## **OPC UA Client and Server Connections Made Easy**



# **OPC UA Client and Server Connections**

OPC UA is the newest open standard from the OPC Foundation to facilitate open connectivity for a variety of systems. Use it to bridge all types of data across remote networks.



### OPC UA also effectively aggregates data from multiple devices, plants, sites, and entire operations. Use it to leverage meaningful information on the enterprise level.

Follow the five steps located in the sidebar to connect an OPC UA Client to KEPServerEX. Let's get started.

### **Follow the Steps**

### Step 1:

Define an endpoint in KEPServerEX's OPC UA Configuration Manager. OPC UA connections use endpoint addressing. An endpoint serves as the URL that other OPC UA software applications will use to find and connect to remote applications.

E	ndpoint Definition		×
	TCP Connection		
	Network Adapter:	Default	<b>_</b>

To create an endpoint in KEPServerEX, open the OPC UA Configuration Manager by right-clicking on the Administration icon (located in the System Tray) and selecting OPC UA Configuration.

Configuration
Start Runtime Service
Stop Runtime Service
Reinitialize
Reset Event Log
Settings
OPC UA Configuration
OPC .NET Configuration
Quick Client
License Utility
Help
Support Information
Exit



URL		<ul> <li>/ Security</li> </ul>		
Enabled				

In OPC UA Configuration Manager, open the Server Endpoints tab and then click Add.

In Endpoint Definition, locate Security Policies. Check None if your application does not need to use security certificates for encrypted communication (such as when the environment is already secured by IT). Leave the remaining settings at their default values, and then click OK to create the endpoint.

Endpoint Definition	×
TCP Connection	
Network Adapter:	Default
Port Number:	49320 +
opc.tcp	://Joanne-Win7LAP.kepdomain.local:49320
Security Policies	
I None	
Basic 128Rsa 15	Sign; Sign and Encrypt 💌
Basic256	Sign; Sign and Encrypt
	OK Cancel Help

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### Step 2:

Enter the newly-created server endpoint address in the OPC UA client.

OPC UA clients should support browsing for OPC UA servers. This means you can simply open your client application, add a server connection, and then browse for the KEPServerEX OPC UA server to connect.

If your client cannot find the KEPServerEX OPC UA server, enter the server endpoint address created in Step 1.

Enter the Url of a computer with discovery service running:						
opc.tcp://10.10.110.10:49320						
	ОК	Cancel				

Note: This image is from a Third-Party OPC UA client.

#### Step 3:

Exchange security certificates between the OPC UA Client and Server. **Note:** Skip this step if "None" was selected in the Security Policies section of the Endpoint Dialog in Step 1.

If the OPC UA client does not prompt you to exchange certificates with KEPServerEX automatically, then you must manually generate a certificate from the server and then upload it to the client.

To manually generate a certificate, return to the OPC UA Configuration Manager and open the Instance Certificates tab. Click Export Server Certificate.

Serve		
	<u>V</u> iew server certificate	Generated by SYSTEM@Joanne-Win7LAP.kepdomain.local on
	Export server certificate	2012-07-17T13:47:00.690 using OpenSSL 1.0.0d 8 Feb 2011
	<u>R</u> eissue certificate	
	Import certificate	
Client	Driver	
	View client driver certificate	Generated by SYSTEM@Joanne-Win7LAP.keodomain.local on
	Export client driver certificate	2012-07-17T13:47:00.779 using OpenSSL 1.0.0d 8 Feb 2011
	Rei <u>s</u> sue certificate	
	Import certificate	1

Save the certificate file and transfer it to the OPC UA client according to the client's instructions.



#### Step 4:

Trust the OPC UA client connection.

Browse to the Trusted Clients tab in KEPServerEX's OPC UA Configuration Manager. If the client you are trying to connect to has a red X, click on the name of the client and then click "Trust". If the client does not have a red X you may skip this step.

OPC UA Config	uration Manager			<b>—</b> X
Server Endpoints	Trusted Clients Discovery S	Servers   Trusted Servers	Instance Certificates	
Client Name		∆ URI		
KEPServerE	X/UA Client Driver	um:Joanne-W	/in7LAP.kepdomain.local:Kepware.	KEP
Import	Export Remove	Trust	View Certificate	. 1
import		- Huse	View Contribute	
ote: Server Runti	me reinitialization is required to u	utilize changes	Close	Help
sto. Convol Handi		danco onongoo.		nop

### Step 5:

Verify the connection is successful by reading tag values from KEPServerEX in the OPC UA Client application. In the OPC UA Client, check that tag values can be read and that they show "Good" quality. If KEPServerEX is not connected to a device, use the Simulator Driver to generate a ramp or sine wave function to see if data is changing.

🖌 🎵 Project	#	Server	Node Id	Display Name	Value
A D Servers	1	KEPServerEX/UA	NS2 String Channel1.Device1.Controller(cn1).clp	clp	Normal
KEPServerEX/UA@Joanne-	2	KEPServerEX/UA	NS2 String Channel1.Device1.Axes(ax).Linear(x1)	Xact	-1.4020783901
4 🧊 Documents					
📁 Default DA View					
4 III					
ddress Space 🗗 🗙	]				
🌶 No Highlight 🗾 👻	]				
🔺 🚞 Channel1 🔷					
🔺 🚞 Device1					
A Axes(ax)					
🔺 🧰 Linear(x1)					
Xact					
Vcom					

**Note:** This image is from a Third-Party OPC UA Client.