

# Accessing and Using the SpecC Compiler

These instructions are to access the command-line SpecC compiler on the department's Linux servers. Alternatively, you may install the compiler on your own system by downloading it directly from the University of California-Irvine SpecC site ([link](#)).

If you are intending on using the SpecC compiler inside a Windows environment then it is recommended to follow the Cygwin instructions in Section 3.

## 1. Linux Access

The SpecC compiler is currently installed only on the `systemc.ece.iastate.edu` server. All students in CprE 588 should have accounts on this server. If you have any problems with your account or do not remember your password please contact the departmental Computer Support Group at: [csg@iastate.edu](mailto:csg@iastate.edu).

There is no telnet access to these machines, only SSH (a secure type of telnet). Most UNIX/Linux machines already have SSH installed, but if you need an SSH client for windows you may try PuTTY ([link](#)) or SSH Secure Shell ([link](#)). To connect to the `systemc` server from a command line type:

```
$ ssh systemc.ece.iastate.edu
```

The SpecC compiler is installed in `/usr/local/scrc`. After logging in, you must setup your environment to run the SpecC compiler. This can be accomplished by running the following script command:

```
$ source /usr/local/scrc/bin/setup.sh
```

Note: the file `setup.sh` is the setup script for the `bash`, which is the recommended shell for ECpE accounts. If you use the `tcsh` shell, then you will need to type:

```
$ source /usr/local/scrc/bin/setup.csh
```

After you have setup the environment you should be able to access the SpecC compiler. The compiler command is “`scrc`” (SpecC Reference Compiler).

## 2. Parity Checker Specification Model

To verify that the SpecC compiler is properly setup it is recommended to try the parity checker specification model, which can be found on the course website ([link](#)). Unzip the files, and follow the instructions given in the README file.

### 3. Cygwin instructions

- 1) Install Cygwin with the default packages.
  - a. This will require you to download a file called “setup.exe” from <http://www.cygwin.com>. Run setup.exe, and it will contact a central server with a list of various packages you can install. In addition to the default packages, you will need to add the “gcc”, “g++”, and “make”. These are found under the “Devel” category.
- 2) Get the binary version of SCRC (SpecC Reference Compiler) compiled for Cygwin.
  - a. Download the package from the University of California-Irvine SpecC site ([link](#)). Be sure to get the “Binary Release” of the newest version. Place the .tar.gz file that you download into c:\cygwin\home\(\your Windows username)\. This assumes that you installed Cygwin to the default directory of c:\cygwin. (Note: You may need to start up Cygwin at least once for the directory to exist.)
- 3) Uncompress the SpecC Reference Compiler.
  - a. Start Cygwin. Type in the command “ls” to verify that the SpecC Reference Compiler package you downloaded from the internet is in the current directory. Once you’ve verified the file is in the current directory, type “tar -zxvf (name of file)”. This will uncompress the compiler, displaying each file as it uncompresses it.
- 4) Edit the bin/setup.sh file included with the compiler to represent your environment.
  - a. In Windows Explorer, find the newly uncompressed directory. It should be in c:\cygwin\home\(\your Windows username)\scrc-2.0 (for v2.0). Inside of this directory, you’ll find a directory bin, and inside that directory is a file called “setup.sh”. Edit it with your favorite text editor. Find the comment “define the SpecC system home directory” – below it should be a line which defines the home directory. You will need to change it to represent your username and installation directory – be sure to leave the beginning portion of the line alone, and only change the path. Save your changes.
- 5) Run the “setup.sh” file you just edited to setup the environment. You must do this EVERY TIME you start a new Cygwin session.
  - a. Type “source (path to SpecC)/bin/setup.sh”. If the file runs correctly, you will simply be presented with a new prompt (no output).
- 6) Enter the command “scrc”. If all steps have been done correctly, you should be presented with the usage information for the SpecC compiler.