



Setup Examples

RTPOPC Server Configuration Development Example

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RTPOPC Server Configuration Development

The RTP3000 system includes OPC Server support to provide variables to OPC Clients. This example has 5 sections:

- First we will develop a simple NetArrays Program to generate 4 variables to be used by the OPC Server.
- Second we will develop an OPC Server Configuration by importing the 4 tags from the Project Tag Data Base (PTDB). You can choose to either use the Import OPC Tags or Enter OPC Tags in the third section. The resulting configuration will be the same.
- Third we will develop an OPC Server Configuration by entering the 4 tag names into the OPC Server.
- Fourth we will start the desired OPC Server configuration.
- Lastly we will develop an RTPView Program to be an OPC Client and display the 4 OPC variables.

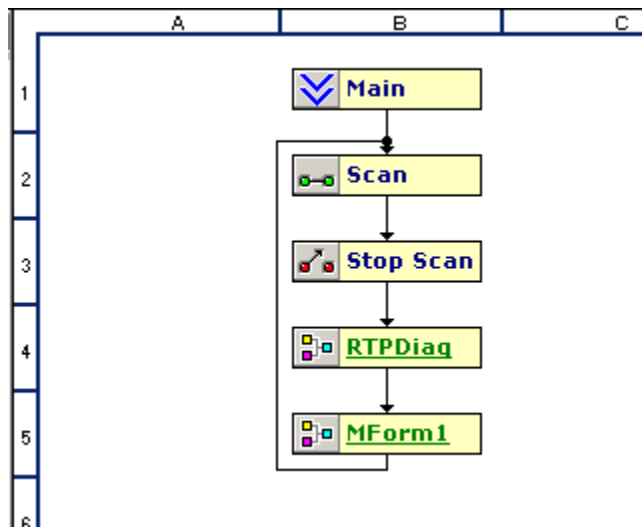
Developing a Simple 4-Variable NetArrays Project

Developing NetArrays Project

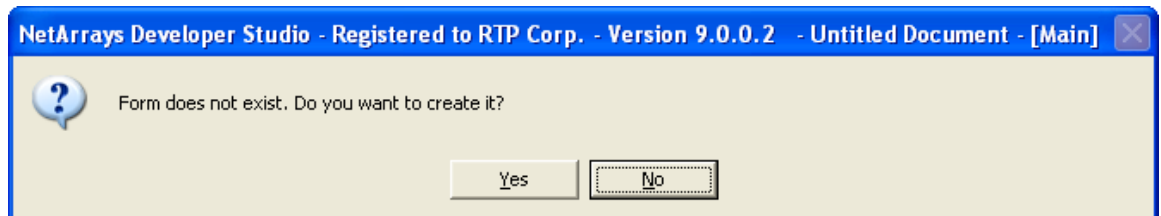
- On your PC, press  **Start** and select **Programs** ▶ **RTP NetSuite** ▶ **NetArrays**.
- Enter User Name and Password. We are using “rtp” for both.



- The configuration will look as shown below:

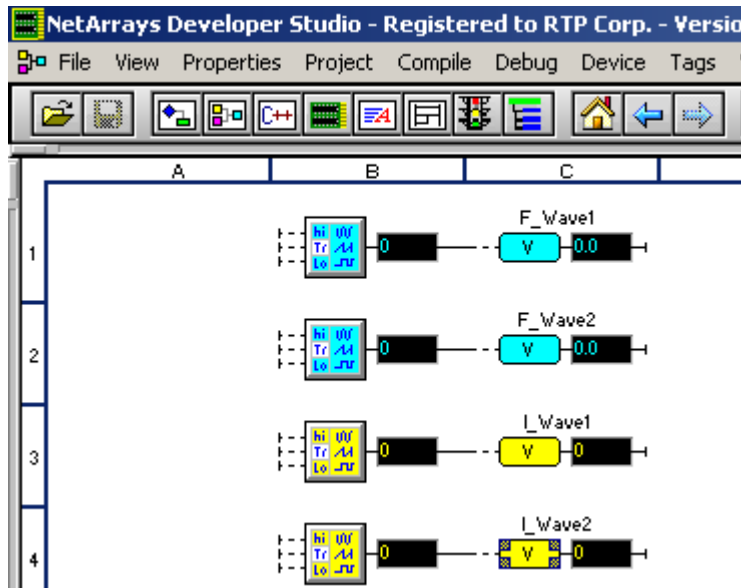


- Double click on **MForm1** to open it. When prompted, select **Yes** to create MForm1.



- Change the configuration parameters of the objects as shown in the table that follows. Left click on objects in the Right Pane, then drag and drop them as shown on the figure below.

