![kepware®]

Client Connectivity Guide

Kepware Server and Wonderware with OPC DA Protocol

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Ref. 1.005

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1. Overview

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

Wonderware System Platform can connect to Kepware Server using SuiteLink protocol (DDESuiteLink DI Object), OPC DA protocol (OPC DI Object) or OPC-UA protocol (activating a Wonderware ArchestrA Service inside the Galaxy). Please refer to the appropriate connectivity guide or documentation for more information on connecting Kepware Server with the other protocols.

⬤ **Note:** For this tutorial, InTouch version 2014R2SP1 and Kepware Server are installed locally (on the same PC).

⬤ **See Also:** This guide assumes Kepware Server is already installed. *For installation instructions, see the* Kepware Server Installation Guide*.*
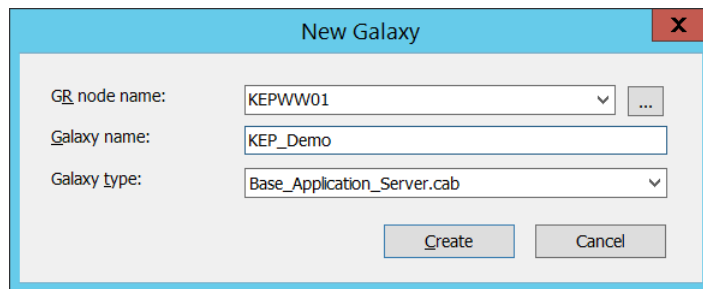
2. Creating a Wonderware Application Server Project

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 OPC DI Object acts as the OPC DA client to Kepware Server.
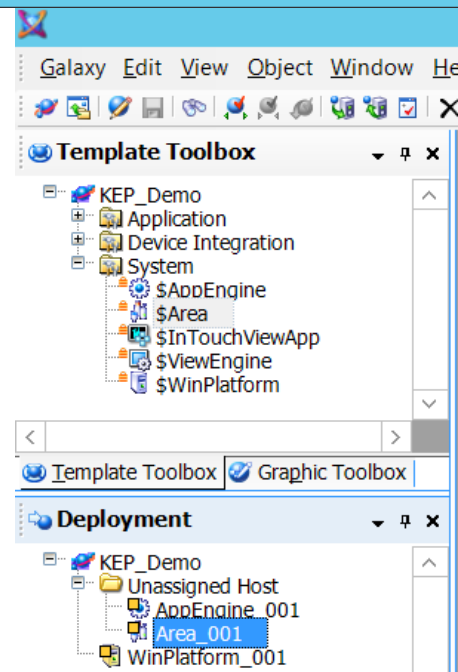
2.1 Creating a Galaxy

1. Click **Start | Programs | Wonderware | ArchestrA IDE**.

2. In the Connect to Galaxy window, click **New Galaxy…**

3. Enter the galaxy name.

4. In Galaxy Type, select "Base_Application_Server.cab" so the new Galaxy has all the System Objects for the next steps.

5. Click **Create**.

2.2 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.

2. Right-click **$WinPlatform** and choose **New | Instance**. The default name is WinPlatform_001.

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3. Right-click **$AppEngine** and choose **New | Instance**. The default name is AppEnginer_001.

4. Right-click **$Area** and choose **New | Instance**. The default name is Area_001.

● *Consult Wonderware documentation for more information on the role of each object.*
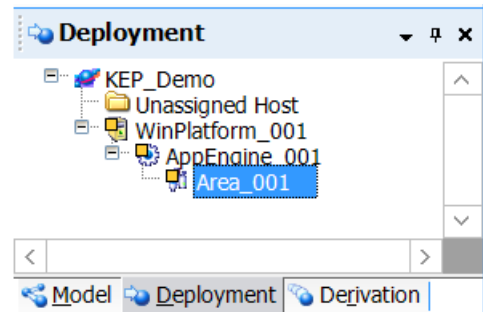
2.3 Assigning System Objects

