VLSI Synopsys Tool Manual

Cosmos Layout Editor (LE) Setup Guide

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Cosmos Layout Editor (LE) Setup Guide

Cosmos LE tool from Synopsys is a layout design and simulation environment. It works parallel with other Synopsys applications like Hercules, Star RXCT, which are used in the layout design , Design rule check implementation and net list extraction. For further information on the tools you can go to "Help" in the menu bar of CosmosSE or CosmosLE windows.

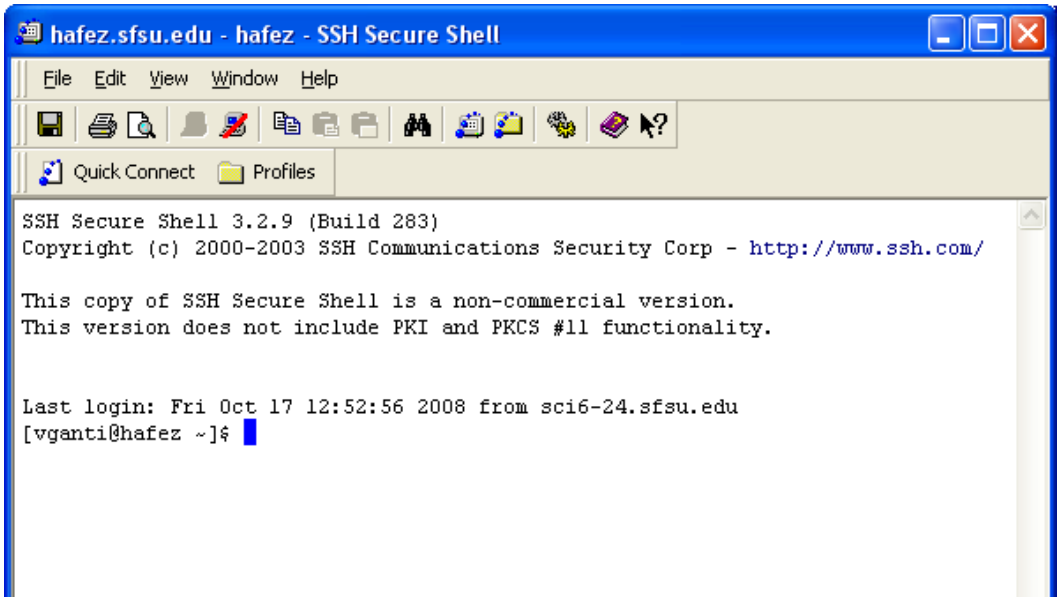
After the competition of this tutorial you will be able to load the libraries and be ready with CosmosLE Graphic User Interface for getting started with your layout design.

System Requirements before you get started

1) SSH client - to provide command line interface to the hafez server
2) Xwin or CYGWIN – to pull up the GUI of cosmos tools

Please follow the instructions given in the **Remote Login to Hafez** File

Step 1) After you have successfully logged into Hafez via SSH you would see the following box with a cursor to enter the command.

