



Kepware Technologies

KEPServerEX Client Connectivity Guide for Wonderware InTouch

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1. Overview

This guide will demonstrate how to establish a connection between the KEPServerEX data server and Wonderware InTouch.

Note: For this tutorial, InTouch version 10.0 has been installed locally with respect to KEPServerEX.

1.1 Installing Common Components

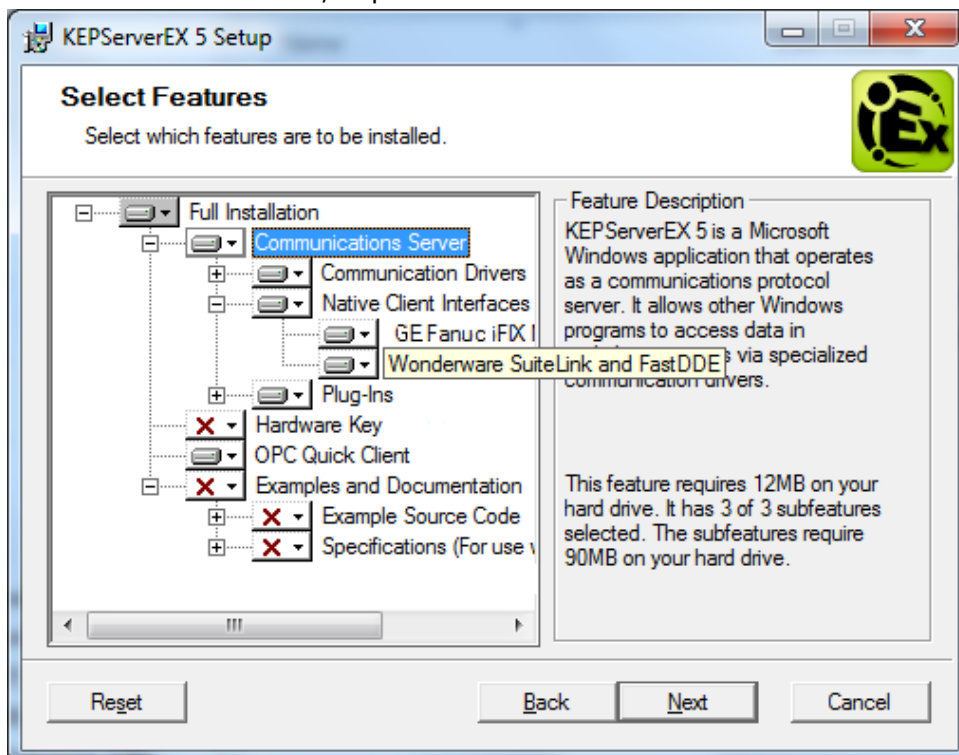
The Wonderware common components must be installed on the same computer as KEPServerEX. For more information, refer to the instructions below.

1. To start, open the **Wonderware FactorySuite I/O Server** installation CD. Then, run the "setup.exe" file located under *FS2K71\Common*.
2. Next, run the "setup.exe" file located under *FS2K71\IOServer\Common\Win32*.

Note: Although KEPServerEX works with all common components installed System Platform 2 and 3, the latest version is preferred. SuiteLink connections will not function unless the components are installed.

1.2 Installing KEPServerEX

1. To start, double-click on the KEPServerEX icon and select **Run** or **Open** to start the install. If an active content warning is displayed, click "Yes" to continue.
2. In the installation welcome screen, click **Next**.
3. In **End-User License Agreement**, click **I accept the terms in the License Agreement**. Then, click **Next**.
4. Continue through the installation, changing the settings as desired.
5. In **Select Features**, expand the driver tree in order to view and select the drivers desired for install. Then, expand **Native Client Interfaces**.



- Next, open the **Wonderware SuiteLink and FastDDE** drop-down menu and select **Will be installed on local hard drive**.
- Then, click **Next**.
- 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. For more information on creating FastDDE and SuiteLink connections to KEPServerEX, refer to the instructions below.

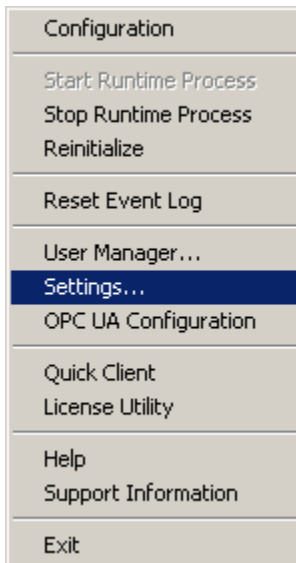
Users must complete the following before continuing with the tutorial:

- Configure the KEPServerEX application. Users may either select the appropriate driver and settings or run the **Simulation Driver Demo** that is included with KEPServerEX. The Simulation Driver Demo project will be used for all examples in the tutorial.
- Start KEPServerEX and load the Simulation Driver Demo project. Once the server project has been loaded, open the Runtime menu on the main menu bar and then verify that the server project has been connected.

