Run exceed on your windows client machine.

If you are using a Windows client to get remote access to the cell simulator (which runs on a Linux Box), you will need to install Exceed on your client machine. Exceed can be obtained from the Information Technology Website. Procedure of obtaining exceed can be found at the following website http://www.asu.edu/it/fyi/dst/unix/xwin/exceed9/ObtainInstall.html

Actual download can be done from the following site http://www.asu.edu/it/security/software/html/xwindows/download.htm

Note: If you are using a Linux client, then you do not need to install Exceed or any other X-server. X-windows clients should work over ssh by default.

Login to the cell simulator machine

IP Address of the simulator machine: 149.169.176.115

ssh 149.169.176.115
username: guest1
password: guest1

When the login succeeds, you will get access to a shell which can be used to run linux commands. Lets call this Remote Shell or (RS)

Running the simulator

The simulator can either be run in command line mode or graphical mode. Both modes are identical in functionality. Usage wise, GUI will have buttons, while you will need to type commands manually in the cli mode. Please note that CLI mode will be much faster than GUI mode.

Type the following command on RS to invoke the simulator. Use –g option for graphical mode.

# systemsim –g -q &

The simulator will display two windows on your screen. One window will be the shell (called the simulator console or SC) where you will be typing in commands and running your program. The other window is a graphical version (only when invoked with –g) which gives you a GUI to run the simulator (called the simulator console or the SG)
Programs can be run either in the standalone mode (bypassing the OS) or in the Linux Mode. For the purpose of this assignment we will execute the programs in Linux Mode.

Click on the Go button on the GUI window. This will boot linux( the OS) on the simulator. The bootup takes quite a lot of time to complete (approximately 20-30 minutes.) The bootup messages will be shown on the simulator console. Please ignore all the messages thrown on the SC. When the simulator comes up completely you will see a prompt(#) on the SC.

Some commands which can be run on the SC in non-graphichal mode.

<table>
<thead>
<tr>
<th>Simulator Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>quit</td>
<td>Closes the simulation and exits the simulator</td>
</tr>
<tr>
<td>help</td>
<td>Displays a list of the available simulator commands.</td>
</tr>
<tr>
<td>mysim go</td>
<td>Starts or continues the simulation. The first time it is issued, the simulator boots the Linux operating system on the simulation</td>
</tr>
<tr>
<td>mysim spu n set model state</td>
<td>Sets SPEn into model mode, where n is a value from 0 to 7 and mode is pipeline, instruction, or fast</td>
</tr>
<tr>
<td>mysim spu n stats print</td>
<td>Displays to the simulator command window, the performance analysis statistics collected on SPUn, where n is a value from 0 to 7. Statistics are only collected when the SPU is executing in pipeline mode.</td>
</tr>
</tbody>
</table>

**Compiling the executable**

In your home directory, you will see a directory called simple. This is a sample program to run on the simulator. This program will create 8 threads to run on the 8 SPEs and prints “Hello Cell” on each of the SPE.

To compile the code, change your directory to simple and just type the make command.

```
#cd simple
#make
```

This will compile the program and copy the executable to the output directory (as specified in the Makefile). The output directory for this application is simply output.

Copy the output file simple to /tmp/

```
#/cp simple /tmp
```

**Running the executable on Cell Simulator**

Switch working to the simulator console SC. You will have to copy the executable from your native linux machine’s /tmp to your environment.

```
#callthru source /tmp/simple > simple
```
#chmod +x simple

Run the executable
#./simple

Standard output will be seen on the shell.
Hello Cell (0x1820008)
Hello Cell (0x1820230)
Hello Cell (0x1820458)
Hello Cell (0x1820680)
Hello Cell (0x18208a8)
Hello Cell (0x1820ad0)
Hello Cell (0x1820cf8)
Hello Cell (0x1820f20)

**Exiting and Logging Off**
When simulation is complete, please make sure that you shutdown the simulator and log off from the system. This is essential since the machine running the simulator is not very powerful and exiting the simulator will decrease the load on the system.

Additional information regarding Cell Simulator Usage can be found out from the SystemSim Users guide