



Kepware Technologies

KEPServerEX Client Connectivity Guide for Rockwell Software's FactoryTalk View Studio



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1. Overview and Requirements

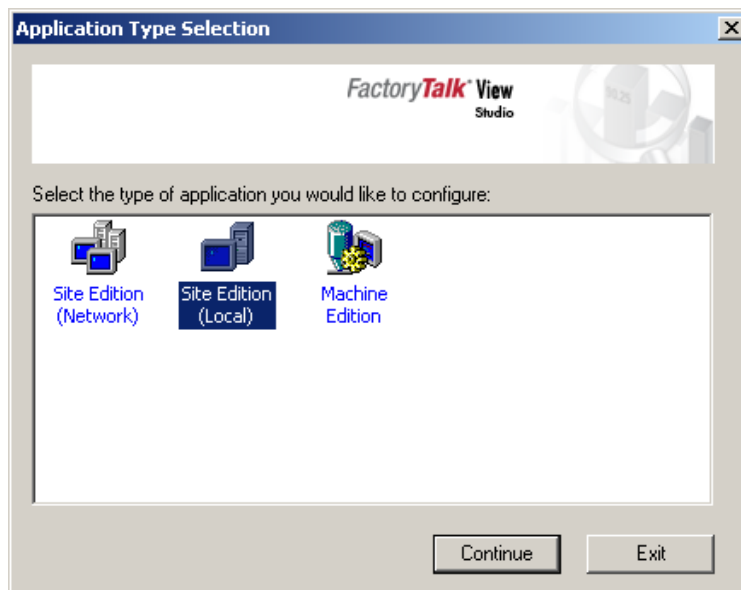
This guide will demonstrate how to establish a connection between the KEPServerEX OPC server and a FactoryTalk runtime project. Users must complete the following before continuing with this tutorial:

- Configure a server project: 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 this 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 verify that the server project has been connected.

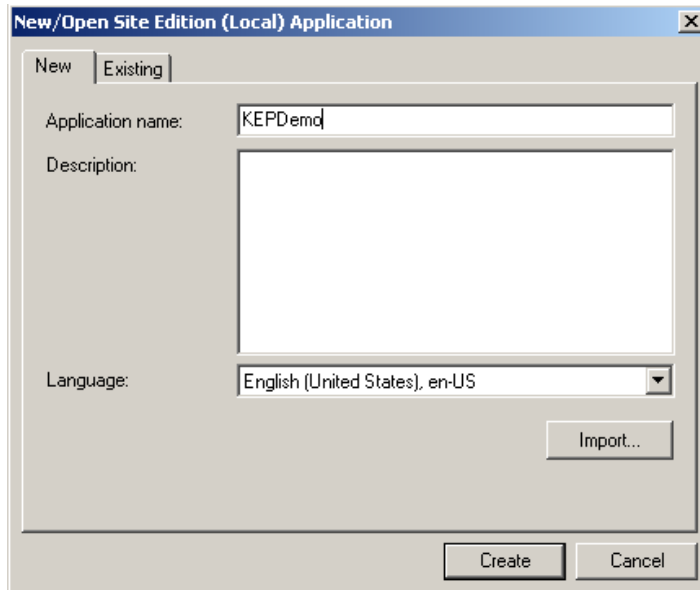
2. Creating a New FactoryTalk Project

Note: For this tutorial, FactoryTalk View Studio version 5.10.00 will be used.

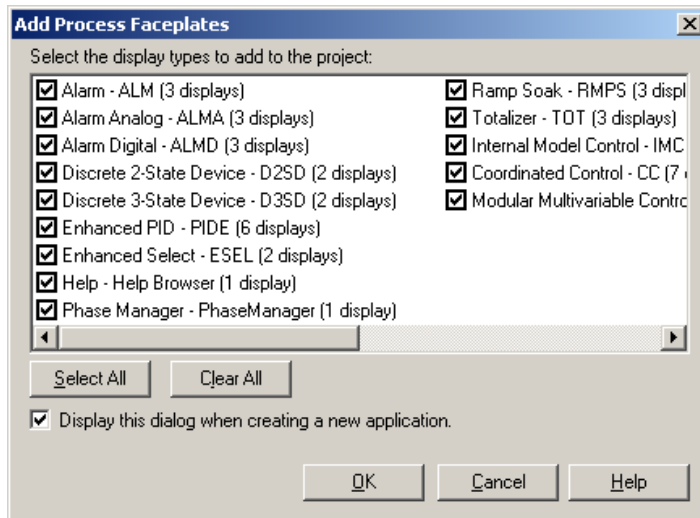
1. Start the program **FactoryTalk View Studio**.
2. In **Application Type Selection**, select **Site Edition (Local)** and then click **Continue**.



3. In **New/Open Site Edition (Local) Application**, select the **New** tab and then enter a name for the application being created. In this tutorial, the application is named “KEPDemo”. Descriptions are optional and may be added if desired. When finished, click **Create**.



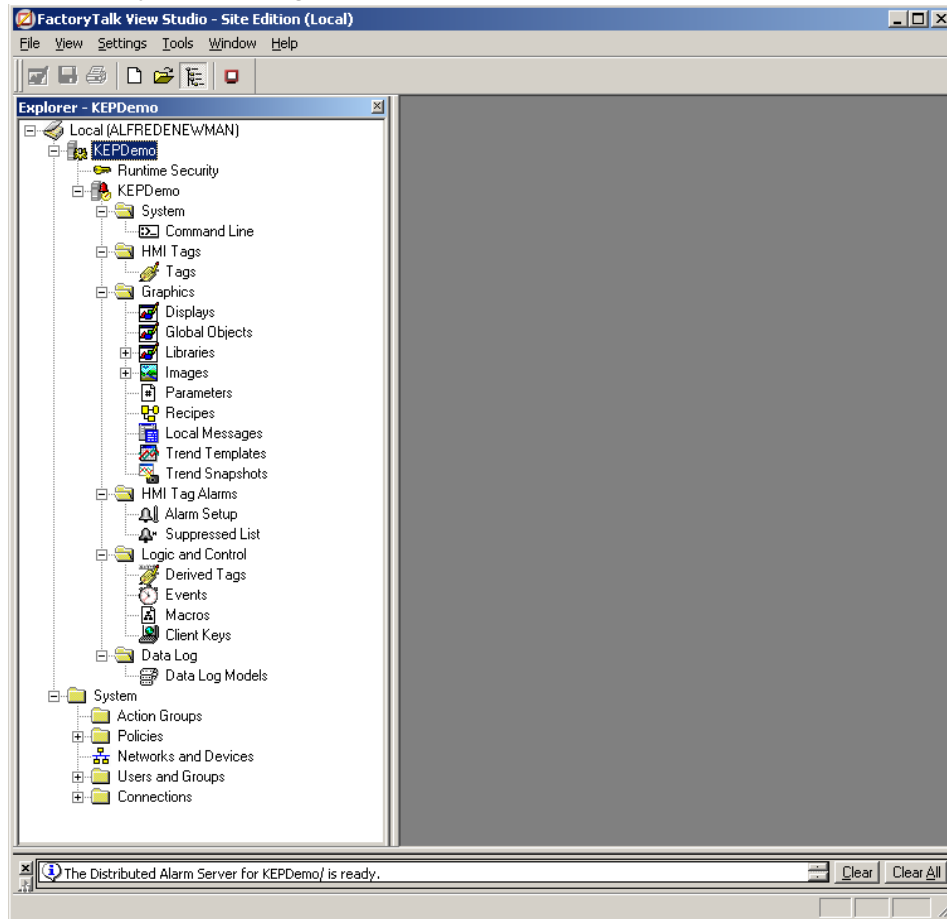
4. In **Add Process Faceplates**, click **Clear All**. Faceplates will not be used in this tutorial. Click **OK**.



