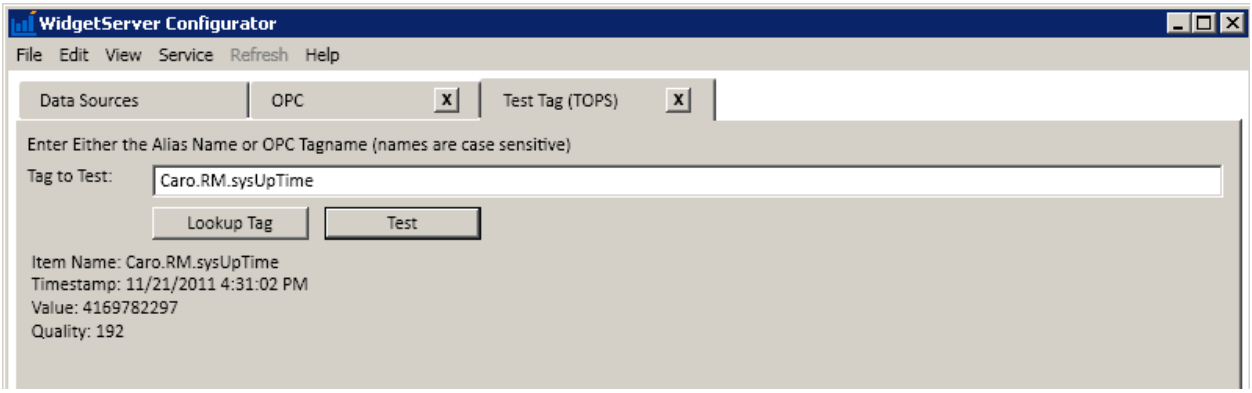
After you have verified your data source and have made a successful connection, test the tags that you want to use with that data source.

1. In the same row in the **OPC** tab where you tested the data source, now click **Test Tag** to make sure the tags you want to use with this data source are valid.
2. In the **Test Tag** tab, enter either the Alias of OPC tag name, and click **Test**. You can also use **Lookup Tag** to browse to the tag.

If the tag name is valid, the parameters associated with that tag display or a message saying, "Valid Tag" displays. If the tag name is not valid, a "Tag Not Found" message displays. An invalid tag name is either not in use with the data

source, or the tag name contains a typo. Double-check the spelling of the tag name and try again. NOTE: All tag names are case sensitive.

Figure 29: Test Tag (successful test)

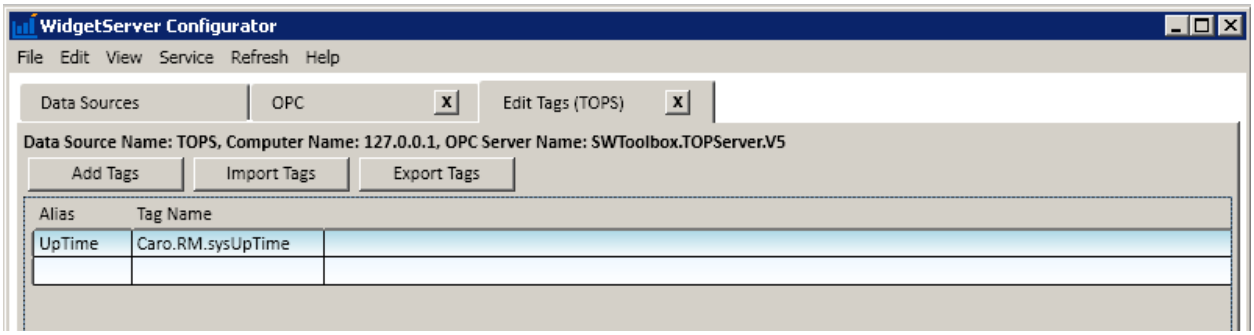


3.3.3.4 Editing a Tag

After you have verified a valid tag name for use with the data source, you can assign a friendly name or "Alias" to that tag.

1. In the same row in the **OPC** tab where you have tested your data source and tested your tags, click **Edit Tags.**
2. Enter a friendly name in the **Alias** field and enter the existing tag name in the **Tag Name** field. Then, press Enter.

Figure 30: Edit Tags tab



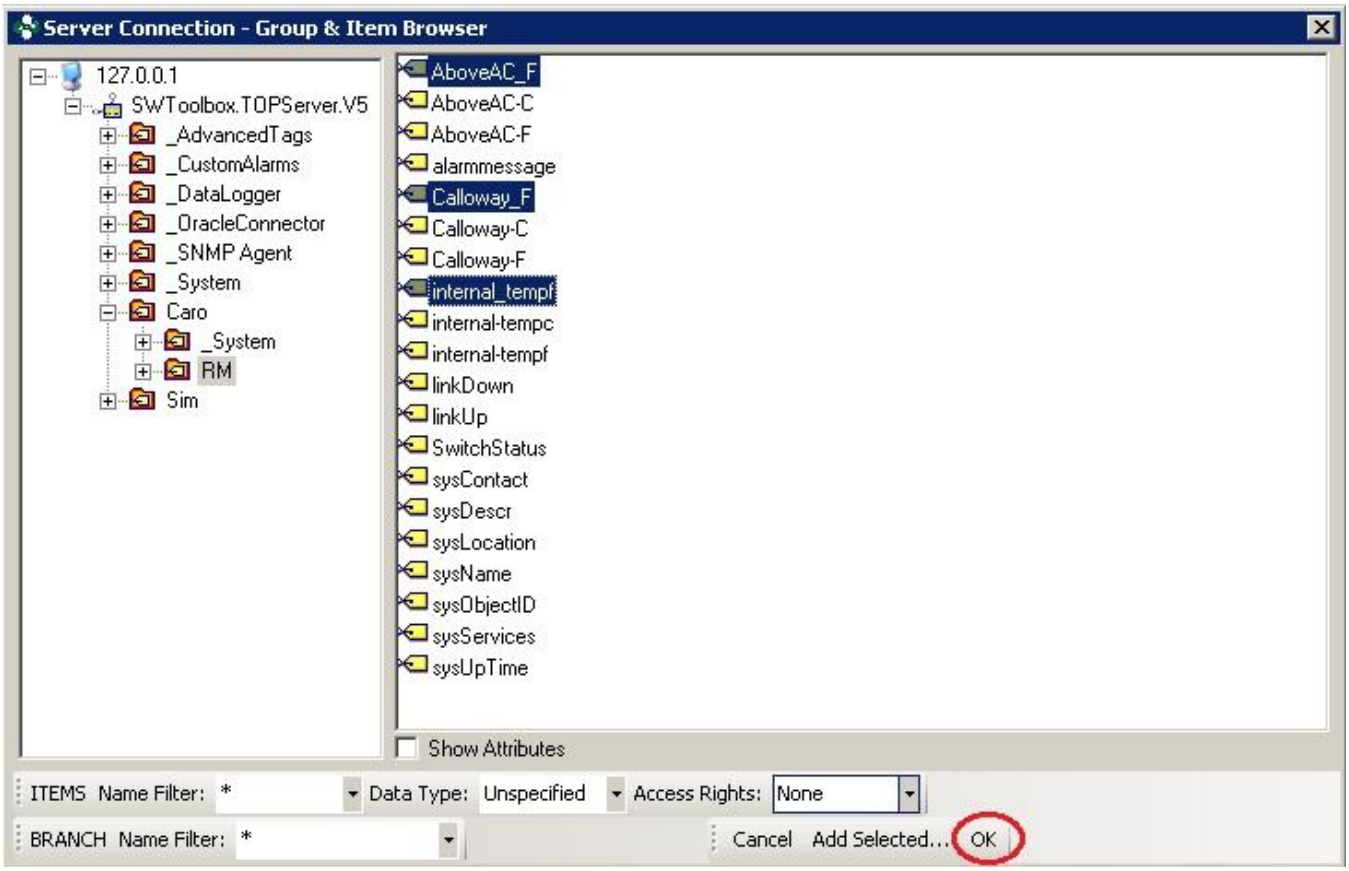
Now, you can use the Alias in the FactoryWidgets. To double-check that the Alias is correctly associated with a tag, test the Alias with **Test Tag**. When doing so the full OPC Item name will populate in the Tag to Test textbox.

3.3.3.5 Adding a Tag

If there is tag that you want to use, but that is not currently associated with your data source, add the tag from the **Edit Tag** tab.

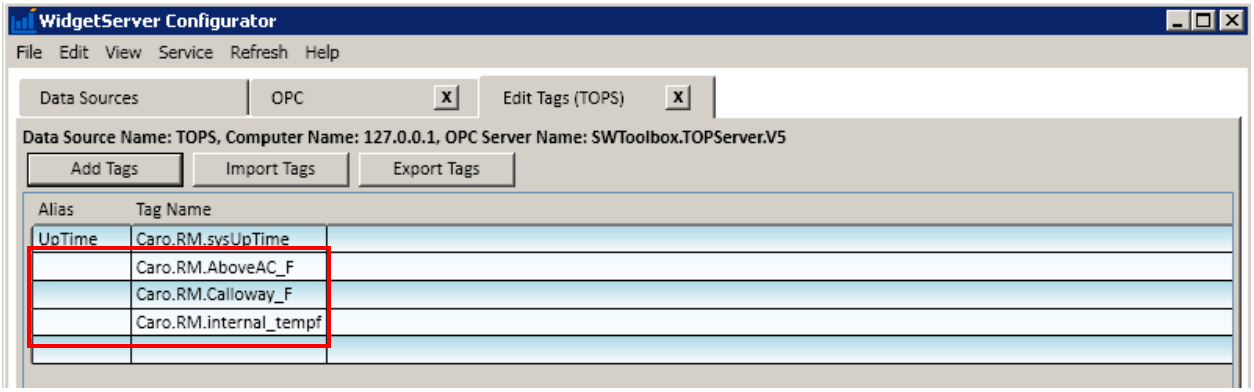
1. To add a tag, click the **Add Tags** button in the **Edit Tags** tab and browse to locate the tag(s) to add.

Figure 31: Browse to locate tags to add



2. Once located, click to select the tag in the right pane and then click **OK** at the bottom of the window. You can add tags individually or several at a time, using Ctrl+click or Shift+click. Once added, the selected tag(s) appear(s) in the **Edit Tags** window in the WidgetServer Configurator.

Figure 32: Tags are now associated with data source in WidgetServer Configurator

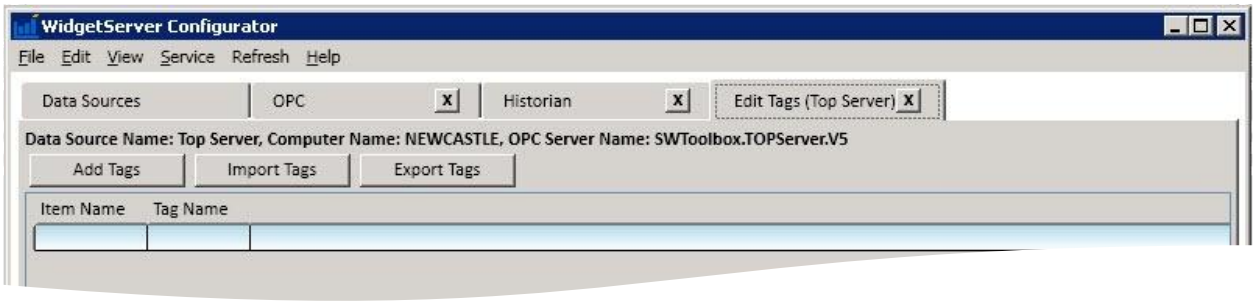


Once added, you can test the tags to ensure they work with your data source and you may associate an Alias with them.

3.3.3.6 Importing and Exporting Tags

Because many systems have hundreds, or even thousands, of tags, entering them into OPC data sources can be cumbersome and time-consuming. Many systems engineers use tools such as Excel or other text editors to create lists of tags, in comma-separated-variable (*.csv) format, for use in their HMI or PLC programs. The same technique can be used with FactoryWidgets. Once you have created the .csv file, you can import that file into the WidgetServer Configurator so that you do not have to manually enter each tag.

Figure 33: Import and Export buttons on the Edit Tags tab



To import tag names to the WidgetServer Configurator:

1. Create .csv file with tag names.

Figure 34: Excel file of tag names to be imported

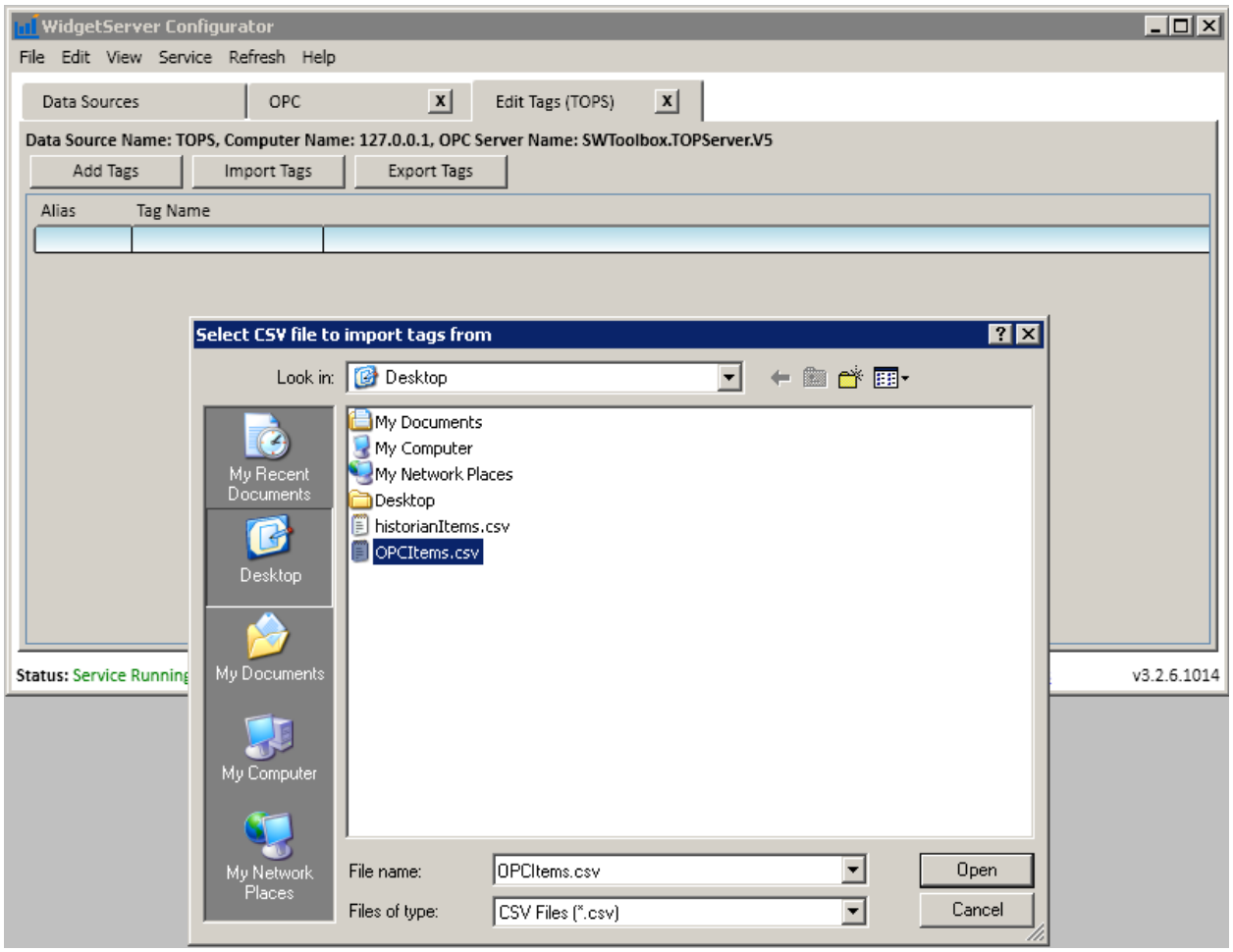
	A	B
1	UpTime	Caro.RM.sysUpTime
2	Name	Caro.RM.sysName
3	Location	Caro.RM.sysLocation
4	Description	Caro.RM.sysDescr
5	Status	Caro.RM.SwitchStatus
6	Internal	Caro.RM.internal-tempf
7	Calloway	Caro.RM.Calloway-F
8	Alarm	Caro.RM.alarmmessage
9	AC	Caro.RM.AboveAC-F
10	Contact	Caro.RM.sysContact
11	String1	Sim.Data.String1
12		
13	Alias	Tag Name
14		
15		