2.1 Changing the Server to Interactive Mode

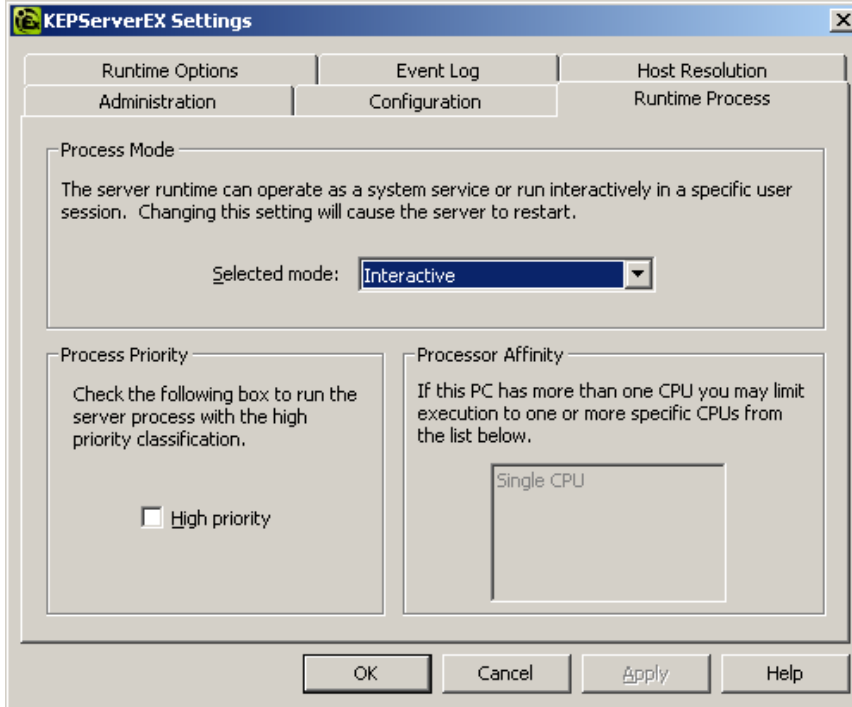
Although the server's default process mode is System Service, communications between InTouch and the server are much simpler with Interactive mode. For information on changing the process mode, refer to the instructions below.

- To start, right-click on the **Administration** menu and then select **Settings....**



- Next, open the **Runtime Process** tab and then locate **Process Mode**.

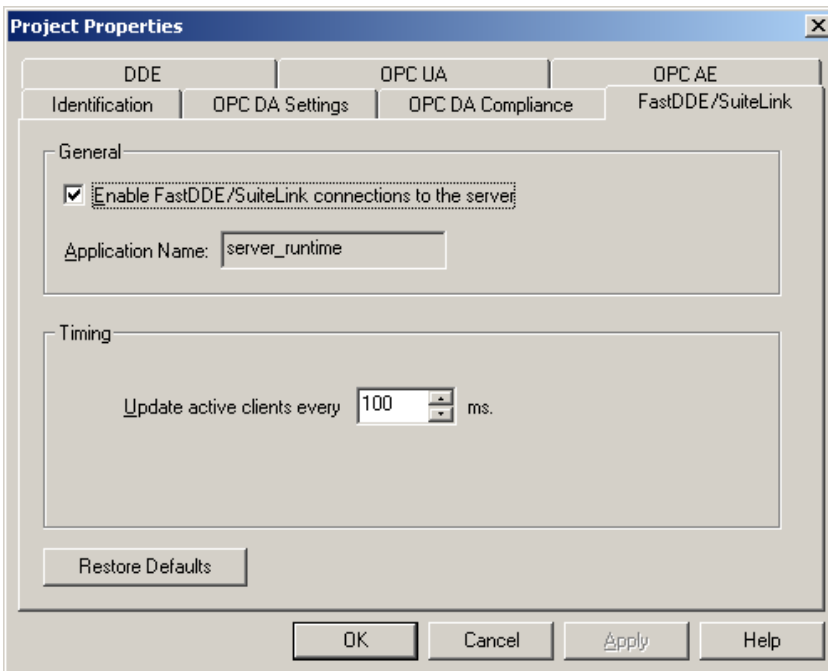
3. Use the **Selected Mode** drop-down menu to select **Interactive**.



4. Then, click **OK**.

2.2 Configuring FastDDE and SuiteLink Properties

1. In KEPServerEX, click **File | Project Properties**. If Wonderware is installed on the PC, the server will display a **FastDDE/SuiteLink** tab. Select this tab.