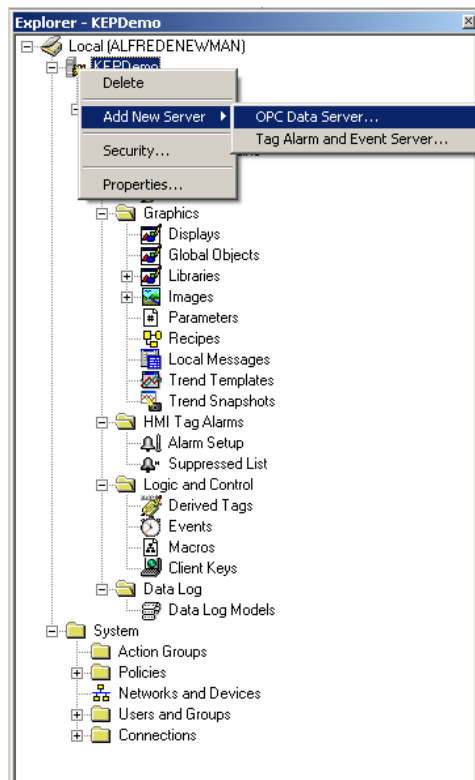
3. Adding a New Data Server to the Project

1. In the main FactoryTalk View Studio window, locate **Explorer – KEPDemo**.

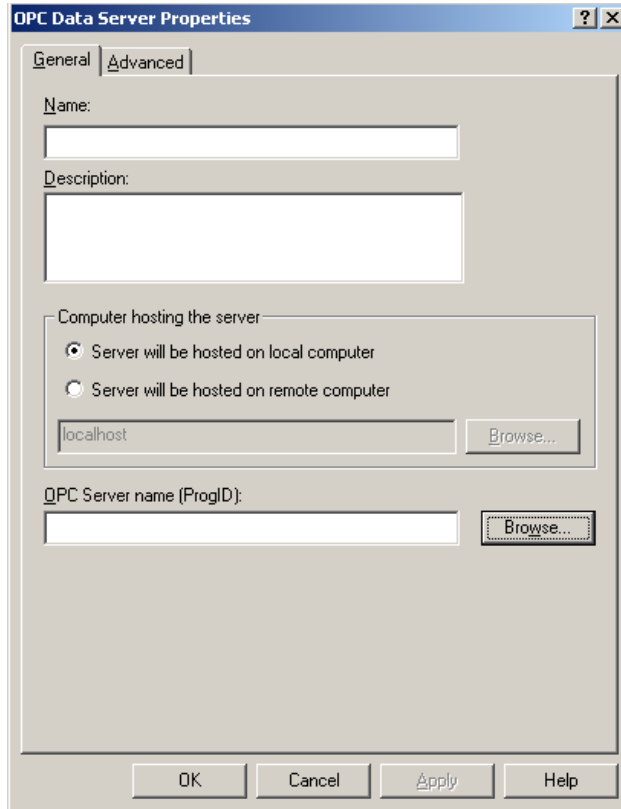
2. In the project tree, right-click on **KEPDemo** to invoke the context menu.



3. Hover over **Add New Server** and then select **OPC Data Server**.



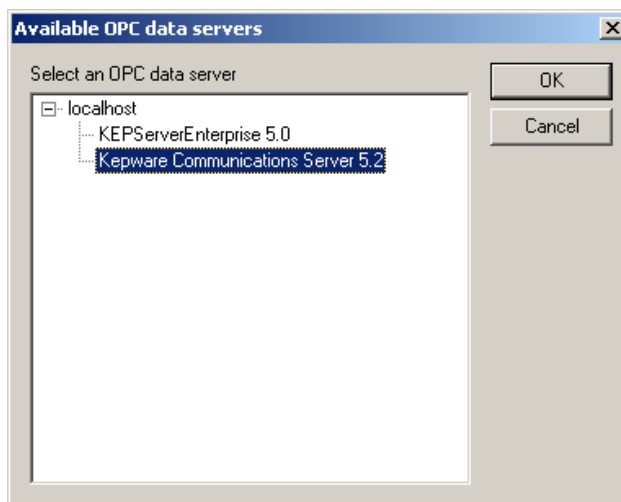
- In **OPC Data Server Properties**, enter a name for the server connection. Then, select the **Server will be hosted on local computer** radio button.



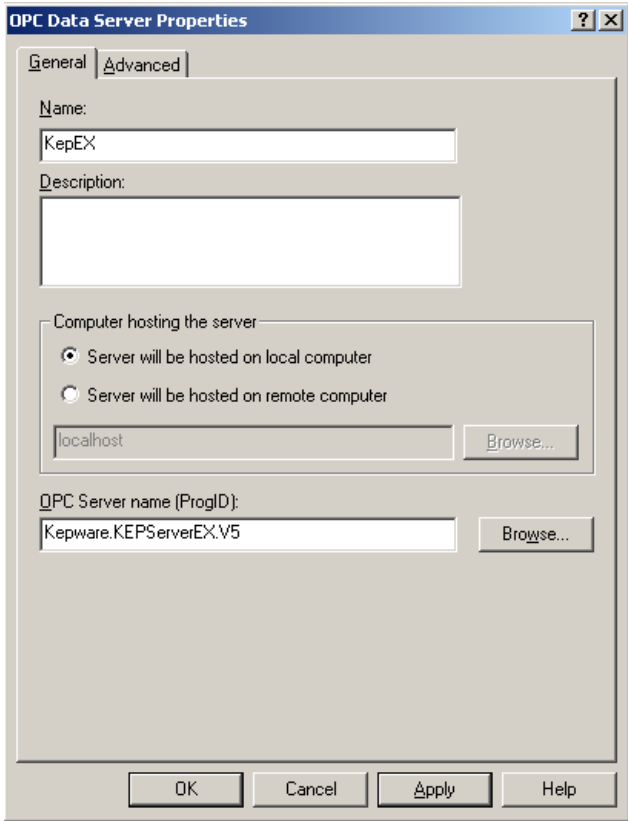
- Next, click **Browse...** in order to locate the OPC server. If the server has been installed and started on the machine, **Kepware Communications Server 5.2** should be visible in the list.