→***Note**: The example shows Excel as the text editor, with spreadsheets saved in *.csv format. If using Excel, the Alias must be in Column A and Tag Names in Column B. Spreadsheet columns must not have headers.*

→***Note**: OPC Tag Names need to contain fully-qualified names as used in the specific OPC Server application.*

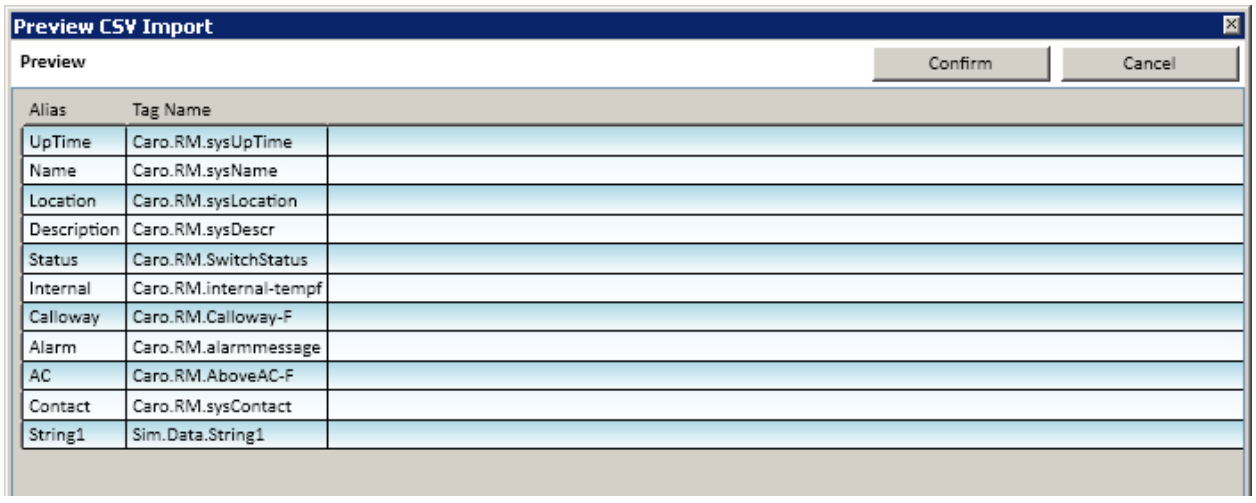
2. Click **Import Tags** in the **Edit Tags** tab and browse to locate the .csv file. Once located, click **Open**.

Figure 35: Browse to locate .csv file to import



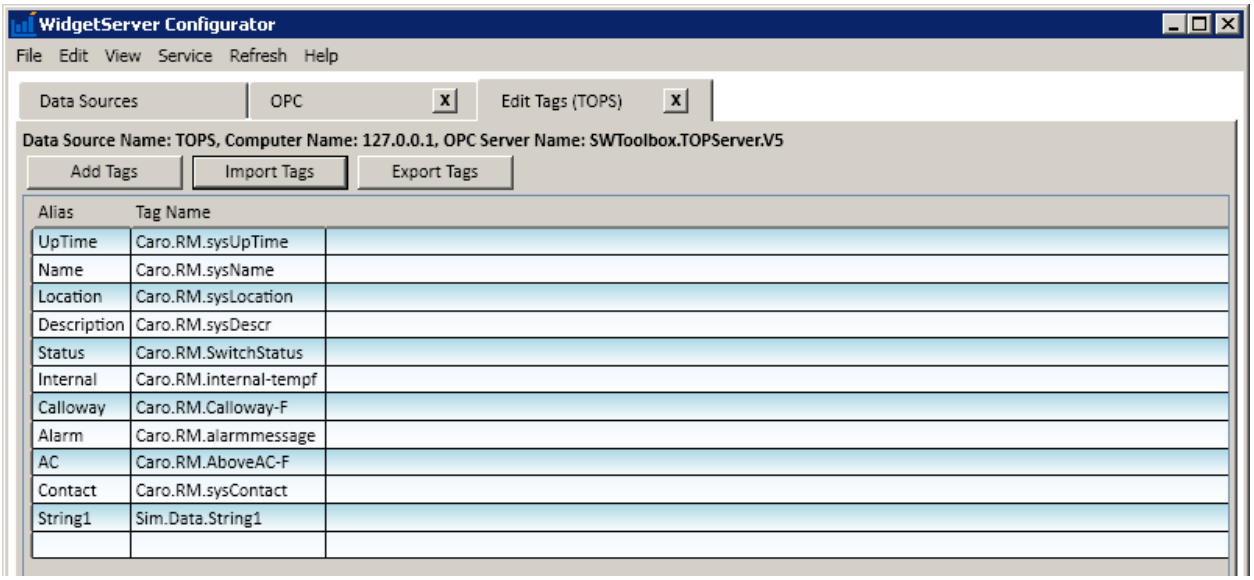
3. A preview of what will be imported is presented to you asking you to Confirm or Cancel. **Click Confirm**.

Figure 36: Successfully imported tag names



1. When the file has imported successfully the tags will be displayed in the **Edit Tags** tab.

Figure 37: Successfully imported tag names



To export tag names to the WidgetServer Configurator:

1. Click **Export Tags** to export your current tags for a selected data source. Browse to select the location where you want to save the .csv file and click **Save**.

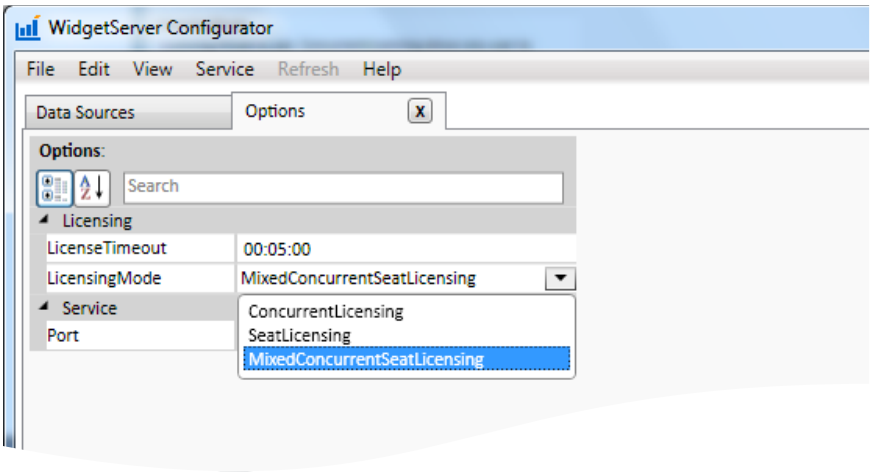
2. When the .csv files has successfully saved, a message displays, "Exported Tags Successfully." Click **OK**.

3.3.4 Distributing FactoryWidget Licenses to Users

- Click the **Edit** menu to open the **Options** tab, where you can select the licensing mode to distribute your FactoryWidget licenses to users.

> → ***Note***: *The Search box at the top of the tab is simply to let you search for the licensing and service parameters.*

Figure 38: Licensing Options



Field	Description
LicenseTimeout	This is the default time for a license to expire after last active use. If a user closes a FactoryWidget on their desktop (is no longer actively using it), the FactoryWidget is "released" for use by another when the time entered in this field expires. Enter time in this format: hh:mm:ss. The default is 5 minutes.

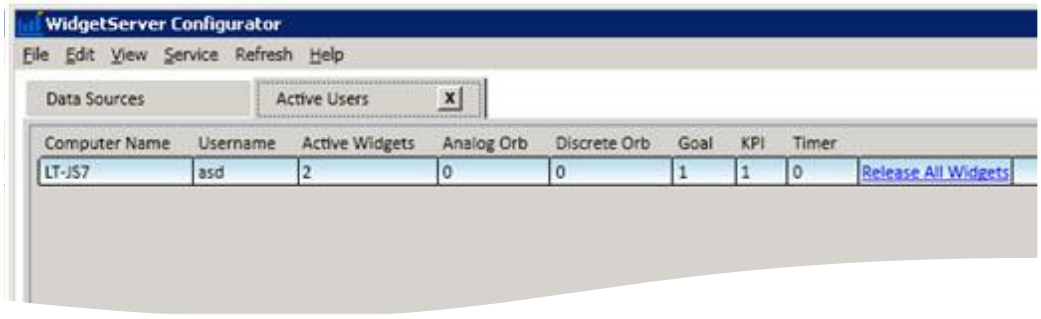
LicenseMode	There are three licensing modes to choose from:
	
	• **ConcurrentLicensing**: Concurrent licensing allows any user to connect as many FactoryWidgets as they want, up to the licensing limit.
	• **SeatLicensing:** Seat licensing uses the configured user licenses to allocate licenses per user.
	• **MixedConcurrentSeatLicensing:** Mixed licensing allows for both licensing modes to be in use. For example:
	  ○ If a user is assigned a certain number of widgets per seat licensing, but there are additional FactoryWidgets in the "pool" per the concurrent method, then the user may configure additional available FactoryWidgets from that pool; however, when that user's PC is shut down, the FactoryWidgets obtained from the pool return to the pool.
	  ○ If a user is not allocated any FactoryWidgets per seat licensing, that user may configure any available FactoryWidgets from the concurrent "pool."

3.3.4.1 Using Concurrent Licensing Mode

If you elect to use **ConcurrentLicensing**, the users can connect to as many FactoryWidgets as they want, up to the licensing limit.

- Go to the **Active Users** tab in the **View** menu to see the tab automatically update to display active users and the FactoryWidgets they have installed and configured.

Figure 39: Active User tab



The list of active users is automatically updated at five second intervals.

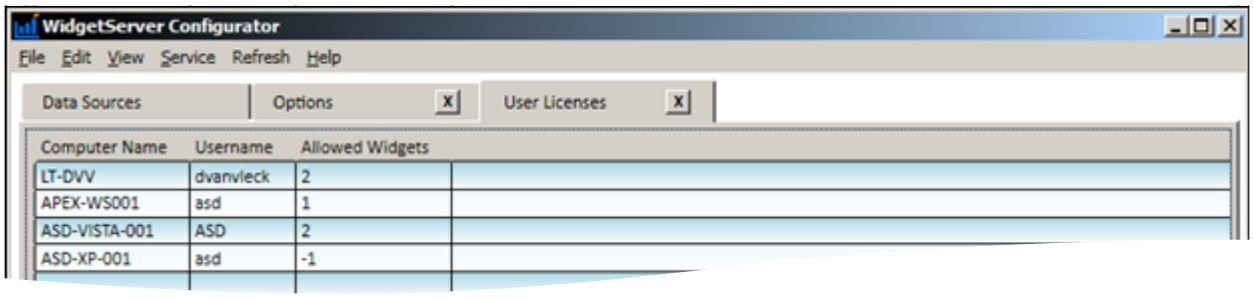
Field	Description
Computer Name	Automatically updates when user installs and configures FactoryWidgets on computer.
Username	Automatically updates when user installs and configures FactoryWidgets on computer.
Active Widgets	Automatically updates when user actively uses FactoryWidgets on computer. When the user shuts down computer, the FactoryWidget is no longer considered active and it is returned to the pool for another user.
Analog Orb **Discrete Orb** **Goal** **KPI** **Readerboard** **Timer**	Automatically updates when user actively uses FactoryWidgets on computer. The number of each type of FactoryWidget in use displays here.
Release All Widgets	Click **Release All Widgets** to release all of a specific user's FactoryWidgets back to the pool.

3.3.4.2 Using SeatLicensing Mode

If you elect to use **SeatLicensing**, the users can connect to FactoryWidgets per the licenses allocated to them.

- Go to the **User Licenses** tab in the **View** menu to enter the user information and the number of allocated FactoryWidgets.

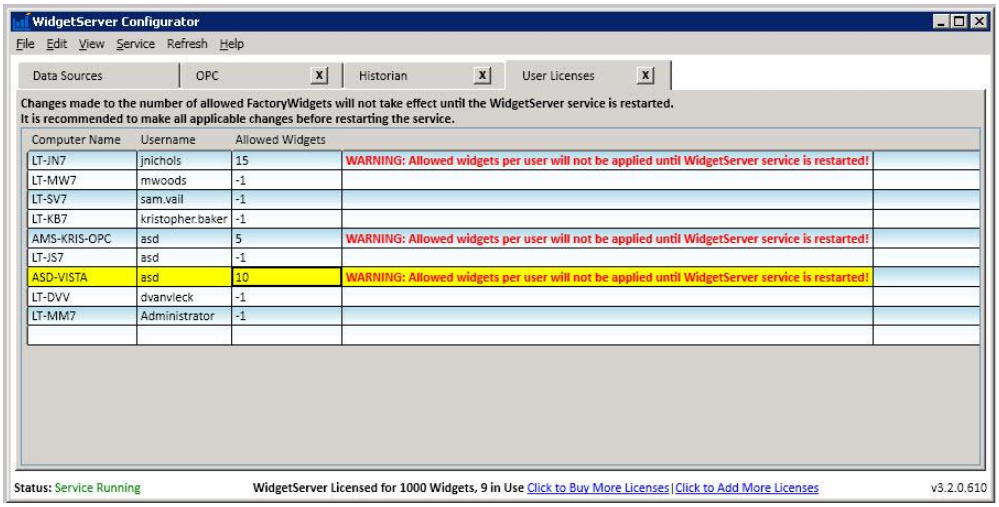
Figure 40: User Licenses tab



→ ***Note**: The **User Licenses** tab is not accessible in ConcurrentLicensing mode.*

For each user, enter the following in the fields provided:

Field	Description
Computer Name	Enter the computer name.
Username	Enter the username.
Allowed Widgets	Enter the total number of FactoryWidgets the user is allowed. The default value is -1. It simply means that no specific number of widgets have been allocated to the user. If you change the number of FactoryWidgets allocated to a user or users, you must restart the WidgetServer service. After changing the allocation, and upon pressing Enter or clicking in a different row, a warning message appears as a reminder: "WARNING: Allowed widgets per user will not be applied until WidgetServer is restarted."

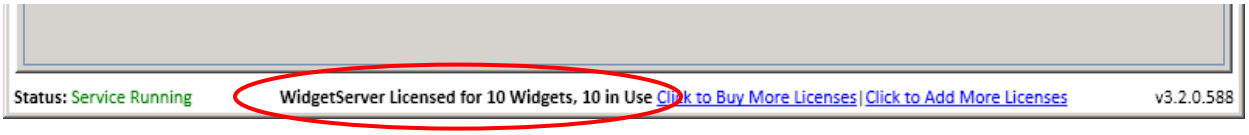
Field	Description
	 It is recommended that you make all allocation changes and then restart the WidgetServer in order to avoid interrupting existing users multiple times. (See section **3.3.7** for restarting service.)

3.3.4.3 Using Mixed Licensing Mode

If you elect to use the **MixedConcurrentSeatLicensing** option, this means you can use a combination of the two licensing modes.

First, remember, the status bar at the bottom of the WidgetServer Configurator shows the number of licenses the WidgetServer is licensed for and how many of those licenses your users are currently using.

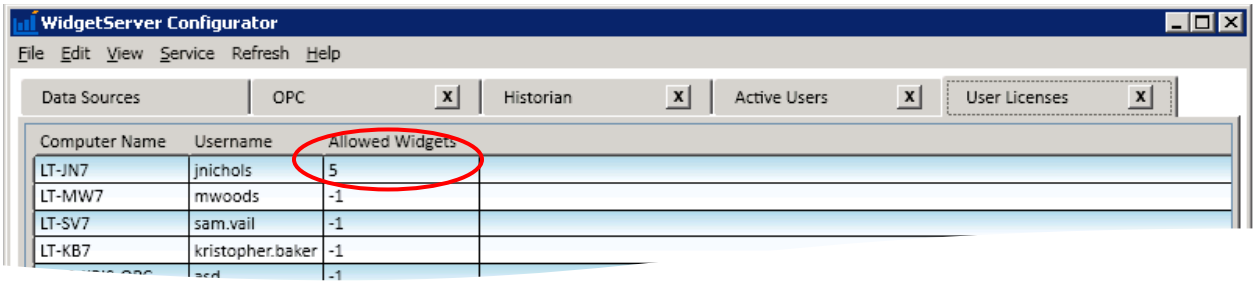
Figure 41: Number of licenses in status bar



Now, consider the following scenario as a means of explanation for using both (mixed) licensing modes.

