Setting up K-Spice OpcDaCom

Installation of OpcDaCom

To install the OpcDaCom application, run the installer called KSpiceOpcCom.exe. By default the program will be installed in the same folder as K-Spice (normally C:\Program Files\Kongsberg\K-Spice).

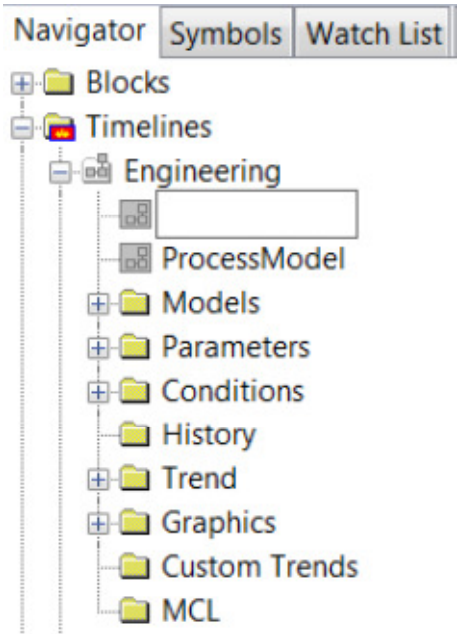
Please note that the installer will fail if you run it on a computer that has a 64-bit version of Microsoft Office installed. This is because the Microsoft Access Database Engine used by OpcDaCom is not compatible with 64-bit versions of Office. KSpiceOpcCom.exe should give an error message that informs you about this.

Microsoft Access 2007 (or newer) must be installed on the computer if you need to make changes to the database used by OpcDaCom. However, you can run OpcDaCom (with a pre-configured database) on computers without Access installed.

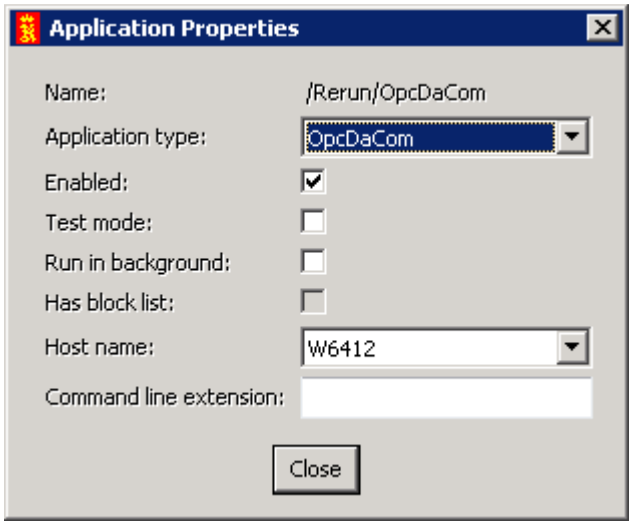
K-Spice Configuration setup

To set up OpcDaCom it's necessary to add it as an application in the K-Spice timeline in parallel to the ProcessModel and other applications. The purpose of doing this is to be able to launch the application through K-Spice SimExplorer by activation of the Timeline of the project.

By right-clicking on a timeline and choosing **New Application**, a new application is added and can be given a name. Enter OpcDaCom as the name (or another suitable name).



