

TUTORIAL

Debugging DLL

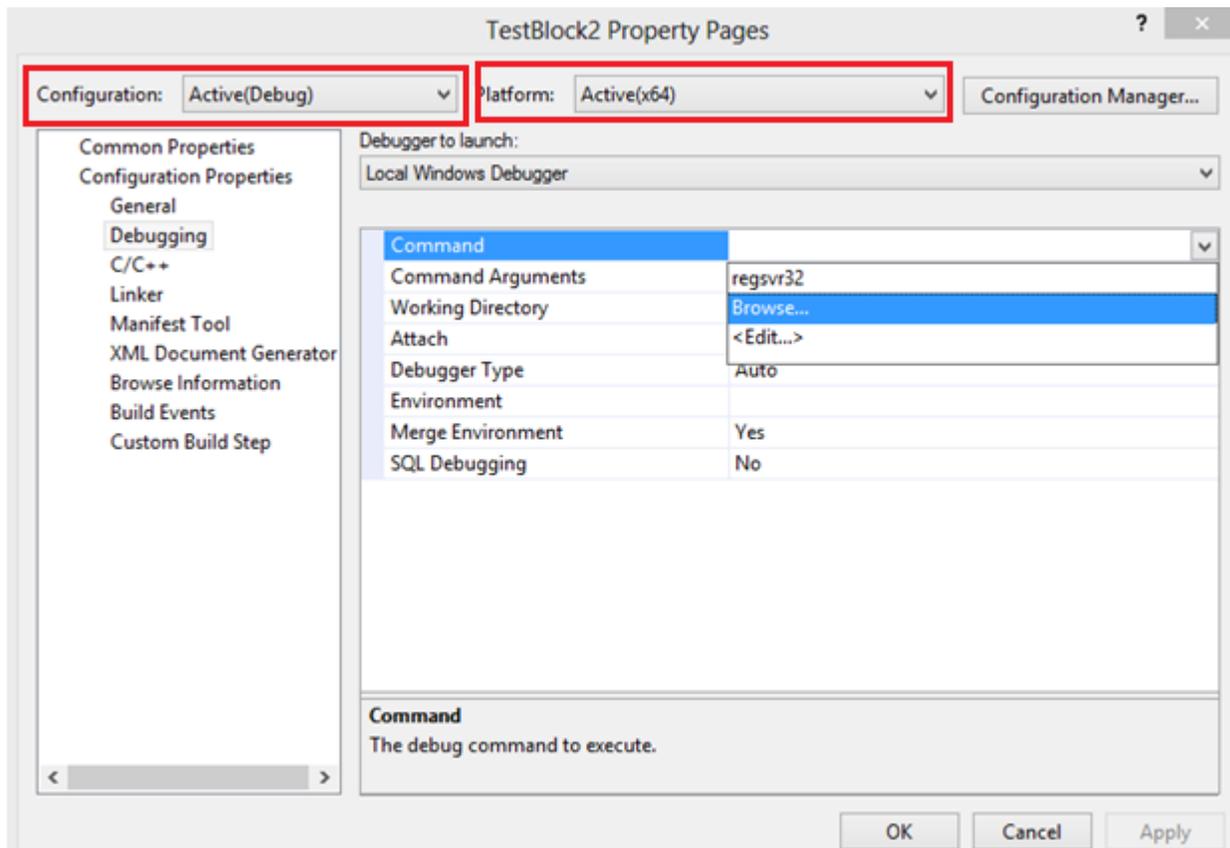
October 2016

When working with DLL blocks, it is important to note that 32-bit DLL only works with 32-bit PSIM, and 64-bit DLL only works with 64-bit PSIM.

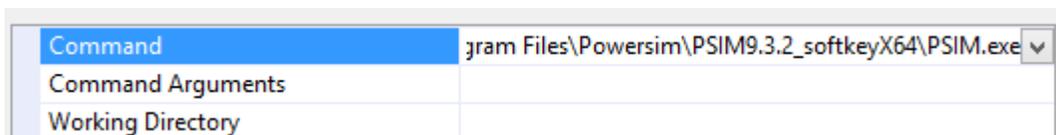
To compile 64-bit DLL with Microsoft Visual C++, please refer to MSDN help: [How to Configure Visual C++ Projects to Target 64-Bit Platforms](#).