- The WidgetServer in the image above is licensed for 10 FactoryWidgets.
- Employee A is allowed five FactoryWidgets per SeatLicensing mode.

Figure 42: Number of licenses in status bar



- Since Employee A has five, there are five FactoryWidgets still available. These can either be assigned to additional user(s) per seat licensing mode, or they can be made available to additional user(s) per concurrent licensing mode.

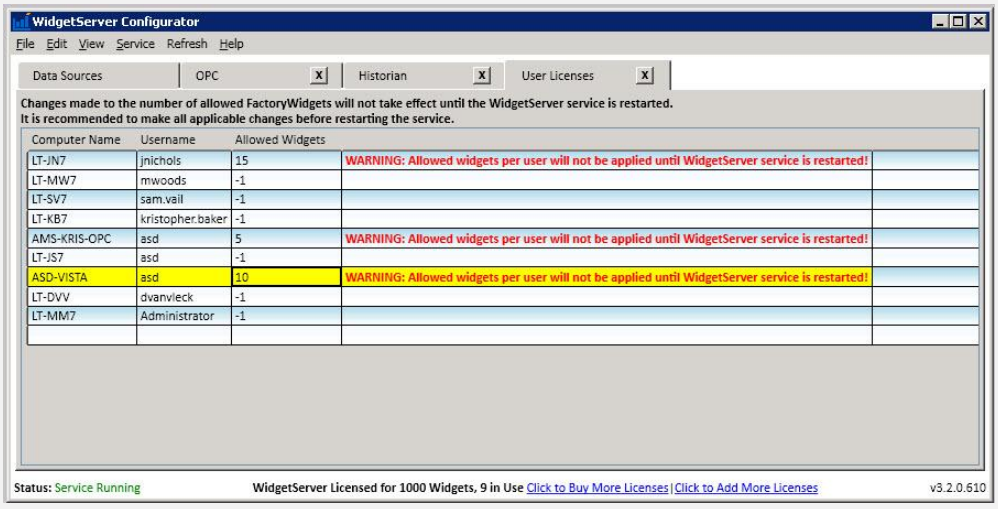
When using the mixed licensing mode, users can take advantage of both kinds of licensing modes to use more FactoryWidgets. This means that if no other users are using FactoryWidgets, Employee A is free to use any or all of the remaining five licenses available per the concurrent mode, over and above the five he is already allowed per seat licensing mode.

In this scenario, Employee A is now using all current licenses. This means that no other users can use FactoryWidgets until Employee A closes his "concurrent" widgets or shuts down his PC.

If Employee B had been using a license yesterday in concurrent mode, but powered down her computer at the end of the day, then her widget license returned to the "pool." When she logs in today, while Employee A has all 10 licenses, the FactoryWidget on her desktop will display, "No Licenses Available," and she will not be able to use it.

When Employee A does shut down his PC, the five licenses granted to him per seat licensing remain his, but the five he claimed through concurrent licensing will return to the "pool" for other users.

→ ***Note**: When using MixedConcurrentSeatLicensing mode, if you change the number of FactoryWidgets allocated to a user or users in the **User Licenses** tab, you must restart the WidgetServer service. After changing the allocation, and upon pressing Enter or clicking in a different row, a warning message appears as a reminder: "WARNING: Allowed widgets per user will not be applied until WidgetServer is restarted."*



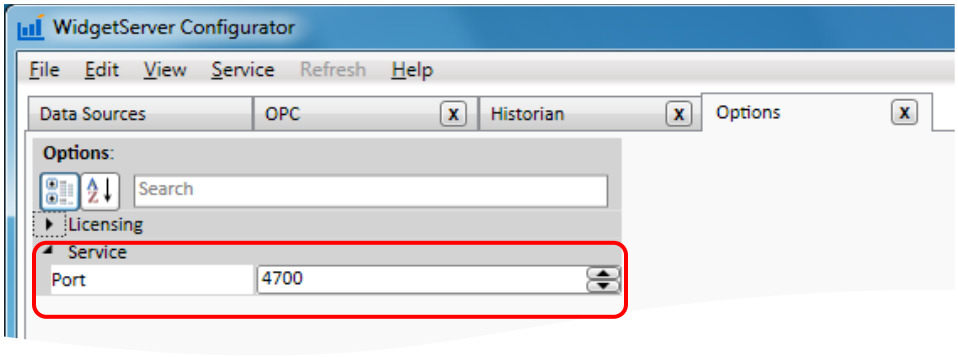
*It is recommended that you make all allocations changes and then restart the WidgetServer in order to avoid interrupting existing users multiple times. (See section **3.3.7** for restarting service.)*

3.3.5 Designating a Server Port (if necessary)

- Click the **Edit** menu to open the **Options** tab, where you can designate a server port, if necessary.

→ ***Note***: *The Search box at the top of the tab is simply to let you search for the licensing and service parameters.*

Figure 43: Port Designation



Field	Description
Port	Designate a WidgetServer TCP port number. This should be a value greater than 1024 and less than 65535, and it should not be in use by any program or service. The default is 4700. You can click the arrows in the right side of the Port field to increment or decrement the port number. → ***Note***: *If you change the port, the WidgetServer will prompt you to restart service.*

3.3.6 Managing FactoryWidget Configurations

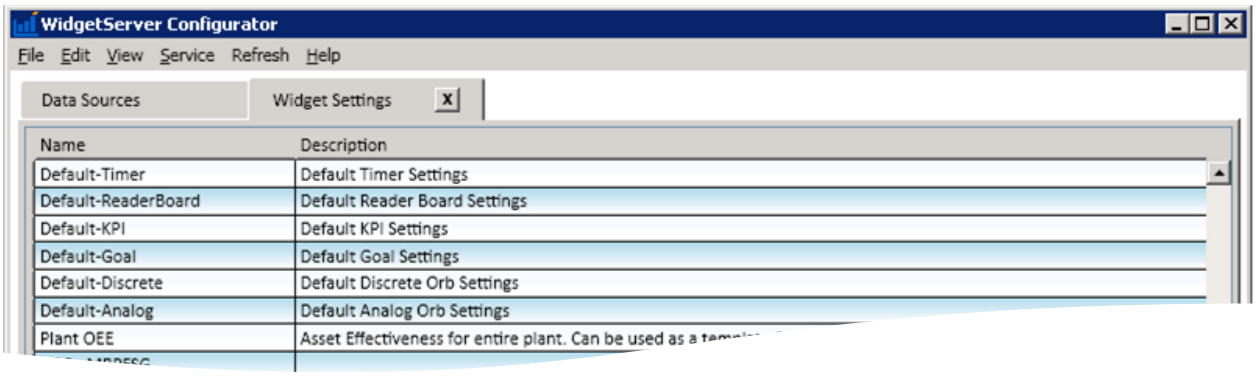
- To manage FactoryWidget configurations, go to the **View** menu and click **Widget Settings** to open the **Widget Settings** tab.

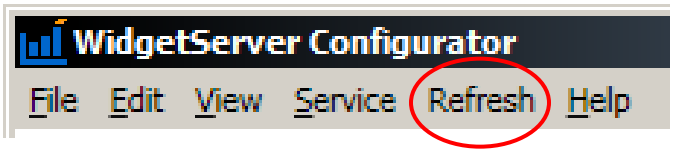
This tab contains a list of global configurations and user-created widget configurations for each FactoryWidget connected to that server. The configuration data is entered and saved in the FactoryWidget itself, and then it is reflected here. Once in the **Widget Settings** tab, you can edit the configuration name and description. You can also designate a configuration as "global," meaning all users have access to the configuration. Other users can load a global configuration, but they cannot overwrite it. See section **4.3.2** for additional information on saving and loading configurations.

Among other uses, a global configuration is helpful to use as a baseline FactoryWidget configuration. When users add new widgets to their desktops, they can quickly load some basic settings by loading a global configuration, and then add to their configurations from there. This saves time over manually adding all

configuration data by hand each time they add a new FactoryWidget or upgrade their FactoryWidgets from one version to the next.

Figure 44: Widget Settings tab



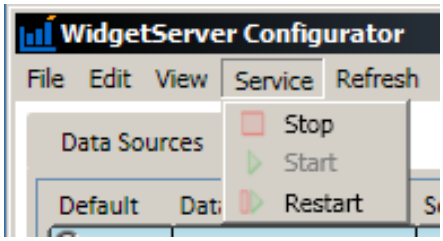
Field	Description
Name	The name given to the configuration when saved in the widget itself.
Description	A description given to the configuration when saved in the widget. This is optional.
Global	Check this box if the configuration is to be a global configuration, available to all users. Users cannot overwrite global configurations.
Widget Type	The widget type displays (Analog Orb, Discrete Orb, Goal, KPI, or Timer).
Username	The name of the computer and the name of the user using the configuration display here.
Refresh	While in the Widget Settings tab, click the Refresh tab in the WidgetServer Configurator's top level menu in order to refresh the data to see the most recent saved configurations. 

3.3.7 Stopping and Starting Service

Generally, the WidgetServer will prompt you any time you need to **stop**, **start**, or **restart** service. For example, if you have made a change to your configuration, like changing the port number, you will be prompted to restart service and the WidgetServer will do it for you when you acknowledge the message.

You can also manually stop, start and restart service by selecting the appropriate action from the **Service** menu.

Figure 45: WidgetServer Configurator's Service menu

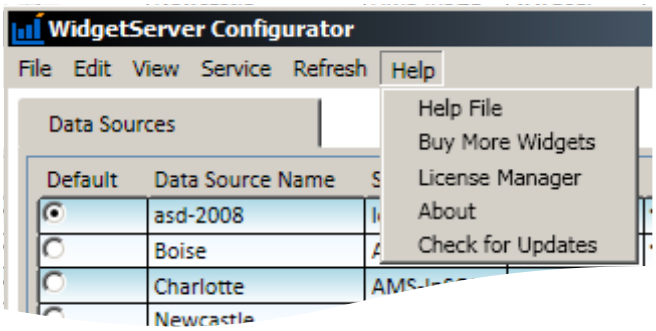


One instance where you might want to manually stop and start the service is when upgrading the WidgetServer. You can avoid having to reboot your system if you stop service, install the upgrade, and then restart.

3.4 Checking for Updates

When an update is available, you will receive an email. Go to the WidgetServer Configurator's **Help** Menu and select the option to **Check for Updates**.

Figure 46: WidgetServer Configurator's Help menu



→ ***Note:*** *If you have opted out of receiving global emails from Software Toolbox, you may not receive notice of these updates.*

The most current version of FactoryWidgets will always display on the FactoryWidgets™ Web site.

4 FACTORYWIDGETS

Now that the WidgetServer is installed to serve data to the FactoryWidgets, install the FactoryWidgets to your Windows Gadget Gallery (and desktop). The FactoryWidgets will conveniently reside on your desktop and deliver easy-to-read, live data indicators.

If you are using Windows Server 2008 or 2008 r2 for the client installation, start with section **4.1.1**.

If you are using Windows XP for the client installation, start with section **4.1.2**.

If you are using any other supported operating system for the client installation, start with section **4.2**.

4.1 Installing FactoryWidgets on Operating Systems on which the Windows Sidebar is Not Native

The Windows sidebar is not native to Windows Server 2008, Windows Server 2008 r2 or Windows XP. If you plan to use either of these as your client desktop, you must first install the Windows sidebar. Proceed to the appropriate of the following two sections to install the sidebar.

4.1.1 Downloading and Installing Windows Sidebar (Windows Server 2008 or 2008 r2 Client Desktop users ONLY)

If you are using the Windows Server 2008 or 2008 r2 operating system for the client installation, you must follow these steps to install and run the Windows sidebar on your desktop.

1. Go to www.factorywidgets.com/ossupport.asp for links to download the Windows sidebar installer.
2. After downloading, unzip the file.
3. Run the RUN_ME.bat file (batch script) to install the sidebar.

After you have successfully installed the sidebar, you will be able to install the FactoryWidgets to the Windows Gadget Gallery on your Server 2008 or 2008 r2 computer, and have them display in your Windows sidebar and on your desktop. Now, proceed to section 4.2.

4.1.2 Downloading and Installing XP Utility (Windows XP SP3 Client Desktop users ONLY)

If you are using the Windows XP operating system for the client installation, you must follow these steps to also install a utility to run the Windows sidebar on your desktop, and then download the sidebar. You must have the sidebar installed before you can run FactoryWidgets on your XP computer.

→ ***Note**: You must have Windows XP Service Pack 3 (SP3) installed.*

→ ***Note**: Even if not using Windows Vista, you must be licensed owner of Vista.*

1. Go to www.factorywidgets.com/ossupport.asp for links to download Alky for Applications 1.1 for Windows XP.
2. Download and install **Alky for Applications 1.1 for Windows XP**.

> → ***Note**: During installation, you may be prompted for a Vista key. You can click **Next** to ignore this or you can enter your Vista key if you have it.*

3. Restart your computer. You *must* restart, even if you are not prompted to do so.
4. Go to www.factorywidgets.com/ossupport.asp for links to download the Windows sidebar installer (this download also includes some default Windows gadgets).
5. After downloading, unzip the file for the Windows sidebar installer.
6. Once unzipped, right-click the **sidebar.inf** file and select **Install**.
7. Restart your computer. You *must* restart, even if you are not prompted to do so.

After you have successfully installed the utility and sidebar, you will be able to install the FactoryWidgets to the Windows Gadget Gallery on your XP computer, and have them display in your Windows sidebar and on your desktop. Now proceed to section 4.2.

4.2 Installing FactoryWidgets

When you installed the WidgetServer, you also installed the "client installer." The client installer is a separate installer designed to be run on the desktop computers where the FactoryWidgets will be used. The client installer puts the FactoryWidgets on your computer so that you can add them to the Windows Gadget Gallery and make them available to your desktop.

If you are installing FactoryWidgets for the first time, follow the steps in sections **4.2.1** and **4.2.2**.

If you are upgrading your FactoryWidgets from a previous version, follow the steps in section **4.2.3**.

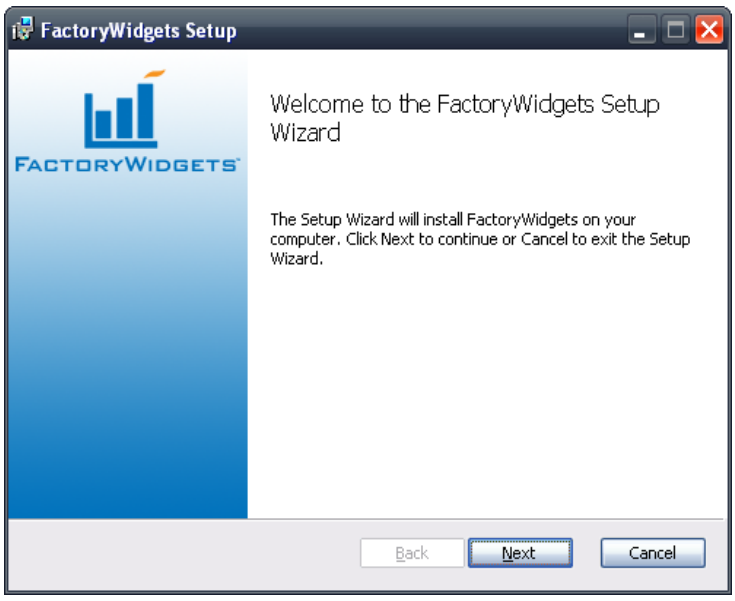
4.2.1 Running the Client Installer on the client computer where you want to use FactoryWidgets

1. Either copy **ClientInstaller** to the client desktop computer where you want to install FactoryWidgets, or access it from that client computer over your network.

> → ***Note***: *If you installed the WidgetServer in the default location, you will find the **ClientInstaller** by going to **Program Files > FactoryWidgets > ClientInstaller** on your C: drive (or the custom location where you selected to install the file during WidgetServer installation). Your network administrator can choose to share this folder on your network or copy **ClientInstaller** to another network share, or otherwise make it available for use on your desktop computer through a method of their choice.*

2. On the client desktop computer, from the location that you have access to the client installer, double-click the setup file, **FactoryWidgetsDesktopSetup.msi** (Windows Installer Package file), to start the installation. The installation starts and Welcome window appears.

