Debugging Software Using SDK

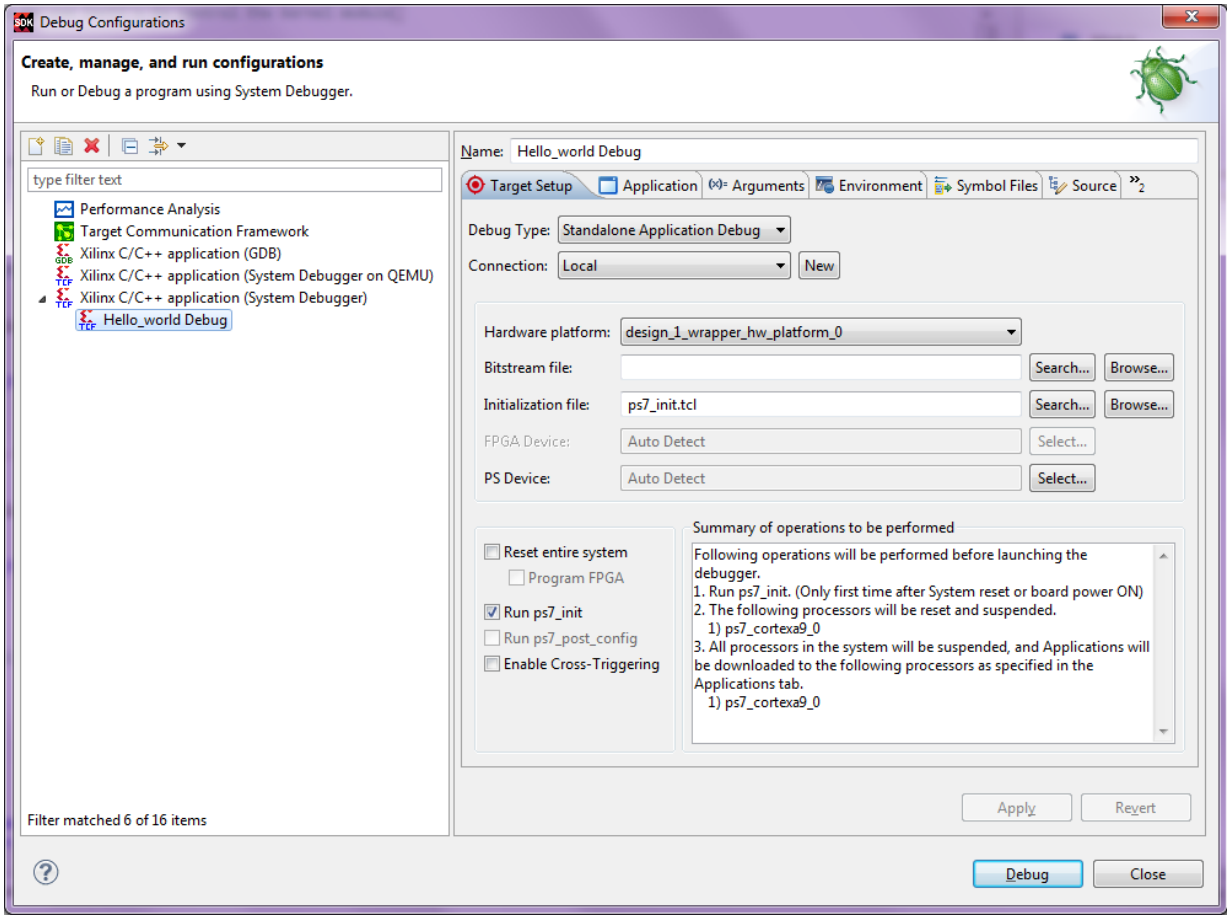
In this example, you will walk through debugging a hello world application.

After you create the Hello World Application, work through below example to debug the software using SDK.