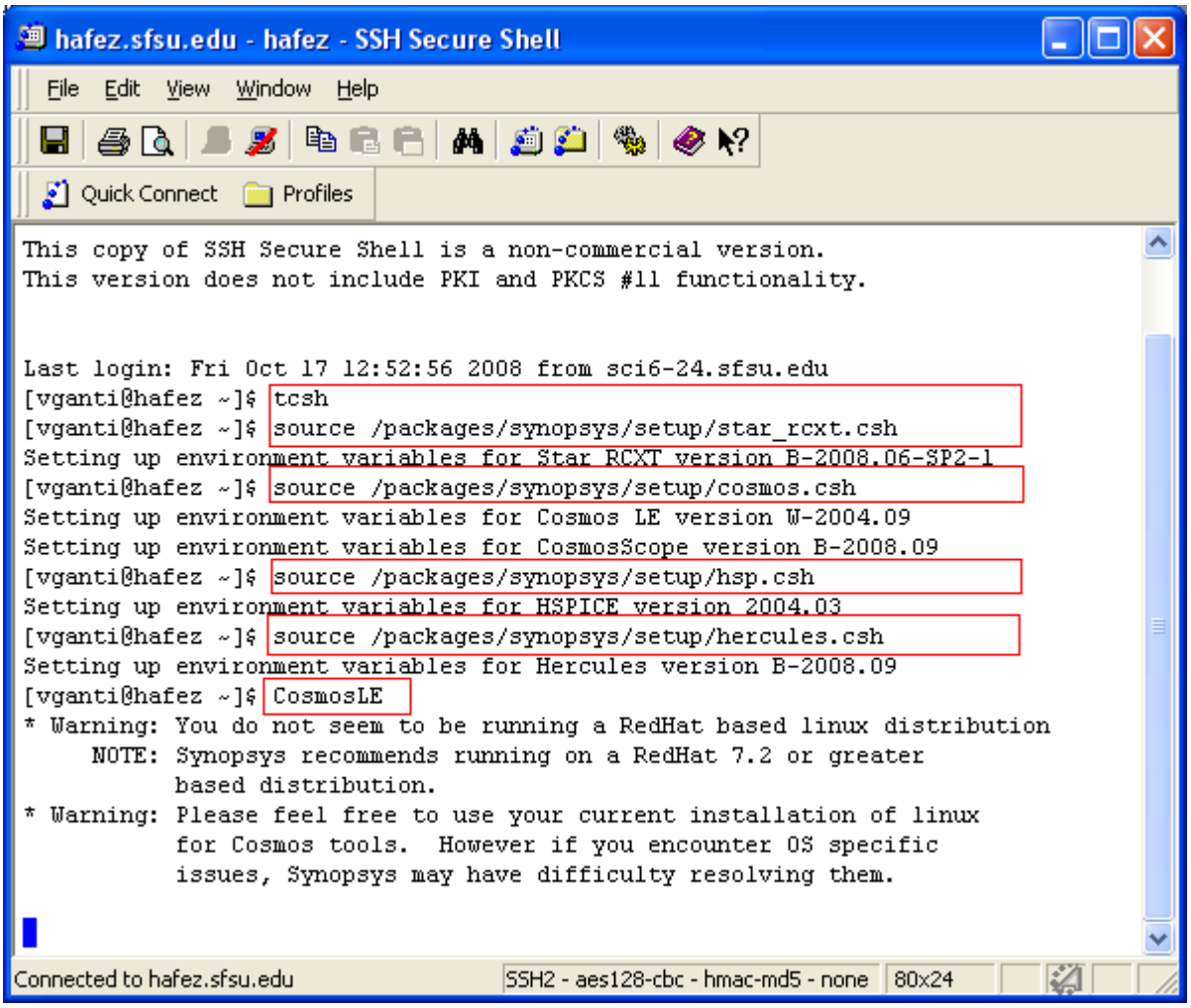


Step 2)

Enter the following commands and hit enter

tcsh
source /packages/synopsys/setup/star_rcxt.csh
source /packages/synopsys/setup/cosmos.csh
source /packages/synopsys/setup/hsp.csh
source /packages/synopsys/setup/hercules.csh
CosmosLE