Users can drag and drop to assign the AppEngine_001 to the WinPlatform_001 object and the Area_001 to the AppEngine_001.
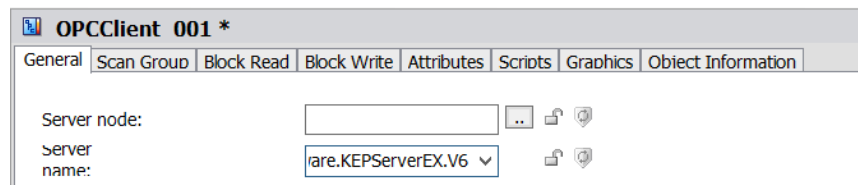

Alternatively, users can:

1. Right-click AppEngine_001 and choose **Assign To...**. Select **WinPlatform_001**.

2. Right-click Area_001 and choose **Assign To...**. Select **Engine_001**.

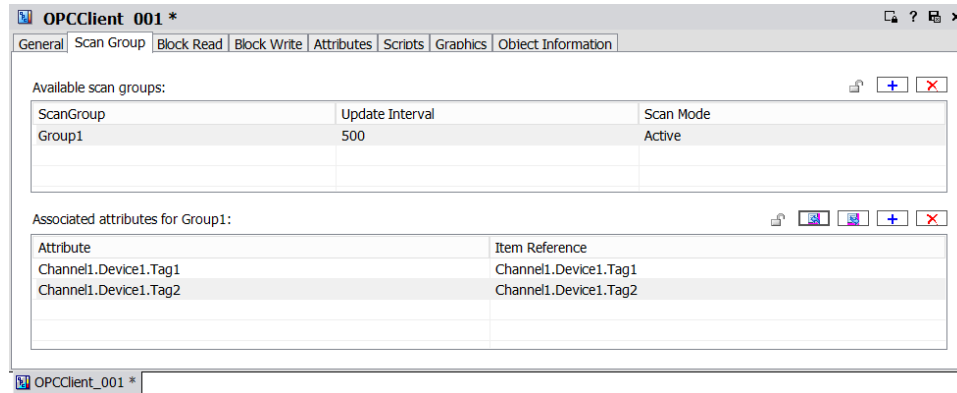● *Consult Wonderware documentation for more information on the role of each object.*

2.4 Creating a Device Integration (DI) Object

1. Expand the Device Integration folder in the Template Toolbox pane.

2. Right-click **$OPCClient** and choose **New | Instance**.

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

3. The OPCClient DI object, OPCClient_001, appears in the Deployment view. Double-click OPCClient_001 object under Unassigned Host to access the object properties.

4. On the General tab, click the Browse (**...**) button next to the Server node field 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 Kepware Server. In this tutorial, Kepware Server is running in the local machine, so this field can be left blank

5. Click the drop-down arrow in the Server name field to view a list of OPC DA Servers installed in the specified node. Select Kepware.Kepware Server.V7.

    ● **Note:**   If OPC DA Server is not in the drop-down list, there may be DCOM issues. Please contact Kepware Technical Support for assistance.
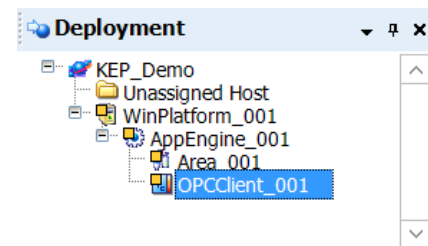
6. Access the Scan Group tab to create a new Scan Group. Click **Add** (**+**). Enter the following parameters:
   - ScanGroup: Group1
   - Update Interval: 500 (poll rate in milliseconds)
   - ScanMode: Active

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

7. Double-click Group1 to add Associated attributes.
8. In the Available Scan Groups grid table, click **Add** (**+**).
9. Click Browse (**...**) to locate and select the OPC Server.
10. Once the item(s) are selected and appear in the basket, click **Add** (**+**).

