

Xilinx Academy - Foundation Series training preparation

Please run through this checklist before the Foundation Series training day. This checklist will make sure that you have the correct files and licenses installed to run the Foundation Series v1.5i tutorials and training materials.

- Note the checkboxes throughout this preparation sheet. Make sure you check off each required feature, indicating that your environment has been installed correctly and that you are ready to work through the Foundation Series training tutorials.

Required Software

The Foundation Series training includes two tutorials. These tutorials assume that the software is installed in the default location `c:\fndtn`. If you have installed the software in a different location, substitute your installation path for `c:\fndtn`. By default, the `$XILINX` variable is set to `c:\fndtn`.

Xilinx Foundation Series, version 1.5i, is required to perform the tutorials. The design requires that you have installed the XC4000E libraries and device files, and are licensed for Foundation Express. These options are selected by default in the install program for either Express configuration. You can verify that these libraries are installed by checking in the file `$XILINX\fileset.txt`. (By default, this file is located in `c:\fndtn\fileset.txt`.)

- Are the XC4000E libraries installed on your system?

Express License

You must have a full-featured Express license installed in order to run the synthesis portions of the training. A demo license file, `license.dat`, will be provided by your instructor, if necessary. If you already have a permanent Express license, do not install the demo license file. The demo license file will allow you to run the tutorial, but will expire after several weeks. Make sure you get a permanent Express license if you do not yet have one. If you have a permanent Express license that worked with F1.4, you will need to get an updated PACKAGE statement from the installed file: `$XILINX\data\license_update.txt`. Follow the instructions in this file to update your F1.4 Express license.

A full-featured Express license will include the keyword: **FND-EXP-PC**. Look for this line in the license file PACKAGE statement.

The `$LM_LICENSE_FILE` variable indicates where the `license.dat` file should be installed.

- Do you have a full-featured Express license (either demo or permanent) and is it installed as indicated by the `$LM_LICENSE_FILE` variable?

NT Service Pack

If you are running on a Windows NT 4.0 system, your system must be updated to include Microsoft's Service Pack 3. This service pack has fixed a number of operating system bugs found in Microsoft's NT system. Foundation Series v1.5i depends on these bugs being fixed. To determine whether your system has the service pack installed, bring up your Windows NT Explorer application, and under the `Help` menu, choose "About Windows NT." A dialog will appear, showing the Version and Build you have installed. If you have the service pack installed, the dialog will say "Version 4.0 (Build #: Service Pack 3)."

- If you have a Windows NT system, do you have Version 4.0 with Service Pack 3 installed?

Tutorial Project Directories and Files

Load the tutorial projects from the Foundation Series 1.5i CD. Note that the projects are *optionally* installed. During the install process, you must specifically select them to be installed. By default, they will not be installed. If you have installed the software, but are not sure if the tutorial projects were installed, check for directories named `C:\fndtn\Active\projects\wtut*`. These directories contain the various tutorial files.

If the Foundation software has been installed, yet the tutorials have not been installed, you may install them by running the Foundation Series 1.5 CD, and selecting *only* the `Tutorials` and `Sample Files` installation option.

In addition to the tutorial projects installed from the Foundation Series CD, your instructor will provide one additional project. This project consists of a file: `ACADEMY.PDF` and a directory: `ACADEMY`. Copy both of these to the same projects directory: `C:\fndtn\Active\projects`.



Are the tutorial projects installed, as well as the `ACADEMY` project provided by the instructor?

Checking your environment

To ensure that your Foundation Series 1.5i environment has been installed properly, please check that the following items work correctly. This check-list should take about 10 minutes, and will identify any problems with your installation. By correcting these problems before the Foundation labs session, you will save class time and have more time to work on the tutorials.

Starting the Project Manager

1. Double click the Foundation Series Project Manager icon on your desktop or select `Programs` → `Xilinx Foundation Series` → `Xilinx Foundation Project Manager` from the Start menu.



