



Client Connectivity Guide

KEPServerEX[®] with Wonderware[®] System Platform: SuiteLink DI Object

October, 2017
Ref. 1.004

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1. Overview

This guide demonstrates how to establish a connection between the KEPServerEX® data server and Wonderware® System Platform using the SuiteLink DI Object, through SuiteLink protocol.

- **Note:** For this tutorial, InTouch version 2014R2SP1 and KEPServerEX version 6.3 are installed locally (on the same PC).

Wonderware InTouch is able to act as a SuiteLink client to get data from a SuiteLink Server. SuiteLink protocol was developed by Wonderware and uses a TCP/IP based communication protocol. SuiteLink places a timestamp and quality indicator on all data values delivered to VTQ-aware peers, such as KEPServerEX.

KEPServerEX can be configured as a SuiteLink server, and provide data to one or more SuiteLink Clients.

1.1 Installing Wonderware Common Components

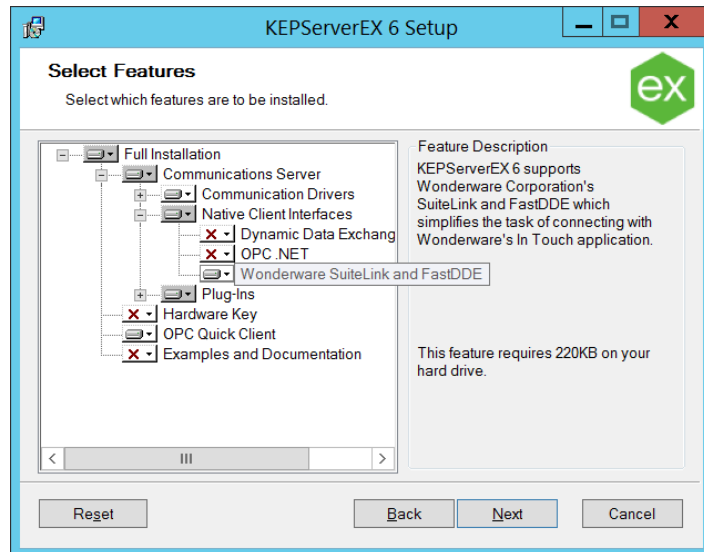
The Wonderware Common Components must be installed on the same computer as KEPServerEX. Wonderware Common Components are automatically installed with any Wonderware software product, so these instructions are only applicable if Wonderware software is not installed.

If you plan to use Kepware products on the same PC as Wonderware products, please install Wonderware products first. If you plan to use KEPServerEX on a PC without Wonderware software to serve data to a remote PC that runs Wonderware, then install Wonderware Common Components on the PC with KEPServerEX. The instructions are as follows:

1. Open the **Wonderware Device Integration** installation DVD.
 2. Locate and double-click "setup.exe" file under *DIFolders\WW\SuiteLink\2.0 SP3\SuiteLink* to run the installation program.
 3. To confirm installation, verify the Common Components are installed under *<Root Drive>\Program Files (x86)\Common Files\ArchestrA*.
- **Note:** If KEPServerEX and Wonderware InTouch will run in different computers, please, make sure **SuiteLink port 5413** is open to enable communication.

1.2 Installing KEPServerEX

1. Double-click the KEPServerEX icon.
2. Select **Run** or **Open** to start the install. If there is an active content warning, click "Yes" to continue.
3. In the installation welcome screen, click **Next**.
4. In End-User License Agreement, click **I accept the terms in the License Agreement**, then click **Next**.
5. Continue through the installation, changing the settings for your environment as needed.
6. In the Vertical Suite Selection, choose your vertical, Typical, or Custom options.
7. In Select Features, expand the tree to view and select the drivers to install.
8. Under Communications Server, expand **Native Client Interfaces**.
9. Open the **Wonderware SuiteLink and FastDDE** drop-down menu and select **Will be installed on local hard drive**. Click **Next**.
10. Click **Install** to start the installation.