Figure 47: FactoryWidgets Setup Welcome

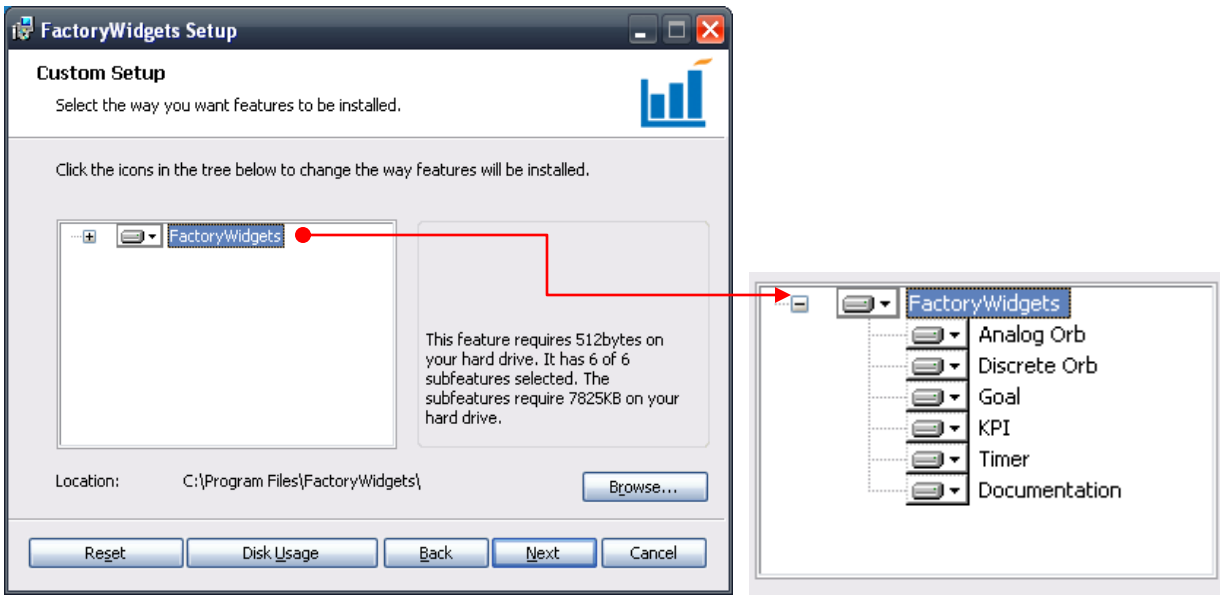


3. Click **Next**. The end-user license agreement appears.

Figure 48: End-User License Agreement

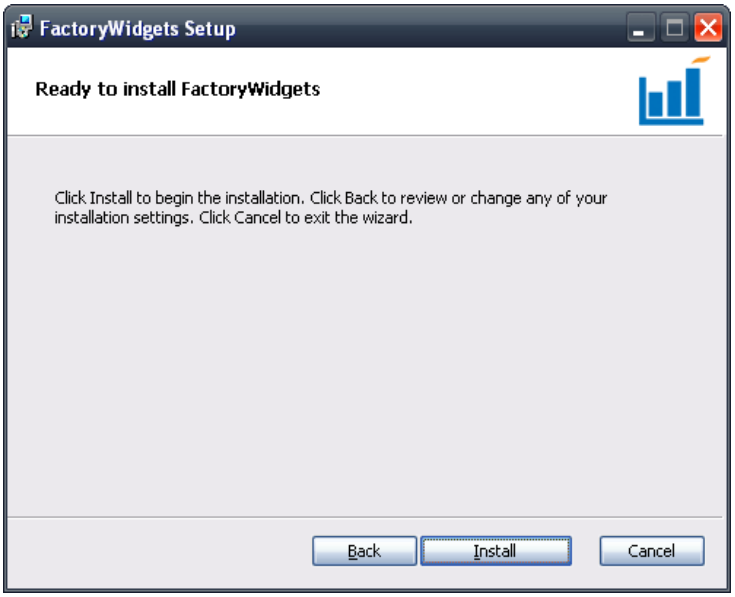
4. Review the agreement (you can click **Print** to print it out), then check to accept the terms of the license agreement, and click **Next**. The Custom Setup window appears.

Figure 49: Custom Setup



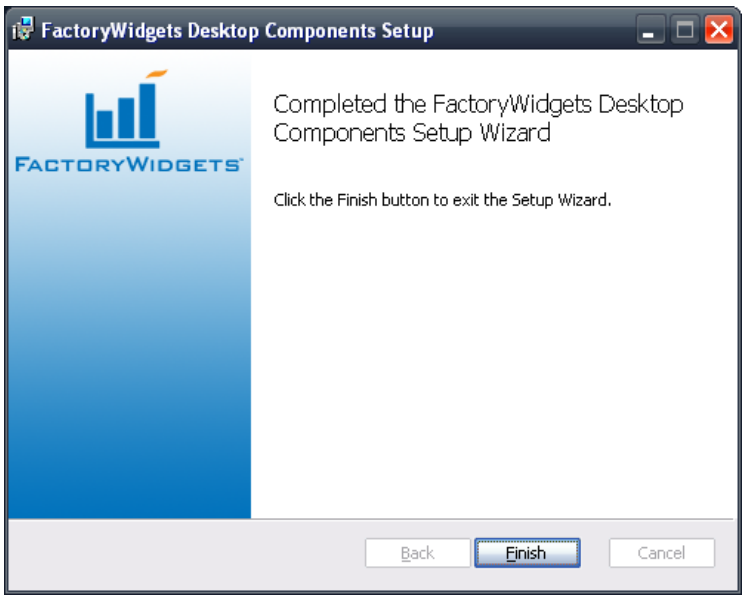
5. Click the plus sign (⊞) to expand the FactoryWidgets icon to see the FactoryWidgets you are installing.
   - To install the widgets somewhere other than the default location listed in the window, click **Browse** to select a different location, and then click **Next**.
   - Otherwise, click **Next** to accept the default location and to continue.

Figure 50: Ready to install



6. When you are ready to install, click **Install**. Installation may take a few minutes.

Figure 51: Finish the installation

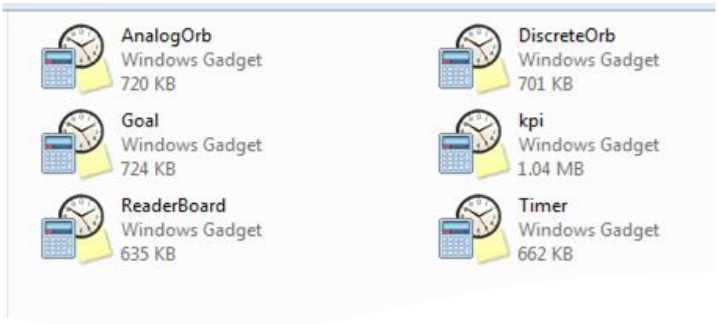


7. Click **Finish**.

4.2.2 Installing the FactoryWidgets in the Windows Gadget Gallery (and onto the desktop)

1. Go to the location where the client installer installed the FactoryWidgets. If you selected the default location, this is **C:** > **Program Files** > **FactoryWidgets** > **Widgets** (or the operating system drive, if not the C: drive).
2. Double-click to open the **Widgets** folder, and you will see the individual FactoryWidget files (.gadget files).

Figure 52: FactoryWidget files



3. Double-click each individual FactoryWidget (.gadget file) to install it to the Windows Gadget Gallery. You will receive a confirmation message when each FactoryWidget has installed successfully.

→ ***Note**: If you are installing to Windows 7 and Windows Vista systems, you can check **Install for All Users** to install the FactoryWidget to multiple users at once. However, if you are installing to Windows XP systems, this may cause an error; install users individually.*

- ***Windows 7 and Windows Vista users***:
  Double-clicking each .gadget file also installs the FactoryWidgets to the Windows sidebar. If this is the first time you have installed FactoryWidgets, skip section **4.2.3** and go to section **4.3** now to configure your FactoryWidgets.
- ***Windows XP users***:
  Double-clicking each .gadget file only installs the FactoryWidget to the Windows Gadget Gallery. You still need to take one more step to install the FactoryWidgets to the Windows sidebar from the gallery.
  a. Open the Windows Gadget Gallery and locate the FactoryWidgets.
  b. Once you have located each FactoryWidget, you can do any of the following to install the FactoryWidgets to your desktop from the gallery:
     - Double-click the FactoryWidget to install it.
     - Right-click the FactoryWidget and select **Install** to install it.
     - Click and drag the FactoryWidget to the desktop to install it.

Figure 53: FactoryWidgets installed in Windows Gadget Gallery

→ ***Note***: *FactoryWidgets (FW) are grouped together in the Windows Gadget Gallery.*

If this is the first time you have installed FactoryWidgets, skip section **4.2.3** and go to section **4.3** now to configure your FactoryWidgets.

4.2.3 Upgrading FactoryWidgets from a Previous Version

To upgrade your FactoryWidgets from a previous version, complete the following five steps.

> → ***Note**: You must follow these steps due to current limitations in the Windows Gadget technology. Future versions of FactoryWidgets may take steps to make this process easier.*

Step one: Record each of your FactoryWidgets' current configuration settings

1. Right-click each FactoryWidget and select **Options** to open the **Options** window for each.
2. Record your current settings for each FactoryWidget, as you will need them later.

> → ***Note:** Beginning with FactoryWidgets v. 3.1.1.* you can save each of your configuration settings and will not have to manually record your configurations.*

Step two: Click the X to remove the FactoryWidgets from your desktop

Step three: Make the Client Installer available to client computers

1. Copy the client installer (**FactoryWidgetsDesktopSetup.msi**) from your WidgetServer location to the client computer, network drive or shared folder on the WidgetServer.
2. On the client desktop computer, from the location that you have access to the client installer, double-click the setup file, **FactoryWidgetsDesktopSetup.msi** (Windows Installer Package file), to start the update.
3. When the installation is complete, browse to **C:\Program Files\FactoryWidgets\Widgets**, if that folder does not open automatically. There are five .gadget files in the Widgets folder, one for each of the five FactoryWidgets.

Step four: Install new version of FactoryWidgets

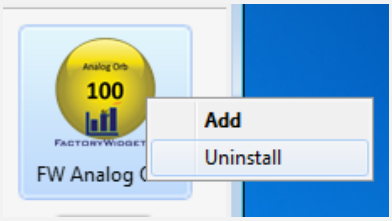
1. Double-click each .gadget file to install it to the Windows Gadget Gallery.

> → ***Note:** Windows XP users will need to close and reopen the Windows Gadget Gallery to see the FactoryWidgets in the gallery.*

2. When prompted to uninstall the previous version, you can leave the previous version in the gadget gallery, however, it is recommended to uninstall all previous versions.

   - ***Windows Vista and Windows 7 users***, the FactoryWidgets are now installed in your Widows sidebar.
   - ***Windows XP users***, open the Windows Gadget Gallery, right-click each FactoryWidget, and select **Install** to add the FactoryWidget to your Windows sidebar.

→ ***Note:*** *If you are not prompted to uninstall the previous version, you can manually uninstall the previous version of each FactoryWidget from the Windows Gadget Gallery by right-clicking the previous version of the FactoryWidget in the gallery and selecting* ***Uninstall****.*



Step five: Re-configure FactoryWidgets with the information recorded in Step one

1. Right-click each FactoryWidget and select **Options** to open the **Options** window for each.
2. Make sure the FactoryWidget version number (**Options** > **About** tab) matches the WidgetServer version number (WidgetServer Configurator > **Help** menu > **About**).
3. Enter the configuration information you recorded earlier for each FactoryWidget.

→ ***Note:*** *Beginning with FactoryWidgets v. 3.1.1.* you can load previously saved configurations and do not have to manually add them back in.*

4.3 Configuring FactoryWidgets

Each FactoryWidget installed on your desktop requires quick configuration to display the kind of data you want to see. During the configuration, there are also customizable features to enable each FactoryWidget to display the data in the way you want to see it – the way that makes the most sense to you and your business.

- If this is the first time you have installed FactoryWidgets, proceed to section **4.3.1, Manually Configuring FactoryWidgets** now.

If you have installed FactoryWidgets before, the WidgetServer name from the most recent previously installed FactoryWidget will automatically default in the **WidgetServer Name** field of **Data Source** tab. If that most recent previously installed FactoryWidget also had the **Data Source Name** and **WidgetServer Port** fields defined (they were not using the default setting), then that information will also default into the Data Source name and Port number fields in your newly installed FactoryWidget. This information is editable and can be changed if you do not want the defaults.

- To finish configuring, proceed to section **4.3.1** to manually enter the rest of the configuration information. If you want to load a previously saved configuration, go to section **4.3.2, Saving and Loading Settings**.

4.3.1 Manually Configuring FactoryWidgets

Configure each FactoryWidget in the **Options** window.

1. Open the **Options** window by doing one of the following:

   - Right-click the FactoryWidget and then select **Options** from the pop-up menu

   OR

   - Roll your mouse over the FactoryWidget, and click the wrench icon ( ) that appears to the upper right of the FactoryWidget.

2. Use the descriptions provided below to configure each of the FactoryWidgets.

3. Remember to click **OK** to save your settings before exiting the **Options** window.

The following sections review how to configure each FactoryWidget:

- Analog Orb
- Discrete Orb
- Goal
- KPI
- Readerboard
- Timer

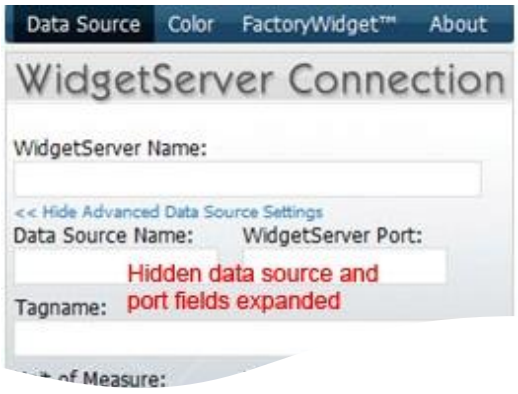
4.3.1.1 Analog Orb

Use the following guidelines to configure the Data Source, Color, and FactoryWidget™ tabs of the Analog Orb.

The Analog Orb displays manufacturing and process data in real time. The FactoryWidget changes color according to configurable data threshold levels.

Data Source tab

WidgetServer Name	Enter your FactoryWidget server name. It must be an alphanumeric value. This is the Windows computer name of the machine hosting the WidgetServer. You may also enter the IP address of the server PC on which the WidgetServer is hosted.



	Double-check for misspellings if you receive an "invalid" error upon entry.
Advanced Data Source Settings • **Click link to show hidden fields.** • **Fields are hidden because it is not always necessary to fill these in if the data source and port are defined in the WidgetServer.**	
Data Source Name	If the data source you want to use for this FactoryWidget is the same data source that is selected as the default data source in the WidgetServer Configurator, then you do not need to enter it again. To connect to a data source other than the default, enter that data source name here, as it appears in the WidgetServer Configurator. Double-check for misspellings if you receive an "invalid" error upon entry.
WidgetServer Port	This is the TCP/IP port number on which the WidgetServer is listening. The default is 4700. You should only change the port number here if you have changed the default on the WidgetServer.

Tagname	Enter your tagname. It must be an alphanumeric value. If you created an Alias for your tags in the WidgetServer Configurator, you can enter that here. Note that the Alias as entered in the WidgetServer Configurator is case-sensitive. Double-check for misspellings if you receive an "invalid" error upon entry.
Unit of Measure	Enter any unit of measure you require for the data you are tracking (EUs, units, %, etc.).
Display Value Format	From the drop-down menu, select the decimal format you want the FactoryWidget to recognize and use for your data values. The format you select displays under **Preview**.
Refresh Rate	From the drop-down menu, select the rate at which you want the data to the FactoryWidget to be refreshed from the data source. If you do not select a refresh rate, the rate defaults to five seconds.

Color tab

Use the color tab to set the value limits, and the text and body color of FactoryWidget when the value exceeds or drops below the specified limit. The display value format that you selected on the **Data Source** tab displays at the bottom of the **Color** tab as a reminder to enter your value limits in the decimal format you selected. You can enter positive and negative value limits. The highest value must be in the **High High** limit field, the next highest value must be in the **High** limit field, and so on, with the lowest value being in the **Low Low** limit field.