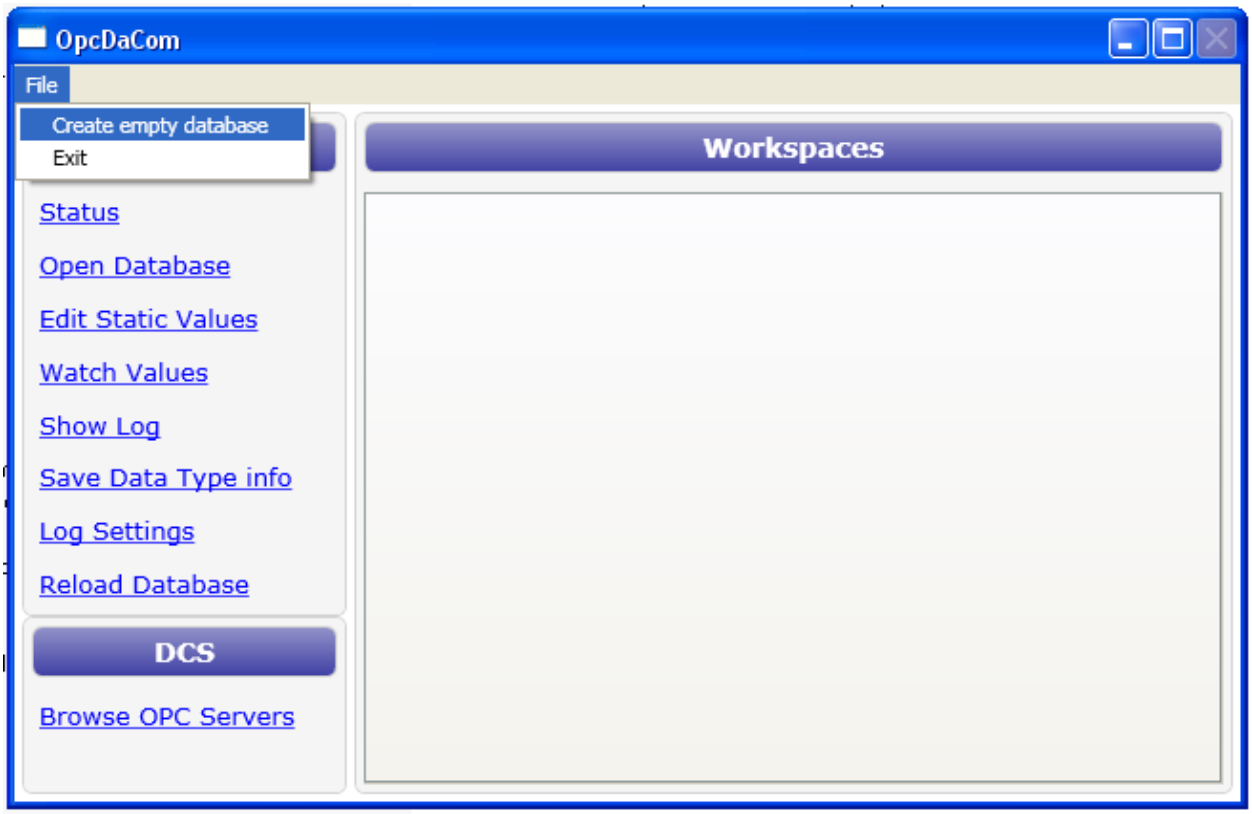
The new application settings should now be edited through the application's property dialog, which is selected via the **Properties** option on the application's right-click menu. Then select **OpcDaCom** as Application type in the drop-down menu.



When the Timeline is activated it will automatically create an OpcDaCom folder inside Timelines → Engineering folder. This folder will later include the new database that you create with the OpcDaCom program.

