**Accessing Serpent2**

The general process for running Serpent2 on the remote server set up for this class will be to 1) write input in a text editor, 2) transfer that input over to the remote server, 3) execute your input, and then 4) either view the output immediately in the terminal/command line window or transfer the output fie back to your computer for viewing and manipulation in Matlab. All output files are Matlab files. All input files must be written in a text editor. For the EWS computers, use Notepad++ (save as .txt) for the Windows computers and gedit for the Linux computers. Serpent is developed for Linux systems, and so input developed on any Linux computer, and some MAC and UNIX machines, will be executable. However, input written on a Windows computer must be converted from DOS to UNIX format to be executable.

Serpent is run entirely through the terminal or command line, so before attempting to run your code you should first familiarize yourself with basic commands. The static IP address of the remote server containing Serpent can be connected to on an EWS station or from a personal computer when connected to the Illinois wifi. Connecting from a Windows EWS machine can be done through the use of a GUI called WinSCP, which allows the user to simply drag files over onto their account. On a personal computer or on a Linux EWS computer, scp will be needed to transfer files to and from your Serpent directory unless you have installed a GUI to accomplish this.

\*In this guide, <file> indicates that you should type the path to or name of a file, excluding the brackets.

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| --- | --- |
| **Static IP address to Serpent executable:** arts-01.npre.illinois.edu | |
| **Executable (sss) location:** | /home/serpent/bin/sss2 |
| **Cross section library:** | /home/serpent/xs/endfb7/sss\_endfb7.xsdata |
| **Your account directory:** | /home/<username> |

Connecting from a Windows EWS computer:

File transfer:

1. Open WinSCP (or other scp/sftp client)
2. Use the IP address as the host name and login with your account information.
3. Drag files from the Illinois EWS station to /home/<username>

Shell:

1. Open putty (or other ssh client)
2. Execute Serpent2: **<Executable\_location> <file\_location>**
3. Transfer output files using WinSCP (or other scp/stfp client)

NOTE: Because input files must be in UNIX format to be executed, if you wrote your input on a Windows computer, you will first need to convert your input from DOS to UNIX format. If you get an error “file must be converted from DOS to UNIX format.” convert you file from DOS to UNIX type in the command line: **dos2unix <file>**

Connecting from a Linux EWS computer:

1. Open the terminal.
2. ssh to your account: **ssh <username>@<IP\_address>**
3. Transfer files from the EWS computer to your account. In a separate terminal window (connected to the EWS computer), scp transfers local (EWS) files to your account. A second window is necessary because you need to be where the file is located in order to specify where it will be copied to:

**scp <local\_file> <username>@<IP\_address>:<file\_end\_loc>**

where <local\_file> is the file location on the EWS computer and <file\_end\_loc> is your account directory on the remote server.

1. Execute Serpent2: **<Executable\_location> <file>**
2. Transfer the files from the remote server back to the EWS computer by scp (type from a terminal window connected to EWS):

**scp <username>@<IP\_address>:<current\_location> /home/<net\_id>**

where <current\_location> is the location on the remote server and /home/<net\_id> places the file in your home directory on the EWS computer.

Connecting from a personal Windows computer (connected to Illinois wifi):

See “Connecting from a Windows EWS computer”

NOTE: you can type nano <file> in terminal to view the file output directly in the window. This is useful for quickly extracting only a few values from the output file or for editing your input without having to transfer files back and forth.

<input\_file>\_res.m Calculation results

<input\_file>.seed Random number seed used

<input\_file>.out Descriptions of how Serpent interpreted your input