

Campus Network Design and Security Workshop

A few Linux basics



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Our chosen platform

Ubuntu Linux 14.04 LTS 32-bit

- LTS = Long Term Support
- no GUI, we administer using ssh
- Ubuntu is Debian underneath
- In the real world choose 64-bit edition
- There are other platforms you could use:
 - CentOS / RedHat, FreeBSD, ...
- This isn't a UNIX admin course
 - Worksheets are mostly step-by-step
 - Please help each other or ask us for help



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You need to be able to....

Login to your virtual machine using ssh

- On Windows use putty.exe
- Connect to vmN.ws.nsrc.org as user *sysadm*
- ***We'll do that now...***

- Accept Public Key when prompted
- Windows users can download *putty* from <http://noc.ws.nsrc.org> and connect
- Instructors will now assist everyone to connect



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You need to be able to....

- Be *root* when necessary: `sudo <cmd>`
- Install packages
 - `sudo apt-get install <pkg>`
- Edit files
 - `sudo joe /etc/mailname`
 - `sudo vi /etc/mailname`
- Check for the process “apache”
 - `ps auxwww | grep apache`
- Start/Stop services
 - `service <NAME> start | stop | restart`



joe editor

- Ctrl-C quit without saving
- Ctrl-K X to quit and save
- Cursors work as you expect
- We provide a PDF reference in the materials



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vi editor

- The default editor for all UNIX and Linux distributions
- Can be difficult to use
- If you know it and prefer to use vi please do
- We provide a PDF reference in the materials



Other tools

- Terminate foreground program:
 - `ctrl-c`
- Browse the filesystem:
 - `cd /etc`
 - `ls`
 - `ls -l`
- Rename and delete files
 - `mv file file.bak`
 - `rm file.bak`



Viewing files

Sometimes files are viewed through a pager program (“more”, “less”, “cat”). Example:

- `man sudo`
- Space bar for next page
- “b” to go backwards
- “/” and a pattern (/text) to search
- “n” to find next match
- “N” to find previous match
- “q” to quit



Exercises

Please follow the instructions on the next three slides to practice a bit with Linux...



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To get started

1. Login to your virtual server using ssh
2. Install the “joe” editor package
 - `sudo apt-get update`
 - `sudo apt-get install joe`
3. Install the postfix mailserver and some utilities:
 - `sudo apt-get install postfix mutt mailutils`
 - 1. Select “**Internet Site**” when prompted
 - 2. Accept the hostname presented.
 - 3. For both screens tab to <Ok> and press ENTER to continue
4. Restart the mailserver:
 - `sudo service postfix restart`



Troubleshooting: Your logs

- Log files are critical to solve problems. They reside (largely) in `/var/log/`
- Some popular log files include:
 - `/var/log/syslog`
 - `/var/log/apache2/error.log`
 - `/var/log/mail.log`
 - And, many, many more
- To view the last entry in a log file:
 - `tail /var/log/syslog`
- To view new entries as they happen:
 - `tail -f /var/log/syslog`

Press “ctrl-c” to exit from the `tail` command.



Using search tricks with help (man)

- At the prompt type:
- `man ssh`
- Search for “ports” by typing “`/ports`” – press <ENTER>
- Press “`n`” to go to the next occurrence of “port” – do this several times.
- Press “`N`” to search *backwards*.
- Press “`p`” to go to the start.
- Search on “`/-p`” and see what you find.
- Press “`h`” for all the keyboard shortcuts.
- Press “`q`” to quit from the man page.