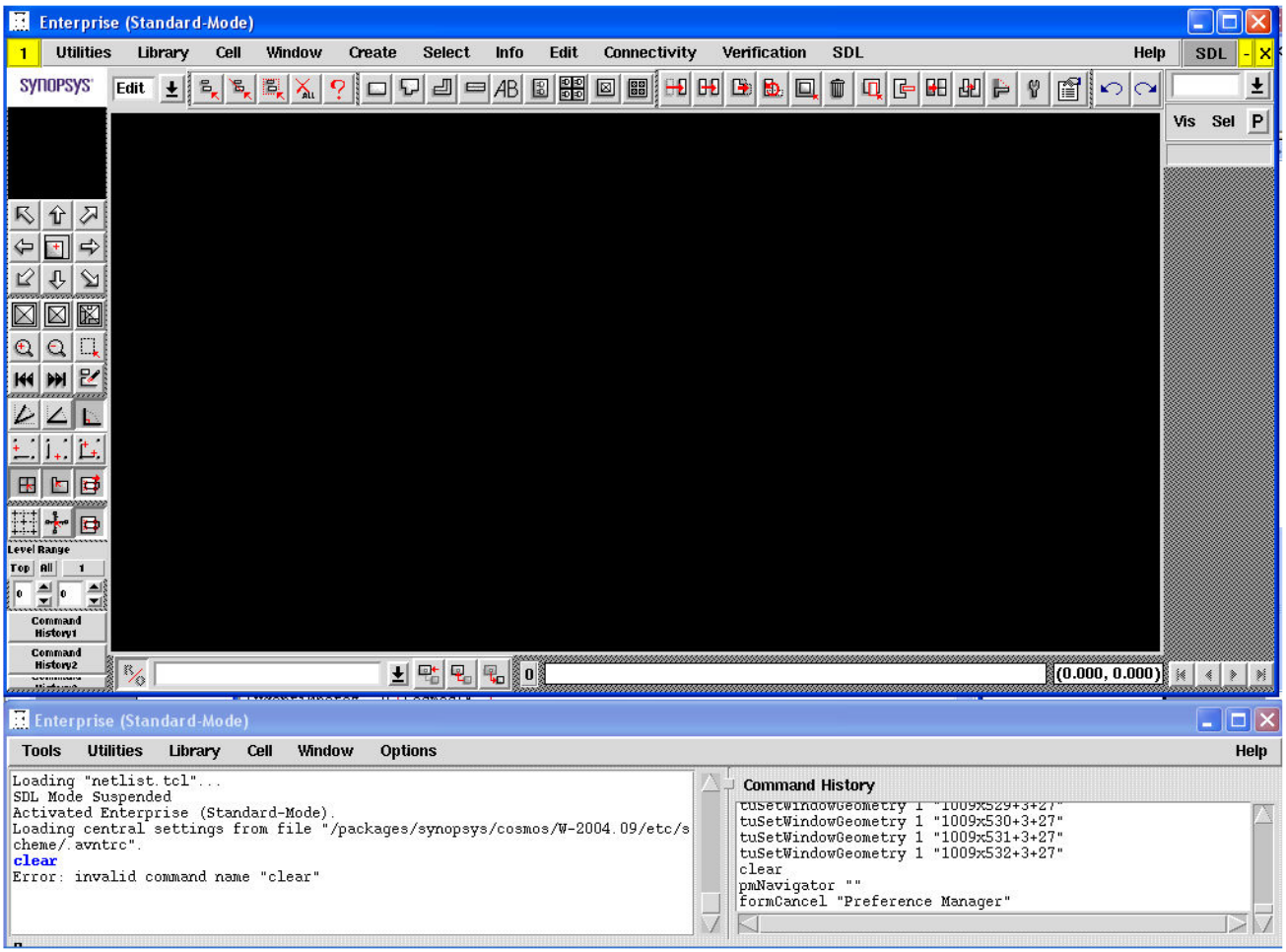
Tip: The simplest way to run is to copy and paste all the command lines above at once in the SSH client command prompt.



The Default screen of CosmosLE GUI should appear as below. For Convenience You may adjust the position and size of the Layout window and the CosmosLE Command line window as shown.

Note: Notice that the right side of the CosmosLE screen is just empty grey

Fill  without any layers.

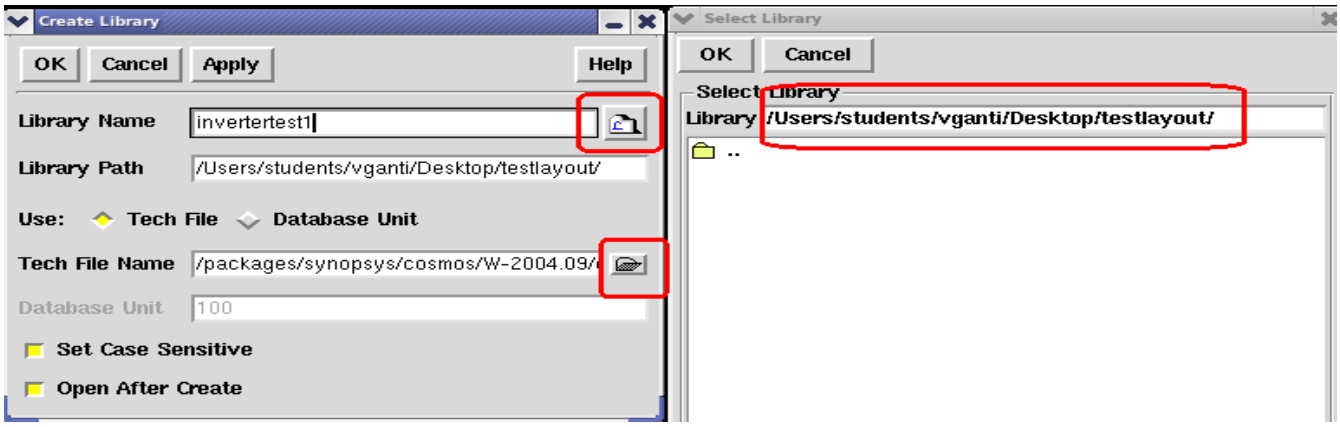


Step 3) Creating a Library

Note : Skip this step for help on Opening and existing library used in the schematic creation

Create a folder on your desktop or at any location where you want to save all your layout files.