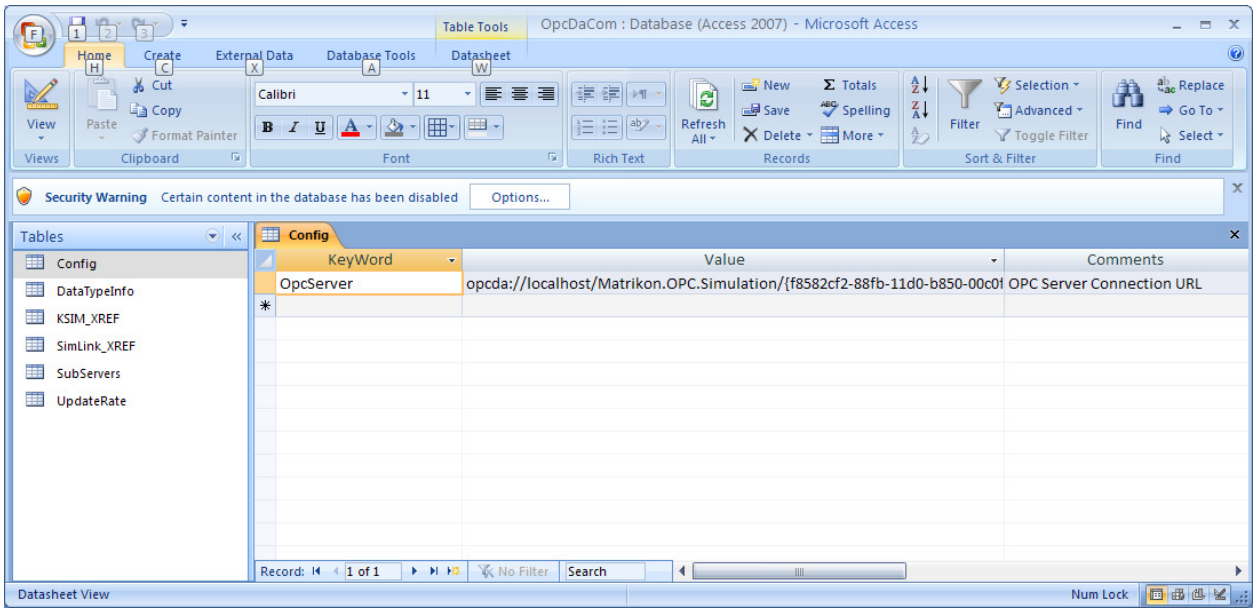
Creating a new database

When you activate the timeline, the OpcDaCom program should start automatically. To create a new database, open the File menu of the program and select **Create empty database**.

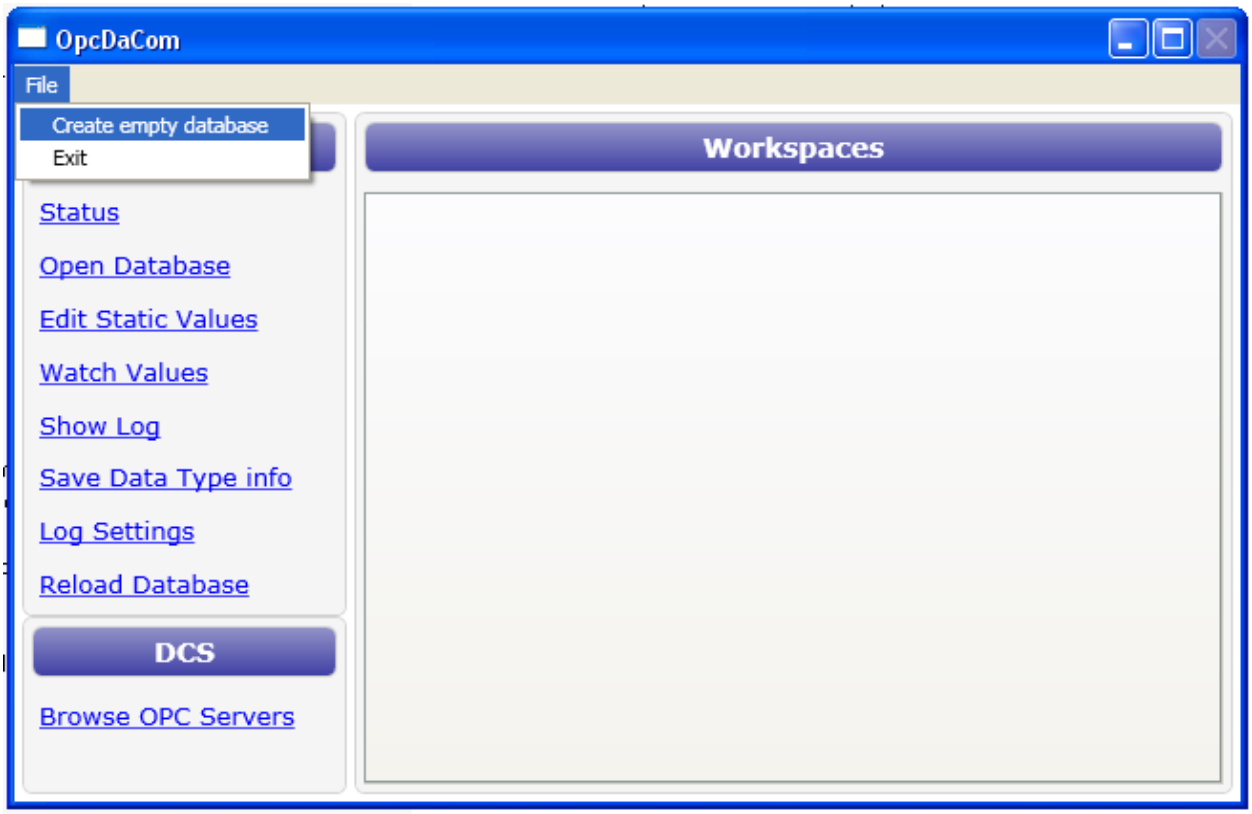


The new Access database should be saved in the OpcDaCom folder that has been created under the timeline folder (e.g. TimeLines\Engineering\Applications\OpcDaCom). The file name must be OpcDaCom.accdb.

