

Setting up the Synopsys VCS Verilog compiler

Gabor Madl (gabe at ics.uci.edu)

VCS is a Verilog compiler and simulator from Synopsys. The school of ICS has licenses to use VCS on its Solaris servers. VCS has a graphical interface which you can use to debug your code. Please note that we are unable to provide support for installing the required software on your machine, the following information is provided as a guide only. The ICS labs have all the required tools installed. Look for the Xwin32 tool that is an X server that comes preinstalled on the lab computers. Then you can use `putty` to establish the connection to the Solaris server. Please read the remote access using Windows section for a more thorough description of how to use `putty`. If you have trouble using the VCS tools from the lab please let us know during the lab hours.

Remote access using Linux platforms

Start the X server on your machine if it is not running:

```
startx
```

Open a terminal window and login to one of the Solaris servers:

```
ssh -X openlab.ics.uci.edu
```

To use VCS you have to load the synopsys module. Naturally you should execute the following commands on the Solaris machine not your own Linux box. Make sure that you are using the C shell. Type `setenv` in the ssh command line. If it returns an error most likely you are using some other shell, in which case you should execute:

```
/bin/csh
```

Once you made sure that you are running the C shell load the synopsys module:

```
module load synopsys/vcs
```

For easier use you can add this command to the `.cshrc` file which is automatically executed whenever the C shell starts. You might also have to execute

```
module load make
```

if you experience problems using `make`. In order to use the waveform viewer and GUI you have to supply the `-RI` compiler flags. Compile your Verilog program:

```
vcs -RI program.v
```

This will create an executable simulator in your current directory and start the simulator. If you compile your program without the `-RI` flags you have to explicitly start the simulator:

```
./simv
```

The simulator opens a graphical window on your screen using the remote connection to the Solaris server.

Remote access using Windows platforms

You have to install an X server on your machine. One way to do this is to install Cygwin (<http://www.cygwin.com>). The X server is not installed by default so you have to explicitly select it for installation during the setup process. Go to the screen where the cygwin packages are listed. Click on the SKIP text in front of the xorg-x11-base package from the X11 category in the graphical installer. This will also select several other packages for installation. You only need the binary versions. Also, make sure that you install ssh either using Cygwin or the Putty free tool (<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>). Open a Cygwin shell and start the X server:

```
startx
```

In another window login to the Solaris server and follow all the instructions above. If you use `putty` and want to use it as your ssh client copy `plink.exe` to `ssh.exe` in your `cygwin/bin` directory. You can even use the `putty` GUI to connect to the Solaris server. In this case you have to enable X11 forwarding in the Connections/SSH/X11 options.