



Client Connectivity Guide

KEPServerEX[®] with Wonderware[®] Historian[®]

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1. Overview

This guide demonstrates how to establish a connection between the KEPServerEX® data server and Wonderware® Historian®.

- **Note:** For this guide, Historian version 2014R2SP1 and KEPServerEX version 6.1 are installed locally (on the same PC).

Wonderware Historian 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 time stamp and quality indicator on all data values delivered to VTQ-aware peers, such as KEPServerEX.

KEPServerEX can be configured as a SuiteLink server, providing data to one or more Historian instances.

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 can only be followed if Wonderware software is not already 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 serving data to a remote PC where Wonderware will run, then refer to the instructions below to install Wonderware Common Components on the PC that will run KEPServerEX:

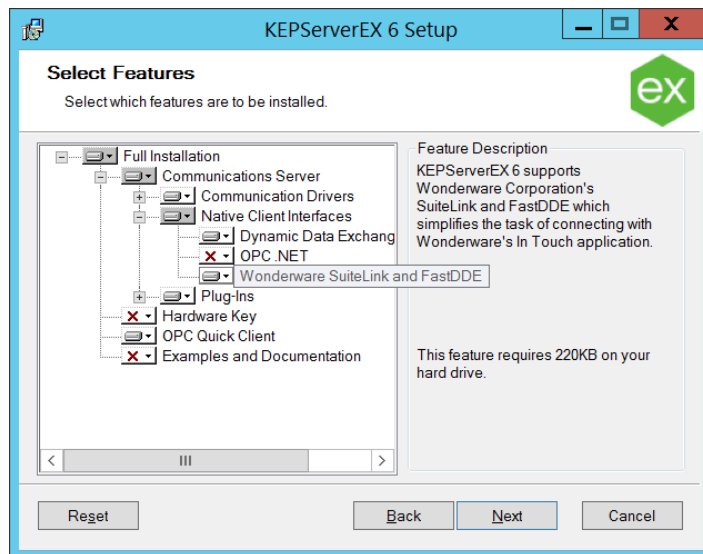
1. Open the **Wonderware Device Integration** installation DVD.
2. Find the "setup.exe" file located under *DIFolders\WW\SuiteLink\2.0 SP3\SuiteLink*.
3. Double-click to run the "setup.exe" installation program.
4. To confirm installation, verify the Common Components are installed under *<Root Drive>\Program Files (x86)\Common Files\ArchestrA*.

- **Note:** If KEPServerEX and Wonderware InTouch will run on different computers, make sure **SuiteLink port 5413** is open to enable the communication.

1.2 Installing KEPServerEX

1. Double-click the KEPServerEX icon.
2. Select **Run** or **Open** to start the install. If an active content warning is displayed, 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, and adjust the settings for your environment.
6. In the Vertical Suite Selection, choose a vertical, Typical, or Custom options.

7. In Select Features, expand the tree to view and select 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**.
10. Click **Next**.
11. 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 the instructions below.

Complete the following steps before continuing:

- Configure KEPServerEX. 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 guide.
- 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 is connected.

2.1 Configuring FastDDE and SuiteLink

1. In the KEPServerEX User Interface, right-click **Project** and select **Properties**.
2. Select the tab (visible if Wonderware is installed).

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.

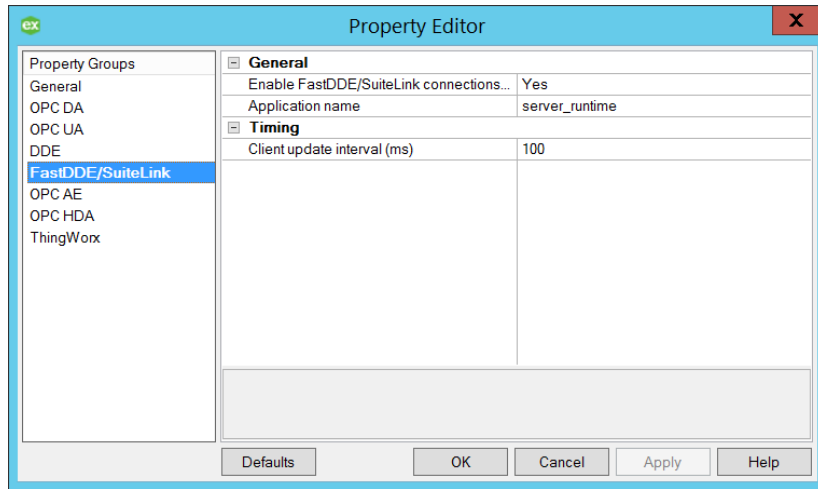
3. Verify that **Enable FastDDE/SuiteLink connections to the server** is checked.