To debug a DLL file, load the DLL project into Microsoft Visual C++, and rebuild it with the Debug configuration and the proper bit platform (32-bit or 64-bit). Go to **Project >> Properties** to open the project's property page. The configuration must be "Active(Debug)" and the platform must be correct. In the left panel, select **Configuration properties >> Debugging**, and in the right panel, click on **Command** and browse for "PSIM.exe" in the PSIM folder.

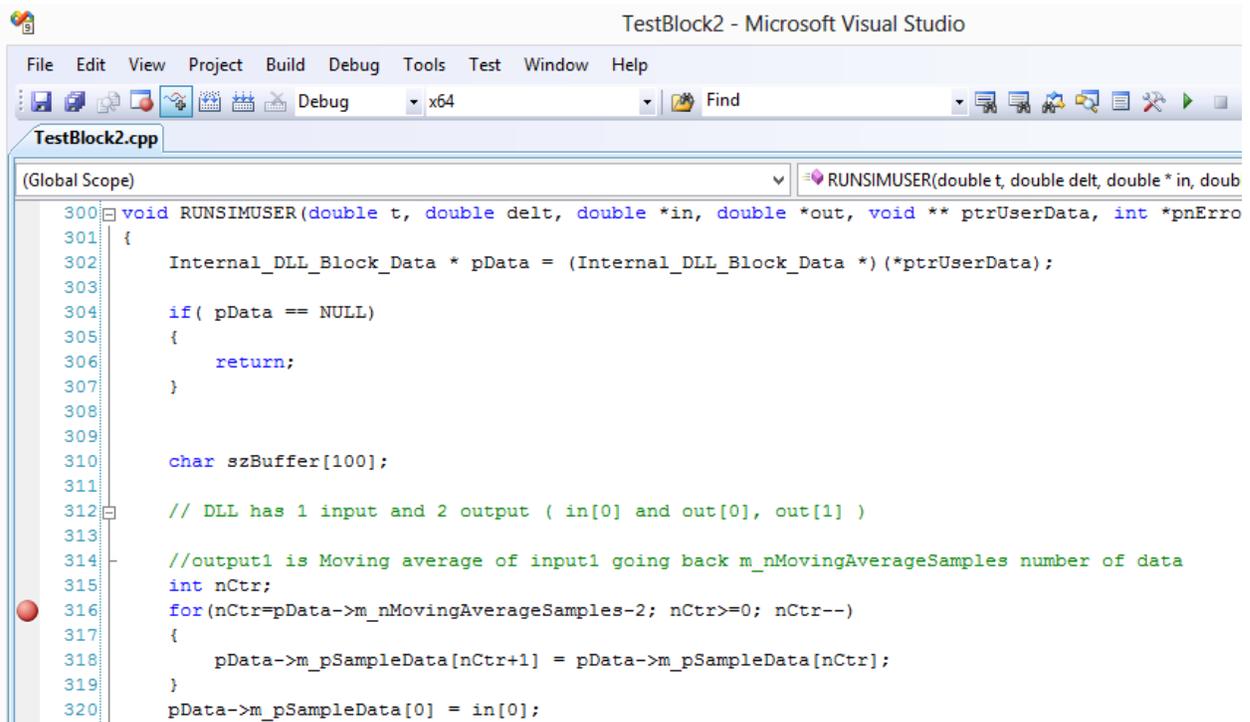
The property dialog window is shown below.



After the command is selected, the dialog is shown below.