2. Preparing KEPServerEX for a FastDDE / SuiteLink Connection

Wonderware provides connectivity to third-party servers like KEPServerEX through FastDDE and SuiteLink. To create FastDDE and SuiteLink connections to KEPServerEX, follow and complete the instructions below before continuing with the tutorial:

- Configure the KEPServerEX application. Select the appropriate driver and settings or run the **Simulation Driver Demo** included with KEPServerEX. The Simulation Driver Demo project is used for all examples in this tutorial.
- Start KEPServerEX and load the Simulation Driver Demo project. Once the server project is loaded, open the Runtime menu on the main menu bar, and verify that the server project is connected.

2.1 Configuring FastDDE and SuiteLink

1. In the KEPServerEX User Interface, right-click **Project** and select **Properties**.

2. Select the **FastDDE/SuiteLink** tab.

Important: If the FastDDE/SuiteLink tab is not available, install the Wonderware Common Components on the same machine as KEPServerEX. The SuiteLink connections to the server cannot function without the components.

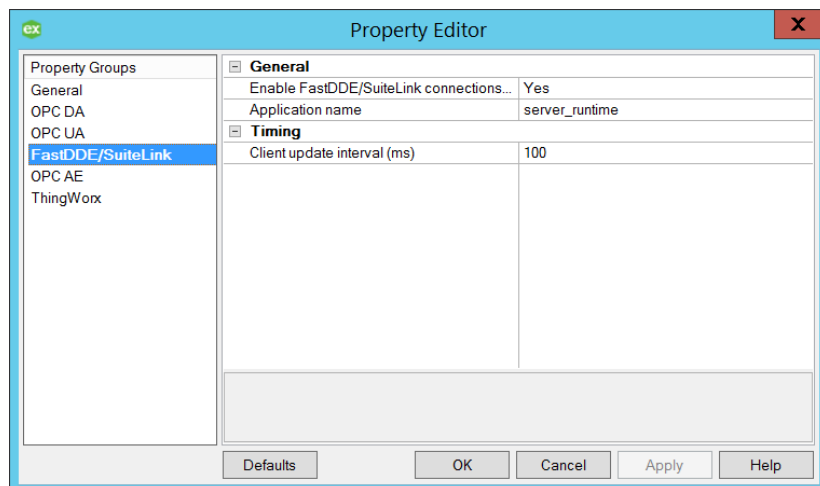
3. Verify that **Enable FastDDE/SuiteLink connections to the server** is checked.

● **Tip:** The Application Name can be changed, but this example uses the default "server_runtime" name.

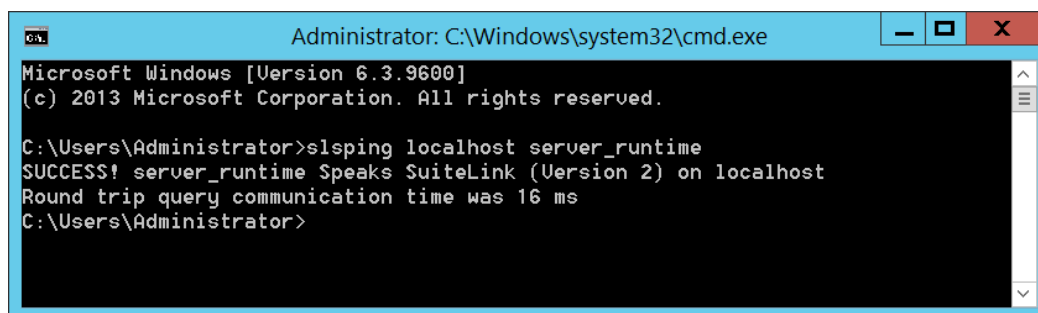
● **Note:** KEPServerEX Version 4 used the application name "servermain," which should not affect InTouch applications when upgrading KEPServerEX.

4. In **Timing**, change the client update rate if desired. The default setting is 100 milliseconds, and can be changed at any time.

5. Click **OK**.



To confirm that any SuiteLink client will be able to access KEPServerEX, run the following command in a MS-DOS window from the PC where Wonderware InTouch will run:



```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>slsping localhost server_runtime
SUCCESS! server_runtime Speaks SuiteLink (Version 2) on localhost
Round trip query communication time was 16 ms
C:\Users\Administrator>
```

● **Note:** If KEPServerEX is running on a different machine, substitute "localhost" by the name or IP address of the machine running KEPServerEX. If the connection is not successful, confirm that port 5413 is open on both machines.