Tips:

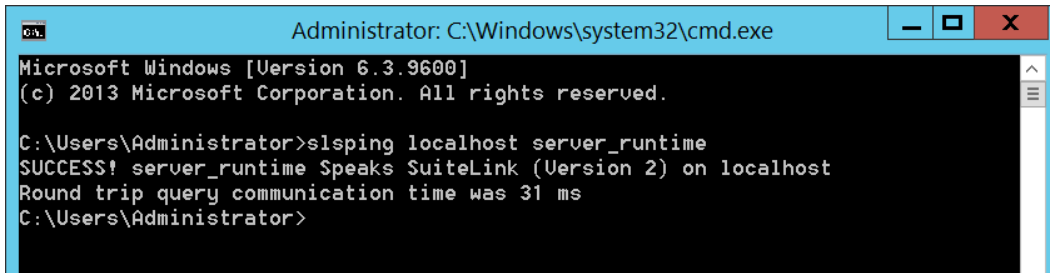
- a. The Application Name may be changed, but this example uses the default "server_runtime" name.

- b. KEPServerEX version 4 used application name "servermain," which can be entered to avoid affecting Historian configurations upgrading from KEPServerEX version 4.

4. In **Timing**, change the client update rate if desired, or leave it at the default rate (100 ms). This setting may be changed at any time.
5. Click **OK**.



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



- **Note:** If KEPServerEX is running on a different machine, substitute "localhost" with 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 in Project properties. For this example we left 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.

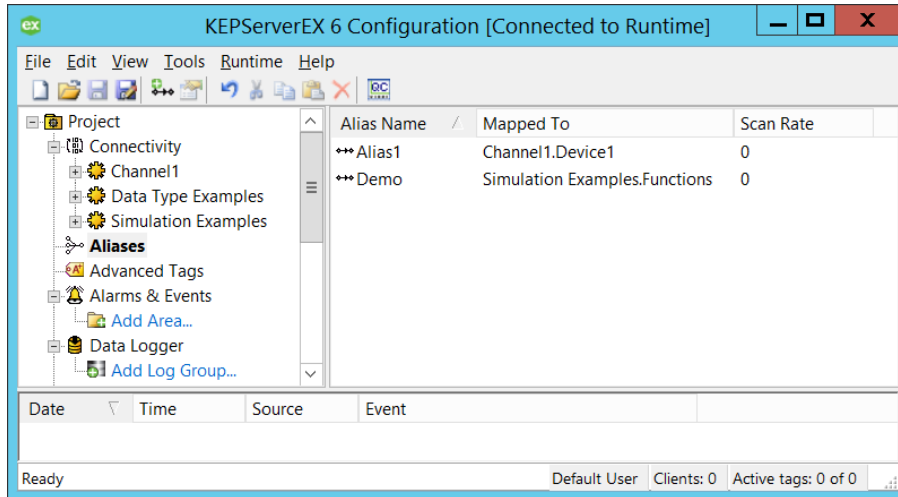
- *For more information on topic references, refer to the "How Do I..." section of the KEPServerEX help file.*

To create an alias, follow the instructions below.

1. To start, open KEPServerEX and click **Aliases**.
2. Right-click **Aliases** and select **New Alias**.

3. Map the string "Demo" to "Simulation Examples.Functions" and click **Close**.

Tip: To find the correct string to map to, click the **Browse (...)** button next to Map to" field.



Notes:

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

3. Configuring Wonderware Historian

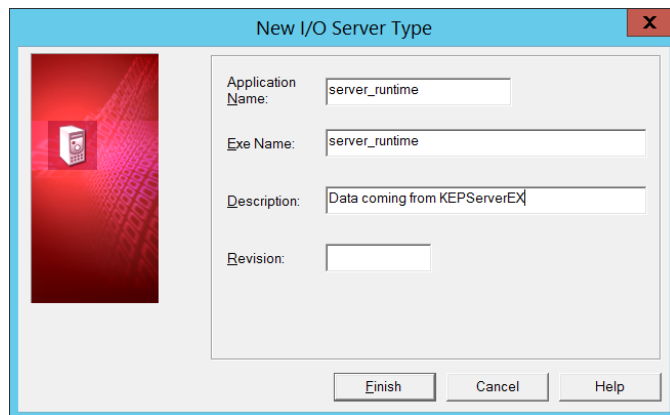
Wonderware Historian will act as the SuiteLink client to KEPServerEX. In Wonderware Historian, users must define the application serving the data and tags to be historized.