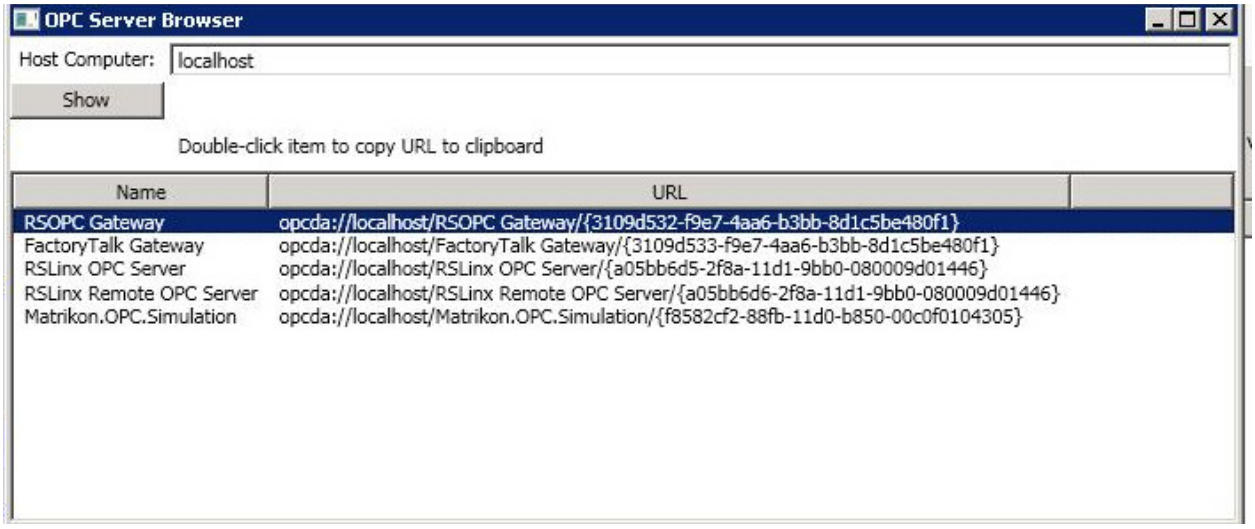
You can now open the database in Microsoft Access and make the necessary changes.



The Config table contains only the OpcServer keyword. Here you need to enter the OPC server connection URL in the "Value" field. To copy the URL, click on the **Browse OPC Servers** link in the OpcDaCom window.



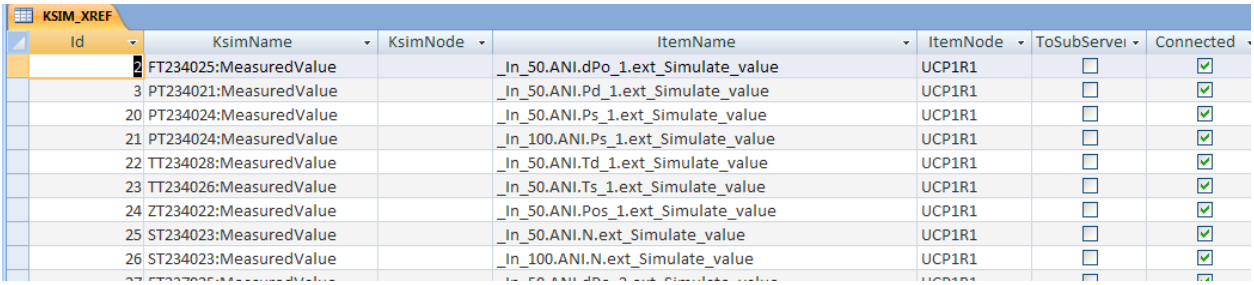
When the panel opens click on **Show**.



You can copy the OPC server connection URL from here and paste it in the Value field of the Config table. Note that a double-click is required to copy the text.

The DataTypeInfo table can be kept as it is.

The KSIM_XREF table must contain the cross-reference list between tags in the K-Spice model and the item names in the OPC server.