RTPOPC Server Configuration Development Example



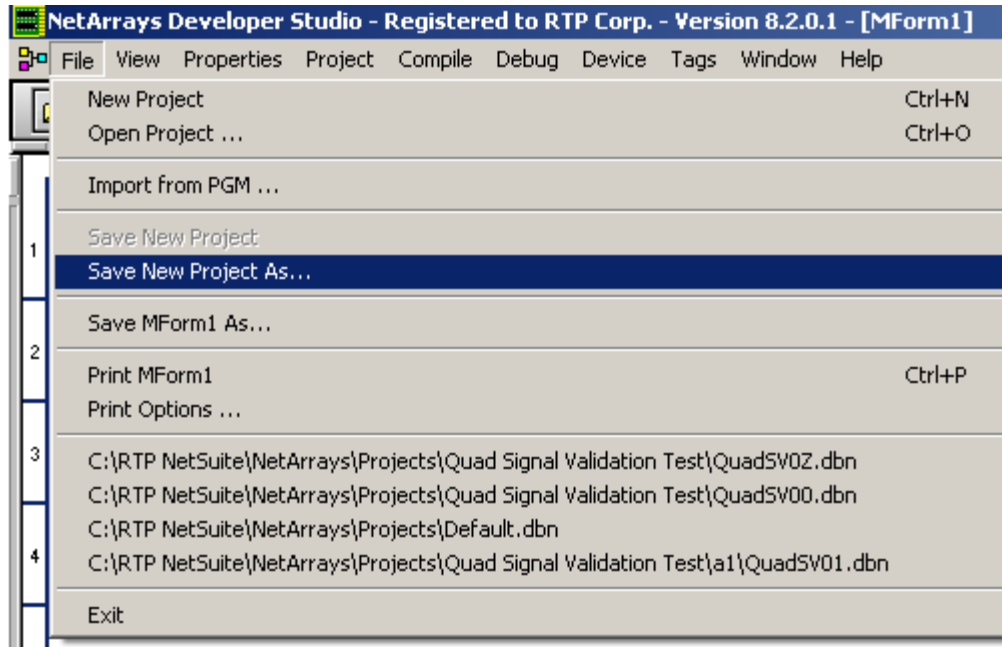
Object Parameters

Object Location	Object Type	Parameter	Notes
B1	Float Waveform	Period = 30	
C1	Float Variable	Tag = F_Wave1	Will be used by OPC
B2	Float Waveform	Period = 45	
C2	Float Variable	Tag = F_Wave2	Will be used by OPC
B3	Integer Waveform	Period = 1.5	
B3	Integer Variable	Tag = I_Wave1	Will be used by OPC
B4	Integer Waveform	Period = 2	
C4	Integer Variable	Tag = I_Wave1	Will be used by OPC

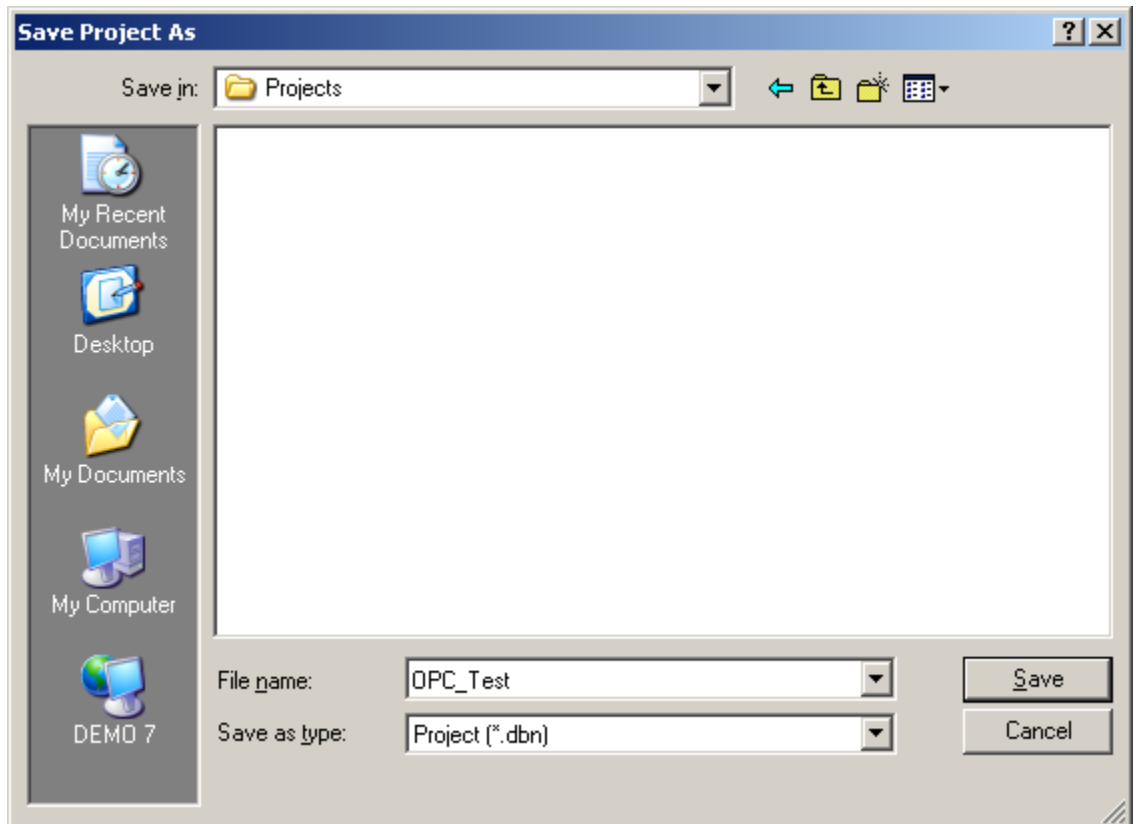
All other parameters will be left in their default state.

Saving the Project

- Click on **File** and **Save New Project as**.



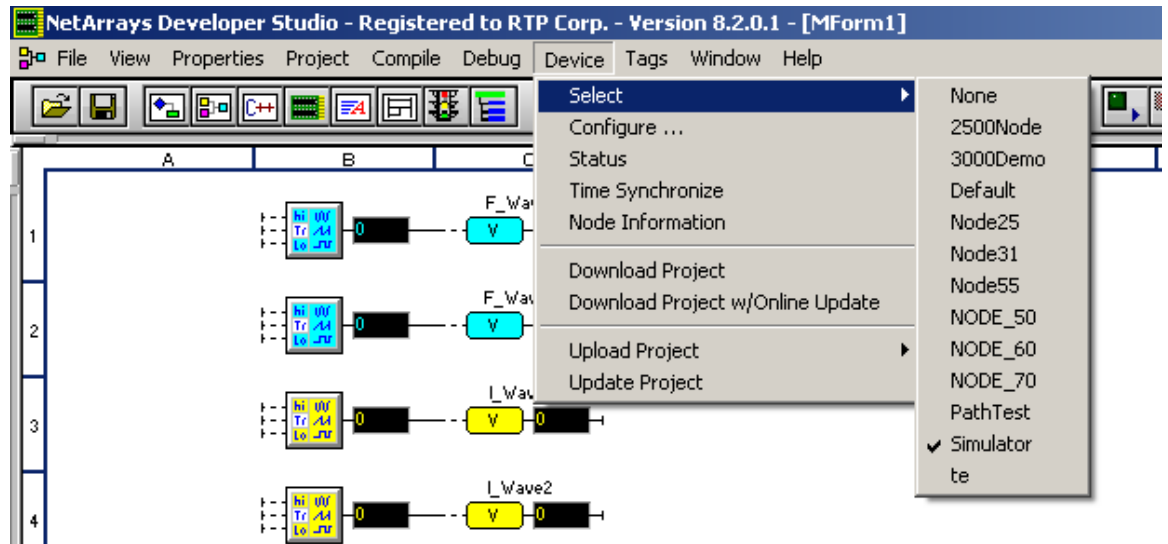
- Navigate to the desired directory, enter the **FileName** (such as **OPC_Test**) and click **Save**.