Note: Users who have selected a remote server connection and are unable to browse for the server may need to configure DCOM security. For more information, refer to the "DCOM Configuration for KEPServerEX" manual.

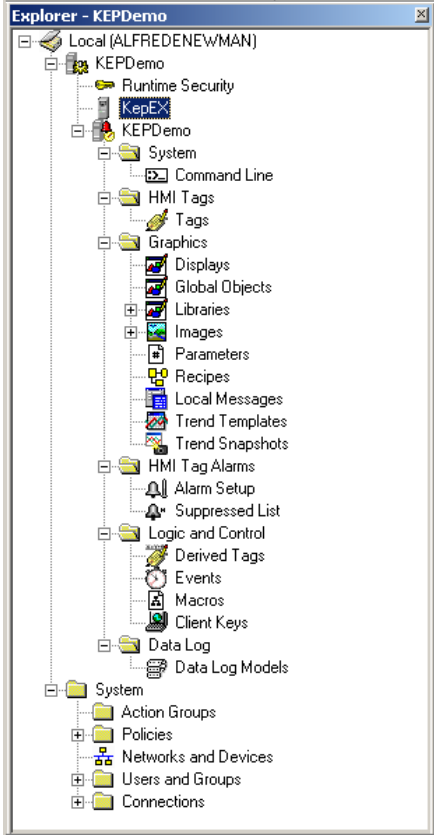
- Select the server for the desired connection, and then click **OK**.



7. In **OPC Data Server Properties**, make sure that the server name is visible and then click **OK** to accept the configuration. In this tutorial, "KepEx" is used.



Note: The project tree should now contain the icon **KepEx**.



4. Synchronizing the New FactoryTalk Project with the OPC Server

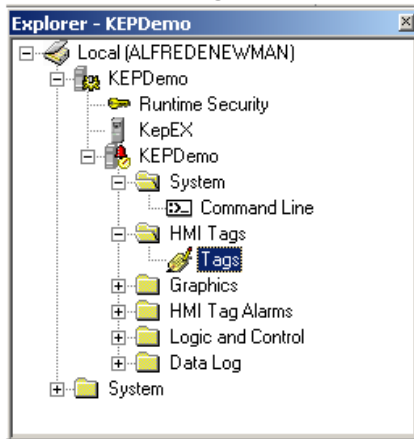
Even though a server has been added, the new FactoryTalk project will not be able to access server tags until the following synchronization steps are completed. The server must remain connected for the duration of the synchronization.

1. To start, shut down FactoryTalk by clicking **File | Exit**.
2. Restart FactoryTalk and then re-open the **KEPDemo** project.

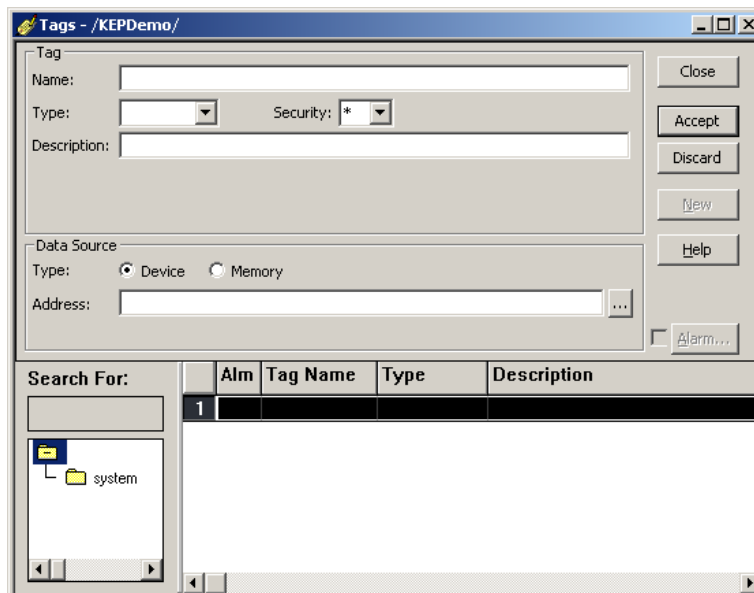
5. Creating a Tag for Indirect Addressing

FactoryTalk has two methods for accessing tags: Indirect Addressing and Direct Addressing. Indirect addressing requires the creation of a tag database, whereas direct addressing allows OPC items to be accessed directly.

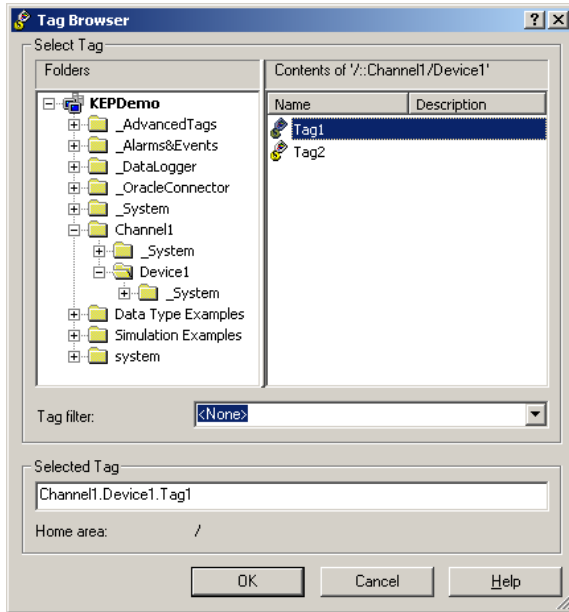
1. In the **Explorer-KEPDemo** window, expand the **HMI Tags** folder and then double-click **Tags**.