Important: If the FastDDE/SuiteLink tab is not visible, users must install the common components on the same machine as KEPServerEX. If the components are not installed, the SuiteLink connections to the server will not function. Instructions for installing the components from the Wonderware FactorySuite I/O Server installation CD are as follows:

- a. First, run the "setup.exe" file located in "FS2K71\Common\".
- b. Then, run the "setup.exe" located in "FS2K71\IOserver\Common\Win32".

Note: Although KEPServerEX V5 works with all common components installed with System Platform 2 and 3, the latest version is recommended.

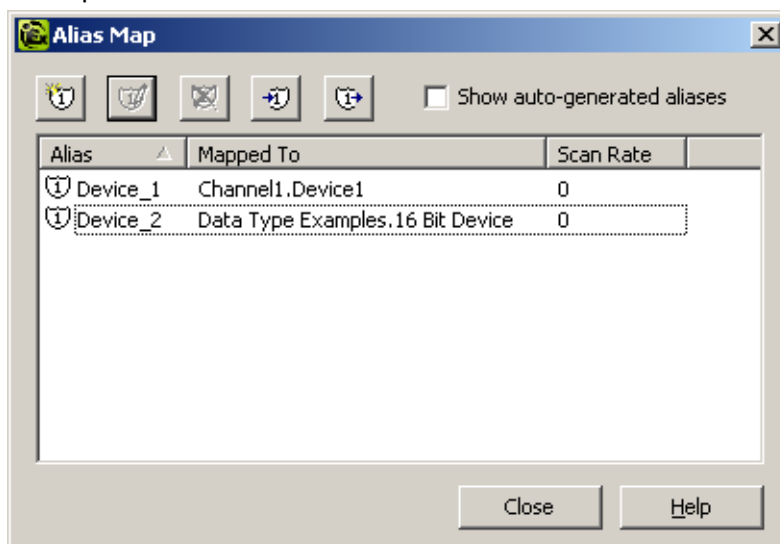
2. Next, verify that **Enable FastDDE/SuiteLink connections to the server** is checked.
3. In **Timing**, change the client update rate if desired, or leave it as its default setting of 100 milliseconds. This setting may be changed at any time.
4. Once finished, click **OK**.

2.3 Creating Aliases for DDE Topics

DDE connections consist of three components: an application name, a topic, and an item. When connecting to KEPServerEX via FastDDE or SuiteLink, the application name will always be "server_runtime". This name is defined automatically in the server and cannot be changed for FastDDE/SuiteLink connections. The topic component, however, can be specified by using the string "_ddedata" as a topic reference or by using the server's Alias Map feature. The Alias Map is preferred because it has been designed to simplify the use of server data in DDE client applications. For more information on creating an alias, refer to the instructions below.

Note: For more information on topic references, refer to the "How Do I..." section in the KEPServerEX help file.

1. To start, open KEPServerEX and then click **Edit | Alias Map**.
2. Click **New Alias**, and then map the string "Device_1" to "Channel1.Device1".
3. Next, create a second alias and map the string "Device_2" to "Data Type Examples.16 Bit Device".



Note 1: The aliased strings referenced above come from the server project "Simulation Driver Demo."

Note 2: To change an existing alias, click **Edit Alias**.

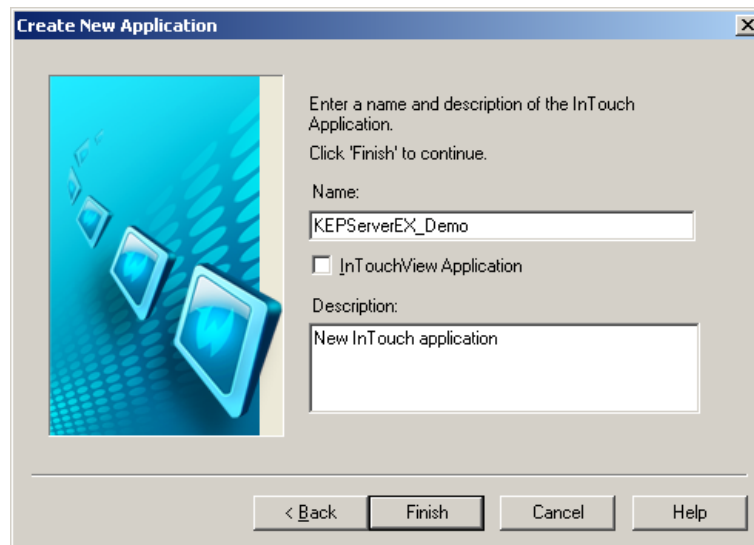
3. Creating an InTouch Project

An InTouch project acts as the DDE client to KEPServerEX. For more information, refer to the instructions below.

