

Lab 2: VHDL Code Synthesis Using Ambit BuildGates

Invoke *Ambit BuildGates* and start the synthesizing process.

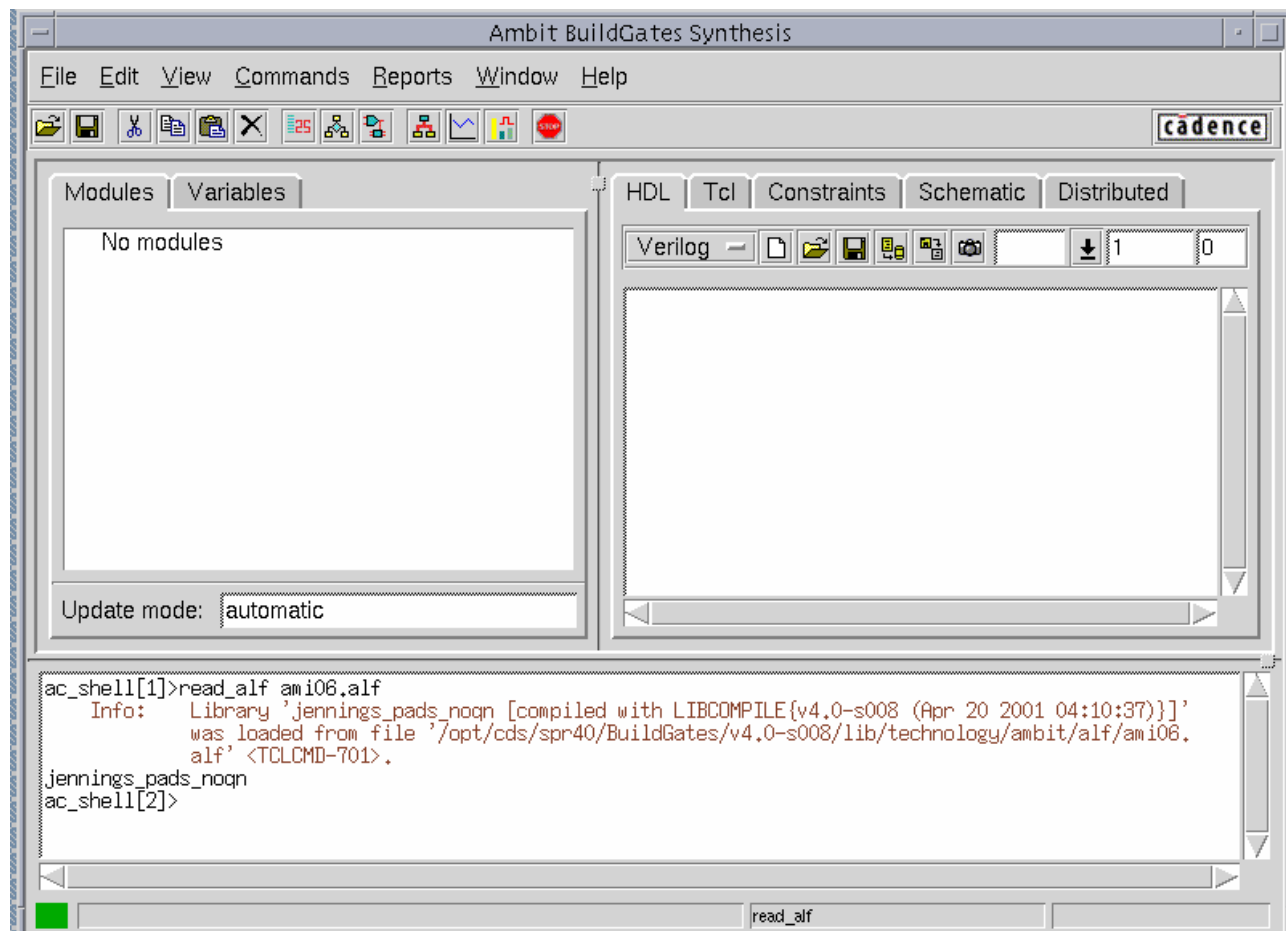
Note: You need to be at the `~/cadence/vhdl` directory.

```
emitsun1% cd
```

```
emitsun1% cd cadence/vhdl
```

```
emitsun1% bgx_shell -gui
```

A graphical user interface will open up like the one shown below



Enter the following set of commands to get your netlist. You have to read in your VHDL from bottom to top so that all modules are defined before they are used.

```
ac_shell[1]>read_tlf ami06.tlf
```

```
ac_shell[2]>set_global hdl_vhdl_environment synopsys (this controls which ieee.std libraries are
```

included)

```
ac_shell[3]>read_vhdl xorgate/src/xor.vhd
```

```
ac_shell[4]>do_build_generic (this will do the synthesis)
```

```
ac_shell[5]>do_optimize (this will map the synthesized logic to ami06 std cells)
```

```
ac_shell[6]>write_verilog xorgate/src/xor.v
```

Now you can view the schematic of your design by Double click the module “xorgate[xorgate](m)” in the right window.

The screenshot displays the Cadence Ambit BuildGates Synthesis interface. The main window is titled "Ambit BuildGates Synthesis" and features a menu bar with "File", "Edit", "View", "Commands", "Reports", "Window", and "Help". Below the menu bar is a toolbar with various icons, including a "cadence" logo. The interface is divided into several panes:

- Modules:** A list of modules, with "xorgate [xorgate] (m)" selected.
- Variables:** A pane for managing variables.
- HDL/Tcl/Constraints/Schematic/Distributed:** A set of tabs for different views. The "Schematic" tab is active, showing a logic diagram of an XOR gate. The diagram consists of two inverters (L1, L2) and two AND gates (L3, L4). The inputs are labeled "A" and "B", and the output is labeled "F".
- Module:** A field showing "Module: xorgate xorgate 1".
- Update mode:** A dropdown menu set to "automatic".
- Terminal:** A text area at the bottom showing the command "ac_shell[5]>f" and the output "Critical Begin Point(s): A <TOPT-515>." and "Critical End Point(s): F <TOPT-516>."