11. Click **Save (🖫)** to save and close the DI object.

2.5 Assigning Device Integration Objects to an Engine

1. In the Deployment View, right-click OPCClient_001 located on Unassigned Host.
2. Click **Assign To...** then choose **AppEngine_001**.
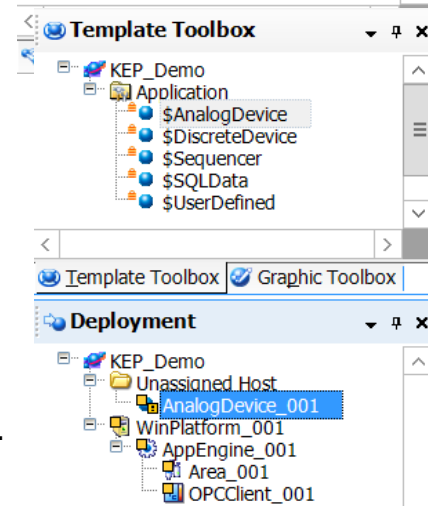3. Click **OK** to close.
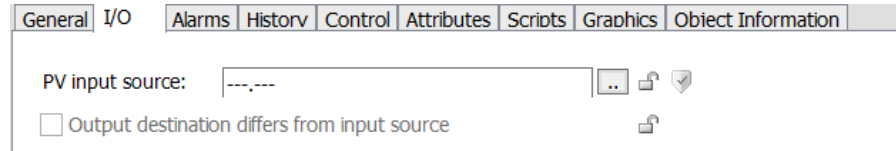

2.6 Creating Application Objects

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

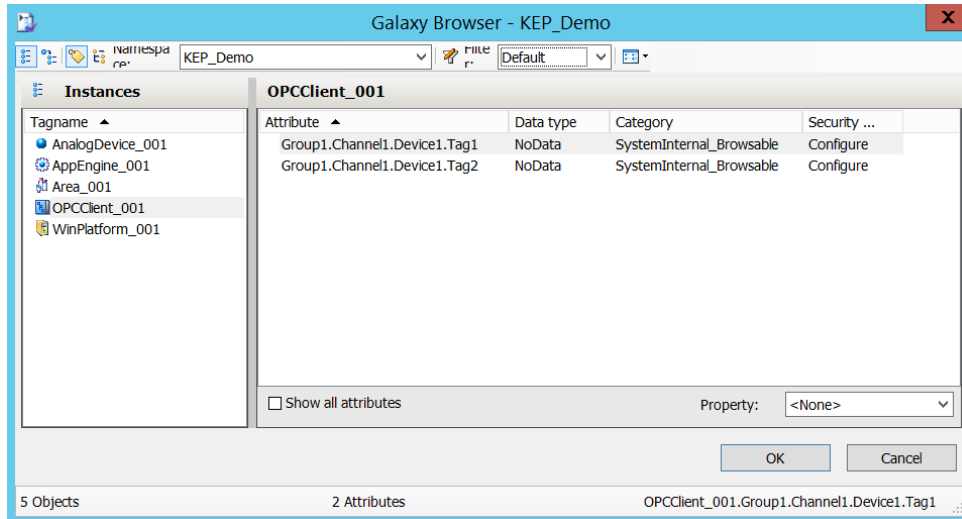Follow these steps to create Application Objects:

1. From the Template Toolbox, open the Application folder and right-click the **$AnalogDevice** base template. Select **New | Instance**.

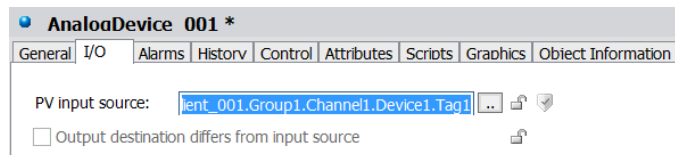2. Once the new instance is created ("AnalogDevice_001"), double-click to open it.

       3

3. Access the I/O tab and click the Browse (**...**) button next to the PV input source field. Select OPCClient_001 attributes.

