



Network Monitoring & Management

A few Linux basics

Our chosen platform

Ubuntu Linux 12.04 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

You need to be able to....

Login to your virtual machine using ssh

- On Windows use `putty.exe` or `SecureShell`
- Connect to pcX as user `sysadm`

– ***We'll do that now...***

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

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
```

- Start/Stop services

```
$ service <NAME> start | stop | restart
```

joe editor

- Start by typing
\$ joe
- 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

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 commands

- Terminate foreground program:

Ctrl-C

- Browse the filesystem:

```
$ cd /etc
```

```
$ ls
```

```
$ ls -l
```

- Rename and delete files

```
$ mv file file.bak
```

```
$ rm file.bak
```

Starting and stopping services

“Old School” method

```
$ /etc/init.d/apache2 restart
```

New method (default in Ubuntu 12.04 LTS)

```
$ service apache2 restart
```

Check for a process

```
$ ps auxwww | grep apache
```

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
- “q” to quit
- “/” and a pattern (/text) to search

(man is a command that shows you the **man**ual page of a command)

Permissions

Each file has

(r)ead (w)rite e(x)ecute

rights for

owner - group - everybody else.

```
-rwxrw-r-- 1 sysadm sysadm 0 2012-04-16 16:36 test.txt
```

These can also be expressed as 3 decimal numbers,
one for each of the `rwX` triplets.

In this example: `rwXrw-r--` =

7 6 4sdf

Saving lots of time: TAB

Pressing TAB when on the command line will auto-complete what you are doing – commands as well as file names. This means, when you type

```
$ /e[TAB]
```

it will know that you mean

```
$ /etc
```

Saving lots of time: history

```
$ history
```

will show you all commands you have issued before.

Use

```
$ !<number of entry>
```

to execute that command again.

Use arrows *up* and *down* to go back and forward in your history.

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
```

1. 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

2. 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.