3.1 Creating a Path, Folder, and Name for a New InTouch Project

1. To start, click **Start | Programs | Wonderware | InTouch**.
2. In the **InTouch-Application Manager**, click **File | New**.
3. Click through the **Create New Application** wizard, making the following changes:
 - In the first dialog, specify a path for the InTouch project. In this tutorial, the default path will be used.
 - In the second dialog, specify a folder name. In this tutorial, "Tutorial" will be used.
 - In the final dialog, specify a name for the new project. In this tutorial, the project "KEPServerEX_Demo" will be used.

Note: If desired, users may add a description of the project in **Description**.



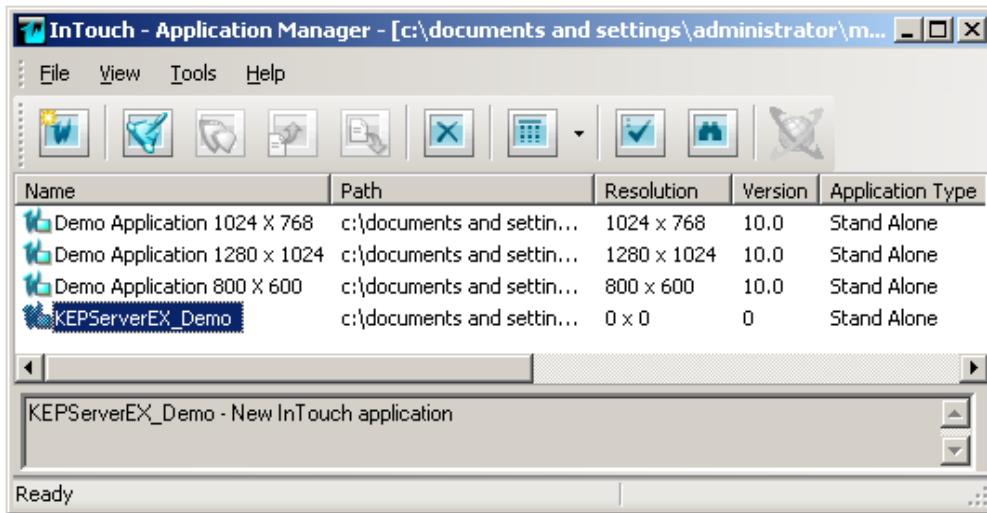
4. Click **Finish** to return to the **InTouch-Application Manager**.

3.2 Adding Access Name Links to the New InTouch Project

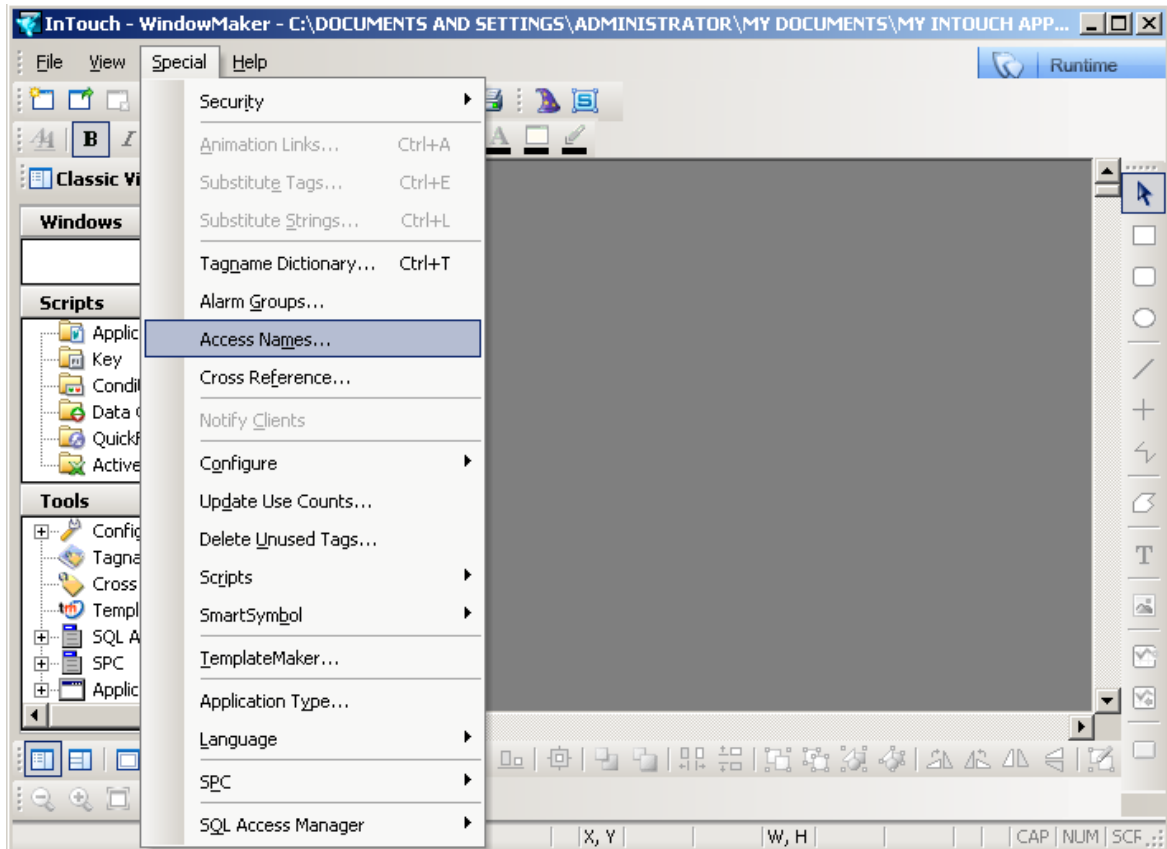
Users must add communication links to the server project. InTouch refers to these communication links as "Access Names," and requires that each device in the server project has a unique access name.