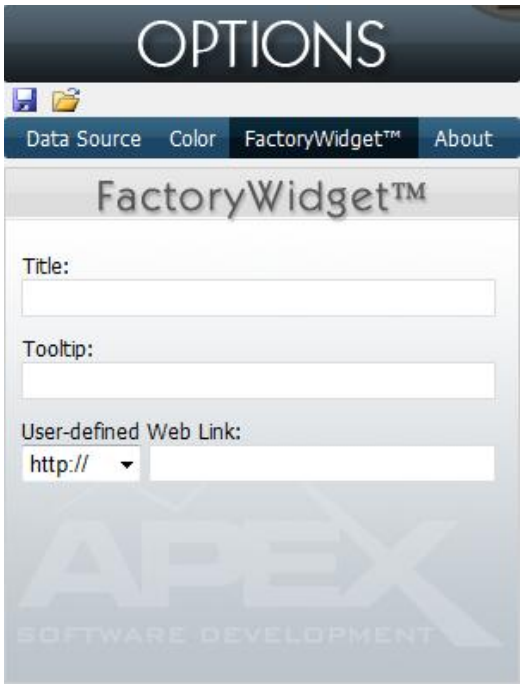
High High	
Text	Click inside the text color box to display the color-picker. Select the color of text you would like to display on the FactoryWidget when it is at or above the "High High" level. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.
FactoryWidget™	From the drop-down menu, select the color you would like the FactoryWidget to display when it is at or above the "High High" level.
Limit	Enter a limit. When the data source value exceeds this threshold value, the FactoryWidget changes text and body color according to the settings you have indicated for this "High High" limit.

High	
Text	Click inside the text color box to display the color-picker. Select the color of text you would like to display on the FactoryWidget when it is at or above the "High" level. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.
FactoryWidget™	From the drop-down menu, select the color you would like the FactoryWidget to display when it is at or above the "High" level.
Limit	Enter a limit. When the data source value exceeds this threshold value, the FactoryWidget changes text and body color according to the settings you have indicated for this "High" limit.
Normal	
Text	Click inside the text color box to display the color-picker. Select the color of text you would like to display on the FactoryWidget when it is at or above the "Normal" level. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.
FactoryWidget™	From the drop-down menu, select the color you would like the FactoryWidget to display when it is at the "Normal" level.
Low	
Text	Click inside the text color box to display the color-picker. Select the color of text you would like to display on the FactoryWidget when it is at or below the "Low" level. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.
FactoryWidget™	From the drop-down menu, select the color you would like the FactoryWidget to display when it is at or below the "Low" level.
Limit	Enter a limit. When the data source value drops below this threshold value, the FactoryWidget changes text and body color according to the settings you have indicated for this "Low" limit.
Low Low	
Text	Click inside the text color box to display the color-picker. Select the color of text you would like to display on the FactoryWidget when it is at or below the "Low Low" level. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.
FactoryWidget™	From the drop-down menu, select the color you would like the FactoryWidget to display when it is at or below the "Low Low" level.

Limit	Enter a limit. When the data source value drops below this threshold value, the FactoryWidget changes text and body color according to the settings you have indicated for this "Low Low" limit.

FactoryWidget™ tab

Use the FactoryWidget™ tab to give your widget a custom title and tooltip, and to link it to any Web site of your choice.



Title	Enter the title you have selected for this FactoryWidget. If you do not enter a title, "Analog Orb" defaults.
Tooltip	Enter the tooltip you would like the FactoryWidget to display when you single-click the widget on your desktop. If you do not enter a tooltip, "Analog Orb" defaults.
User-defined Web Link	Select the appropriate protocol from the drop-down list, and then enter a Web link to which you would like to link to from this Analog Orb. Note that because you have selected the protocol in the drop-down, you do not have to enter that again as part of the Web address. When the FactoryWidget is running on your desktop, hover your mouse over the value on the FactoryWidget face. When the cursor turns into the pointing finger ( ), click to go to the link you defined.

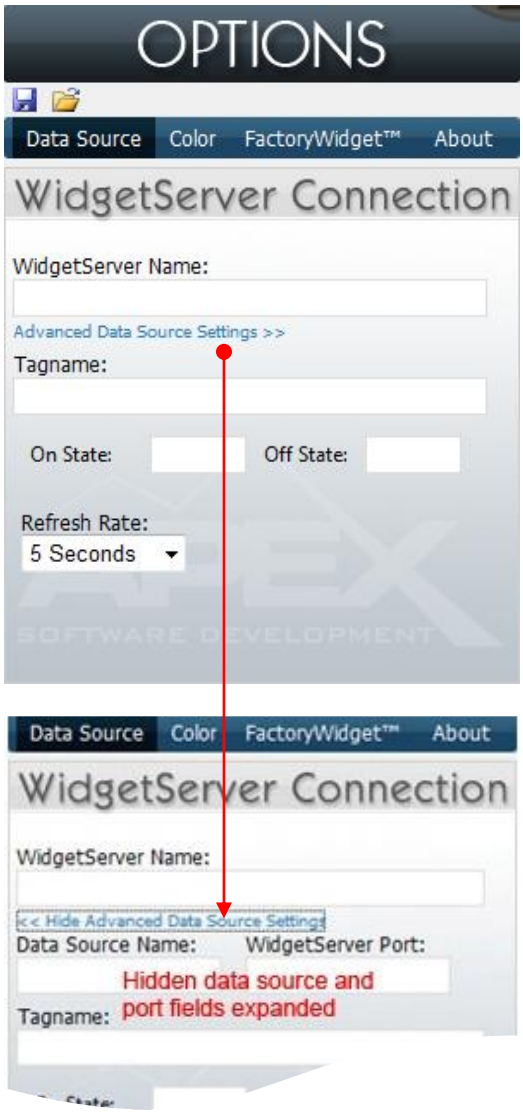
- Remember to click **OK** to save the configuration settings.

4.3.1.2 Discrete Orb

Use the following guidelines to configure the Data Source, Color, and FactoryWidget™ tabs of the Discrete Orb.

The Discrete Orb displays the on/off state of a component or system in real time. The FactoryWidget changes color according to the state.

Data Source tab



WidgetServer Name	Enter your FactoryWidget server name. It must be an alphanumeric value. This is the Windows computer name of the machine hosting the WidgetServer. You may also enter the IP address of the server PC on which the WidgetServer is hosted. Double-check for misspellings if you receive an "invalid" error upon entry.
Advanced Data Source Settings • **Click link to show hidden fields.** • **Fields are hidden because it is not always necessary to fill these in if the data source and port are defined in the WidgetServer.**	
Data Source Name	If the data source you want to use for this FactoryWidget is the same data source that is selected as the default data source in the WidgetServer Configurator, then you do not need to enter it again. To connect to a data source other than the default, enter that data source name here, as it appears in the WidgetServer Configurator. Double-check for misspellings if you receive an "invalid" error upon entry.
WidgetServer Port	This is the TCP/IP port number on which the WidgetServer is listening. The default is 4700. You should only change the port number here if you have changed the default on the WidgetServer.

Tagname	Enter your tagname. It must be an alphanumeric value. If you created an Alias for your tags in the WidgetServer Configurator, you can enter that here. Note that the Alias as entered in the WidgetServer Configurator is case-sensitive. Double-check for misspellings if you receive an "invalid" error upon entry.
On State	Enter any text you want to indicate the on state of the data being tracked. If you do not enter text to indicate the on state, "On" defaults.
Off State	Enter any text you want to indicate the off state of the data being tracked. If you do not enter text to indicate the off state, "Off" defaults.
Refresh Rate	From the drop-down menu, select the rate at which you want the data to the FactoryWidget to be refreshed from the data source. If you do not select a refresh rate, the rate defaults to five seconds.

Color tab

Use the color tab to set the color the text and Factory Widget should be when in the on and off states.

On State	
Text	Click inside the text color box to display the color-picker. Select the color you would like the text to display on the FactoryWidget when it is reflecting the "on" state. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.
FactoryWidget™	From the drop-down menu, select the color you would like the FactoryWidget to display when it is reflecting the "on" state. If you do not select a color, green defaults.

Off State	
Text	Click inside the text color box to display the color-picker. Select the color you would like the text to display on the FactoryWidget when it is reflecting the "off" state Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.
FactoryWidget™	From the drop-down menu, select the color you would like the FactoryWidget to display when it is reflecting the "off" state. If you do not select a color, red defaults.

FactoryWidget™ tab

Use the FactoryWidget™ tab to give your widget a custom title and tooltip, and to link it to any Web site of your choice.

Title	Enter the title you have selected for this FactoryWidget. If you do not enter a title, "Discrete Orb" defaults.
Tooltip	Enter the tooltip you would like the FactoryWidget to display when you single-click the widget on your desktop. If you do not enter a tooltip, "Discrete Orb" defaults.
User-defined Web Link	Select the appropriate protocol from the drop-down list, and then enter a Web link to which you would like to link to from this Discrete Orb. Note that because you have selected the protocol in the drop-down, you do not have to enter that again as part of the Web address. When the FactoryWidget is running on your desktop, hover your mouse over the state display (e.g., "running" or "stopped") on the FactoryWidget face. When the cursor turns into the pointing finger ( ), click to go to the link you defined.

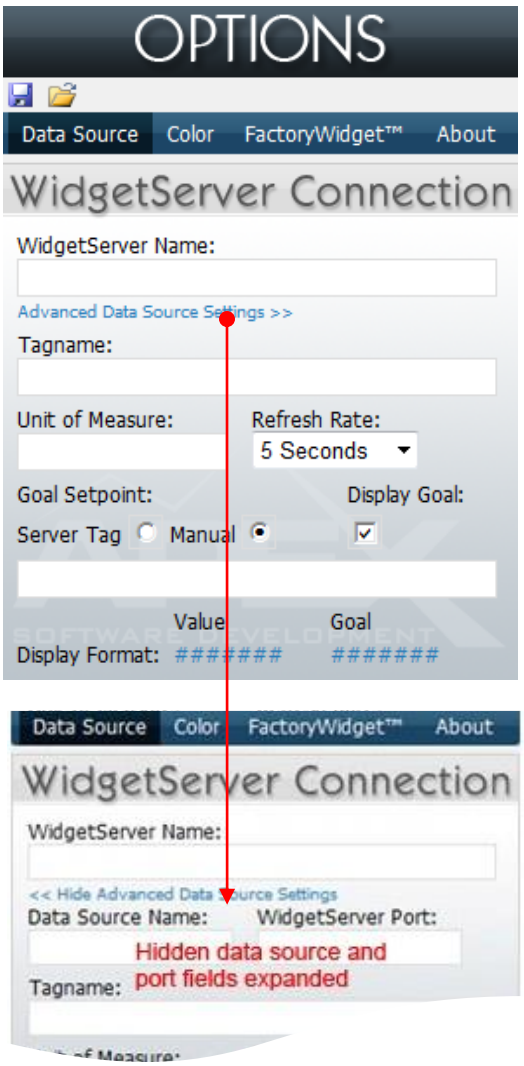
- Remember to click **OK** to save the configuration settings.

4.3.1.3 Goal

Use the following guidelines to configure the Data Source, Color, and FactoryWidget™ tabs of the Goal.

The Goal displays manufacturing and process data in real time. It shows performance versus a goal. The progress bar changes color according to configurable data threshold levels.

Data Source tab



WidgetServer Name	Enter your FactoryWidget server name. It must be an alphanumeric value. This is the Windows computer name of the machine hosting the WidgetServer. You may also enter the IP address of the server PC on which the WidgetServer is hosted. Double-check for misspellings if you receive an "invalid" error upon entry.
Advanced Data Source Settings • **Click link to show hidden fields.** • **Fields are hidden because it is not always necessary to fill these in if the data source and port are defined in the WidgetServer.**	
Data Source Name	If the data source you want to use for this FactoryWidget is the same data source that is selected as the default data source in the WidgetServer Configurator, then you do not need to enter it again. To connect to a data source other than the default, enter that data source name here, as it appears in the WidgetServer Configurator. Double-check for misspellings if you receive an "invalid" error upon entry.
WidgetServer Port	This is the TCP/IP port number on which the WidgetServer is listening. The default is 4700. You should only change the port number here if you have changed the default on the WidgetServer.

Tagname	Enter your tagname. It must be an alphanumeric value. If you created an Alias for your tags in the WidgetServer Configurator, you can enter that here. Note that the Alias as entered in the WidgetServer Configurator is case-sensitive. Double-check for misspellings if you receive an "invalid" error upon entry.
Unit of Measure	Enter any unit of measure you require for the data you are tracking (EUs, units, %, etc.).
Refresh Rate	From the drop-down menu, select the rate at which you want the data to the FactoryWidget to be refreshed from the data source. If you do not select a refresh rate, the rate defaults to five seconds.
Display Value Format	There is a separate Display Format for the Value and the Goal. First click the ####### for the format you wish to change. The Change Value Format dialog will appear. From the drop-down menu, select the decimal format you want the FactoryWidget to recognize and use for your data values. The format you select displays under **Preview**. You can choose to enable or disable Trim Trailing Zeros. Click OK to accept the settings. The Display Format on the Data Source tab should now show the new format setting.
Goal Setpoint	Indicate what kind of goal setpoint you are using by selecting **Server Tag** or **Manual**. Then enter the appropriate goal setpoint. If using a server tag, the setpoint will be a setpoint tagname. If using a manual goal setpoint, the value may be positive or negative.
Display Goal	This checkbox is checked by default. You can click to remove the check if you do not want to show the goal setpoint when the FactoryWidget is running. When you remove the check in this box, the unit of measure also does not display if it is not defined.

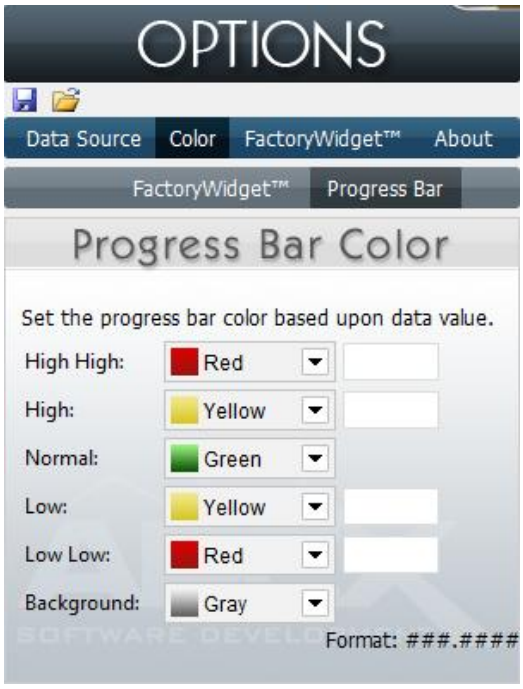
Color tab

> **FactoryWidget™**
> **Progress Bar**

Use the color tab to set the body and text color of the FactoryWidget, as well as set the value limits, and the progress bar color when the value exceeds or drops below the specified values.

FactoryWidget™ Color	
FactoryWidget™ Color	From the drop-down menu, select the color you would like the FactoryWidget to display. This is a static color and will not change once selected. If you do not select a color, black defaults.
Text Color	Click inside the text color box to display the color-picker. Select the color you would like the text to display on the FactoryWidget. This is a static color and will not change once selected. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.

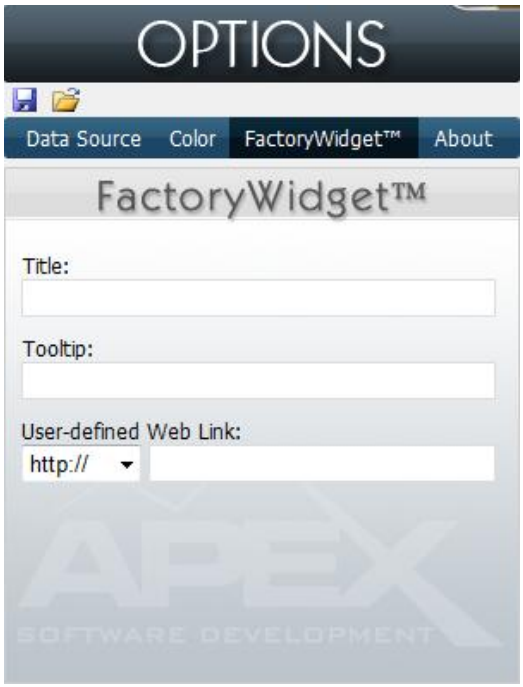
The display value format that you selected on the **Data Source** tab displays at the bottom of the **Color > Progress Bar** tab as a reminder to enter your value limits in the decimal format you selected. You can enter positive and negative value limits. The highest value must be in the **High High** limit field, the next highest value must be in the **High** limit field, and so on, with the lowest value being in the **Low Low** limit field.