3.1 Creating a new I/O Server Type

1. Select **Start | Programs | Wonderware | System Management Console**.
2. In the System Management Console, navigate to **Historian-Historian Group-<ServerName>-**

Configuration Editor-System Configuration-Data Acquisition, right click **I/O Server Type | New I/O Server Type**.

3. In the Application Name and Exe Name fields, type "server_runtime", as defined in KEPServerEX project properties.

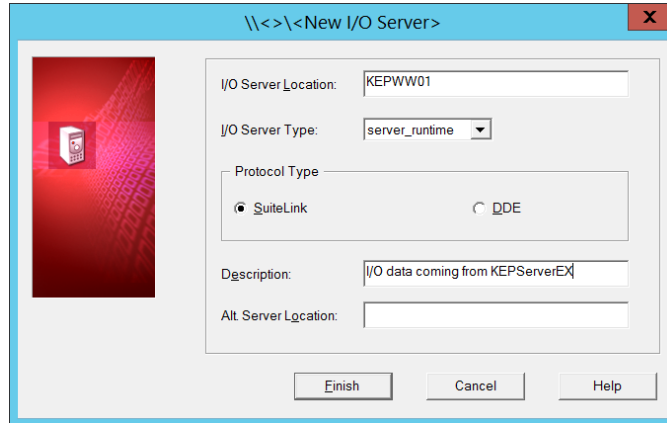


Tip: It is recommended to write a descriptive text in the Description field.

4. Click **Finish** to close the dialog.

3.2 Creating a new I/O Server

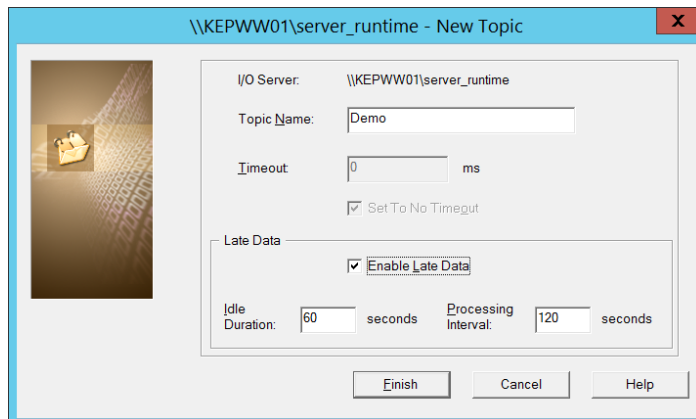
1. In the System Management Console, navigate to **Historian-Historian Group-<ServerName>-Configuration Editor-System Configuration-Data Acquisition**. Select the local IDAS, which can be identified by the name of the machine.
2. Right click the local IDAS and select **New I/O Server**.
 - In I/O Server Location, type the name or IP address of the machine running KEPServerEX.
 - From the I/O Server Type dropdown list, select the newly created “server_runtime”.
 - Make sure to select SuiteLink as the Protocol Type.
3. Click **Finish** to close the dialog.



Tip: In this guide, KEPServerEX and Wonderware Historian are running on the same machine, so “localhost” can also be used as the I/O Server Location.

3.3 Creating a Topic

1. In System Management Console, right-click the recently created I/O Server and select **New Topic**.
 - For the Topic Name, type “Demo”, as defined in the Alias list in KEPServerEX.
 - In case the data coming from KEPServerEX could have a TimeStamp in the past, enable Late Data. This will force Historian not to modify the TimeStamp of the values.