Figure 1 Foundation desktop icon

2. A Getting Started dialog box opens. Click the **More Projects...** button.

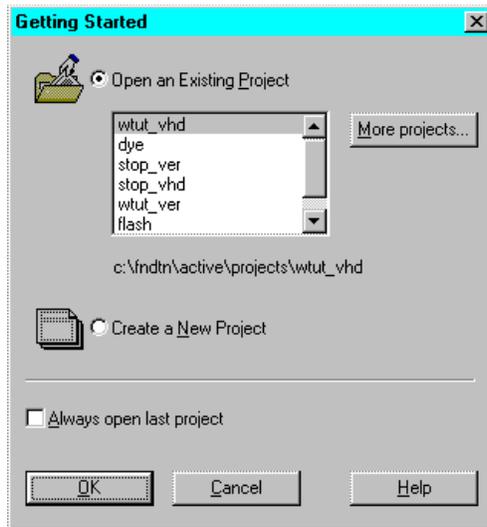


Figure 2 Getting Started Dialog Box

3. In the Directories list, browse to `C:\fndtn\Active\projects`. In the Projects list on the left side of the window, open the WATCHVER project by double clicking.
4. The Project Manager (PCM) should now come up, and should open the WATCHVER project.

The Project Manager (PCM)

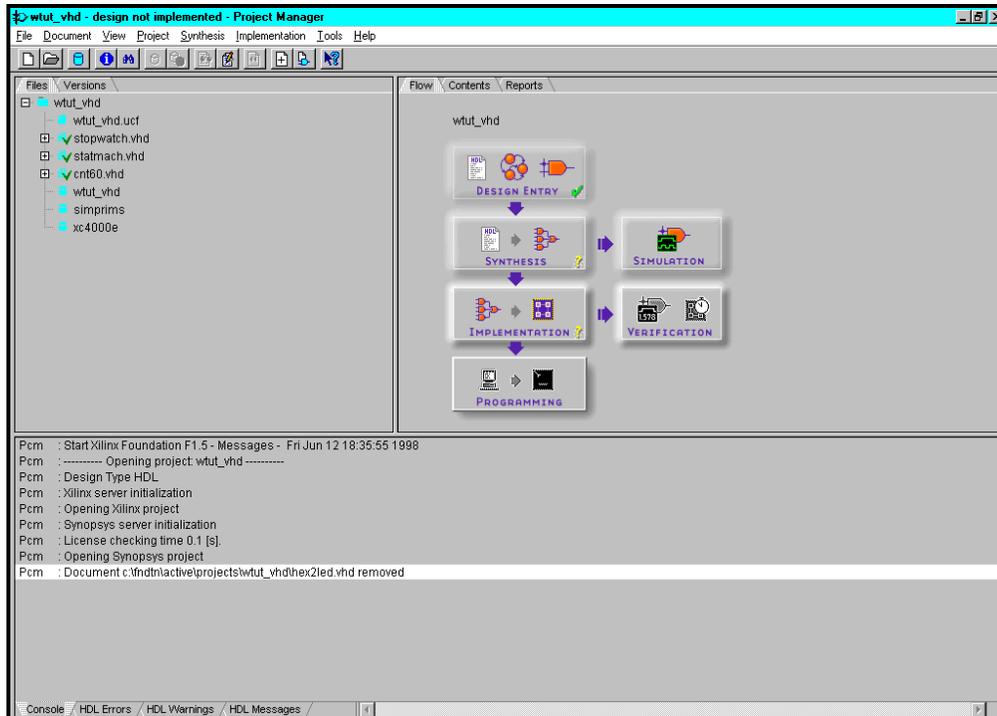


Figure 3 Project Manager (PCM)

5. In the message console (the large window at the bottom of the PCM), as the project opens, you will see several messages about opening the project and initializing the Synopsys license. If any Synopsys

License error messages appear, then there is a problem with your Synopsys license file and you will need to fix the license file.

Did the project open without Synopsys License errors?

6. If the project opens with Automation errors, then there is a problem, most likely that you are running on an NT machine without the correct service pack installed. If this is not the case, you may need to ask your instructor about these errors.

Did the project open without Automation errors?

7. From the PCM pulldown menus, select **Synthesis** → **Options**. Change some of the synthesis options; for example, check the Export Timing Constraints box, or change FSM Synthesis to “Safest.” Click **OK** to accept these values.