In this tutorial, two access names will be created. Each access name will be linked to a different device that appears in the Simulation Driver Demo project. One access name will be linked to "Channel1.Device1." The other will be linked to "Data Type Examples.16 Bit Device". For more information, refer to the instructions below.

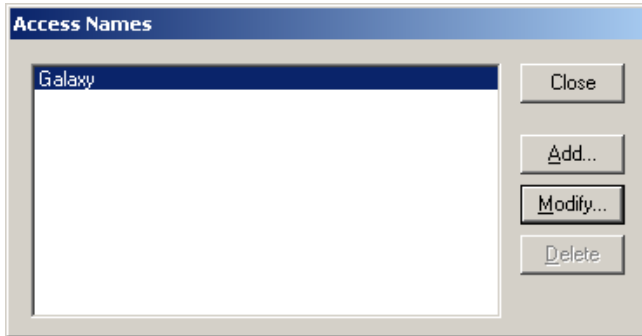
1. In **InTouch-Application Manager**, the name of the recently created project should be visible beneath the list of InTouch applications. Select the project name and then click **File | WindowMaker**.



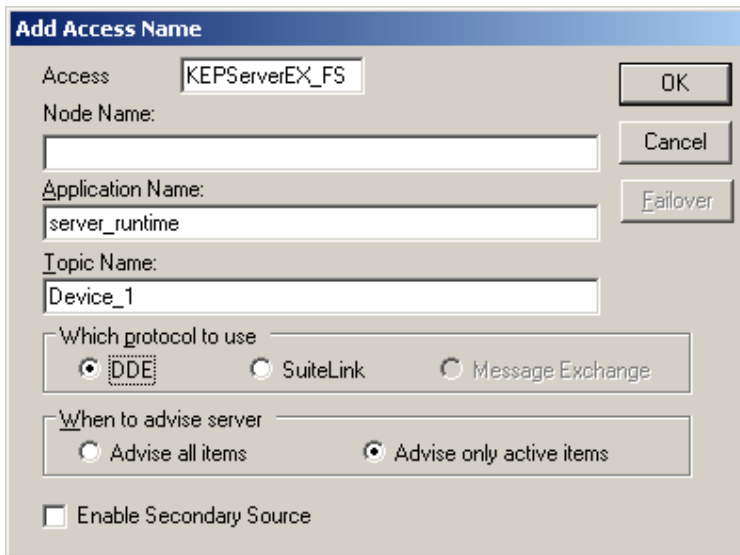
2. In **InTouch-WindowMaker**, click **Special | Access Names**.



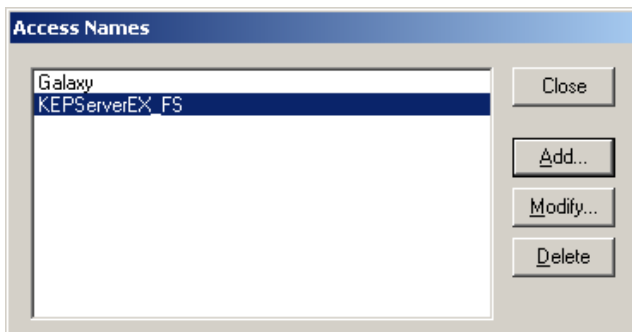
3. To add a new access name, click **Add**.