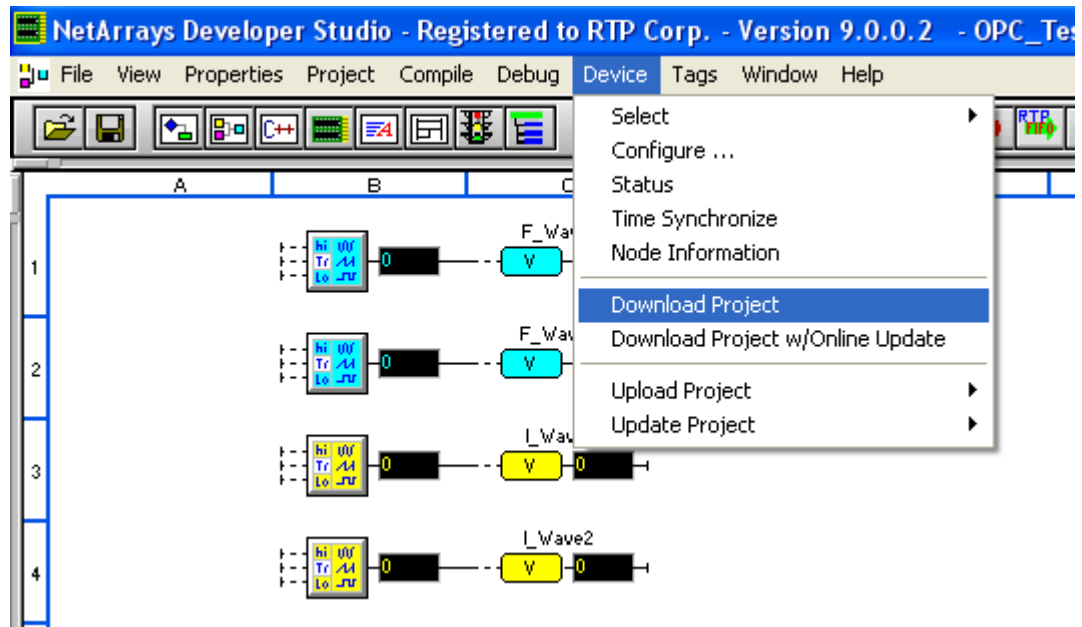
Downloading and running the Project

- Download the program to the Simulator. First click **Device** on the **Main Toolbar**. Click **Select** then choose **Simulator**.

RTPOPC Server Configuration Development Example



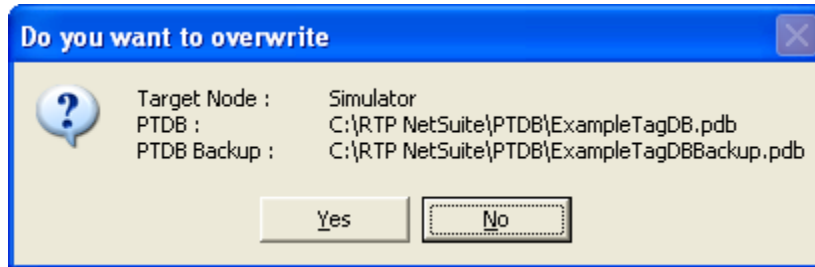
- Select **Device** and **Download Project**.



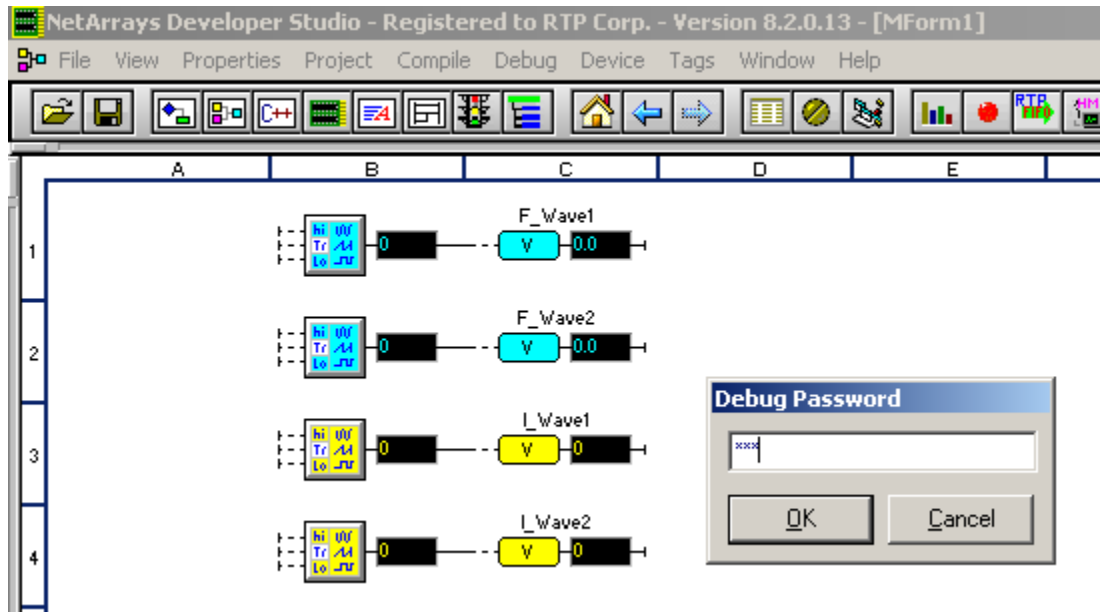
- Enter the password you have defined, for the **Download Password**. The default is **rtp**.