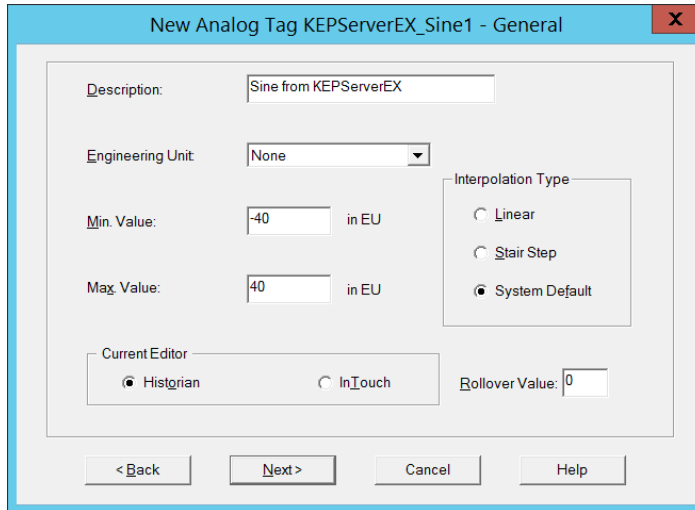


2. Click **Finish** to close the dialog.

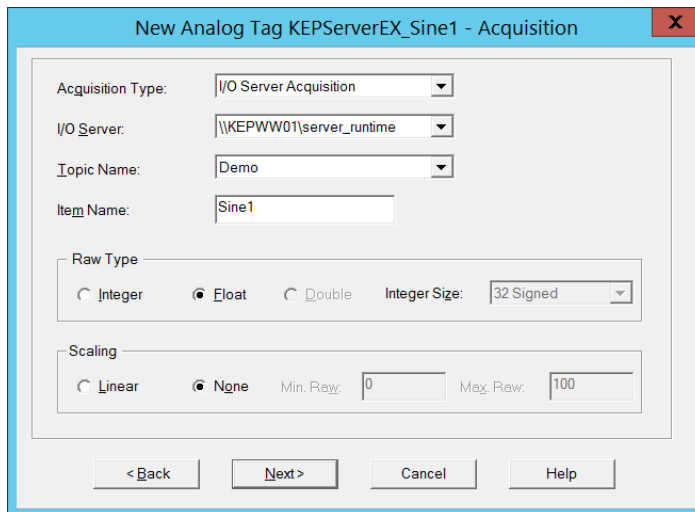
Tip: For more information about Late Data, consult the Wonderware Historian documentation.

3.4 Adding Tags to Wonderware Historian

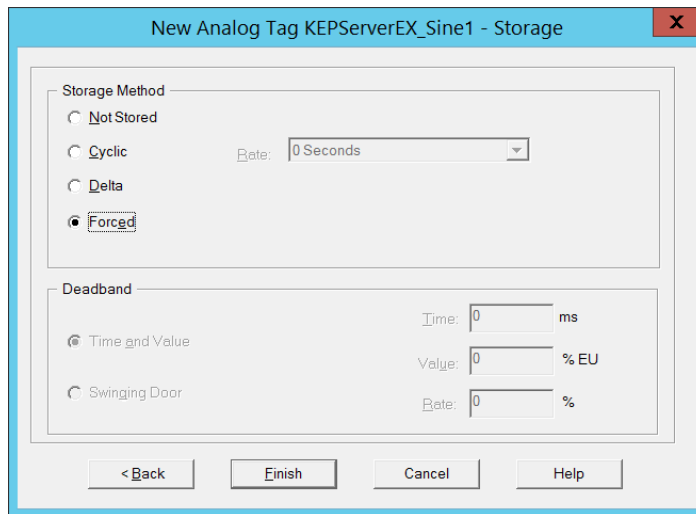
1. In System Management Console, right-click the recently created I/O Server and select **New Analog Tag**.
2. Enter a name for the Tag and click **Next**.
3. In the General dialog, select the Engineering Unit (if applicable) and both Minimum and Maximum values. Historian must be selected as the Current Editor. Click **Next** when done.