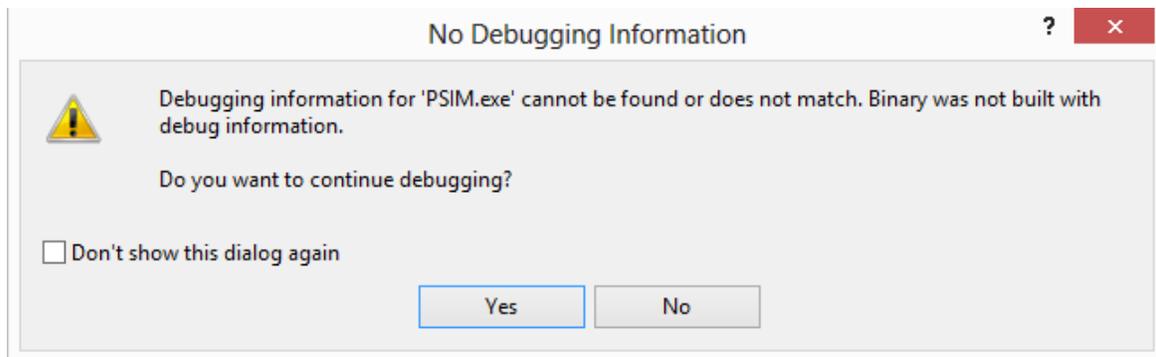


In the code, place one or more break points in desired locations, as illustrated below.