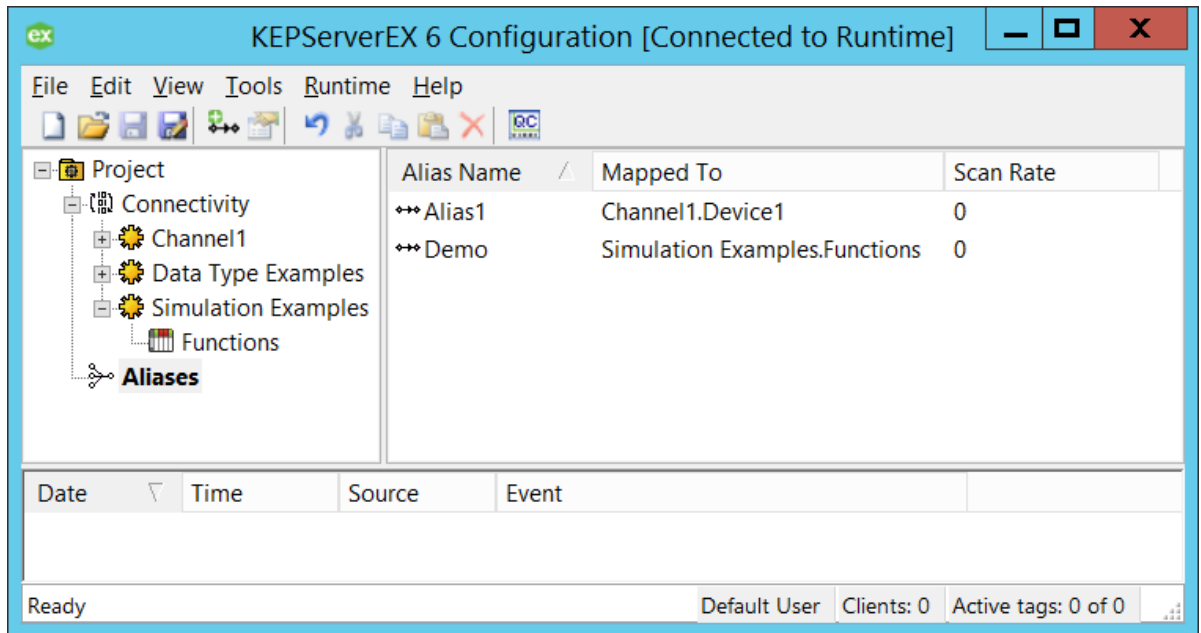
2.2 Creating Aliases for SuiteLink Topics

SuiteLink connections consist of three components: an application name, a topic, and an item. When connecting to KEPServerEX via SuiteLink, the application name can be configured in the server under Project properties. For this tutorial we used the default string: "server_runtime". The topic component can be specified by using server's Alias Map feature. The Alias Map has been designed to simplify the use of server data in DDE and SuiteLink client applications.

- For more information on topic references, refer to the "How Do I..." section in the KEPServerEX Help file.

To create an alias, follow the instructions below.

1. Open KEPServerEX and click **Aliases**.
 2. Right-click **Aliases** and select **New Alias**
 3. Map the string "Demo" to "Simulation Examples.Functions".
- **Tip:** To find the correct string to map to, click ... next to "map to" field.
4. Click **Close**.



Notes:

- The aliased strings referenced above come from the server project "Simulation Driver Demo."
- To change an existing alias, right-click the alias and select **Properties**.

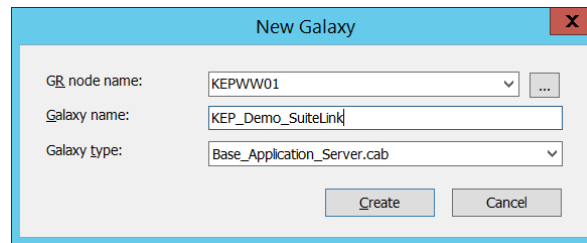
3. Creating a Wonderware Application Server project

Before creating Device Integration (DI) Objects of interest, the system platform must be configured. This requires creating a Galaxy, WinPlatform, AppEngine, and Area.