- Select **Yes** for **Do you want to overwrite?**.

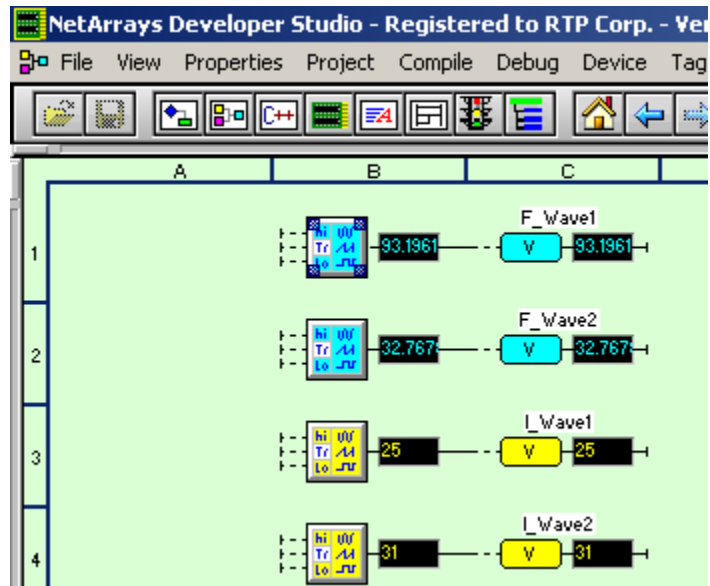


- Click on the **Debug** button on the **Main Toolbar** and select **Run Simulator F5**. Enter **rtp**, or the password you have defined, for **Debug Password**. Click **OK**.



- Observe that the variables **F_Wave1**, **F_Wave2**, **I_Wave1** and **I_Wave2** are ranging between **0** and **100**.


RTPOPC Server Configuration Development Example

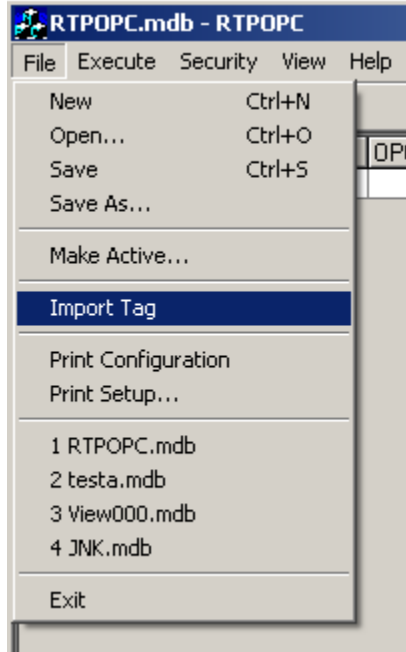


- This completes the creation of a NetArrays configuration.

Developing an OPC Configuration by Importing Tags from PTDB

Importing Tags to the OPC Server Configuration

- You can choose to either Import OPC Tags from the PTDB (this section) or Create OPC Tags by entering tags names as shown in the next section. The resulting configurations in these two examples will be the same. Each will result in the same OPC Server configuration.
- On your PC, press  **Start** and select **Programs** ▶ **RTP NetSuite** ▶ **RTPOPC**.
- Click on **File** and select **Import Tag**.




- Using the Tag Filter at the bottom of the window, enter ***_Wave***. Highlight **F_Wave1** through **I_Wave2**. Then **OK**.

Saving the OPC Server Configuration

- Click on **File**, select **Save As**, navigate to the desired directory, enter the **File Name** (such as **OPC_Sample**), and click **Save**.
- This completes the creation of the OPC Server configuration by importing tags.

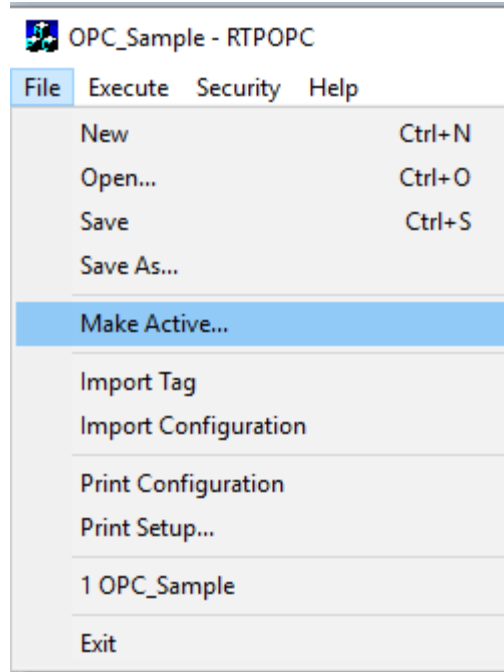
Starting and Running the OPC Server

Open the OPC Server Configuration

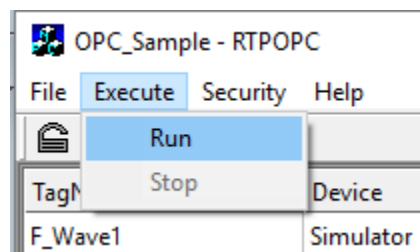
- On your PC, press  **Start** and select **Programs** ▶ **RTP NetSuite** ▶ **RTPOPC**.
- Click on **File**, select **Open**, and navigate to the directory with the desired file. Select the **File Name** (such as **OPC_Sample**), and click **Open**.

Make the OPC Server Configuration Active

- Click on **File**, select **Make Active**.