Progress Bar Color	
High High	
Progress Bar	From the drop-down menu, select the color you would like the progress bar to display when it is at or below the "High High" level.
Limit	Enter a limit. When the data source value exceeds this threshold value, the progress bar changes color according to the settings you have indicated for this "High High" limit.
High	
Progress Bar	From the drop-down menu, select the color you would like the progress bar to display when it is at or below the "High" level.
Limit	Enter a limit. When the data source value exceeds this threshold value, the progress bar changes color according to the settings you have indicated for this "High" limit.
Normal	
Progress Bar	From the drop-down menu, select the color you would like the progress bar to display when it is at or below the "Normal" level.
Low	
Progress Bar	From the drop-down menu, select the color you would like the progress bar to display when it is at or below the "Low" level.
Limit	Enter a limit. When the data source value drops below this threshold value, the progress bar changes color according to the settings you have indicated for this "Low" limit.
Low Low	
Progress Bar	From the drop-down menu, select the color you would like the progress bar to display when it is at or below the "Low Low" level.
Limit	Enter a limit. When the data source value drops below this threshold value, the progress bar changes color according to the settings you have indicated for this "Low Low" limit.
Background	From the drop-down menu, select the color you would like to display as the background to the progress bar.

FactoryWidget™ tab

Use the FactoryWidget™ tab to give your widget a custom title and tooltip, and to link it to any Web site of your choice.



Title	Enter the title you have selected for this FactoryWidget. If you do not enter a title, "Goal" defaults.
Tooltip	Enter the tooltip you would like the FactoryWidget to display when you single-click the widget on your desktop. If you do not enter a tooltip, "Goal" defaults.
User-defined Web Link	Select the appropriate protocol from the drop-down list, and then enter a Web link to which you would like to link to from this Goal. Note that because you have selected the protocol in the drop-down, you do not have to enter that again as part of the Web address. When the FactoryWidget is running on your desktop, hover your mouse over the value versus goal just below the title and above the progress bar on the FactoryWidget face. When the cursor turns into the pointing finger ( ), click to go to the link you defined.

- Remember to click **OK** to save the configuration settings.

4.3.1.4 KPI

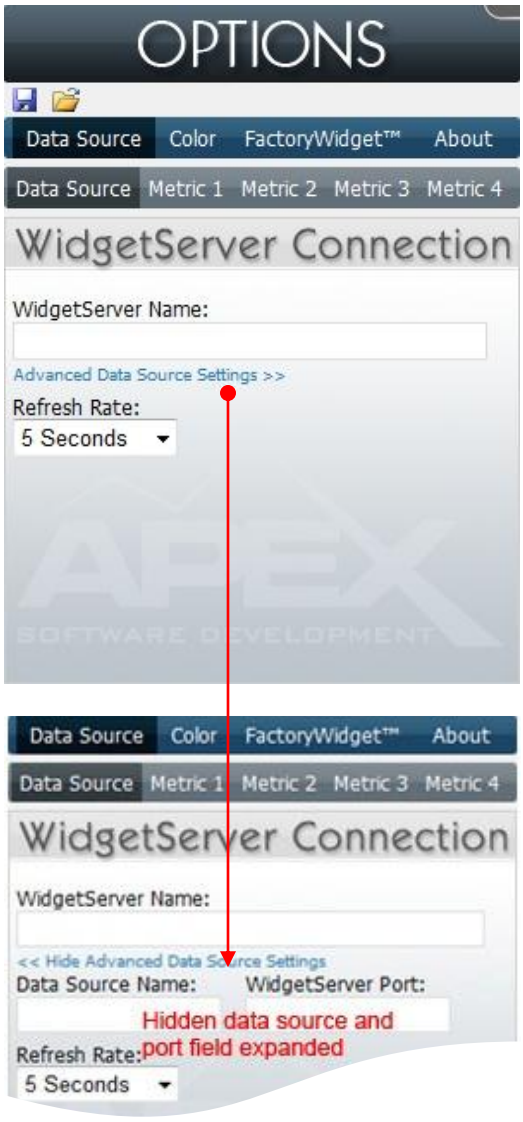
Use the following guidelines to configure the Data Source, Color, and FactoryWidget™ tabs of the KPI.

The KPI displays one master manufacturing metric, and up to three sub-metrics, in real time. It shows performance versus goals. The progress bars change color according to configurable threshold levels.

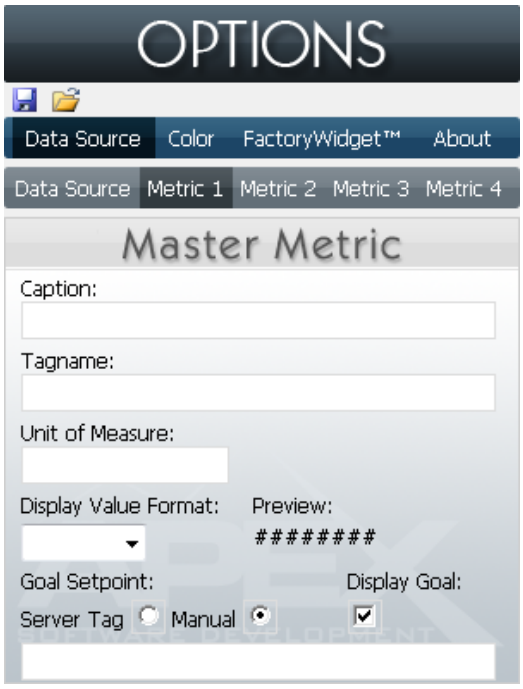
Data Source tab

> **Data Source**
> **Metric 1 (Master Metric)**
> **Metric 2**
> **Metric 3**
> **Metric 4**

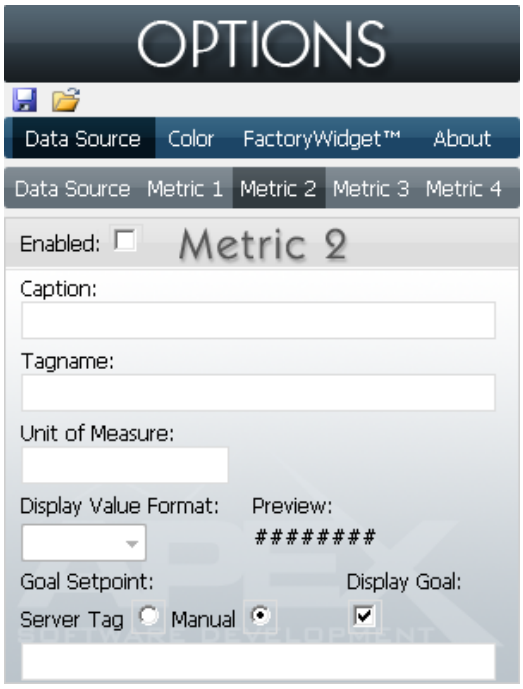
The KPI displays four different metrics (if you elect to use all of them), so there is a little bit more configuration required for this FactoryWidget.



Data Source	
WidgetServer Name	Enter your FactoryWidget server name. It must be an alphanumeric value. This is the Windows computer name of the machine hosting the WidgetServer. You may also enter the IP address of the server PC on which the WidgetServer is hosted. Double-check for misspellings if you receive an "invalid" error upon entry.
Advanced Data Source Settings • **Click link to show hidden fields.** • **Fields are hidden because it is not always necessary to fill these in if the data source and port are defined in the WidgetServer.**	
Data Source Name	If the data source you want to use for this FactoryWidget is the same data source that is selected as the default data source in the WidgetServer Configurator, then you do not need to enter it again. To connect to a data source other than the default, enter that data source name here, as it appears in the WidgetServer Configurator. Double-check for misspellings if you receive an "invalid" error upon entry.
WidgetServer Port	This is the TCP/IP port number on which the WidgetServer is listening. The default is 4700. You should only change the port number here if you have changed the default on the WidgetServer.
Refresh Rate	From the drop-down menu, select the rate at which you want the data to the FactoryWidget to be refreshed from the data source. If you do not select a refresh rate, the rate defaults to five seconds.



Metric 1 (Master Metric)	
Caption	Enter a description, acronym, or legend to describe what this metric is showing.
Tagname	Enter your tagname. It must be an alphanumeric value. If you created an Alias for your tags in the WidgetServer Configurator, you can enter that here. Note that the Alias as entered in the WidgetServer Configurator is case-sensitive. Double-check for misspellings if you receive an "invalid" error upon entry.
Unit of Measure	Enter any unit of measure you require for the data you are tracking (EUs, units, %, etc.).
Display Value Format	From the drop-down menu, select the decimal format you want the FactoryWidget to recognize and use for your data values for this metric. The format you select displays under **Preview**.
Goal Setpoint	Indicate what kind of goal setpoint you are using by selecting **Server Tag** or **Manual**. Then enter the appropriate goal setpoint. If using a server tag, the setpoint will be a setpoint tagname. If using a manual goal setpoint, the value may be positive or negative. Double-check for misspellings if you receive an "invalid" error upon entry.
Display Goal	This checkbox is checked by default. You can click to remove the check if you do not want to show the goal setpoint when the FactoryWidget is running. When you remove the check in this box, the unit of measure also does not display if it is not defined.



Metric 2	
Enabled	Check Enabled if you are using this metric. If you do not enable this metric, you cannot enter data in this window and the progress bar associated with this metric does not display on the FactoryWidget.
Caption	Enter a description, acronym, or legend to describe what this metric is showing.
Tagname	Enter your tagname. It must be an alphanumeric value. If you created an Alias for your tags in the WidgetServer Configurator, you can enter that here. Note that the Alias as entered in the WidgetServer Configurator is case-sensitive. Double-check for misspellings if you receive an "invalid" error upon entry.
Unit of Measure	Enter any unit of measure you require for the data you are tracking (EUs, units, %, etc.).
Display Value Format	From the drop-down menu, select the decimal format you want the FactoryWidget to recognize and use for your data values for this metric. The format you select displays under **Preview**.
Goal Setpoint	Indicate what kind of goal setpoint you are using by selecting **Server Tag** or **Manual**. Then enter the appropriate goal setpoint. If using a server tag, the setpoint will be a setpoint tagname. If using a manual goal setpoint, the value may be positive or negative. Double-check for misspellings if you receive an "invalid" error upon entry.
Display Goal	This checkbox is checked by default. You can click to remove the check if you do not want to show the goal setpoint when the FactoryWidget is running. When you remove the check in this box, the unit of measure also does not display if it is not defined.

- If you elect to use Metrics 3 and 4, use the same steps to configure those metrics as for Metric 2.

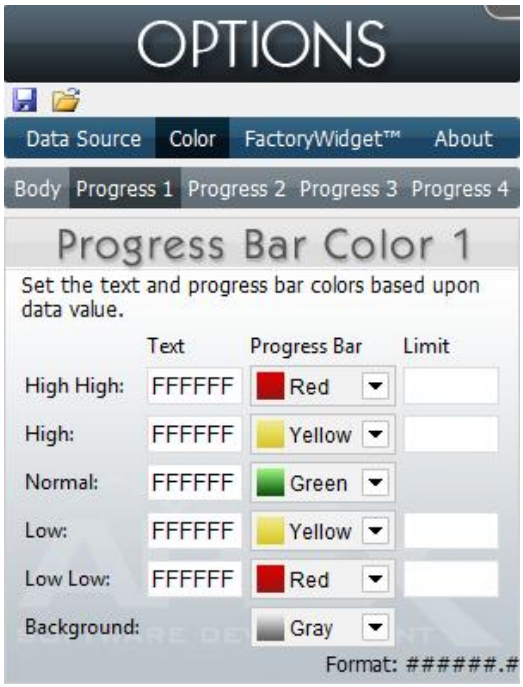
Color tab

- **> Body**
- **> Progress 1**
- **> Progress 2**
- **> Progress 3**
- **> Progress 4**

For each of the four metrics (if all are used) configured in the **Data Source > Metric *X*** windows, there is a corresponding progress bar to configure as well. Use this tab to set the value limits and the color the progress bar should be when the value exceeds or drops below the specified value.

Body	
FactoryWidget™ Color	From the drop-down menu, select the color you would like the FactoryWidget to display. This is a static color and will not change once selected. If you do not select a color, black defaults.
Text Color	Click inside the text color box to display the color-picker. Select the color you would like the text to display on the FactoryWidget. This is a static color and will not change once selected. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.

The display value format that you selected on each **Data Source > Metric** tab(s) display(s) at the bottom of the **Color > Progress** tab(s) as a reminder to enter your value limits in the decimal format you selected for that metric. You can enter positive and negative value limits. The highest value must be in the **High High** limit field, the next highest value must be in the **High** limit field, and so on, with the lowest value being in the **Low Low** limit field.



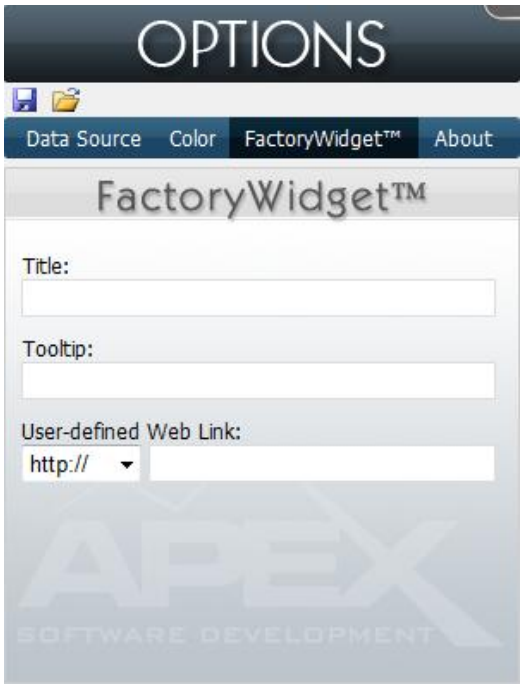
Progress 1	
High High	
Text	Click inside the text color box to display the color-picker. Select the color of text you would like to display on the progress bar when it exceeds the "High High" level. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.
Progress Bar	From the drop-down menu, select the color you would like the progress bar to display when it exceeds the "High High" level.
Limit	Enter a limit. When the data source value exceeds this threshold value, the progress bar changes colors according to the settings you have indicated for this "High High" limit.
High	
Text	Click inside the text color box to display the color-picker. Select the color of text you would like to display on the progress bar when it exceeds the "High" level. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.
Progress Bar	From the drop-down menu, select the color you would like the progress bar to display when it exceeds the "High" level.
Limit	Enter a limit. When the data source value exceeds this threshold value, the progress bar changes colors according to the settings you have indicated for this "High" limit.
Normal	
Text	Click inside the text color box to display the color-picker. Select the color of text you would like to display on the progress bar when it is the "Normal" level. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.
Progress Bar	From the drop-down menu, select the color you would like the progress bar to display when it is the "Normal" level.

Low	
Text	Click inside the text color box to display the color-picker. Select the color of text you would like to display on the progress bar when it drops below the "Low" level. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.
Progress Bar	From the drop-down menu, select the color you would like the progress bar to display when it drops below the "Low" level.
Limit	Enter a limit. When the data source value drops below this threshold value, the progress bar changes colors according to the settings you have indicated for this "Low" limit.
Low Low	
Text	Click inside the text color box to display the color-picker. Select the color of text you would like to display on the progress bar when it drops below the "Low Low" level. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.
Progress Bar	From the drop-down menu, select the color you would like the progress bar to display when it drops below the "Low Low" level.
Limit	Enter a limit. When the data source value drops below this threshold value, the progress bar changes colors according to the settings you have indicated for this "Low Low" limit.
Background	From the drop-down menu, select the color you would like to display as the background to the progress bar.

- If you elect to use Metrics 2, 3 and 4, use the same steps to configure those metrics and progress bars as for Metric 1.

FactoryWidget™ tab

Use the FactoryWidget™ tab to give your widget a custom title and tooltip, and to link it to any Web site of your choice.