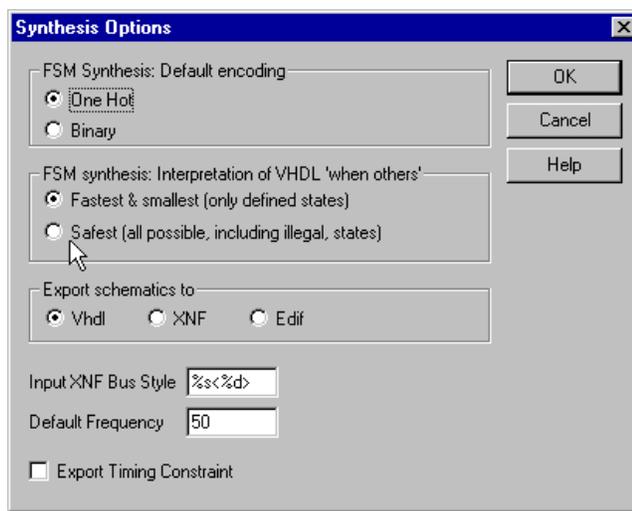


Figure 4 Synthesis Options dialog

8. In the files window of the PCM, click on the “Versions” tab. If the design has not yet been implemented, click back on the Files tab and proceed. If the design has already been implemented and revisions and versions are seen in this tab, you must clear them. Choose **Project** → **Clear Implementation Data**. After the versions and revisions have been cleared, click on the Files tab and proceed.
9. Choose **Synthesis** → **Analyze all Source Files**.
10. Click the + next to STOPWATCH.V.
11. Select the module named “stopwatch” and click the Implementation button from the Flow tab.

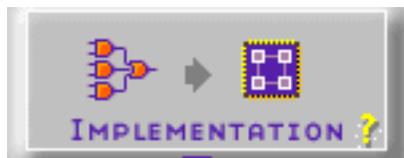


Figure 5 Implementation phase button

12. The Synthesis/Implementation window should come up.

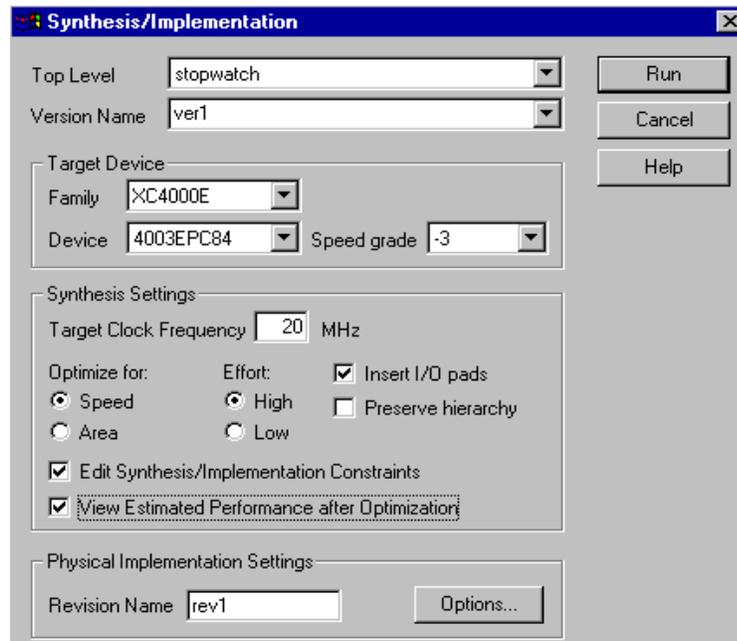


Figure 6 Synthesis/Implementation dialog

13. In the Synthesis window, click on the checkbox “Edit Synthesis/Implementation Constraints.” If this checkbox is grayed out, you do not have the full-featured Express license.

Were you allowed to check the “Edit Constraints” checkbox?

14. Launch Synthesis/Implementation by clicking **RUN**. Your design will synthesize, and the Constraints window will appear. If there are any errors, or if the Constraints window does not appear, you may not have the full-featured Express license.

Did the Constraints window appear?

15. Click **OK** in the Constraints window. Synthesis will complete and the Implementation Tools “Flow Engine” will appear and complete by implementing the design.

Did the design successfully complete through the Flow Engine? If not, please take note of the errors that were produced and ask your Academy instructor if you cannot debug your installed environment.

Thank you for checking your Foundation Series installation environment. If you have successfully completed the checklist, then your environment is correctly installed.

If you have any questions or difficulties with this checklist, please talk to an instructor before the Foundation tutorials are presented so that your environment may be fixed, and you will be able to run the tutorials and training materials.