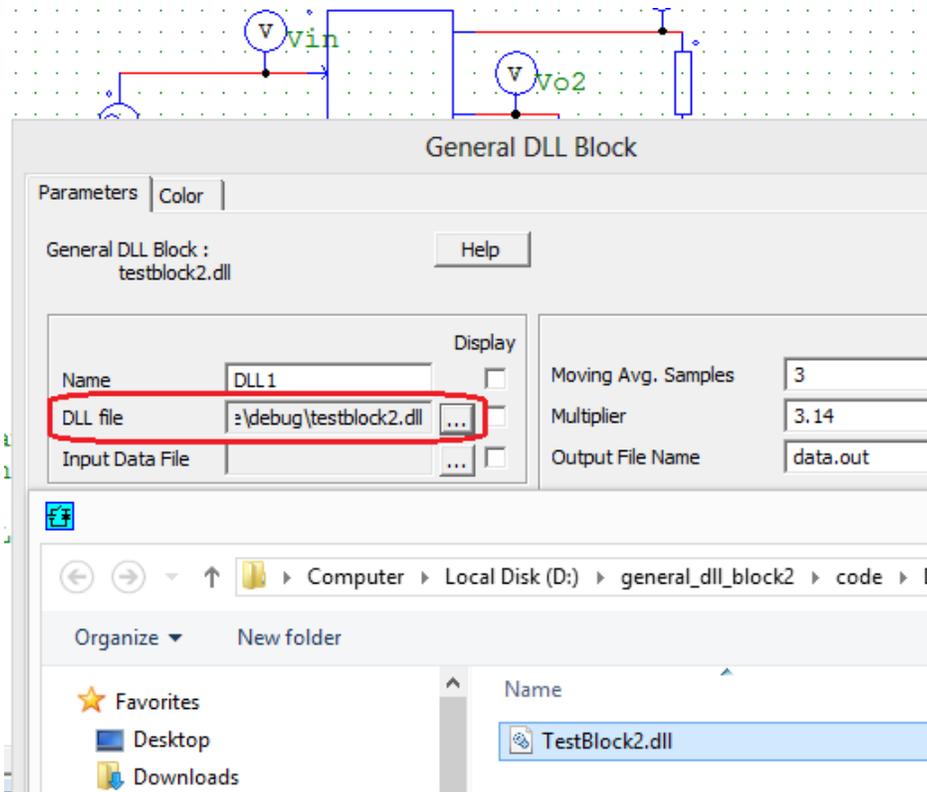


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TestBlock2 - Microsoft Visual Studio
File Edit View Project Build Debug Tools Test Window Help
Debug x64 Find
TestBlock2.cpp
(Global Scope) RUNSIMUSER(double t, double delT, double *in, double *out, void ** ptrUserData, int *pnError)
300 void RUNSIMUSER(double t, double delT, double *in, double *out, void ** ptrUserData, int *pnError)
301 {
302     Internal_DLL_Block_Data * pData = (Internal_DLL_Block_Data *) (*ptrUserData);
303
304     if( pData == NULL)
305     {
306         return;
307     }
308
309
310     char szBuffer[100];
311
312     // DLL has 1 input and 2 output ( in[0] and out[0], out[1] )
313
314     //output1 is Moving average of input1 going back m_nMovingAverageSamples number of data
315     int nCtr;
316     for(nCtr=pData->m_nMovingAverageSamples-2; nCtr>=0; nCtr--)
317     {
318         pData->m_pSampleData[nCtr+1] = pData->m_pSampleData[nCtr];
319     }
320     pData->m_pSampleData[0] = in[0];
```

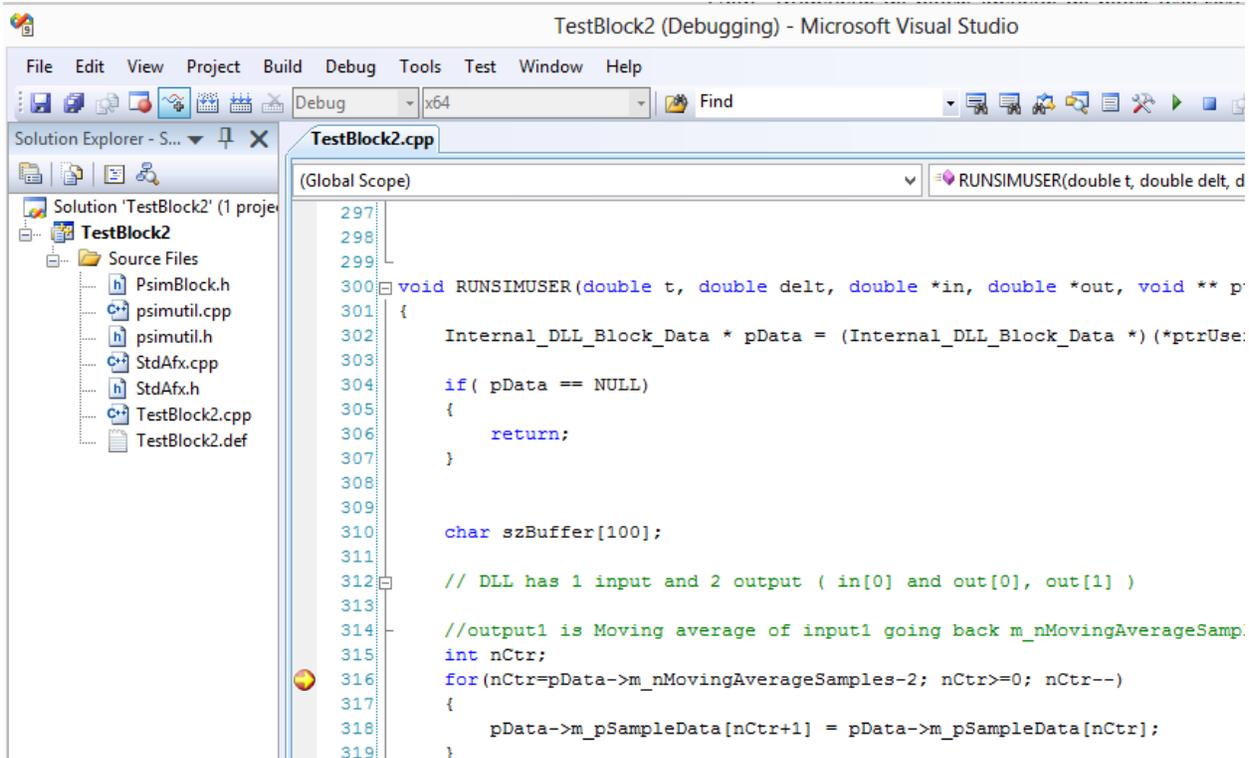
From the menu, go to **Debug >> Start debugging**. A warning message will be shown as below.



This is to be expected. Click **Yes** to continue, and PSIM should start. Create a new schematic file and place a general DLL block into the schematic. Select the debug version of DLL that you have just created as the General DLL block's DLL file. You can also open an existing schematic file that already contains the DLL block. The image below shows the DLL file definition of a DLL block.



Modify the circuit as desired. Save the schematic file and run the simulation. Execution will stop at the break points, as shown below.



If execution does not stop, check the location of the break points. One common error is that a wrong DLL file, or the release version of the DLL file, is selected for the general DLL block. The path of the generated DLL file is shown in Visual C++ as shown below.

