Using the Shell

UIC Linux Users Group

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About the Presenter

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- 7 Years of Linux Experience.
- UIC Alumni
  - Management Information Systems Masters from the CBA.
Please hold your comments and contributions!

- Questions are OK if you are confused or behind.
- May have time for questions at the end.
This is an interactive presentation.

- Login
  - Ask if you need help.
- Click on Applications ➔ Accessories ➔ Terminal
- Type 'bash' (Enter) for a real shell.
A Shell, what is it?

- It interprets commands from the user.
- Passes control to other programs.
- Supports batch operations via scripting.
- bash is one of many shells.
  - sh, csh, tcsh, zsh, etc.
List (ls)

Lists files and directories.

- Directories are equivalent to folders.
- `ls`
- `ls -l`
- `ls -a`
- `ls -la`
List (ls) (continued)

- Wildcards (* and ?)
- more
  - ls -l | more
Random bash Tips

- Tab Completion
- Command History
Directory Commands

- `pwd`
- `mkdir <directory>`
- `rmdir <directory>`
Change Directory (cd)

Changes the current working directory.

- `cd <directory>`
- `cd /`
  - All locations start here.
  - No drives like on Windows or DOS.
- `cd ~` (or just `cd`)
  - Takes you to `/home/<your username>`
Change Directory (cd) - Relative Navigation

- `cd ./`
- `cd ../`
- `cd ../../someotherplace/`
All physical volumes are part of the same hierarchy.

- Mount points are found under `/mnt` and `/media`.
- `mount <device> <mount point>`
- `umount <mount point>`
Moving, Copying and Deleting

- `touch <file>`
  - Use it to create empty files.
- `mv -i <source> <destination>`
  - Rename and Move
- `cp -i <source> <destination>`
- `rm -i <file(s)>`
  - `rm -rf <directory(ies)>`
Example Shell Script

echo \#!/bin/sh > temp.sh
echo echo "Hello world\n\n" >> temp.sh
Example Shell Script (continued)

- `cat temp.sh`
- `echo`
- `#!`
- **File Redirection**
File Permissions

- chmod <permission> file(s)
  - Read u+r (r--)  
  - Write u+w (-w-)  
  - Execute u+x (--x)  
    - chmod u+x temp.sh  
    - ./temp.sh

- ls -l
Directory Permissions

- `chmod <permission> directory(ies)`
  - Read u+r (r--)  
  - Write (-w-)  
  - Traverse (--x)

- `ls -l`
  - d----------
User, Group, Other Permissions

- `chmod u+rwx <file(s)>` (`-rwX------`)
- `chmod g+rwx <file(s)>` (`----rwX---`)
- `chmod o+rwx <file(s)>` (`-------rwX`)
- `chmod u-rw <file(s)>`
- `chmod a+rx <file(s)>`
- `chmod 755 <file(s)>` (`-rwxrwrw`)
User, Group, Other Permissions

- \texttt{-rwsr-Sr-t}

- Layered directories to support complex permissions.

- Access Control Lists
  - Security Enhanced Linux
**Symlinks**

- Can be used for security.
- Hard and Soft Links
  - `ln -s <realfile> <symlink>`
    - Like a Windows Shortcut.
    - More Transparent.
Environment Variables

- `echo $TERM`
- `export TERM="xterm"`
- `$SHELL $DISPLAY $HOSTNAME $JAVA $PATH`
Text Editors

- Newbies use pico or nano.
- Real Linux users use vim.
  - Weird people use emacs.
Other Commands

- man
- Ctrl-C
- backtick (‘)
- screen
Questions?
About the UIC-LUG & UIC-ACM

UIC LUG
  ▶ Meetings on Thursdays at 5:00 PM
  ▶ in SEL 2260 (Next Door)

UIC ACM
  ▶ ACM Office: SEL East 2262
  ▶ Meetings on select Thursdays at 6:00 PM
  ▶ in SEO 1000