Session 1: Accessing MUGrid and Command Line Basics

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MUGrid Resources

MBiG

COE

MSCS

Père

Pario
Exercises

1. Using your assigned username and password, access pere.marquette.edu. When presented with a prompt, type in the command

   $ echo Hello World

You should see the text Hello World on the screen and presented with another prompt.
In Linux, files are organized in a hierarchical *directory* (aka folder) structure with a single *root* denoted `/`. A sample of the Linux directory structure on `pere.marquette.edu` is shown below.
To display your current working directory, use the command

```
$ pwd
```

which stands for “print working directory.”
Finding Your Way Home

The primary purpose for introducing home directories now is that you can always “find your way home” by typing the command

```
$ cd
```
Navigating directories on a Linux system means *to change your working directory*. By navigating, you establish a new context for the commands you execute.

To change into a directory, use

$$\text{cd } \text{dirname}$$

where `dirname` is the directory you want to make your new working directory.

To back up one directory in the hierarchy, use

$$\text{cd ..}$$
Creating Directories

As you generate more files and need to organize them, you will want to create new directories. Use

```
$ mkdir dirname
```

where `dirname` is the name of the directory you want to create.
List Working Directory

To view the contents of your working directory, type

```
$ ls
```

You will be presented with a list of file and directory names that are stored in your working directory.
List Specific Directory

To list the contents of a specific directory, type

```
$ ls dirname
```

where `dirname` is the name of the directory you want to view. A similar list of file and directory names in `dirname` will be presented.
Using the commands above, create the following directory hierarchy rooted at your home directory, which is denoted $HOME.

```
$HOME
  
  bin  Documents

  Projects

  First  Second
```
Exercises

2. Navigate so that $HOME/Documents/Projects/First is your working directory. Write down the command(s) you use to do so.

3. If $HOME/Documents/Projects/First is your working directory, use a relative path and the cd command to make $HOME/Documents/Projects/Second your working directory. Write down the command you use.

4. If $HOME/Documents/Projects/Second is your working directory, use ls and a relative path to list the directory $HOME/bin.

5. What are the contents of /group/hpc-bootcamp/Summer2010/Session1 on pere.marquette.edu?
Editing Files

A simple to use editor available on pere.marquette.edu and most Linux systems is `pico`. The editor is started with

```
$ pico
```
Directly Editing Files

You can also directly edit an existing file or create a new file with a specific name by adding a command line argument to `pico`

```
$ pico filename
```
A commonly used command to view files is

$ more filename
You can view the contents of a file all in one go with the command

```bash
$ cat filename
```
Exercises

1. Assuming you have created the directory structure earlier, create a file named README.txt in $HOME/Documents/Projects/First. Type in your name, the current date, and a brief description of your first MUGrid project. Creating README.txt files is good practice so that you can remember what a project is about 6 months after you last worked on it.

2. View the contents of your README.txt using more and cat commands.

3. View the file in /group/hpc-bootcamp/2010Summer/Session1/Shakespeare.txt using the more and cat commands.
Exercises

1. Create a README.txt file using a text editor on your local machine. If you’re using Windows, Notepad is a program for creating simple text files. Transfer this file using the SFTP/SCP client available on your system to the remote directory $HOME/Documents/Projects/Second.

2. View the contents of the README.txt file using more or cat on the remote system pere.marquette.edu.

3. Transfer the file
/group/hpc-bootcamp/2010Summer/Session1/Shakespeare.txt from the remote system pere.marquette.edu to your local system. Use a local text editor or viewing program (e.g. Notepad) to read the file.
Copying, Renaming, and Moving Files

Copy a file

$ cp origfile newfile

Rename a file

$ mv origname newname

Move a bunch of files into a directory

$ mv file1 file2 ... dir-name

Note that dir-name must already exist to move files into the directory.
Removing Files and Directories

Remove a bunch of files. Beware there’s no going back.

```
$ rm file1 file2 ...
```

Remove an empty directory.

```
$ rmdir dirname
```

Recursively remove a directory and its contents. Beware, this is powerful and dangerous.

```
$ rm -r dirname
```
Useful Information

Read the online manual page for a command.

$ man command

See what processes you are running.

$ ps

See the processes you and others are running.

$ ps -efww