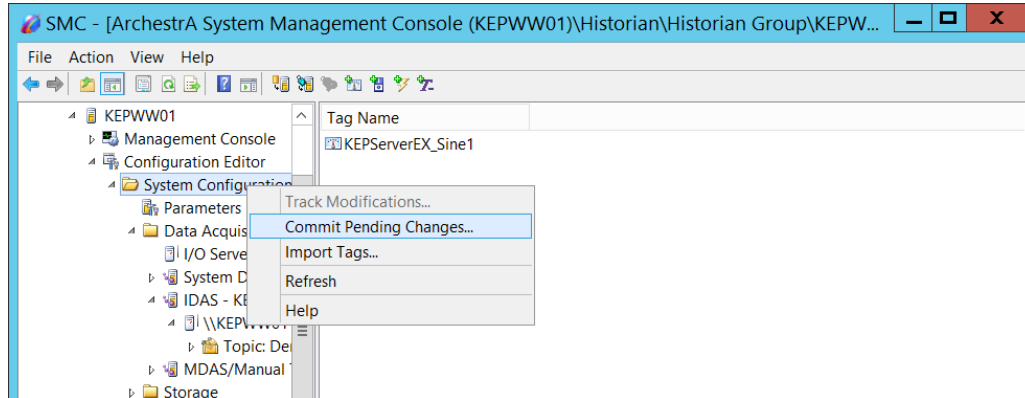
4. In the Acquisition dialog, define the source of the tag to be historized. The first three fields are selected automatically but can be modified. For Item Name, enter the name of an existing Tag in KEPServerEX. Click **Next**.



5. In the Storage dialog, define the Storage method for the Tag. Select **Forced** to make sure that all the values coming from KEPServerEX for this tag will be stored. For other options, refer to Wonderware Historian Documentation. Click **Finish** to close the dialog.



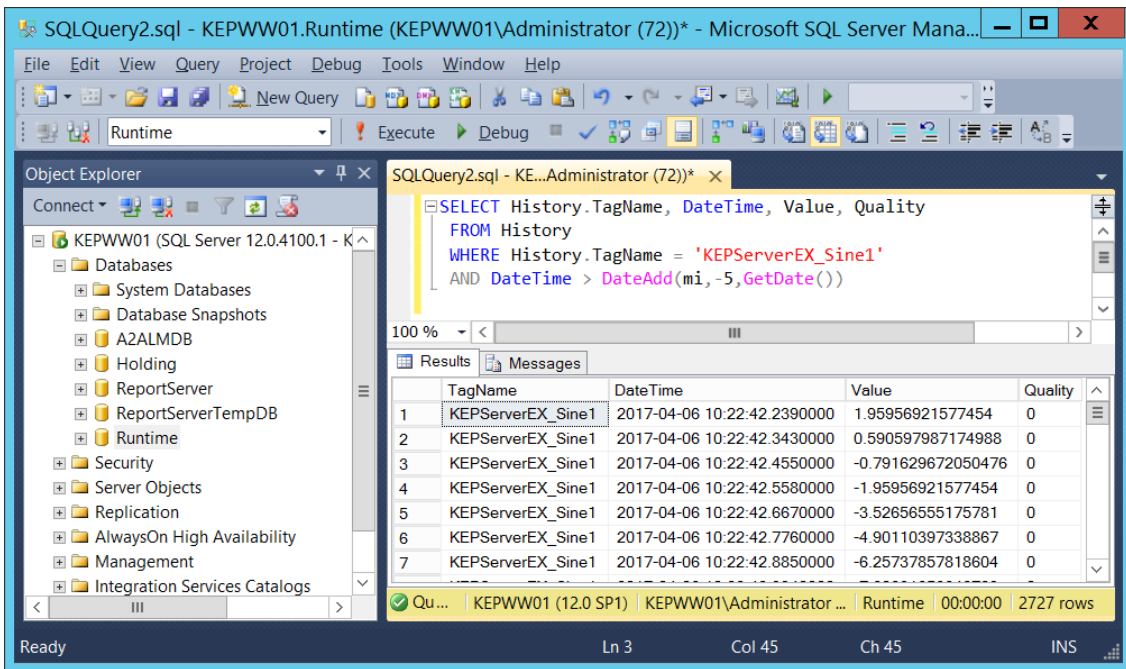
6. In the System Management Console, right-click any element of the Historian Configurator Editor and select **Commit Pending Changes**. This will validate and commit the newly created I/O Server Type, I/O Server, Topic, and Tag.



4. Viewing Historized Values

To view the historized values, open Microsoft SQL Server Management Studio and connect to the server running Wonderware Historian. Execute the following SQL query to get the stored values for the last 5 minutes for the Tag KEPServerEX_Sine1.

```
SELECT History.TagName, DateTime, Value, Quality
FROM History
WHERE History.TagName = 'KEPServerEX_Sine1'
AND DateTime > DateAdd(mi,-5,GetDate())
```



Wonderware provides tools to view and analyze historized data. One of the tools is Historian Client Trend. Open Historian Client Trend, connect to the Server and select the tag KEPServerEX_Sine1 from the Tag Picker. Drag and drop to the plot area.

