Debug the new BSP from Rom with GHS 3.5 Multi 2000

Debugging code from ROM means that the application code is programmed into flash and you are using the debugger only to step through the code fetched from flash.

After debugging the BSP from RAM, build a ROM image (rom.bin) of the application and program it into flash. The ROM startup is different from RAM startup because the initialization code has to determine the type of RAM on the board, size it, and then set up the chip selects to support it. However, if you know the board's RAM is a fixed type and amount, you can hard-code it.

The Green Hills Software components included with NET+OS do not support a hardware breakpoint for the JEENI. The following ROM debugging instructions only apply to the Raven ICE.

ROM Debugging for 50 and above chip types:

1. After building rom.bin and loading it into flash on your development board, open rom.bld file in the MULTI debugger Build window.
2. Enable flash, turn on the power and connect the Raven to the board.
3. When you try to connect to the board this time you would need to create a new connection. Go to Target | Connect to Target. Click the 'new' button. Give the new connection a name, and choose Macraigor OCD connection (ocdserv) as the type. Click the Create button, choose Raven and also make sure that you set endianness to Big. Then go to the Advanced tab, and click the button "Apply Flash/ROM Debugging Defaults". Click OK to set the options, and then Connect.
4. Once connected, in the target window, execute only: ocd>reg cpsr 0xd3
5. In the debugger window, type " hardbrk Reset_Handler" you will see that it would place the HW breakpoint right away at Reset_Handler.
6. After you have placed the HW breakpoint, hit go to load the image and you will see that it will stop at the HW break point at Reset_Handler in init.s file.
7. In order to proceed further, you would need to remove this hardware break point and then place it elsewhere say application start. To do so simply type "hardbrk applicationStart" and then hit go, this will take you to root.c and stop at Application Start.

ROM Debugging for the 40 chip type:

We recognized that Green Hills Tool has a problem with the reset and hence"-rst_hard" option does not work correctly. If this option was to work, potentially could solve many RAVEN + NETARM related problems.

Firstly you need to ensure that your board has the correct jtag connection circuitry – ECO as explained in the JTAG solution.pdf that could be found at:

ftp://NetSupport:techsupport01@ftp.netsilicon.com/Private/Service_Support/Raven_Fix/

Once that is verified please follow the guidelines below:

1. After building rom.bin and loading it into flash on your development board, open rom.bld file in the MULTI debugger Build window.
2. Enable flash, turn on the power and connect the Raven to the board.
3. Go to http://www.ocdemon.net and download the "ocd commander" free debugger SW tool kit to be installed on your PC.
4. Click on start->Program->OCD debugger->ocd_cmdl, this will invoke OCD \Commander. At the pop out "CONNection Dialog" window, under "Target Processor", choose "Netsilicon" "netarm"; and also under "OCD Interface device", choose "RAVEN/Black bird", click OK.
5. Once the ocd commander is running click "reset" button once for which you will observe that will do a hardware reset to the board. After this close the OCD commander.
6. When you try to connect to the board this time you would need to create a new connection. Go to Target | Connect to Target. Click the 'new' button. Give the new connection a name, and choose Macraigor OCD connection (ocdserv) as the type. Click the Create button, choose Raven and also make sure that you set endianness to Big. Then go to the Advanced tab, and click the button "Apply Flash/ROM Debugging Defaults". Click OK to set the options, and then Connect.
7. Once connected, in the target window, execute only: ocd>reg cpsr 0xd3
8. In the debugger window, type " hardbrk Reset_Handler" you will see that it would place the HW breakpoint right away at Reset_Handler.
9. After you have placed the HW breakpoint, hit go to load the image and you will see that it will stop at the HW break point at Reset_Handler in init.s file.
10. In order to proceed further, you would need to remove this hardware break point and then place it elsewhere say application start. To do so simply type "hardbrk applicationStart" and then hit go, this will take you to root.c and stop at Application Start.