4. Select **Group1.Channel1.Device1.Tag1** and click **OK**.

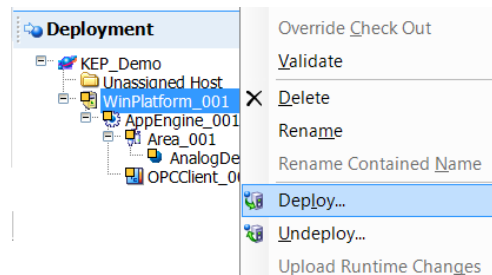5. Now the PV attribute in AnalogDevice_001 is bound to "Channel1_Device1.Area1_Tag1".

2.7 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 **AnalogDevice_001** under Unassigned Host.
2. Select **Assign To...** then select **Area_001**.
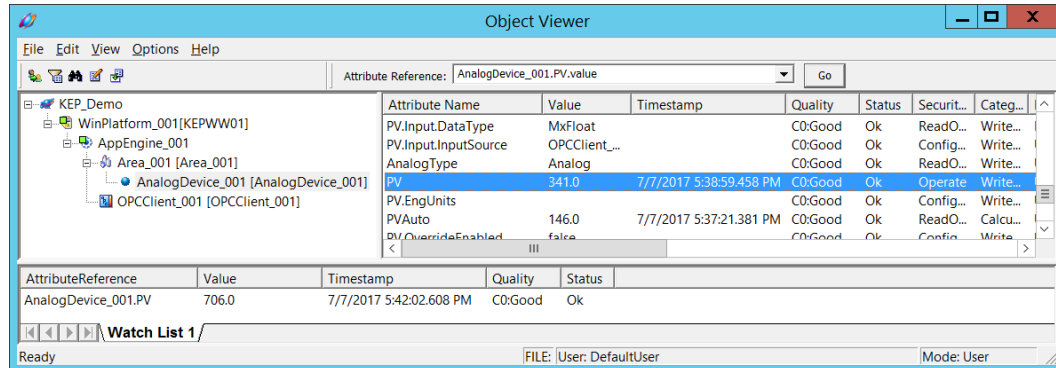
3. Deploying Objects

1. In the Deployment View, right-click **WinPlatform_001** and choose **Deploy...**.

2. In the Deploy window, verify **Cascade Deploy** is enabled.

3. Click **OK**.
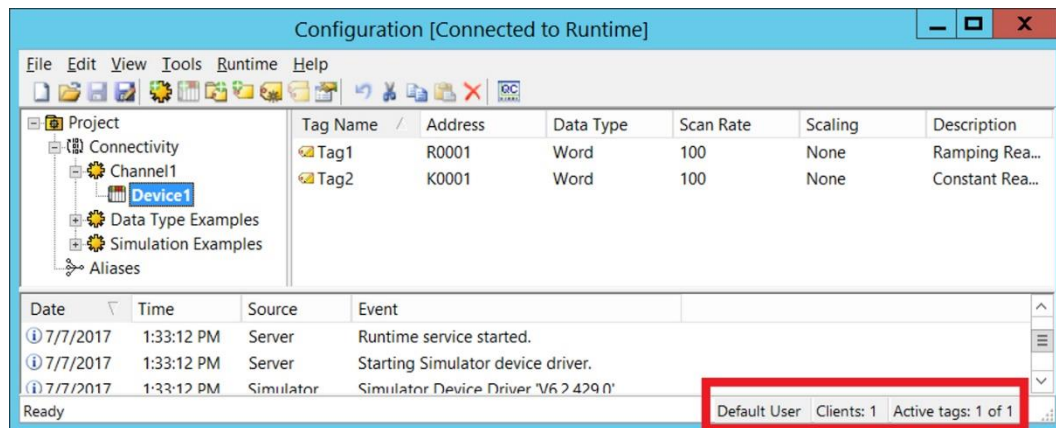
4. Viewing Active Data

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, either drag and drop "PV" attribute to the Watch List, or right-click an Attribute Name and select **Add to Watch**. Both actions trigger the active values to display.

5. Checking the Connection to the Server

To confirm the Wonderware Galaxy is connecting to the server, check the server Connection Status Bar (which should also display an active client and items) and the Event Log pane for any error messages.

🔹 *For more information or for technical support, refer to the Support section of* *www.ptc.com.*