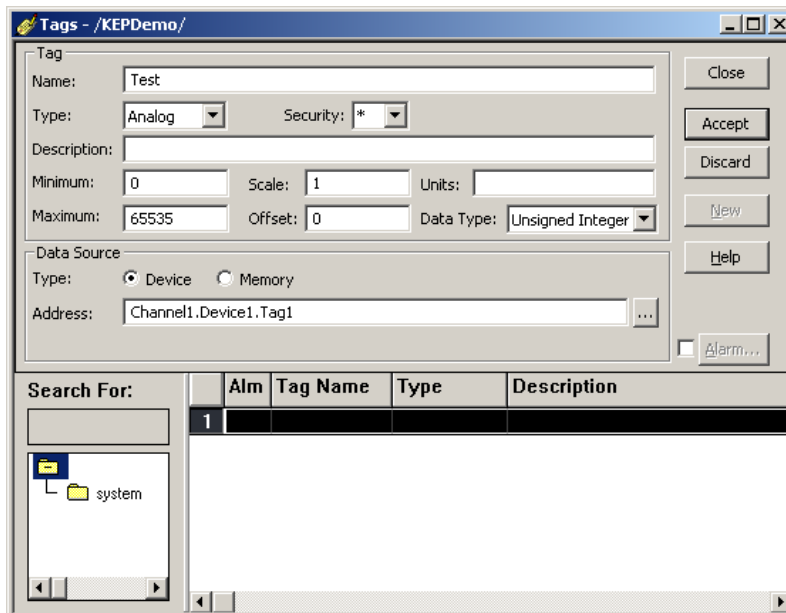
2. In **Tags - /KEPDemo/**, make the following changes:
 - Under the **Tag** group, enter a descriptive name in the **Name** field. In this tutorial, "Test" is used. Then, specify **Analog** as the **Type**. Leave the remaining parameters at their default settings.
 - Under the **Data Source** group, select **Device**.



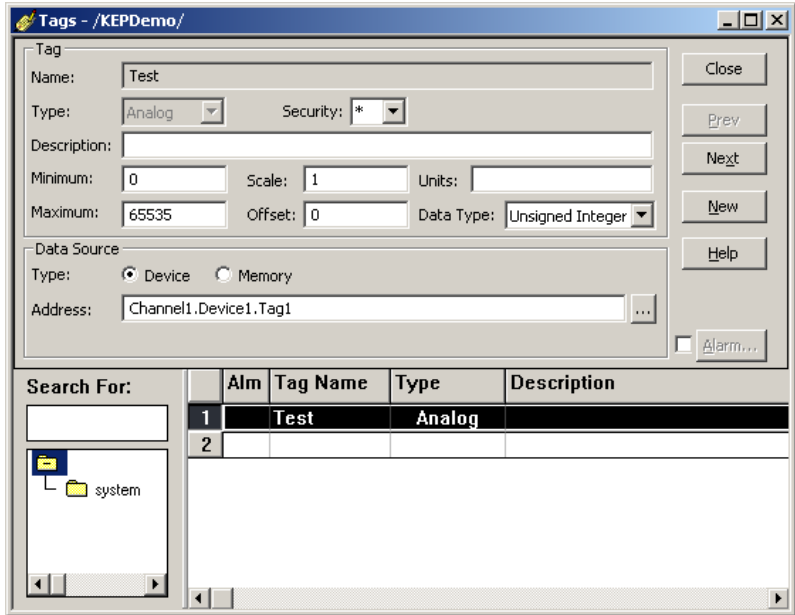
- Next, click on the Address browse button to open the **Tag Browser**.
- In the **Folders** pane, expand the tree view and then locate the folder that contains the desired tag. In this tutorial "Channel1/Device1" is used.
- In the **View** pane, select the desired tag. In this tutorial, "Tag1" is used. Then click **OK**.



- In **Tags - /KEPDemo/**, the chosen tag will be displayed in the **Address** field. Review the other parameters and make sure that the **Minimum**, **Scale**, **Maximum**, **Offset** and **Data Type** fields are set accordingly. The **Description** and **Units** fields may be left empty.



- Next, click **Accept** to add the tag to the tag database.

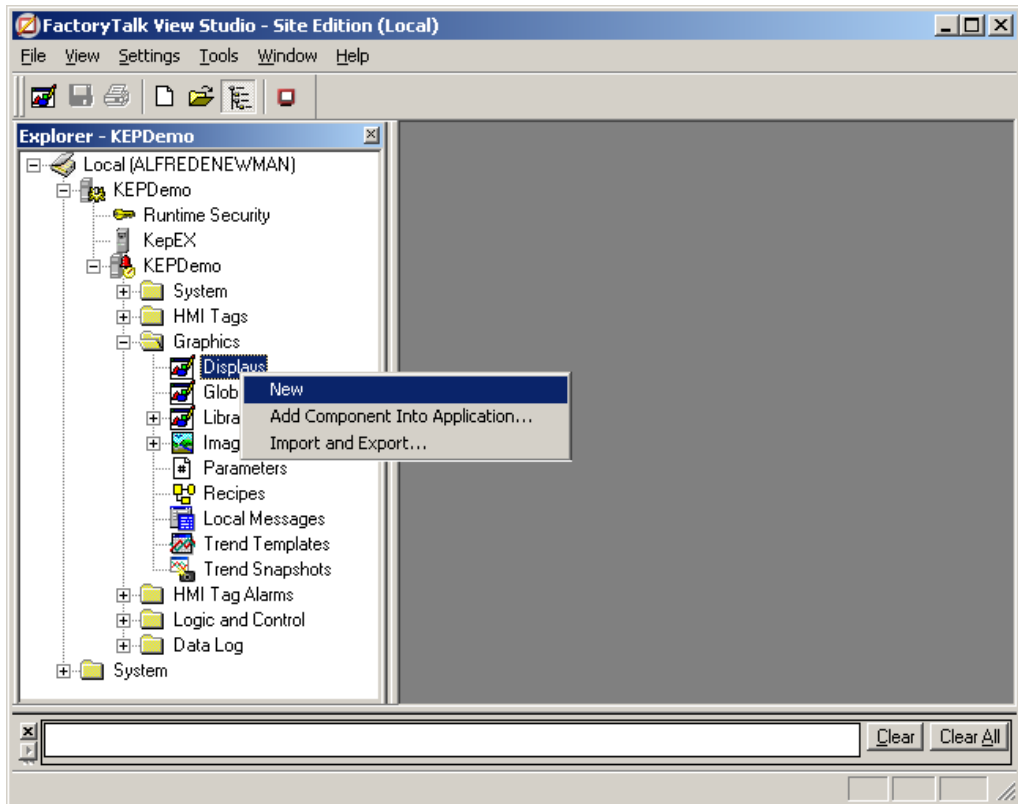


- Then, click **Close**.