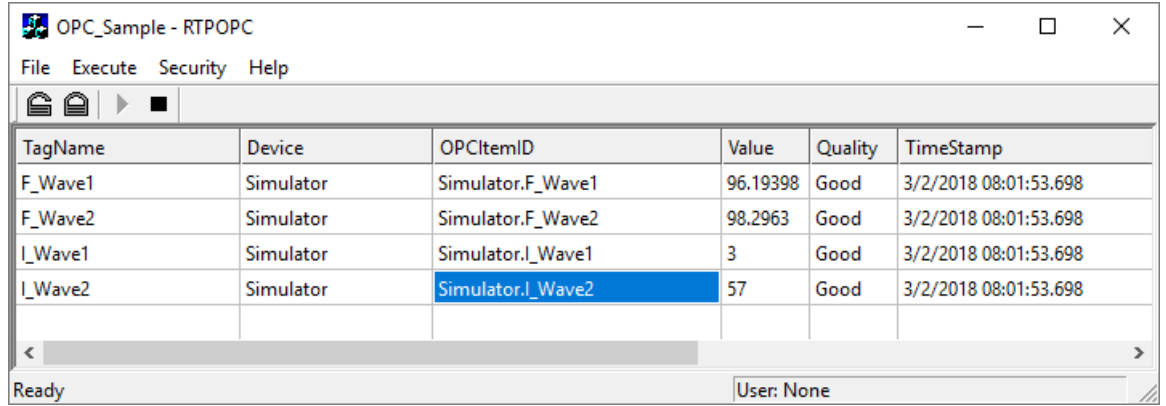


- Run the OPC Server to verify that it is connected correctly before proceeding to the next step. Click on **Execute** and select **Run**.



- The OPC Server will show the **Value** of each of the 4 variables changing as in NetArrays and the **Quality** for each is **Good**. See the figure below. If the **Value** and **Quality** are not as expected, check the linkage to the variables selected.

RTPOPC Server Configuration Development Example



The screenshot shows a window titled "OPC_Sample - RTPOPC" with a menu bar (File, Execute, Security, Help) and a toolbar. Below the toolbar is a table with the following data:

TagName	Device	OPCItemID	Value	Quality	TimeStamp
F_Wave1	Simulator	Simulator.F_Wave1	96.19398	Good	3/2/2018 08:01:53.698
F_Wave2	Simulator	Simulator.F_Wave2	98.2963	Good	3/2/2018 08:01:53.698
I_Wave1	Simulator	Simulator.I_Wave1	3	Good	3/2/2018 08:01:53.698
I_Wave2	Simulator	Simulator.I_Wave2	57	Good	3/2/2018 08:01:53.698

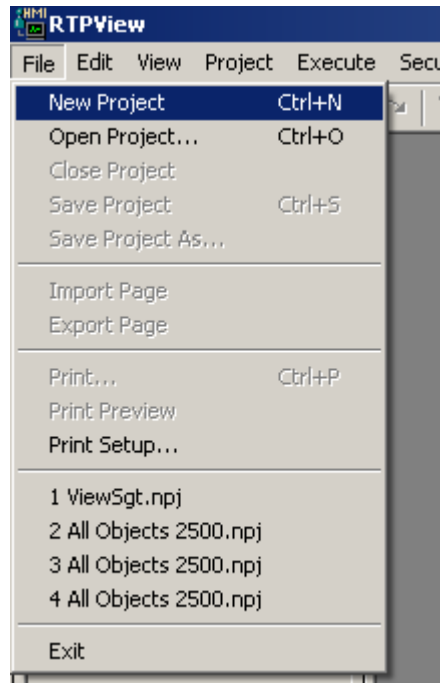
The status bar at the bottom indicates "Ready" and "User: None".

- This completes the Starting OPC Server section.

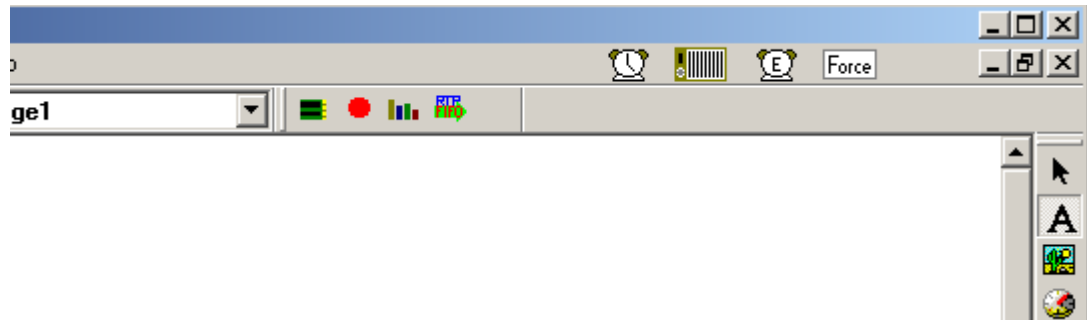
Developing and Running an RTPView Configuration Linked to Variables via an OPC Server

Creating the RTPView Configuration

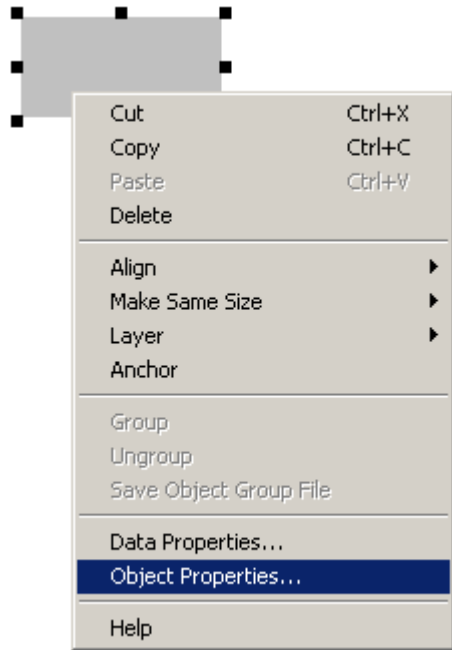
- On your PC, press  **Start** and select **Programs** ▶ **RTP NetSuite** ▶ **RTPView**.
- Click on the **File** and select **New Project**.