A Wonderware System Platform project using DDESuiteLink DI Object acts as the SuiteLink client to KEPServerEX.

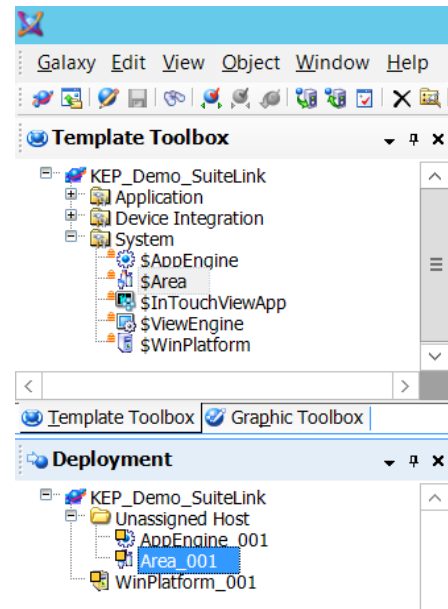
3.1 Creating a Galaxy

1. To start, click **Start | Programs | Wonderware | ArchestrA IDE**.
2. In Connect to Galaxy, click **New Galaxy...**
3. Enter the galaxy name.
4. For Galaxy Type, select **Base_Application_Server.cab** so that the new Galaxy has all the System Objects used in next steps
5. Click **Create**.



3.2 Creating System Objects

1. Once the New Galaxy is created, System Objects must be created. Expand the System folder that appears within the Template Toolbox pane, as shown:
2. Create the System Objects. This tutorial will use the default names for System Objects.
 - Right-click the **\$WinPlatform** and choose **New | Instance**. A Default name of WinPlatform_001 is created.
 - Right-click **\$AppEngine** and choose **New | Instance**. A Default name of AppEngine_001 is created.
 - Right-click **\$Area** and choose **New | Instance**. A Default name of Area_001 is created.



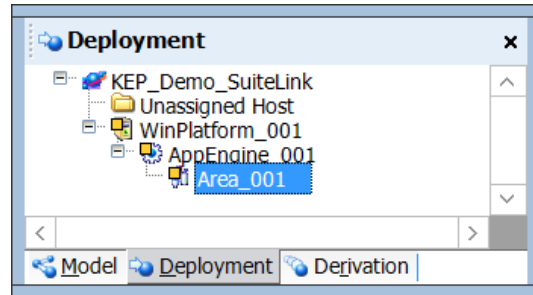
- **Note:** Consult the Wonderware documentation for more information on the role of each object.

3.3 Assigning System Objects

By Drag and Drop, users may now assign the AppEngine_001 to the WinPlatform_001 object and the Area_001 to the AppEngine_001.

Alternatively, users can:

1. Right-click AppEngine_001 and click **Assign To....** From the pop-up menu, select **WinPlatform_001**.
2. Right-click Area_001 and click **Assign To....** From the pop-up menu, select **Engine_001**.



- **Note:** Consult the Wonderware documentation for more information on the role of each object.

3.4 Creating a Device Integration Object

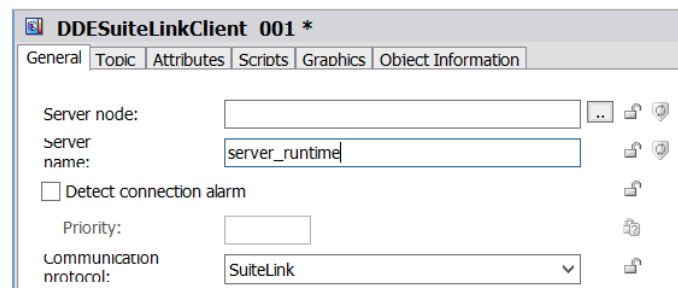
To create the DDESuiteLink Device Integration (DI) Object, follow these steps:

1. Expand the Device Integration folder under the Template Toolbox pane.
2. To create the DI objects, right-click **\$DDESuiteLinkClient** and select **New | Instance**.