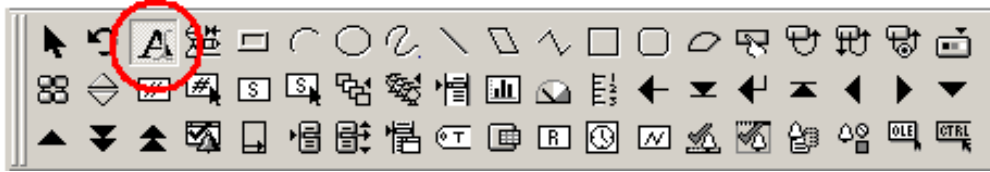
6. Creating a FactoryTalk Project Display

To verify a runtime connection to KEPServerEX, a display must be added to the FactoryTalk client project.

- In the **Explorer - KEPDemo** window, open the **Graphics** folder.
- Right-click on **Displays** and then select **New**.



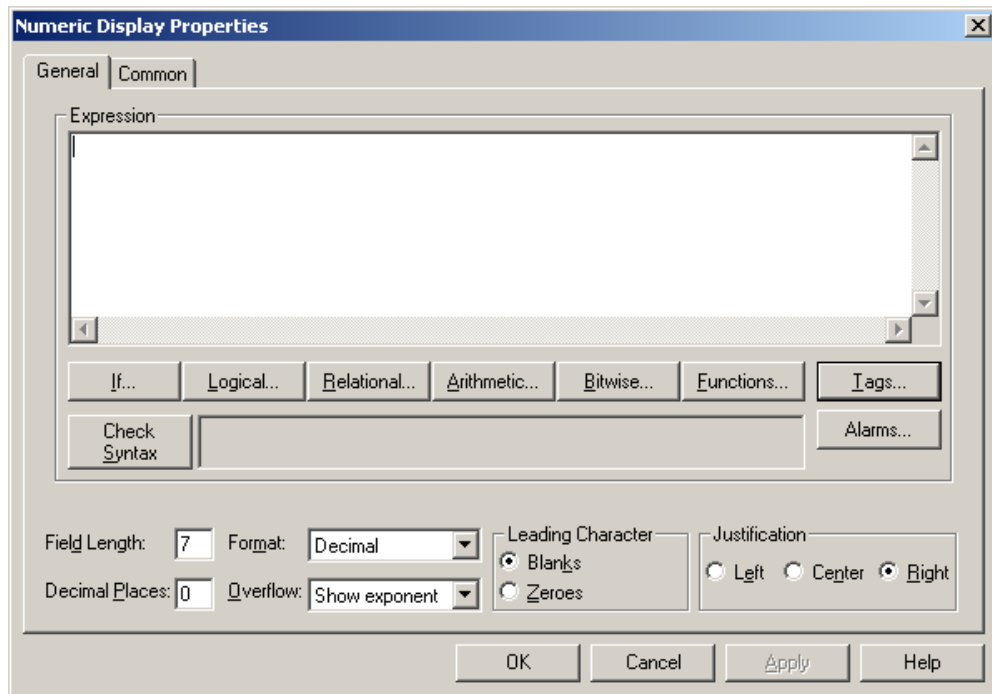
3. The **Graphics Toolbar** should now appear below the main menu bar. Select the **Text** tool icon and then add two text labels to the display. In this tutorial, they are named "Display1" and "Display2".



4. Next, select the **Numeric Display** tool and then add a numeric display beneath "Display1."

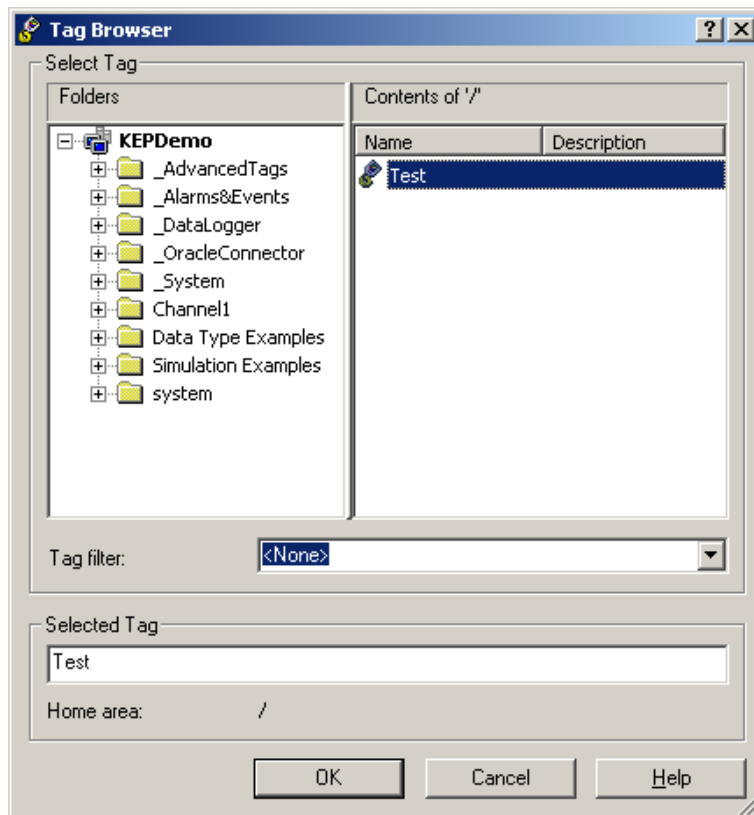


5. The dialog **Numeric Display Properties** will appear. Click **Tags...** to invoke the tag browser.

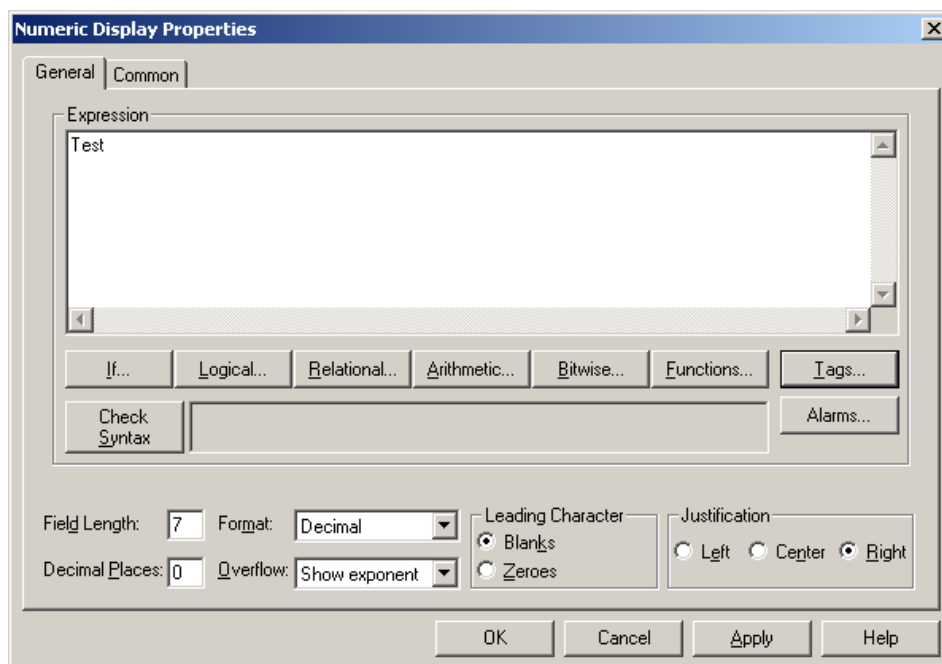


- In the **Tag Browser**, indirect tags will be located in the main root of the project tree, immediately beneath the project icon. Select the tag "Test" and then click **OK**