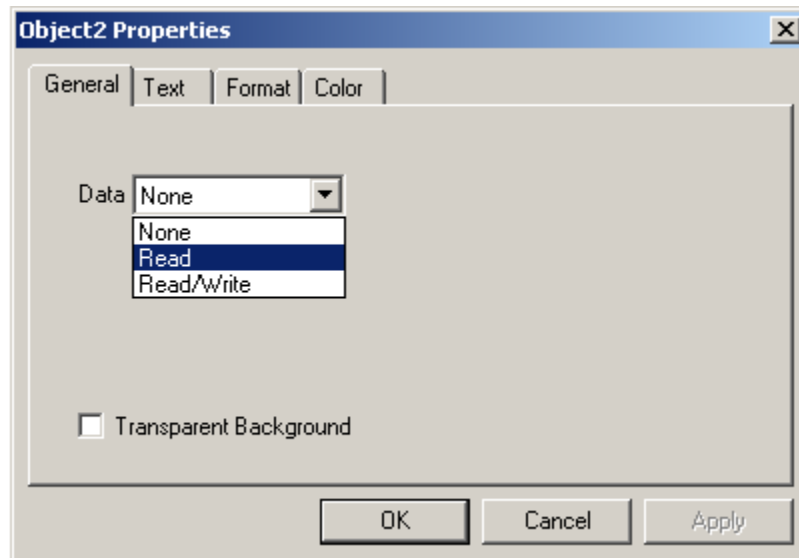
- Click on the **No** to the query **“Project has been modified. Save Changes?”**
- Left click on the **Edit Box** Icon  on the Palette and left click on the page that was created.



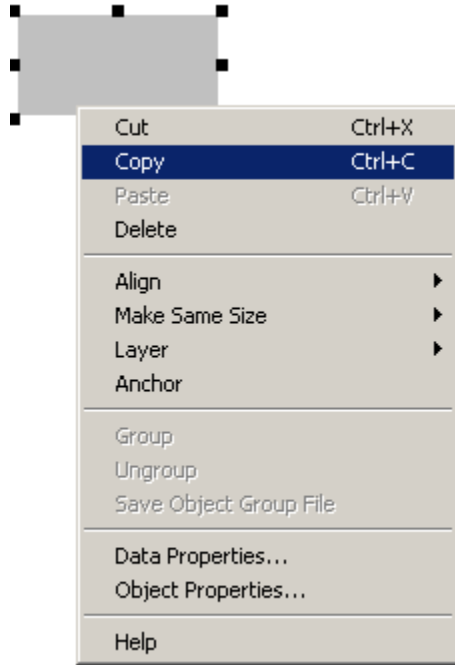
- Right click on the **Edit Box** that was added and select **Object Properties**.



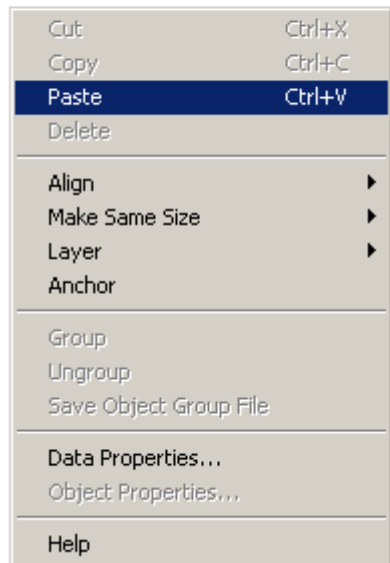
- Under the **General** tab select **Read** and click **OK**.



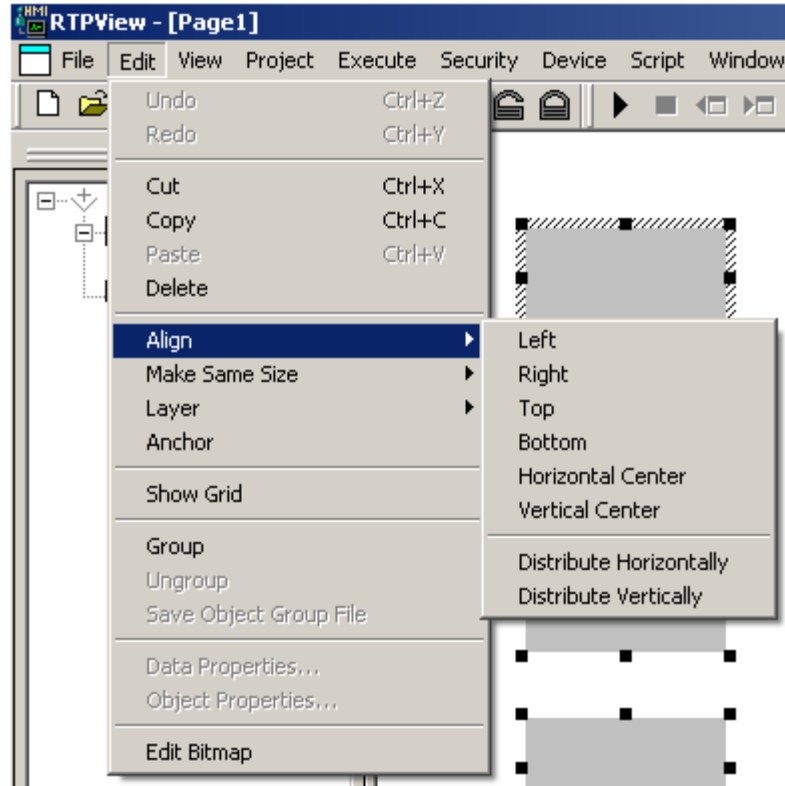
- Right click on the **Text Box** created and select **Copy**.