- **Note:** Default names of DI objects are used in this tutorial.

3. The DDESuiteLinkClient DI object, DDESuiteLinkClient_001, appears in the Deployment view. Double-click the DDESuiteLinkClient_001 object under Unassigned Host to access the object properties.
4. Under the General tab, to the right of the Server node field, click Browse (...) to locate the domain and available computer nodes.

- **Note:** In Server Node field, users can write the name or IP address of the computer running KEPServerEX. In this tutorial, KEPServerEX is running in the local machine, so this field can be left blank.
- 5. In the Server name field, write "server_runtime" for the KEPServerEX Application name, as configured in section 2.1.

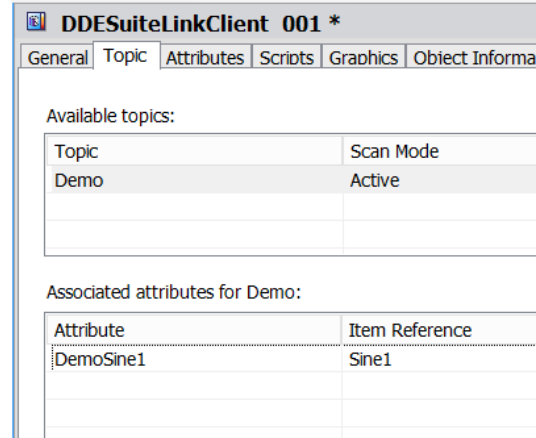


6. Click the Topic tab.
7. Click **Add (+)** in the grid table.
8. Enter "Demo" or the name of the alias created in section 2.2.

- **Note:** The topic is from "Simulation Examples Functions" project file. Multiple topics may be added using the syntax: `<Channelname>_<Device>_<TagGroup>` or aliases.

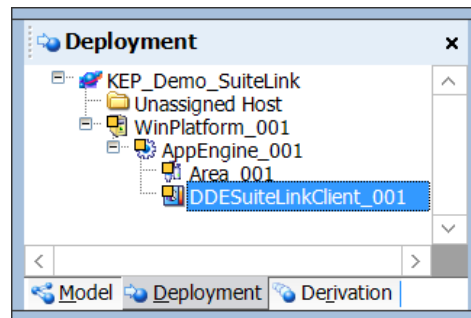
- **Note:** Users may add tag items to the attributes of a DI Object.

9. Double-click to add Associated attributes for topic.
10. Add an Attribute named "DemoSine1" with Item Reference as "Sine1" (a named tag within KEPServerEX).
11. Click **Save** icon to save the DI object.



3.5 Assigning Device Integration Objects to an Engine

1. In the Deployment View, right-click the DDESuiteLinkClient_001 icon located on Unassigned Host.
2. Click **Assign To....**
3. From the pop-up menu, select **AppEngine_001**.
4. Click **OK** to close.