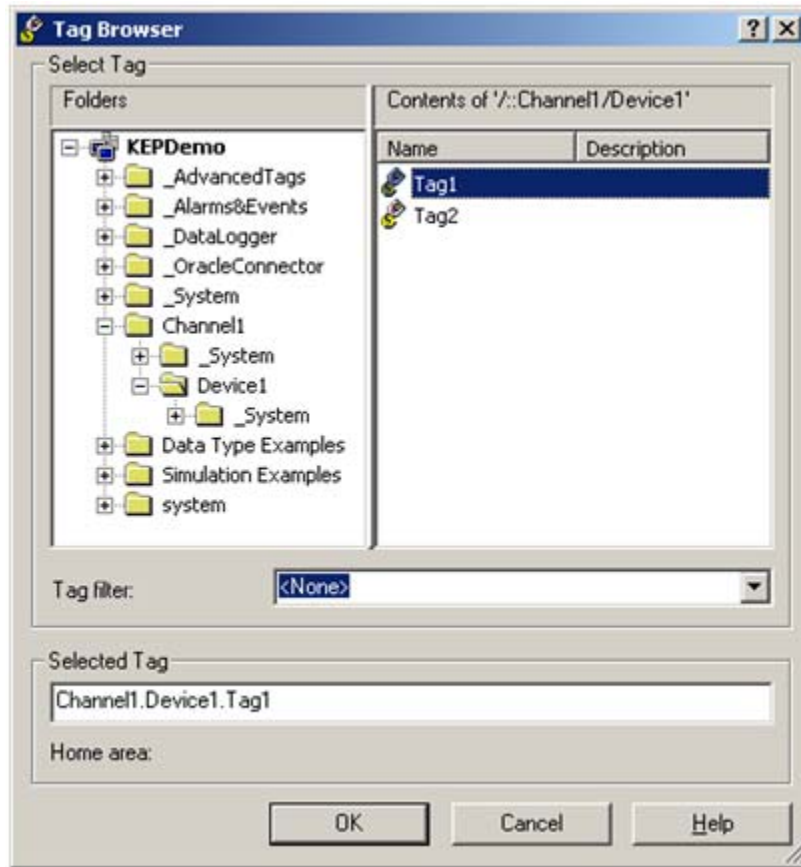
Note: If the indirect tag is not visible in the **Contents** window, click the **KEPDemo** icon in the **Folders** window to view tags located at the root.



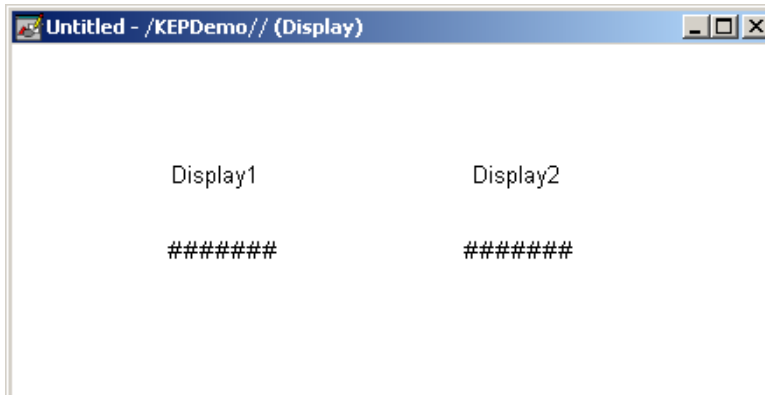
- In **Numeric Display Properties**, the **Expression** field should now display "Test," the indirect tag created earlier. Click **OK**.



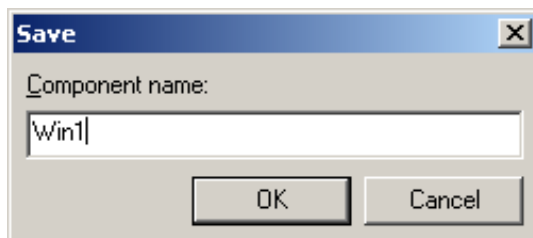
- Repeat the process for "Display2," but now directly reference an object in the server. Select the same tag that was used to create the indirect tag.



Note: The untitled display should appear as shown below.



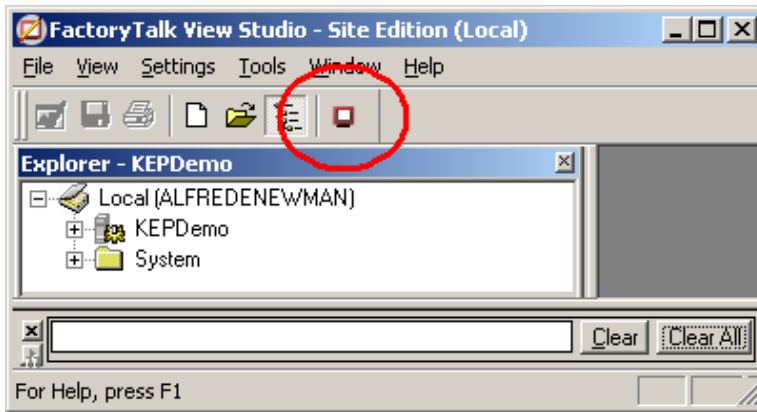
- Next, click **File | Save**. In this tutorial, the display is named "Win1".



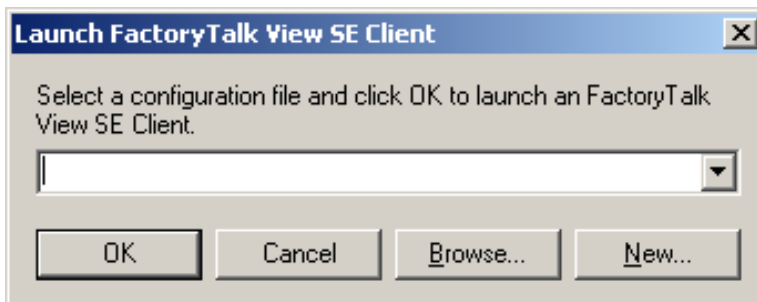
7. Creating an SE Client Configuration File

In order for the HMI to function, an SE Client configuration file must be created.

