Common Platform

CSC230: C and Software Tools

Department of Computer Science

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Common Platform for This Course

- Different platforms have different conventions for end of line, end of file, tabs, compiler output, …
- Solution (for this class): compile and run all programs consistently on one platform
- Our common platform:

Intel PC + Linux

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Your Choices

Option	Use GUI-based Editor?	Access to your unity Filespace?
Use Unity Lab Computer	Y	Y
ssh to VCL (linux)	N**	Y
ssh to remote-linux.eos.ncsu.edu	N**	Y
Use Mac OS X (+developer tools)	Y	ftp*
Use MS Windows + cygwin	Y	ftp*
Use Linux on your PC (dual boot or virtualized)	Y	ftp*

- * direct if you install Expand Drive
- ** Yes if you run X windows server on your computer

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Common Platform Questions

- If you want to develop locally, that's fine, but you must ensure that it works on the Common Platform
  - You should always test on the Common Platform before submitting
  - No, really, you should test on the Common Platform
  - There are differences between the C compilers for different architectures that may cause your program (that runs locally) to fail on the Common Platform
  - C is not architecture neutral!

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Tools for Development

- ssh – Secure Shell
  - Log into a remote machine
  - You can execute commands at the command line
- ftp – File Transfer Protocol
  - Log into a remote machine
  - Transfer files between local and remote machines

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Tools for Development (con't)

Protocol	Windows	Mac / Linux
ssh	Putty	Open a terminal Enter command: `% ssh remote-linux.eos.ncsu.edu`
ftp	ExpandDrive WinSCP	Open a terminal Enter command: `% ftp remote-linux.eos.ncsu.edu` ExpandDrive or download an FTP client

- Putty, Expand Drive, and WinSCP are available for NC State students to download
  - See http://www.eos.ncsu.edu/remoteaccess/ and select your operating system

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VCL – Virtual Computing Lab

- VCL is available for students to use
- You reserve time to use virtual computers
- Go to http://vcl.ncsu.edu and make a reservation for "Linux Lab Machine (Realm RHEnterprise Linux 6)"

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Remotely Using the Common Platform

- VCL Demo
- remote-linux.eos.ncsu.edu Demo

Remote Access Details

- See the E115 online textbook for an overview of helpful commands
  - http://www.eos.ncsu.edu/e115/text.php?ch=3
- Unless you have X-Win 32 installed on a Windows machine, you cannot run GUI applications through ssh
  - Edit your files in the command line
  - Edit your files locally, and transfer to the remote machine for compilation and execution

Console Editors

- I recommend editing in the remote terminal using a console editor
  - **`pico`**
  - **`vi/vim`**
  - **`emacs`**
- There are resources online to help with using these text editors
- Pico demo

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Useful Commands

- Compilation

```
% gcc –Wall –std=c99 file.c –o executable_name
```

- Creating a file

```
% touch filename
```

  - Use this command to create a file with no extension
- Comparing two files

```
% diff file1 file2
% sdiff file1 file2
```


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