Note: For simplicity, in this tutorial, all the files are saved on the desktop under a folder named **mylibrary**



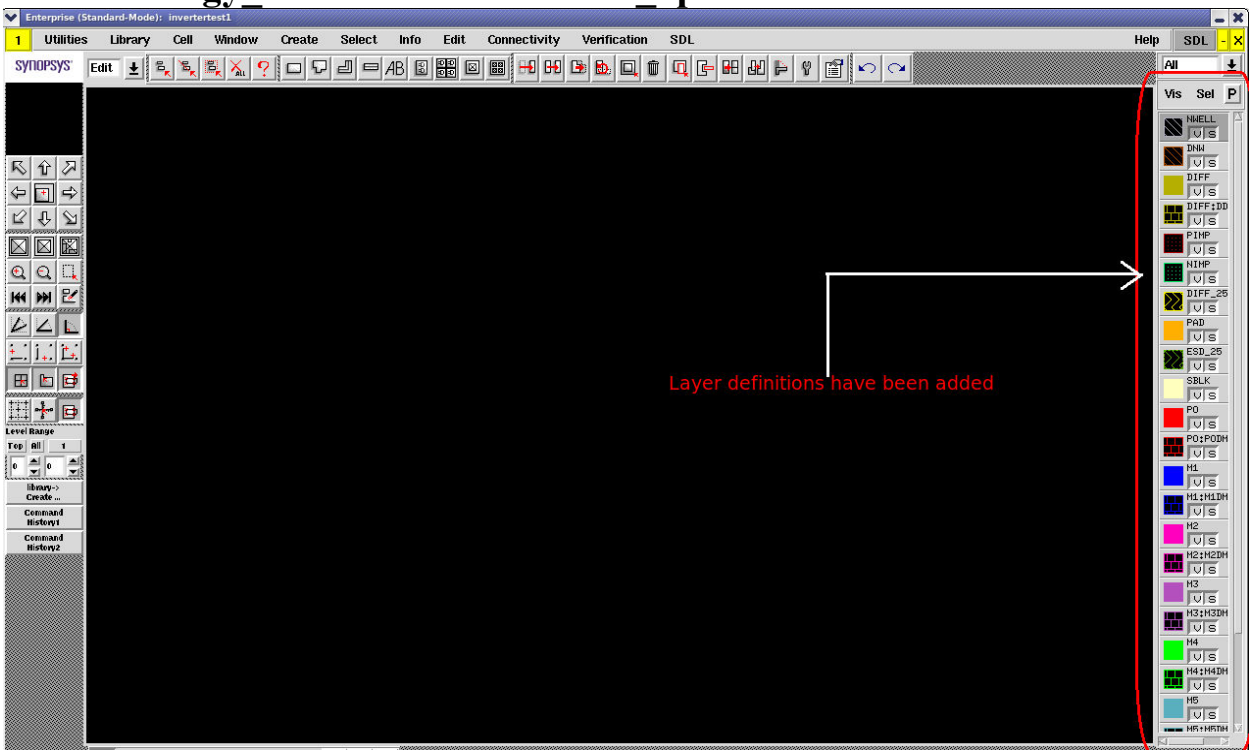
Now click on **Library > Create Library** and follow the three steps below

a) Click on the small icon and locate to the directory that you have created earlier to save all the layout files

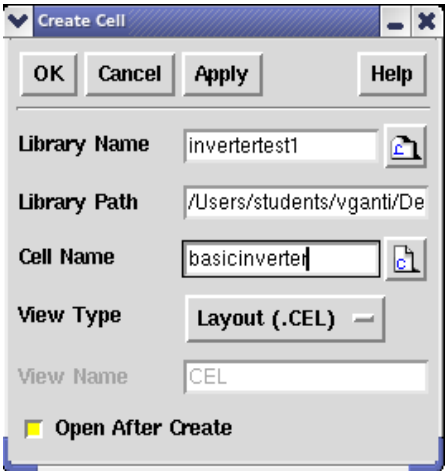
b) Give a name to the library(naming convention should be same as given during the creation of schematic)

c) Click on the small icon beside "**Tech File Name**" and navigate to the technology file located in the following directory and click OK.