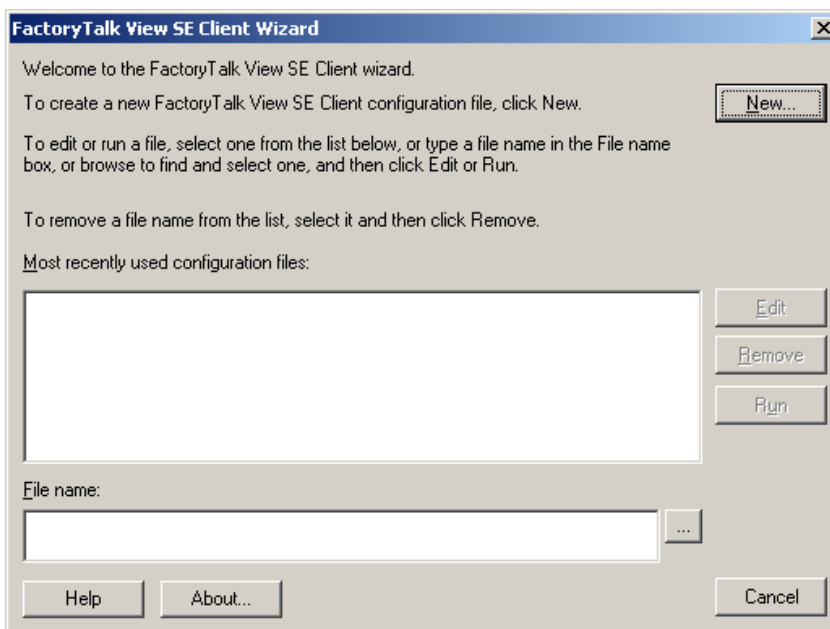
1. To start, launch the SE Client through the icon located on the menu bar.



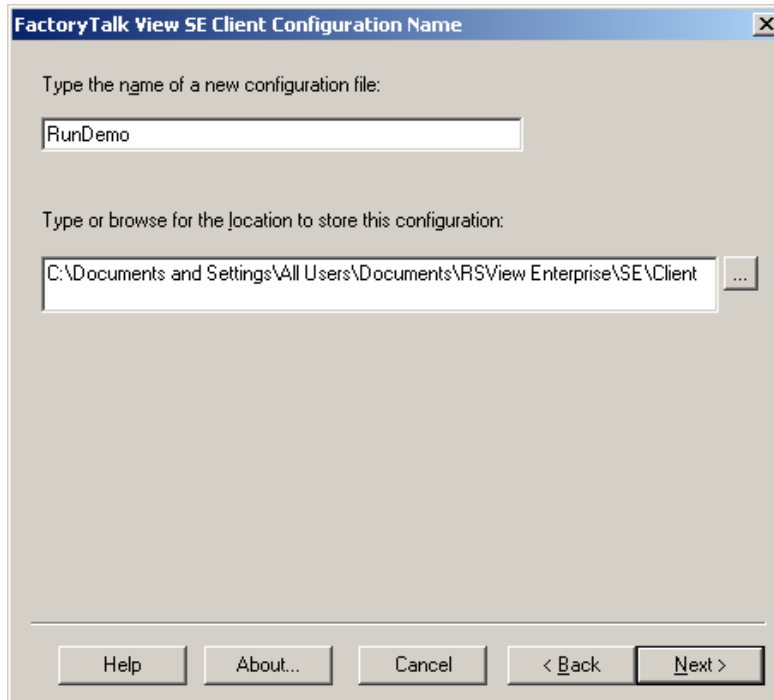
2. In **Launch FactoryTalk View SE Client**, leave the text entry field blank and then select **New**.



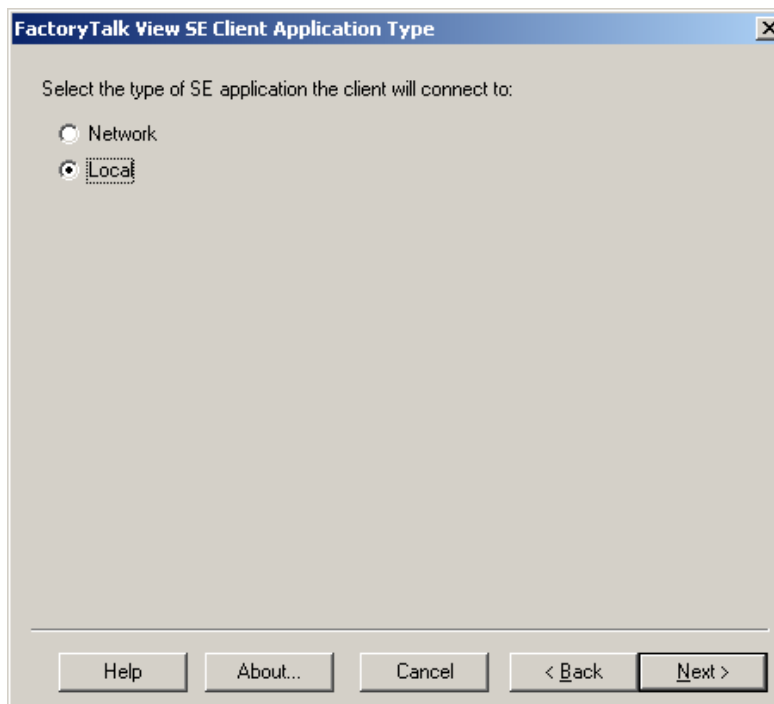
3. In **FactoryTalk View SE Client Wizard**, leave the text entry field blank and then select **New**.



4. In **FactoryTalk View SE Client Configuration Name**, enter a name for the configuration file. In this tutorial, it is named "RunDemo". Leave the file storage location at its default setting and then click **Next**.



5. In **FactoryTalk View SE Client Application Type**, select **Local**. Then, click **Next**.



6. In **FactoryTalk View SE Client Application Name**, select **KEPDemo** from the drop-down list beneath the application name field. Leave all other parameters at their default settings and then click **Next**.