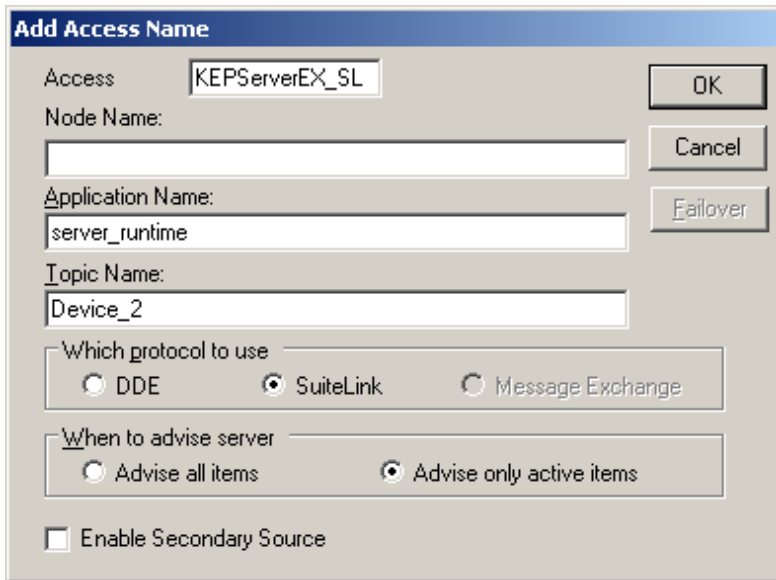
4. In **Add Access Name**, make the following changes:



- In **Access**, enter a unique access name. In this tutorial, "KEPServerEX_FS" will be used.
 - In **Node Name**, leave the field blank.
 - In **Application Name**, leave the default entry "server_runtime".
 - In **Topic Name**, type the first alias that was created earlier ("Device_1").
 - In **Which protocol to use**, select **DDE**.
 - In **When to advise server**, select **Advise only active items**. For more information on the Advise options, refer to the InTouch User's Manual.
5. Once finished, click **OK**.
6. Next, add a second access name that will be used for a SuiteLink connection. In **Access Names**, click **Add**.



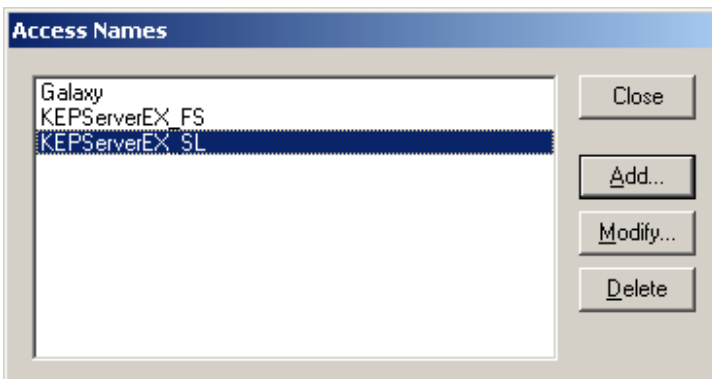
7. In **Add Access Name**, make the following changes:



- In **Access Name**, enter "KEPServerEX_SL".
- In **Node Name**, leave the field blank because the SuiteLink connection is local. Since the node name specifies the name of the PC that is running the server project, it is required for SuiteLink connections to remote PCs.
- In **Application Name**, leave it at the default name "server_runtime".
- In **Topic Name**, specify the second alias that was created earlier ("Device_2").
- In **Which protocol to use**, select check **SuiteLink**.
- In **When to advise server**, select **Advise only active items**.

Important: For SuiteLink, InTouch version 10.0 and later supports KEPServerEX V5 in either Service or Interactive Mode. In these cases, FastDDE may require that additional changes be made to the service's **Log On** tab so that it can interact with the desktop.

8. Once finished, click **OK**.



9. Once all access names have been added, click **Close**.

3.3 Adding Tags to the Tagname Dictionary

1. In **WindowMaker**, click **Special | Tagname Dictionary**.

- To add a new tag, click **New**.

The screenshot shows the 'Tagname Dictionary' dialog box with the 'Details' tab selected. The 'New' button is highlighted. The 'Tagname' field contains '\$AccessLevel', the 'Type' is 'System Integer', and the 'Group' is '\$System'. The 'Read only' radio button is selected. The 'Comment' field contains 'AccessLevel' and 'Log Events Priority' is set to '999'.

- Then, click **Type....**

The screenshot shows the 'Tagname Dictionary' dialog box with the 'Type: ...' button highlighted. The 'Tagname' field is empty, and the 'Type' is 'Memory Integer'. The 'Group' is '\$System' and the 'Read Write' radio button is selected. The 'Comment' field contains 'AccessLevel'. The 'Log Data', 'Log Events', 'Retentive Value', and 'Retentive Parameters' checkboxes are all unchecked.

- In **Tag Types**, check **I/O Integer** and then click **OK**.