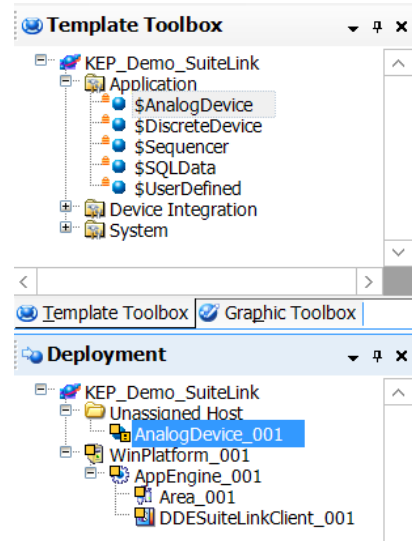


3.6 Creating Application Objects

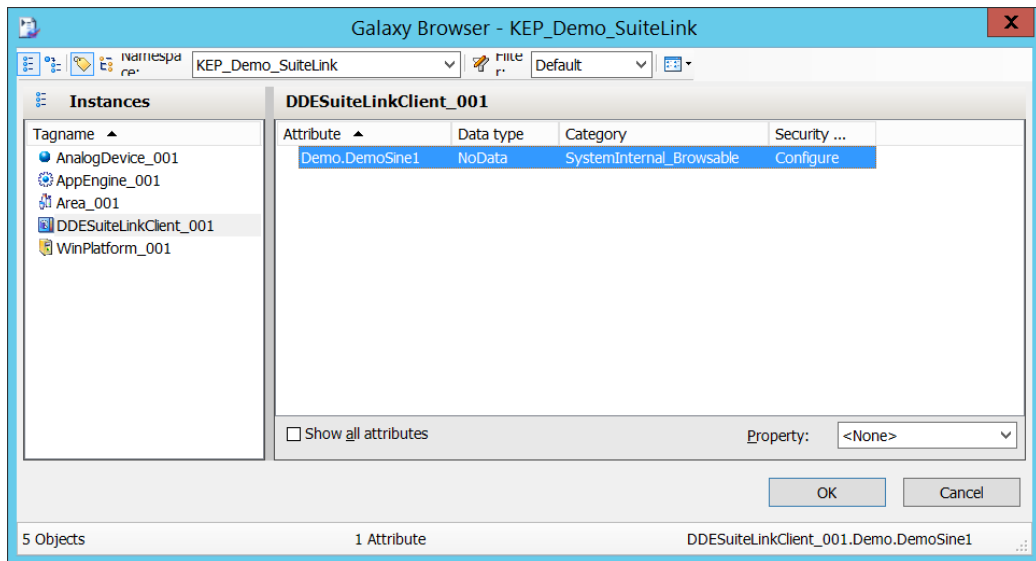
It is necessary to create an application object so that its properties can be bound to attributes in the DI Object.

Follow these steps:

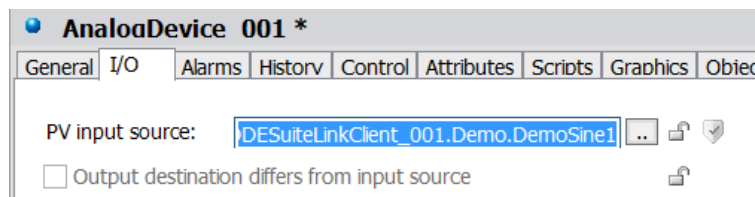
1. From the Template Toolbox, open the Application folder and select the **\$AnalogDevice** base template.
2. Right-click and select **New | Instance**.
3. Once the new instance is created, double-click it ("AnalogDevice_001") to open it.



4. Go to I/O tab and locate the PV input source field.
5. Click Browse (...) next to the PV Input Source field and browse to DDESuiteLink_001 attributes.
6. Select **Demo.DemoSine1**.



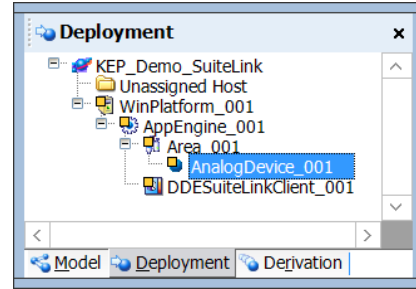
7. Click **OK**. This binds the PV attribute in AnalogDevice_001 to "Demo.DemoSine1".



3.7 Assigning Application Objects to an Area

To deploy any Application Object instance, it must first be assigned to an existing Area. Follow these steps:

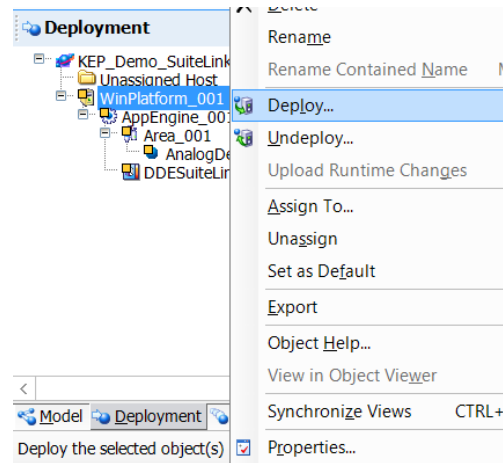
1. In the Deployment view, right-click the **AnalogDevice_001** icon located under Unassigned Host.
2. Select **Assign To...** from the pop-up menu.
3. Select **Area_001**.