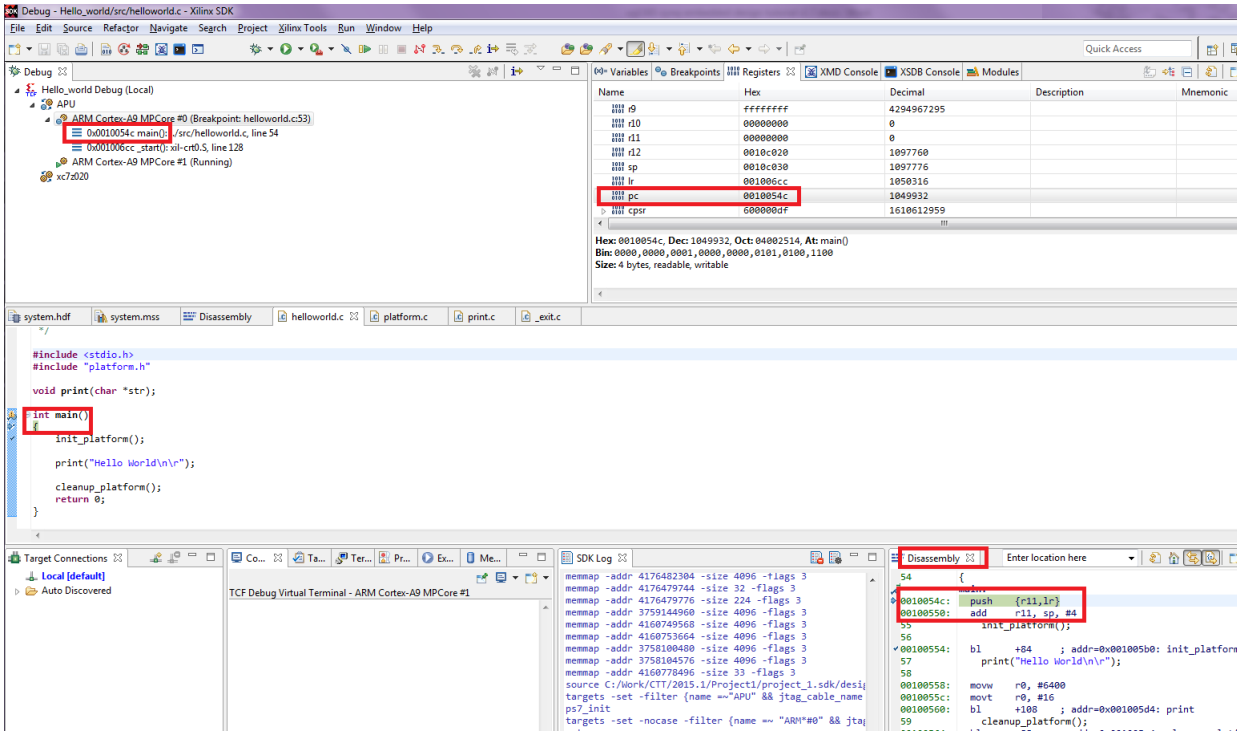
1. In the C/C++ Perspective, right-click the `Hello_world` Project and select **Debug As > Launch on Hardware (System Debugger)**.

   If the **Confirm Perspective Switch** popup window appears, click **Yes**.

   The Debug Perspective opens.



Note: If the Debug Perspective window does not automatically open, select **Window > Open > Perspective > Other**, then select **Debug** in the Open Perspective wizard.



Note: The addresses shown on this page might slightly differ from the addresses shown on your system.

The processor is currently sitting at the beginning of `main()` with program execution suspended at line `0x0010054c`. You can confirm this information in the Disassembly view, which shows the assembly-level program execution also suspended at `0x0010054c`.

Note: If the Disassembly view is not visible, select **Window > Show View > Disassembly**.

2. The `helloworld.c` window also shows execution suspended at the first executable line of C code. Select the Registers view to confirm that the program counter, pc register, contains `0x0010054c`.

   Note: If the Registers window is not visible, select **Window > Show View > Registers**.

3. Double-click in the margin of the `helloworld.c` window next to the line of code that reads `init_platform ()`. This sets a breakpoint at `init_platform ()`. To confirm the breakpoint, review the Breakpoints window.

   Note: If the Breakpoints window is not visible, select **Window > Show View > Breakpoints**.

4. Select **Run > Step Into** to step into the `init_platform ()` routine.

   Program execution suspends at location `0x001005c4`. The call stack is now two levels deep.

5. Select **Run > Resume** to continue running the program to the breakpoint.

   Program execution stops at the line of code that includes the `printf` command. The Disassembly and Debug windows both show program execution stopped at `0x00100554`.

   Note: The execution address in your debugging window might differ if you modified the hello world source code in any way.

6. Select **Run > Resume** to run the program to conclusion.

   When the program completes, the Debug window shows that the program is suspended in a routine called `exit`. This happens when you are running under control of the debugger.

7. Re-run your code several times. Experiment with single-stepping, examining memory, breakpoints, modifying code, and adding print statements. Try adding and moving views.

TIP: *You can use SDK tool debugging shortcuts for step-into (F5), step-return (F7), step-over (F6), and resume (F8).*

8. Close SDK.