The screenshot shows the 'Tag Types' dialog box with a list of tag types. The 'I/O Integer' option is checked and highlighted. The other options are unchecked. The buttons at the bottom are 'OK', 'Cancel', 'Details', 'Select All', and 'Clear All'.

- In **Tagname Dictionary**, click **Access Name...**

The screenshot shows the 'Tagname Dictionary' dialog box with the 'Details' tab active. The 'Access Name: ...' button is highlighted. The 'Item' field is empty. Other fields include 'Tagname', 'Type: I/O Integer', 'Group: \$System', 'Comment: AccessLevel', 'Log Data', 'Log Events', 'Retentive Value', 'Retentive Parameters', 'Initial Value: 0', 'Min EU: -32768', 'Max EU: 32767', 'Deadband: 0', 'Min Raw: -32768', 'Max Raw: 32767', 'Eng Units', 'Log Deadband: 0', 'Conversion: Linear (selected), Square Root', and 'Use Tagname as Item Name' (unchecked).

- In **Access Names**, select "KEPServerEX_FS" as the new tag's data source. Then, click **Close**.

The screenshot shows the 'Access Names' dialog box. The list contains 'Galaxy', 'KEPServerEX_FS', and 'KEPServerEX_SL'. 'KEPServerEX_FS' is selected. The 'Close' button is highlighted. Other buttons include 'Add...', 'Modify...', and 'Delete'.

- In **Tagname Dictionary**, locate **Item** and then enter "Tag1". This is the name of the static tag found in the Simulation Driver Demo server project.

The screenshot shows the 'Tagname Dictionary' dialog box with the 'Item' field now containing 'Tag1'. The 'Access Name: ...' button is highlighted. Other fields are the same as in the previous screenshot.

8. In **Tagname**, specify a name. In this tutorial, "KEPServerEX_INT1" will be used.

The screenshot shows the 'Tagname Dictionary' dialog box with the following fields and values:

- Tagname:
- Type:
- Group:
- Comment:
- Initial Value:
- Min EU:
- Max EU:
- Deadband:
- Min Raw:
- Max Raw:
- Eng Units:
- Log Deadband:
- Conversion: Linear Square Root
- Access Name:
- Item:

9. Click **Save** to accept the new tag.
10. Next, create a second tag. To make this a dynamic tag, enter "R200" into the **Item** field of the **Tagname Dictionary**.
- Note:** "R200" is not the name of any static tag defined in the server project, but is a valid register address defined in Kepware's Simulator driver.
11. Specify the new tag's name as "KEPServerEX_INT4_Dynamic." Then, assign it to the SuiteLink Access Name "KEPServerEX_SL".

The screenshot shows the 'Tagname Dictionary' dialog box with the following fields and values:

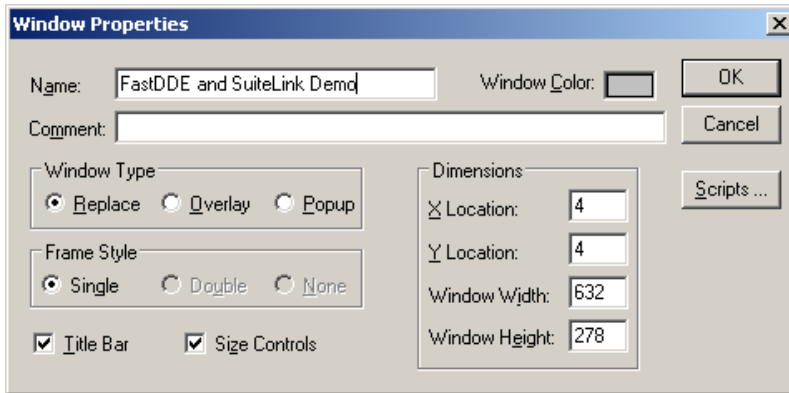
- Tagname:
- Type:
- Group:
- Comment:
- Initial Value:
- Min EU:
- Max EU:
- Deadband:
- Min Raw:
- Max Raw:
- Eng Units:
- Log Deadband:
- Conversion: Linear Square Root
- Access Name:
- Item:

12. Once finished, click **Close**.

3.4 Creating a Window for Displaying the Device Values

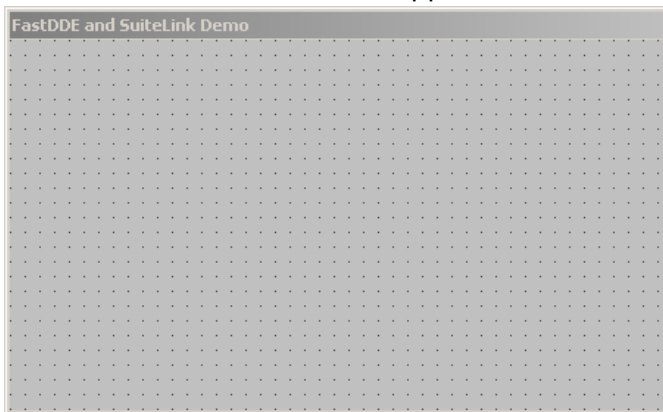
1. In **WindowMaker**, click **File | New Window**.