Title	Enter the title you have selected for this FactoryWidget. If you do not enter a title, "KPI" defaults.
Tooltip	Enter the tooltip you would like the FactoryWidget to display when you single-click the widget on your desktop. If you do not enter a tooltip, "KPI" defaults.
User-defined Web Link	Select the appropriate protocol from the drop-down list, and then enter a Web link to which you would like to link to from this KPI. Note that because you have selected the protocol in the drop-down, you do not have to enter that again as part of the Web address. When the FactoryWidget is running on your desktop, hover your mouse over any of the progress bars on the FactoryWidget face. When the cursor turns into the pointing finger (), click to go to the link you defined.

- Remember to click **OK** to save the configuration settings.

4.3.1.5 Readerboard

Use the following guidelines to configure the Data Source, Color, and FactoryWidget™ tabs of the Readerboard.

The Readerboard displays manufacturing and process text messages in real time. It changes color and/or blinks according to configurable priorities. (The text messages seen at left are examples of the rotating text displayed on a Readerboard.)

Readerboard uses a script instruction from a control system, HMI or PLC software to display dynamic data values in a fixed text message. For example, the following is a script from Wonderware InTouch HMI software:

```
MessageTagName = "Current plant OEE is " + TEXT(KPI_OEE, "#") + "%";
```

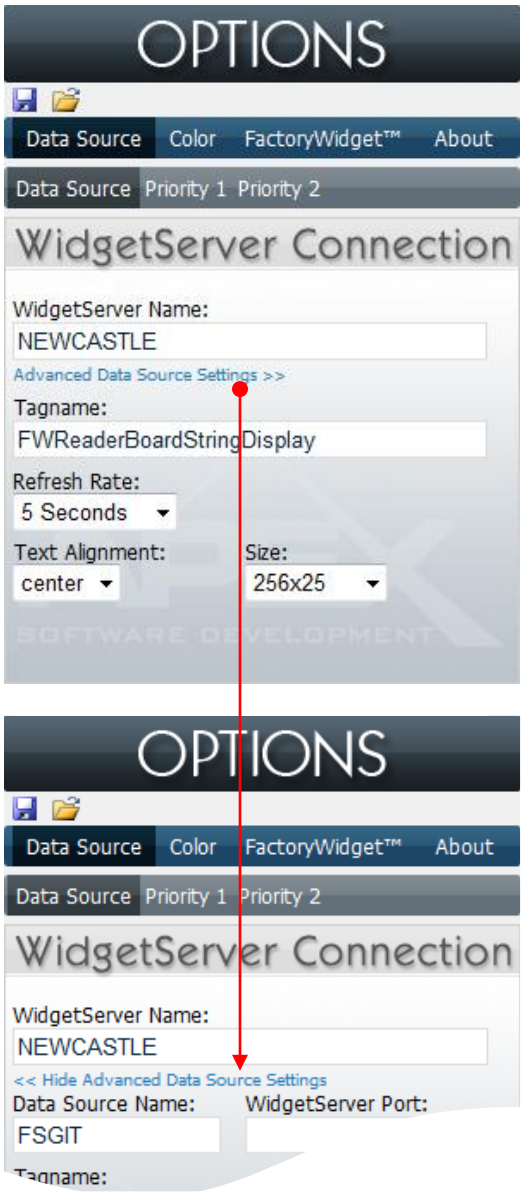
- **MessageTagName** is the name of a message tag defined in InTouch.
- **KPI_OEE** is an analog tag also defined in InTouch that contains the calculated value of overall equipment effectiveness (OEE).
- This script displays the fixed text ("Current plant OEE is " and "%"), converts the numerical value of KPI_OEE to text, displays it in integer format, concatenates it to the fixed text message.
- The value of KPI_OEE updates dynamically and is embedded in the fixed text message.

By using the **MessageTagName** as the **tagname** in the **Data Source** tab when configuring Readerboard, the FactoryWidget™ displays "Current plant OEE is 95%" with the OEE value updating when the value is updated in InTouch.

Data Source tab

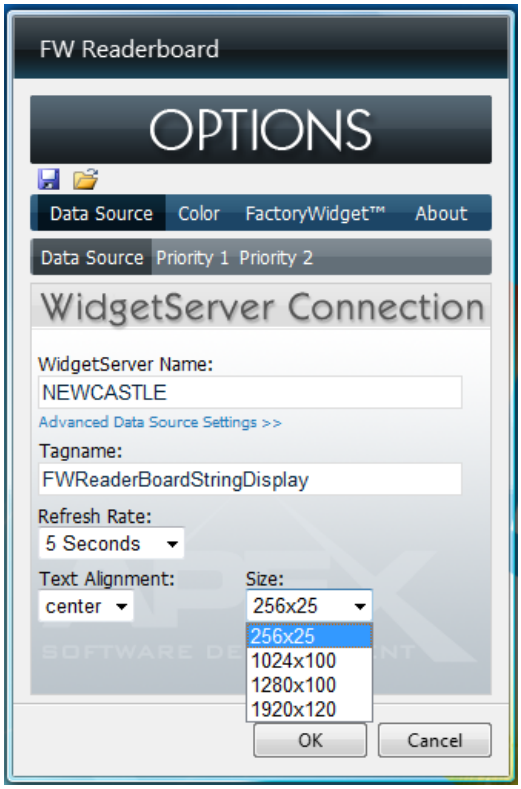
> **Data Source**
> **Priority 1**
> **Priority 2**

The Readerboard displays a "normal" state and two priority states, Priority 1 and Priority 2. The normal state is required while the priority states are optional.



Data Source	
WidgetServer Name	Enter your FactoryWidget server name. It must be an alphanumeric value. This is the Windows computer name of the machine hosting the WidgetServer. You may also enter the IP address of the server PC on which the WidgetServer is hosted. Double-check for misspellings if you receive an "invalid" error upon entry.
Advanced Data Source Settings • **Click link to show hidden fields.** • **Fields are hidden because it is not always necessary to fill these in if the data source and port are defined in the WidgetServer.**	
Data Source Name	If the data source you want to use for this FactoryWidget is the same data source that is selected as the default data source in the WidgetServer Configurator, then you do not need to enter it again. To connect to a data source other than the default, enter that data source name here, as it appears in the WidgetServer Configurator. Double-check for misspellings if you receive an "invalid" error upon entry.
WidgetServer Port	This is the TCP/IP port number on which the WidgetServer is listening. The default is 4700. You should only change the port number here if you have changed the default on the WidgetServer.
Tagname	Enter your tagname. It must be an alphanumeric value. If you created an Alias for your tags in the WidgetServer Configurator, you can enter that here. Note that the Alias as entered in the WidgetServer Configurator is case-sensitive. Double-check for misspellings if you receive an "invalid" error upon entry. → ***Note**: Readerboard can display analog and discrete values if such tagnames are*

	entered here, but the values are given no context. Therefore, the string tagname is best-suited and recommended.



Refresh Rate	From the drop-down menu, select the rate at which you want the data to the FactoryWidget to be refreshed from the data source. If you do not select a refresh rate, the rate defaults to five seconds.
Text Alignment	From the drop-down menu, select how the text will align on the face of the FactoryWidget – left, center or right.
Size	From the drop-down menu, select how large you want the FactoryWidget to display on the screen – 256x25, 1024x100, 1280x100 or 1920x120.

The "normal" state was defined in **Data Source > Data Source** tab; enable and define the optional priority states in the **Data Source > Priority *X*** tabs. If both priority levels are enabled, Priority 1 supersedes Priority 2.

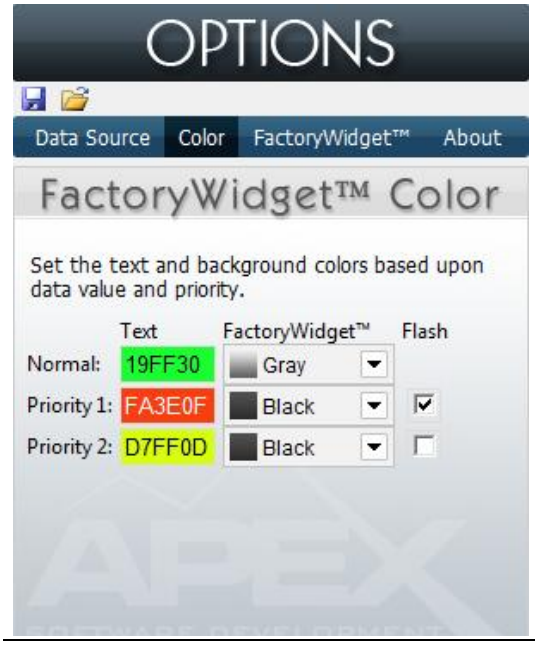
Priority 1	
Enabled	Click the checkbox to enable this priority level for use.

Flag	Enter the flag tagname as defined in your data source. It is a discrete (on/off) tag.

Priority 2	
Enabled	Click the checkbox to enable this priority level for use.
Flag	Enter the flag tagname as defined in your data source. It is a discrete (on/off) tag.

Color tab

Use the color tab to set the body and text color of the FactoryWidget that will display on the face of the FactoryWidget™ for the normal, Priority 1 and Priority 2 states. You can also make the text flash for either or both priority levels.



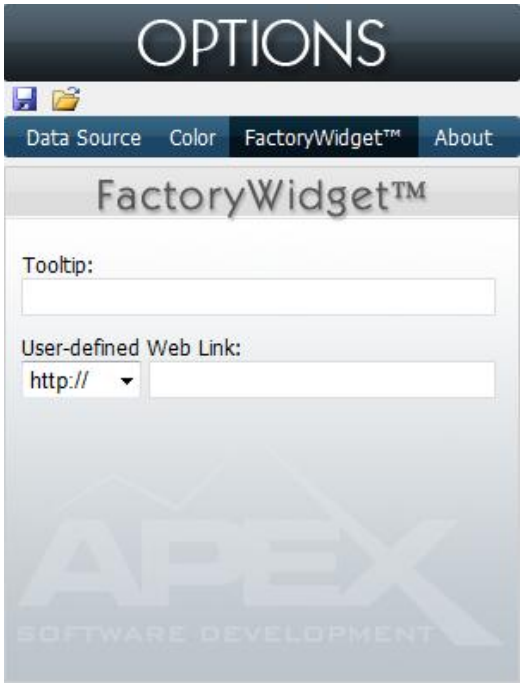
Normal	
Text	Click inside the text color box to display the color-picker. Select the color you would like the text to display on the FactoryWidget. This is a static color and will not change once selected.
FactoryWidget	From the drop-down menu, select the color you would like the body to display when it's in the normal range.
Priority 1	
Text	Click inside the text color box to display the color-picker. Select the color you would like the text to display on the FactoryWidget. This is a static color and will not change once selected.
FactoryWidget	From the drop-down menu, select the color you would like the body to display when it reaches the Priority 1 range.

	Flash	Click the checkbox if you want the text to flash when this priority level has been reached.

	Priority 2	
	Text	Click inside the text color box to display the color-picker. Select the color you would like the text to display on the FactoryWidget. This is a static color and will not change once selected.
	FactoryWidget	From the drop-down menu, select the color you would like the body to display when it reaches the Priority 2 range.
	Flash	Click the checkbox if you want the text to flash when this priority level has been reached.

FactoryWidget™ tab

Use the FactoryWidget™ tab to give your widget a custom title and tooltip, and to link it to any Web site of your choice.



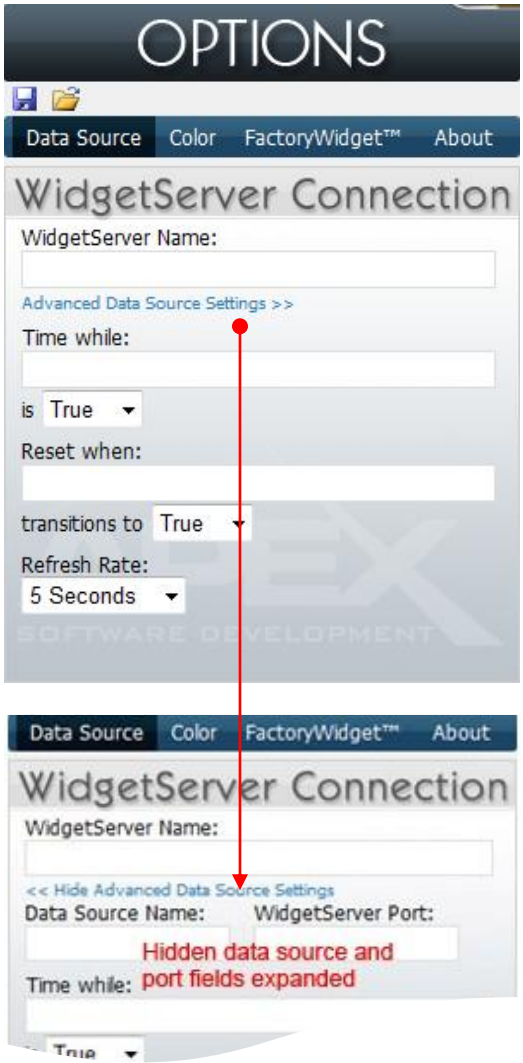
Tooltip	Enter the tooltip you would like the FactoryWidget to display when you single-click the widget on your desktop. If you do not enter a tooltip, "Readerboard" defaults.
User-defined Web Link	Select the appropriate protocol from the drop-down list, and then enter a Web link to which you would like to link to from this Timer. Note that because you have selected the protocol in the drop-down, you do not have to enter that again as part of the Web address. When the FactoryWidget is running on your desktop, hover your mouse over the elapsed time display on the FactoryWidget face. When the cursor turns into the pointing finger ( ), click to go to the link you defined.

4.3.1.6 Timer

Use the following guidelines to configure the Data Source, Color, and FactoryWidget™ tabs of the Timer.

The Timer displays total elapsed time of manufacturing or process steps. Timing starts, stops, resumes, and resets based on state changes of discrete events.

Data Source tab



WidgetServer Name	Enter your FactoryWidget server name. It must be an alphanumeric value. This is the Windows computer name of the machine hosting the WidgetServer. You may also enter the IP address of the server PC on which the WidgetServer is hosted. Double-check for misspellings if you receive an "invalid" error upon entry.
Advanced Data Source Settings • **Click link to show hidden fields.** • **Fields are hidden because it is not always necessary to fill these in if the data source and port are defined in the WidgetServer.**	
Data Source Name	If the data source you want to use for this FactoryWidget is the same data source that is selected as the default data source in the WidgetServer Configurator, then you do not need to enter it again. To connect to a data source other than the default, enter that data source name here, as it appears in the WidgetServer Configurator. Double-check for misspellings if you receive an "invalid" error upon entry.
WidgetServer Port	This is the TCP/IP port number on which the WidgetServer is listening. The default is 4700. You should only change the port number here if you have changed the default on the WidgetServer.
Time while / is	Enter your tagname (up to 64 characters). It must be an alphanumeric value. If you created an Alias for your tags in the WidgetServer Configurator, you can enter that here. Note that the Alias as entered in the WidgetServer Configurator is case-sensitive.

	Select **True** from the drop-down to the right of the **Time while** field. This indicates that you want the FactoryWidget to time the period when the data associated with this tagname is running (true). Or conversely, select **False** to time when the data associated with the tagname is stopped (false). Double-check for misspellings if you receive an "invalid" error upon entry.
Reset when / transitions to	Enter tagname (up to 64 characters). It must be an alphanumeric value. If you created an Alias for your tags in the WidgetServer Configurator, you can enter that here. Note that the Alias as entered in the WidgetServer Configurator is case-sensitive. Select **True** from the drop-down to the right of the **Reset when** field. This indicates that you want the FactoryWidget to reset the timer when the data associated with this tagname transitions from stopped (false) to running (true). Or conversely, select **False** to reset the timer when the data associated with the tagname transitions from running (true) to stopped (false). This parameter is optional. Double-check for misspellings if you receive an "invalid" error upon entry.
Refresh Rate	From the drop-down menu, select the rate at which you want the data to the FactoryWidget to be refreshed from the data source. If you do not select a refresh rate, the rate defaults to five seconds.