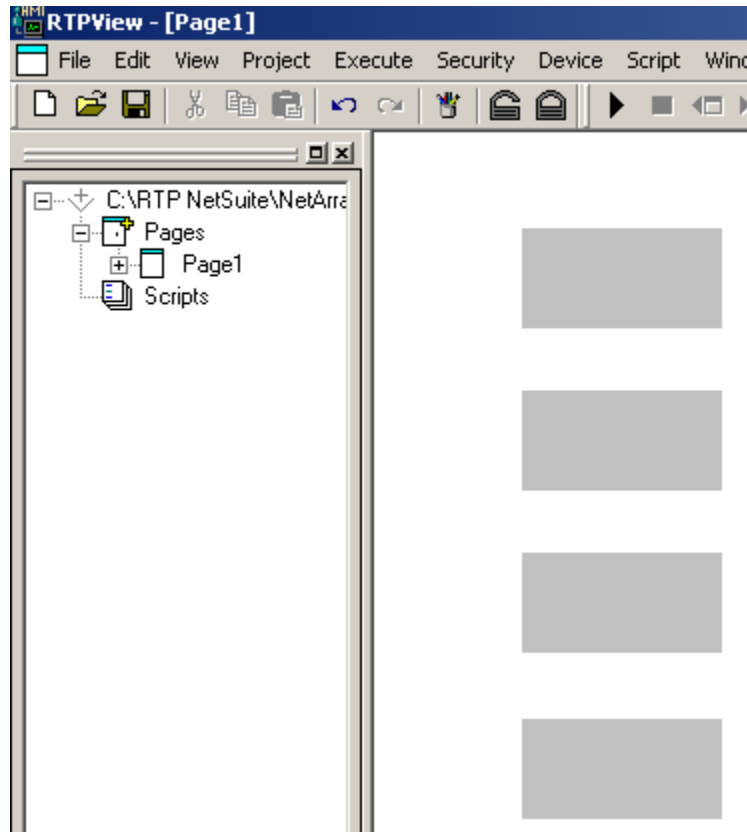
- Right click on a clear area on the page and select **Paste**. Repeat the **Paste** operation two more times. You should now have four text boxes.



- Align the objects as desired.

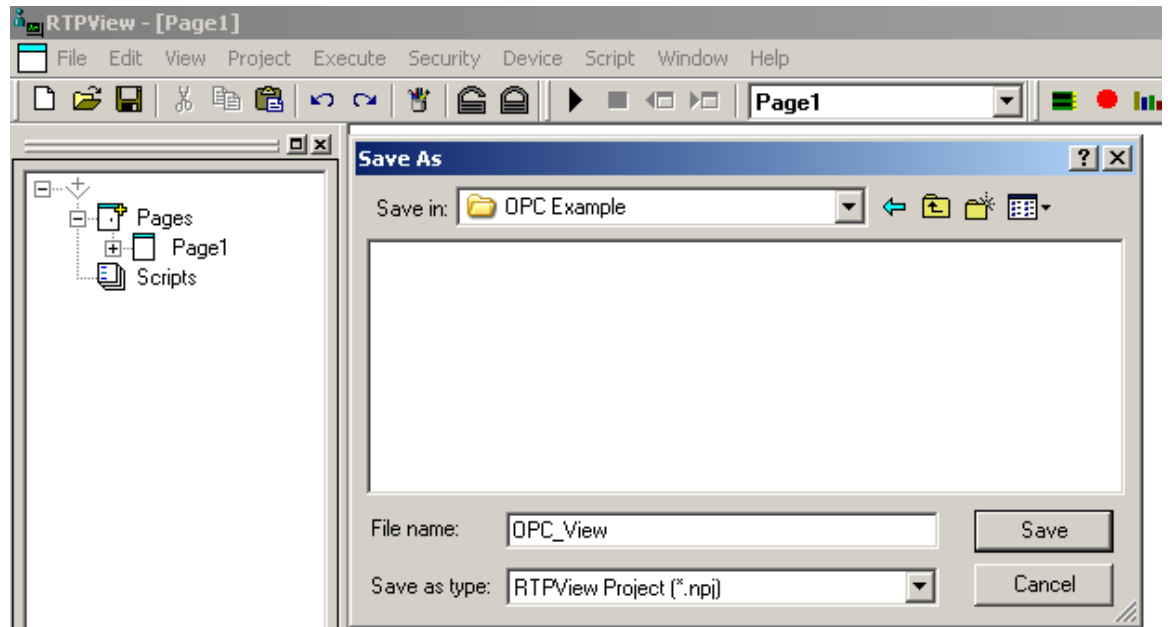


- The page should look similar to the one below.



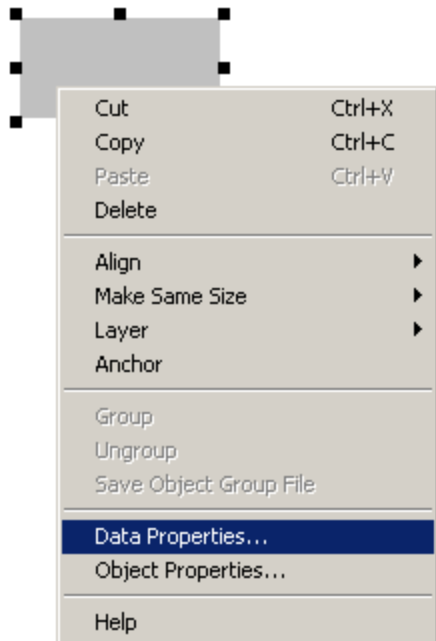
Saving the RTPView Configuration

- Click on **File**, select **Save As**, navigate to the desired directory, enter the **File Name** (such as **OPC_View**), and click **Save**.