- Next, assign the new window a name. In this tutorial, "FastDDE and SuiteLink Demo" will be used.



- Once finished, click **OK**.

Note: A new window should appear in WindowMaker's work area.



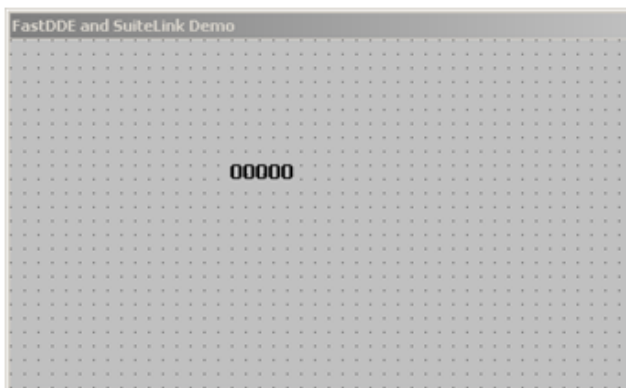
3.5 Adding and Animating a Text Object

A text object may be added in order to display the value of one of the defined tags. For more information, refer to the instructions below.

- In **WindowMaker**, select the **Text** icon



- Next, click on the object window. To create a data display object, enter "00000".



- To add an animation link to the new text object, double-click on it.

- In the unnamed dialog, click **User Inputs, Analog** (located in the **Touch Links** group).

The image shows a configuration dialog box with several sections:

- Touch Links:**
 - User Inputs: Discrete, Analog, String
 - Sliders: Vertical, Horizontal
 - Touch Pushbuttons: Discrete Value, Action, Show Window, Hide Window
- Line Color:** Discrete, Analog, Discrete Alarm, Analog Alarm
- Fill Color:** Discrete, Analog, Discrete Alarm, Analog Alarm
- Text Color:** Discrete, Analog, Discrete Alarm, Analog Alarm
- Object Size:** Height, Width
- Location:** Vertical, Horizontal
- Percent Fill:** Vertical, Horizontal
- Miscellaneous:** Visibility, Blink, Orientation, Disable, Tooltip
- Value Display:** Discrete, Analog, String

- In **Tagname**, enter the name of one of the tags created earlier.

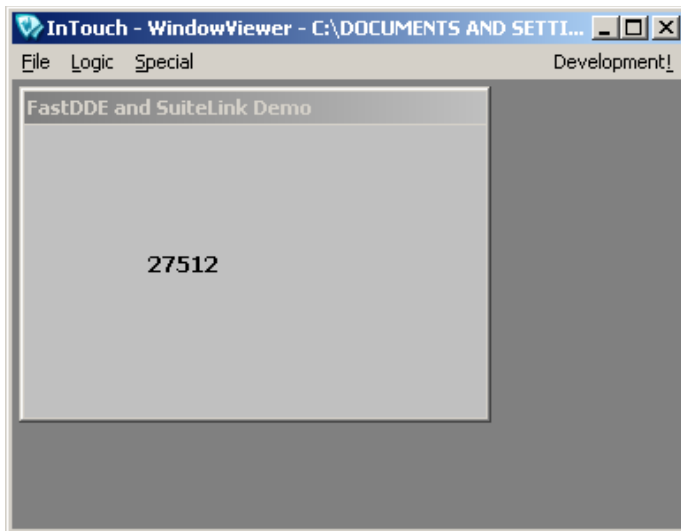
The image shows the 'Input -> Analog Tagname' dialog box with the following fields and options:

- Object type: Text
- Buttons: Prev Link, Next Link, OK, Cancel
- Tagname: (Buttons: OK, Cancel)
- Key equivalent: Ctrl, Shift, None (Buttons: Cancel, Clear)
- Msg to User:
- Keypad?: Yes, No
- Min Value: Max Value:
- Input Only

- Once finished, click **OK**.

4. Viewing Active Data

To view the active data, click on Runtime in **WindowMaker**. This will display the ramping data in **WindowViewer**. If ramping data is not displayed, users should verify that everything is configured correctly by comparing the configuration steps in this tutorial to the project.



5. Checking the Connection to the Server

To confirm that the InTouch application is connecting to the server, check the server Connection Status Bar (which should also display an active client and items). Users can also check for error messages by looking in the Event window.

Note: For more information or for technical support assistance, refer to the Support section of www.kepware.com.