/packages/process_kit/generic/generic_90nm/updated_Oct2008/SAED_EDK90nm/Technology_Kit/techfile/saed90nm_1p9m.tf



Notice on the right of the screen that layers have been added to the layer definition panel



Creation of New Cell

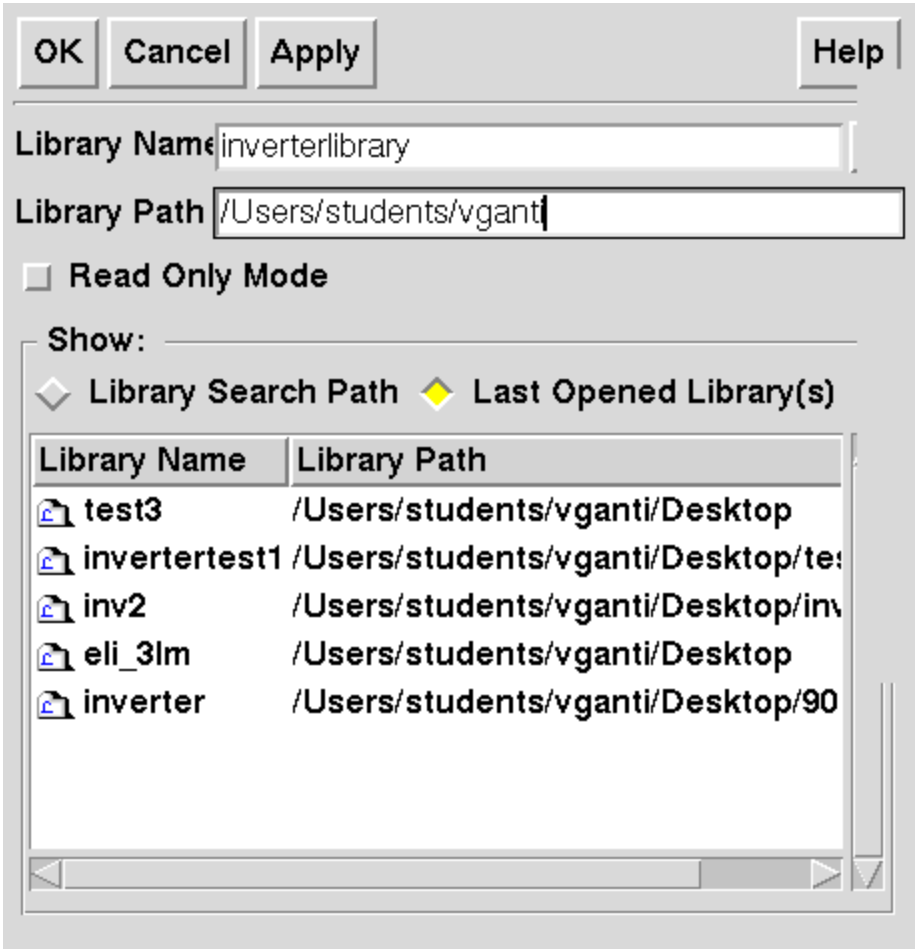
Click on **Cell > Create** and give a name to the cell

Example : 90nminv

Click OK

Step 4) Opening a existing Library to work with Schematic and Layout in parallel.

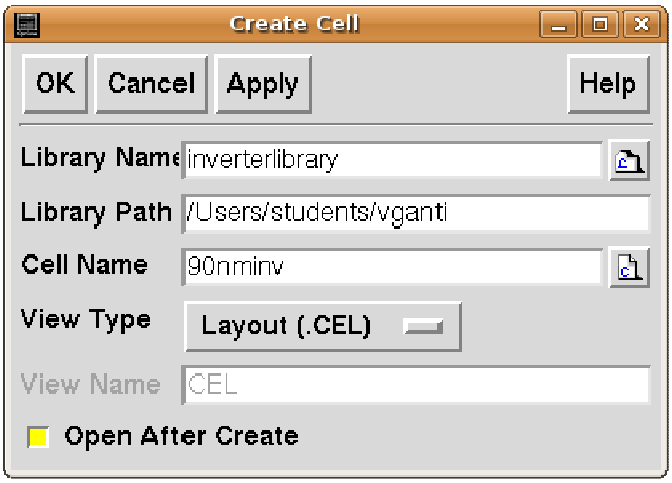
Click on **Library > Open Library** and locate the library which was saved previously during Schematic Creation and Click OK.



When the Library is opened the related tech file and layer definitions are also loaded.

Creation of a Cell

Click on **Cell > Create Cell** and give the **same cell name as used for the schematic.**



After successful competition of the steps above
You may begin drawing the layout.

Please refer to the tutorial on drawing the CMOS Inverter layout