KSIM_XREF

Id	KsimName	KsimNode	ItemName	ItemNode	ToSubServer	Connected
2	FT234025:MeasuredValue		_In_50.ANI.dPo_1.ext_Simulate_value	UCP1R1	☐	☑
3	PT234021:MeasuredValue		_In_50.ANI.Pd_1.ext_Simulate_value	UCP1R1	☐	☑
20	PT234024:MeasuredValue		_In_50.ANI.Ps_1.ext_Simulate_value	UCP1R1	☐	☑
21	PT234024:MeasuredValue		_In_100.ANI.Ps_1.ext_Simulate_value	UCP1R1	☐	☑
22	TT234028:MeasuredValue		_In_50.ANI.Td_1.ext_Simulate_value	UCP1R1	☐	☑
23	TT234026:MeasuredValue		_In_50.ANI.Ts_1.ext_Simulate_value	UCP1R1	☐	☑
24	ZT234022:MeasuredValue		_In_50.ANI.Pos_1.ext_Simulate_value	UCP1R1	☐	☑
25	ST234023:MeasuredValue		_In_50.ANI.N.ext_Simulate_value	UCP1R1	☐	☑
26	ST234023:MeasuredValue		_In_100.ANI.N.ext_Simulate_value	UCP1R1	☐	☑

Description of the fields in the KSIM_XREF table:

Name	**Type**	**Notes**
Id	int	Automatic numeric identifier for the record. Used internally.
KsimName	text(255)	Name of the model tag. SomeBlock:SomeVariable
KsimNode	text(255)	• SubServer (ModelServer) where tag exists

Name	Type	Notes
		• Should match name defined in SubServer table • Blank indicates default ModelServer(if available)
ItemName	text(255)	• Name of the OPC tag
ItemNode	text(255)	• Optional • Any text you enter here will be added as a prefix to the ItemName when making OPC subscriptions
ItemType	text(255)	• Not required for OpcDaCom
ItemAttribute	text(255)	• Alternate method of entering Attributes (BinaryCopy, etc) • Optional.
ToSubServer	bit	When checked (-1), the data is read from the OPC server
Bidirectional	bit	When checked (-1), ToSubServer is ignored and data is read/write.
Connected	bit	When unchecked (0), record is ignored.
SourceItemName	text(255)	Source OPC item for writing data from one OPC tag to another OPC tag. In which case, KsimName should be blank.
SourceFlag	bit	When checked (-1), ItemName is used as a source of data for a SourceItemName
StaticValue	text(50)	A static value to send to the OPC server instead of connecting to a ModelServer tag.

Name	Type	Notes
DcsUnit	text(255)	• Optional • The unit the OPC item is in. Note: The ModelServer does any required conversions.
Tolerance	single	Fractional change required before an item value is sent over the connection.
Invert	bit	When checked (-1), whether the boolean value is inverted before being written.
KsimComment	text(255)	Text field ignored by the SimLink available for Project use.
TestDate	text(50)	Text field ignored by the SimLink available for Project use.
Sign	text(255)	Text field ignored by the SimLink available for Project use.
UpdateRate	text(255)	Update rate of item. Should match a RateName in the UpdateRate table.
Length0	long	Not currently working. Used for automatic array connections.
Length1	long	Not currently working. Used for automatic array connections.

The SimLink_XREF table can be kept blank.

The SubServers table must contain the name of the application containing the K-Spice model. In the example below this is ProcessModel (inside Engineering Timeline of K-Spice).

SubServers

KsimNode	SubServer	Connected	Add New Field
ProcessModel	/Engineering/ProcessModel	-1	
*			

The UpdateRate table can be modified as needed.

UpdateRate

RateName	Milliseconds	Add New Field
Fast	1000	
Medium	2000	
Slow	3000	
*		

After making changes to the database, you should reload it to apply the changes. Use the link "Reload Database" in OpcDaCom to do this. In some cases it may also be necessary to deactivate (stop) the timeline and activate it again.

Status information and diagnostics

Whenever you start OpcDaCom with a new or updated database, it's a good idea to open the Status page in OpcDaCom to check that all OPC items are connected and there are no errors. If you need more details about any errors, you can click the "Show Log" link to see the full log file of the program.

OpcDaCom also has a page called "Watch Values" where you can add OPC items that you want to inspect. This is useful for checking that the program is sending/receiving correct values.