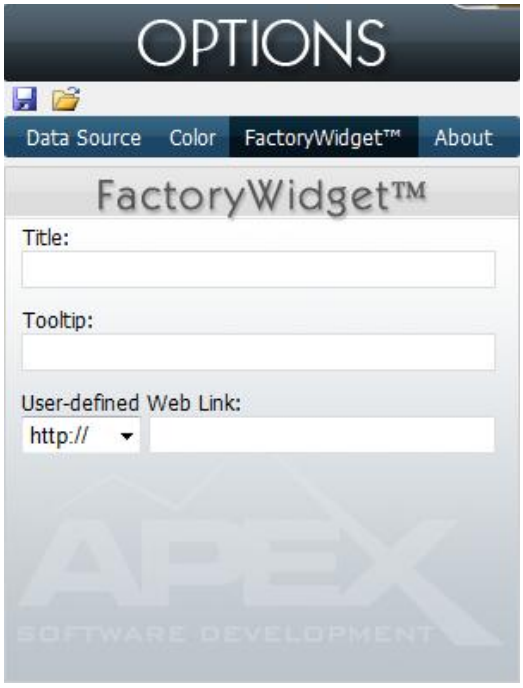
Color tab

Use the color tab to set the body and text color of the FactoryWidget.

FactoryWidget™ Color	From the drop-down menu, select the color you would like the FactoryWidget to display. This is a static color and will not change once selected. If you do not select a color, green defaults.
Title Text Color	Click inside the text color box to display the color-picker. Select the color you would like the text to display on the FactoryWidget. This is a static color and will not change once selected. Once you have selected a color, it displays in the text box. If you do not select a color, white defaults.

FactoryWidget™ tab

Use the FactoryWidget™ tab to give your widget a custom title and tooltip, and to link it to any Web site of your choice.



Title	Enter the title you have selected for this FactoryWidget. If you do not enter a title, "Timer" defaults.
Tooltip	Enter the tooltip you would like the FactoryWidget to display when you single-click the widget on your desktop. If you do not enter a tooltip, "Timer" defaults.
User-defined Web Link	Select the appropriate protocol from the drop-down list, and then enter a Web link to which you would like to link to from this Timer. Note that because you have selected the protocol in the drop-down, you do not have to enter that again as part of the Web address. When the FactoryWidget is running on your desktop, hover your mouse over the elapsed time display on the FactoryWidget face. When the cursor turns into the pointing finger ( ), click to go to the link you defined.

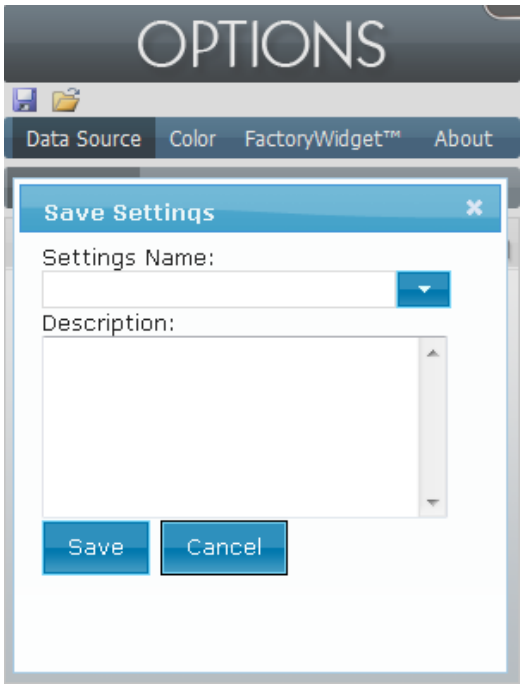
4.3.2 Saving and Loading Settings

With the Save and Load task bar, you can save your FactoryWidgets' configuration settings in the WidgetServer Configurator.

Figure 54: Save and Load taskbar in FactoryWidget's Options window

By saving them, they can be made available for other users, they are stored for future use if you elect to switch to another configuration and later want to change back, or they can simply serve as a backup in case you inadvertently change your configuration settings. The Save Settings feature is also very useful when upgrading to new versions of FactoryWidgets; you can save your current configuration, upgrade to the new version, and then load the configuration into the new version without having to manually enter configuration settings again. There is no limit to the number of configurations you can save.

To *save* your current configuration settings:

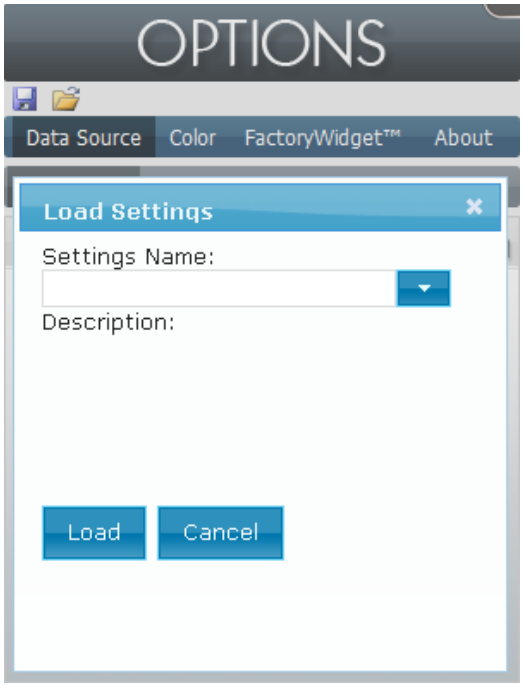


1. Right-click your FactoryWidget and select **Options** to open the **Options** window.
2. Click **Save Settings** ( ) and enter a name in the **Settings Name** field under which you are going to save your current FactoryWidget configuration settings.
3. Enter an optional description and then click **Save**. The **Settings Name** field cannot be blank; the configuration will not save without a name.

→ ***Note**: After selecting the settings name and optional description, be sure to click **Save** in the **Save Settings** pop-up window to save your settings. If you click the Option window's OK button, you will lose your Save settings.*

If you have previously saved a configuration that you wish to overwrite, you may select the name of the existing configuration from the **Settings Name** drop-down list, and click **Save**. (The drop-down list displays all previously saved configurations for the FactoryWidget type you are configuring.) However, you cannot overwrite a global configuration; you can only load a global configuration, then edit and save it under a new name.

To *load* existing configuration settings:



1. Right-click your FactoryWidget and select **Options** to open the **Options** window.

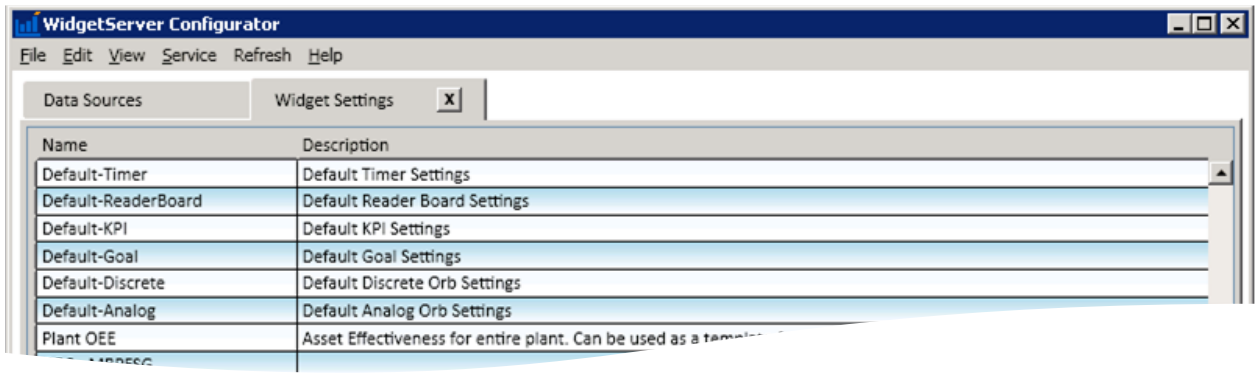
2. Click **Load Settings** ( ) and select the name of the configuration you want to load from the **Settings Name** drop-down list. You can select any existing global configuration created by anyone or any configuration you previously created. (The global designation is made in the **Widget Settings** tab in the WidgetServer Configurator.)

3. Click **Load**. The **Settings Name** field cannot be blank; the configuration will not load without a name.

→ ***Note**: After selecting the settings name and optional description, be sure to click **Load** in the **Load Settings** pop-up window to load your settings. If you click the Option window's OK button, you will lose your Load settings.*

After you save a configuration, you may view this and other saved configurations in the Widget Settings tab in the WidgetServer Configurator on the server.

Figure 55: Widget Settings tab



- Open the WidgetServer Configurator, click the **View** menu, and select **Widget Settings**.
- If you want to make your configuration available to others, click the **Global** checkbox. A global configuration is one that others can load, but cannot overwrite.
- To edit a configuration name or description in the Widget Settings tab, double-click inside the field to edit.
- To delete a configuration, select the configuration and press **Delete** or right-click the configuration and click **Delete**.

5 TROUBLESHOOTING

If see errors with the FactoryWidgets, review the error messages below for guidance about how to resolve them. If you are having issues connecting to valid data sources, you can test your data source connection and your tag names using the WidgetServer Configurator. Contact Support if you cannot resolve errors or issues.

5.1 FactoryWidget Error Messages

You may see any of the following error messages if, when configuring the FactoryWidgets, some data was not entered, or invalid data was entered. Review the messages below for more explanation about what they indicate and how to resolve them.

Error Message	Description/Remedy
BAD DATA QUALITY	The data stream from the data source is not available. This means the input/output (I/O) server providing data to the control system is experiencing an issue. Check the status of that server.
DATA SOURCE NOT CONFIGURED	There is no data source name entered in the FactoryWidget™ **Options** window. Enter a valid data source in the **Data Source Name** field.
Flash cannot be configured for this Priority unless it is enabled. Go to Priority tab to enable.	The priority level for which you are trying enable flashing text in not enabled. Go to the tab for that priority and click **Enabled**.
INVALID DATA SOURCE NAME OR DATA SOURCE NOT AVAILABLE	The data source name entered in the FactoryWidget™ **Options** window is invalid (misspelled or does not exist), or the data source is not currently available. Check the entry in the **Data Source Name** field.
INVALID PRIORITY 1 FLAG TAGNAME	The flag tagname entered in the FactoryWidget™ **Options** window in the **Priority 1** tab is invalid (misspelled or does not exist). Check the entry in your **Flag** field.
INVALID PRIORITY 2 FLAG TAGNAME	The flag tagname entered in the FactoryWidget™ **Options** window in the **Priority 2** tab is invalid (misspelled or does not exist). Check the entry in your **Flag** field.
INVALID SETPOINT	If you have the setpoint type set to **Manual** in the FactoryWidget™ **Options** window, the setpoint goal entry field is invalid (misspelled or does not exist). Check the entry in your setpoint entry field.
INVALID SETPOINT TAGNAME	If you have the setpoint type set to **Server Tag** in the FactoryWidget™ **Options** window, the setpoint tagname entered is invalid (misspelled or does not exist). Check the entry in your **Setpoint Tagname** field.
INVALID TAGNAME	The tagname entered in the FactoryWidget™ **Options** window is invalid (misspelled or does not exist). Check the entry in your **Tagname** field.
INVALID TIMESTAMP	The UTC time (time zone adjusted) clocks on the client computer and the computer where WidgetServer is running are out of synch by more than five minutes. Set up the computers to synchronize their clocks with a common time source. If this is not possible, contact technical support for details on an alternative workaround solution.
INVALID WIDGETSERVER NAME OR WIDGETSERVER NOT CONFIGURED	The WidgetServer name entered in the FactoryWidget™ **Options** window is invalid (misspelled or does not exist), or there is no name entered. Check your entry in **WidgetServer Name** field.
NO CONNECTIVITY TO DATA	The desktop computer has lost its network connection. Check for a loose or disconnected network cable.

Error Message	Description/Remedy
NO LICENSES AVAILABLE	There is not a license available for the FactoryWidget™ you are trying to configure on the desktop. Go to the **Options** menu in the WidgetServer Configurator and assign an open license or purchase an additional license.
No widget settings found. Please check your server name and settings name, and try again.	You are trying to load a configuration to your FactoryWidget™ that does not exist. If you select an existing configuration to load, you must click **Load** to first load that configuration with its existing name; then, click **Save Settings**, change the **Settings Name** to something else, and click **Save**. If you select a configuration to load, and then modify the name before clicking **Load**, you will receive this error.
PRIORITY 1 FLAG NOT CONFIGURED	The **Priority 1** tab for the Readerboard FactoryWidget™ has been enabled, but there is no flag entered in the FactoryWidget's **Options** window. Enter a valid data source in the **Flag** field.
PRIORITY 2 FLAG NOT CONFIGURED	The Priority 2 tab for the Readerboard FactoryWidget™ has been enabled, but there is no flag entered in the FactoryWidget's **Options** window. Enter a valid data source in the **Flag** field.
SETPOINT NOT CONFIGURED	If you have the setpoint type set to **Manual** in the FactoryWidget **Options** window, there is no setpoint goal entered. Enter a valid setpoint in the setpoint entry field.
TAGNAME NOT CONFIGURED	There is no tagname entered in the FactoryWidget™ **Options** window. Enter a valid tagname in the **Tagname** field.
USER NOT FOUND	You may see this error message when the WidgetServer is configured for "Seat Licensing" mode, and the user is not in the database (that is, they have not yet been added to the WidgetServer Configurator's **User Licenses** tab). Users are automatically added to the database if you are using "Concurrent Licensing" mode, but they are not automatically added when using "Seat Licensing" mode. Make sure the user is added to the **User Licenses** tab in the WidgetServer Configurator.
WIDGET SERVER AND FACTORYWIDGET VERSION MISMATCH	The WidgetServer version number does not match the FactoryWidget™ version number. You can see the version number of the WidgetServer by checking the status bar in the WidgetServer Configurator, and you can see the FactoryWidget™ version number by going to the **About** tab in its **Options** menu. Make sure you have the same newest version of both the WidgetServer and FactoryWidget™.

5.2 Testing Connections in WidgetServer Configurator

If you are having issues connecting to a valid data source, you can test your data source and WidgetServer using the WidgetServer Configurator.

- Open the WidgetServer Configurator.

5.2.1 Testing Data Sources

1. To test the data source, enter the following information.
   a. For a Historian-type data source, go to the **View** > **Data Source** > **Historian** tab and enter the following information in a row:

      - Data source name
      - Server
      - Username
      - User password

   b. For an OPC-type data source, go to the **View** > **Data Source** > **OPC** tab and enter the following information in a row:

      - Data source name
      - Computer name
      - OPC server

2. Click **Test Data Source**. A new tab opens to display the results of the test.

   If a successful connection is made, "success" message in green displays, indicating the data entered is valid. If a "failure" message in red displays, the data entered in one or more of the four fields you configured is invalid, the data source is not available, or network configuration issues prevent you from connecting to the data source. Check your data and your spelling and try again.

5.2.2 Testing Tags

1. To test a tag, you must have already tested and verified your data source in the **View > Data Source > Historian** or **OPC** tabs. If you have not already done so, test your data source now before proceeding.

2. Now, in the same row where you verified the data source, click **Test Tag**. A new tab opens to test a tag name.

3. Enter a tag name and click **Test** or press **Enter**.

   If the tag name is valid, the parameters associated with that tag or a "Valid Tag" message display. If the tag name is not valid, a "Tag Not Found" message displays. An invalid tag name is one that is either not in use with the data source, or the tag name contains a typo. Double-check the spelling of the tag name and try again.

5.3 Contacting Support

When you contacting Software Toolbox for support, having the following information ready:

- Customer and order information
- Product serial number (provided at the time of purchase)
- The serial number of your FactoryWidgets license, which is listed in the WidgetServer.

As much of the following information that you can provide is also very helpful and helps technicians to help you resolve issues more quickly:

- Nature of the problem (e.g., installation, configuration, functionality of a FactoryWidget)
- Version of WidgetServer, which is listed in WidgetServer Configurator status bar in the lower right. It can also be found by clicking **Help > About** in the WidgetServer Configurator.
- Operating System on which you are running the WidgetServer.
- Version of the affected FactoryWidget(s), which is found by opening the FactoryWidget **Options** window, and clicking **About**.
- Operating system of the client system(s) if issue involves a FactoryWidget on a client computer.
- Description of the symptom in the form of "actual behavior" vs. "expected behavior," error messages you are seeing, and if possible, steps to replicate the issue.
- Email address to which you have access and a phone number where you can be reached.

5.3.1 Software Toolbox Support

- **Phone**

  1-704-849-2773

  Normal business hours: Monday to Friday, 8 AM to 5 PM, Eastern Std. Time (GMT -5)

- **Email**

  Please submit an inquiry via our support portal at http://support.softwaretoolbox.com. This insures fastest handling as all of our staff monitors this for any type of inquiry.

- **Web**

  Technical Support: http://support.softwaretoolbox.com

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