4. Deploying Objects

To deploy the projects, follow these steps:

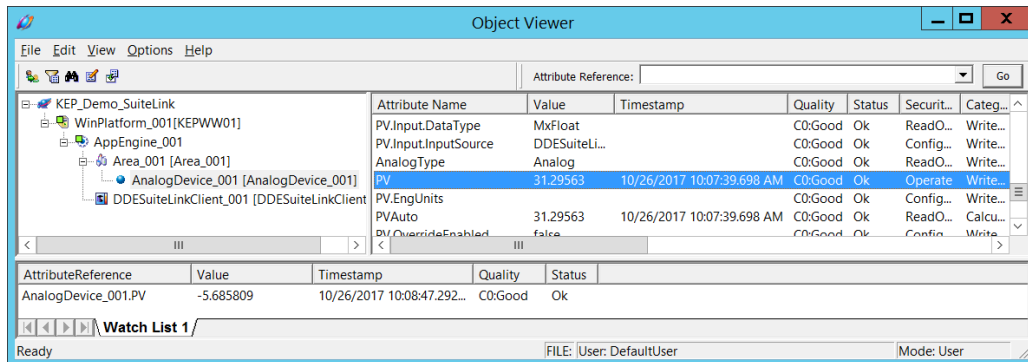
1. In the Deployment View, locate the **WinPlatform_001** object.
2. Right-click **WinPlatform_001** and choose **Deploy...**
3. In the Deploy window that appears, verify **Cascade Deploy** is enabled.
4. Click **OK**.



5. Viewing Active Data

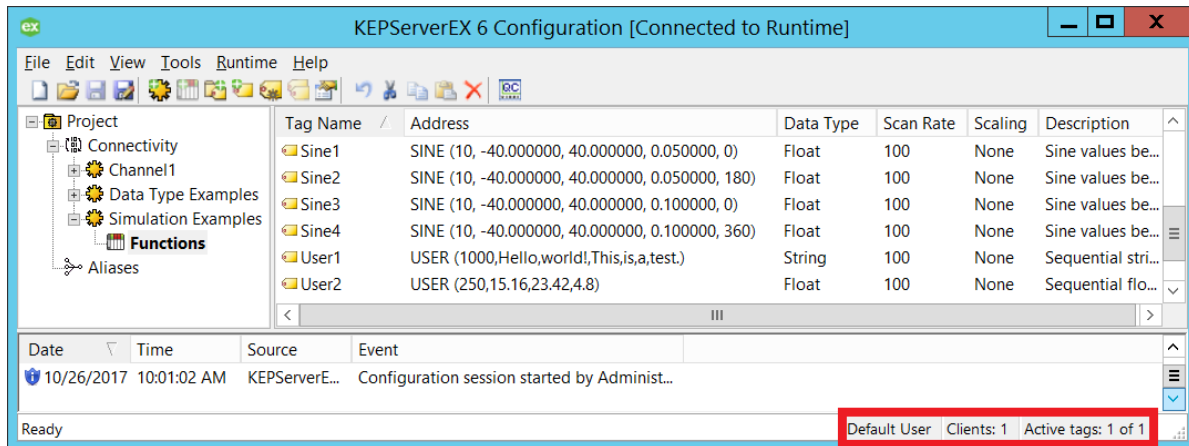
To view live data after the WinPlatform_001 is deployed, follow these steps:

1. Right-click the application object **AnalogDevice_001** and select **View in Object Viewer** to see the active data values.
2. To get live values, drag and drop "PV" attribute to the Watch List. You can add any attribute by drag and drop or right-clicking on the Attribute Name and selecting **Add to Watch** to trigger the active values to display.



6. Checking the Connection to the Server

To confirm that the Wonderware Galaxy is connected to the server, check the server Connection Status Bar (which should also display an active client and item) and any messages in the Event Log.



- For more information, please refer to the [Technical Support](#) webpage.