The screenshot shows a dialog box titled "FactoryTalk View SE Client Application Name". It contains the following elements:

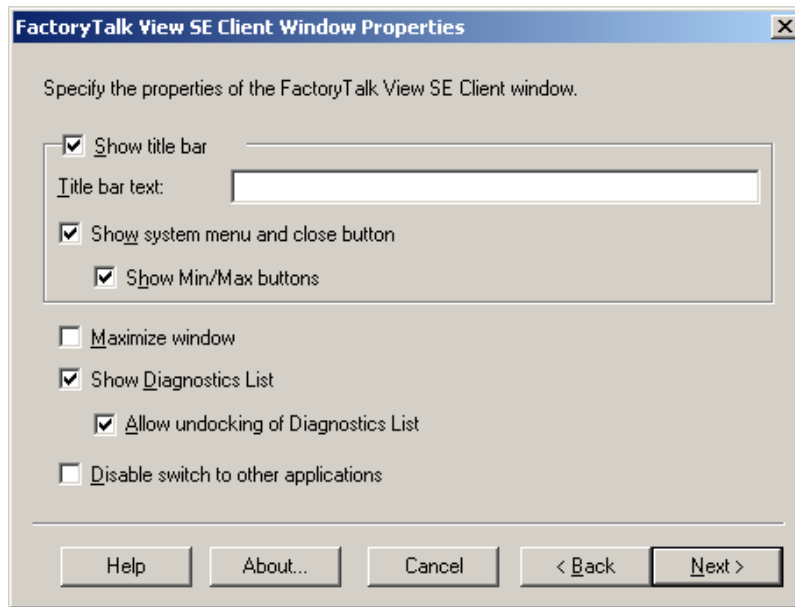
- A text field with the label "Type the name of the application you want to connect to:" containing the text "KEPDemo".
- Three unchecked checkboxes:
 - Open FactoryTalk View SE Client as view-only
 - Enable on-screen keyboard
 - Allow display code debugging
- A text field with the label "Select the initial runtime language:" containing the text "English (United States), en-US".
- Buttons at the bottom: Help, About..., Cancel, < Back, and Next >.

7. In **FactoryTalk View SE Client Components**, select the graphic display "Win1" beneath **Initial Display**. Leave all other parameters empty and then click **Next**.

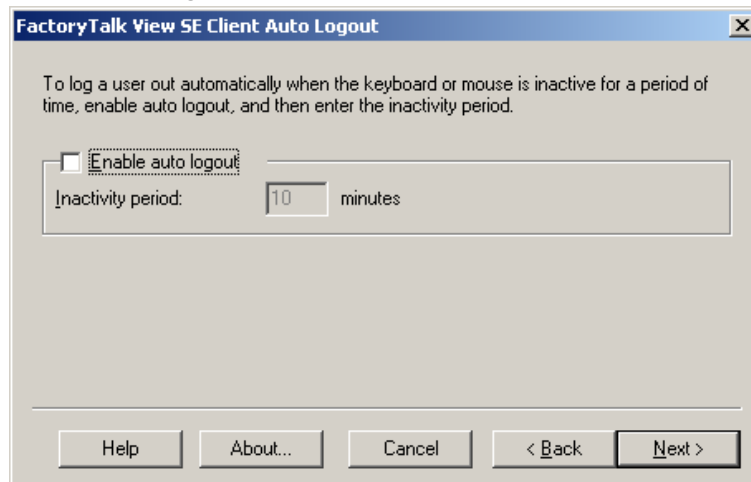
The screenshot shows a dialog box titled "FactoryTalk View SE Client Components". It contains the following elements:

- A text field with the label "Select components." containing the text "Win1".
- A section titled "Components" containing five fields:
 - Initial display: Win1
 - Display parameters: (empty)
 - Initial client key file: (empty)
 - Startup macro: (empty)
 - Shutdown macro: (empty)
- Buttons at the bottom: Help, About..., Cancel, < Back, and Next >.

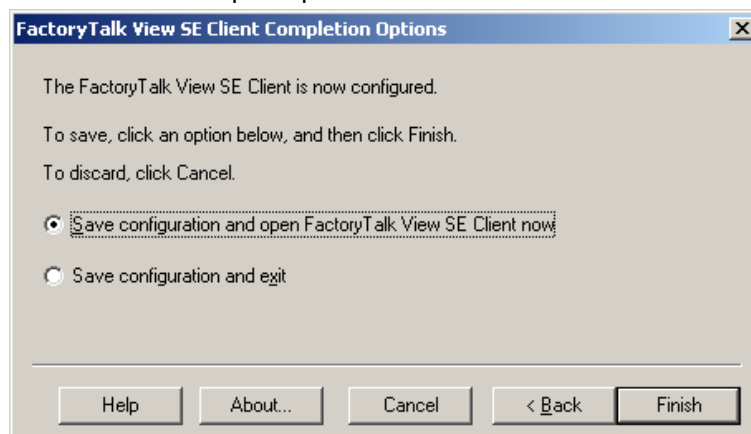
8. In **FactoryTalk View SE Client Window Properties**, leave all parameters at their default settings and then click **Next**.



9. In **FactoryTalk View SE Client Auto Logout**, leave all parameters at their default settings and then click **Next**.

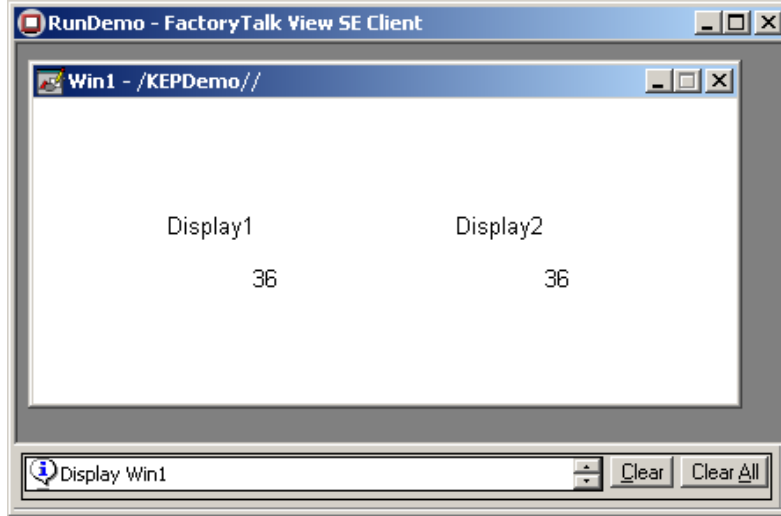


10. In **FactoryTalk View SE Client Completion Options**, select **Save configuration and open FactoryTalk View SE Client now** and then click **Finish**. This will prompt the HMI to load.



11. Once the HMI starts, it should appear as shown below. Changing data should be visible in the numeric displays.

Note: The indirect tag display updates slightly slower than the direct tag display. This is because the indirect tag display must update the FactoryTalk View tag database before displaying its update from the cache. The direct tagged object does not have this wait.



8. Using Kepware's OPC Quick Client

Kepware provides an OPC client application for testing purposes with each installation of KEPServerEX. For more information, refer to the OPC Quick Client help documentation.