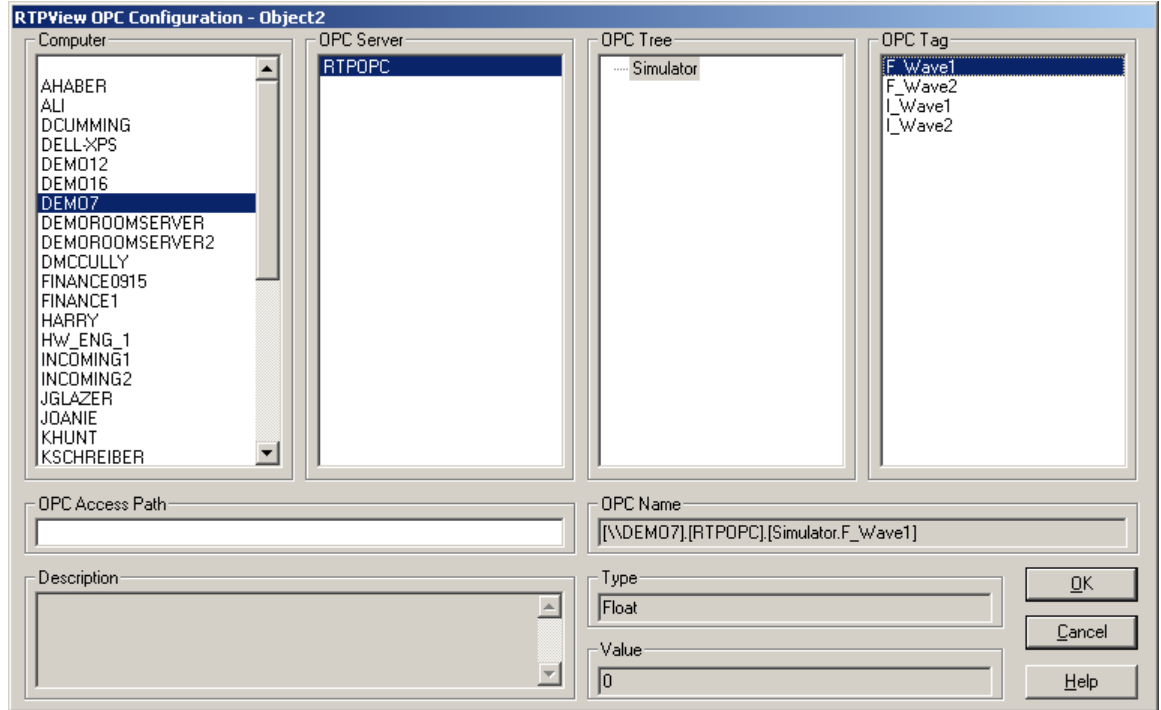
Linking RTPView Application to the OPC Tags

- Right click on the first **Edit Box** and select **Data Properties**.



- In the Object Properties window, find the OPC property and left mouse click box to bring up the **OPC window**. Select the **Computer** (the one running the Simulator), **OPC Device (RTPOPC)**, **OPC Tree (Simulator)**, and **OPC Tag (F_Wave1)**. Then click **OK** twice.

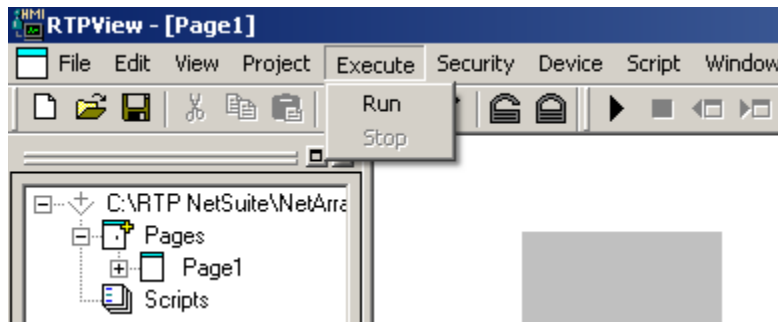
RTPOPC Server Configuration Development Example



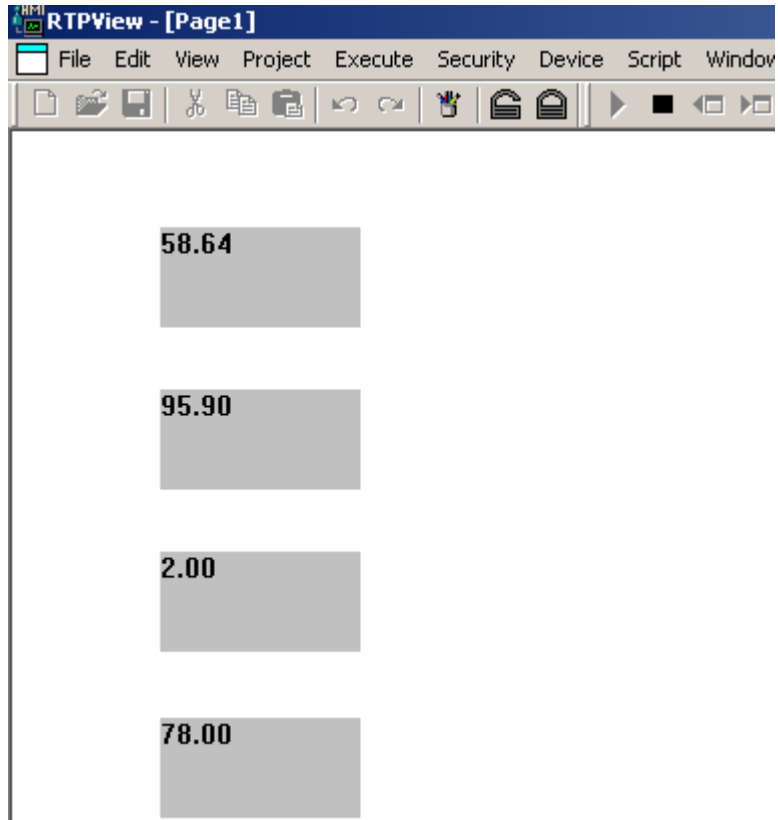
- Repeat on the other 3 **Edit Boxes** and select Tags **F_Wave2**, **I_Wave1**, and **I_Wave2** as in the step above.
- Save the Project by selecting **File** and **Save Project**.

Run RTPView Application and Observe the 4 Variables

- Click on **Execute** and select **Run**. This will cause the RTPView project to execute.



- The RTPView window should look similar to the one below. All 4 variables will be changing to match the variables on the NetArrays screen.



Congratulations! You have successfully completed your first NetArrays OPC configuration and run it on the Simulator.