

Technical Note

Simulation Mode

The purpose of this note is to explain how Simulate Mode works in ThingWorx® Kepware® Server (formerly KEPServerEX®) and how it can be used to see changing data. This note applies to the following server versions:

- All KEPServerEX V4.x
- All KEPServerEX V5.X
- All KEPServerEX V6.X
- ThingWorx Kepware Server

1. Simulate Mode with OPC Clients

It is a common misconception that Simulate Mode allows the simulation of a device as is done with a soft PLC. This is incorrect. Simulate Mode is intended to be used when no physical device is available, but it is necessary to make sure a client application is functioning properly. It essentially echoes back to the connected client application anything the client writes to each tag. If nothing has been written to a Boolean or Analog tag, the value echoed back to the client is zero. If nothing has been written to a String tag, the value echoed back is a null character (the string display is blank).

1.1 Why Can't Two Clients See the Same Data

The server creates poll groups based on the update rates configured in an OPC client application. When the server is placed in Simulate Mode, it is these poll groups that are echoed back to the client. If two clients use different update rates, different data values are echoed back even when the clients are addressing the same tags. To use one OPC client to change data in the server and see it with another, connect both clients using the same update rates.

2. Simulate Mode with Non-OPC Clients

Tag update rates are not specified from within non-OPC clients. The Scan Rate of each tag is set within the server. When using Simulate Mode with non-OPC clients tag values are still echoed back to the client application. A non-OPC client connected to the same items sees changes made from another non-OPC client.

3. Simulate Mode with OPC and Non-OPC Clients

If using a non-OPC client to simulate changing data using the Kepware OPC QuickClient, ensure that the Update Rate used in the QuickClient is the same as the rate used for the client. There may also be an option of using the Alias Map feature to perform an override of a tag Scan Rate.