Advanced DNS Operations & Security

A few UNIX basics

Our chosen platform

FreeBSD 9.1 64 bit

- UNIX OS, BSD variant
- 30 year history
- no GUI, we administer using SSH

- There are other platforms you could use:
  - Ubuntu, Debian, CentOS/RedHat, …
- This isn’t a UNIX admin course
  - Worksheets are mostly step-by-step
  - Please help each other or ask us for help

Some things we'll need to do…

Be *root* when necessary: `sudo <cmd>`

Install packages:

```
pkg add <package_name>
```

Edit files:

```
sudo ee /etc/motd
sudo vi /etc/motd
```

Installed editors include ee, jed, joe and vi*

vi editor

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

THE MUG OF VI
AROUND
move to line n
left, right, up, down one character
left or right n words
backward, forward one screen
up, down one screen
go to end of line, end of file
go to beginning of line (zero)
move to next, previous sentence
move to next, previous paragraph
move forward, back one word
go to end of current or next word
COOL STUFF
change case
transpose characters
combine current line with next
create a mark called p
return to p
del, copy text from mark to cursor
indent n lines

Other editors

ee

- ESC brings up the editor menu
- Cursors work as you expect

jed

- F10 brings up the editor menu
- Cursors work as you expect

joe

- Ctrl-k-h brings up the editor menu
- Ctrl-c aborts
- Cursors work as you expect

Other tools

Terminate foreground program: CTRL+C

```
$ ping yahoo.com
PING yahoo.com (67.195.160.76): 56 data bytes
64 bytes from 67.195.160.76: icmp_seq=0 ttl=45 time=221.053 ms
64 bytes from 67.195.160.76: icmp_seq=1 ttl=45 time=224.145 ms
^C     ← here press CTRL + C
```

Browse the filesystem:

- cd /etc
- ls
- ls -l

Rename and delete files

- mv file file.bak
- rm file.bak

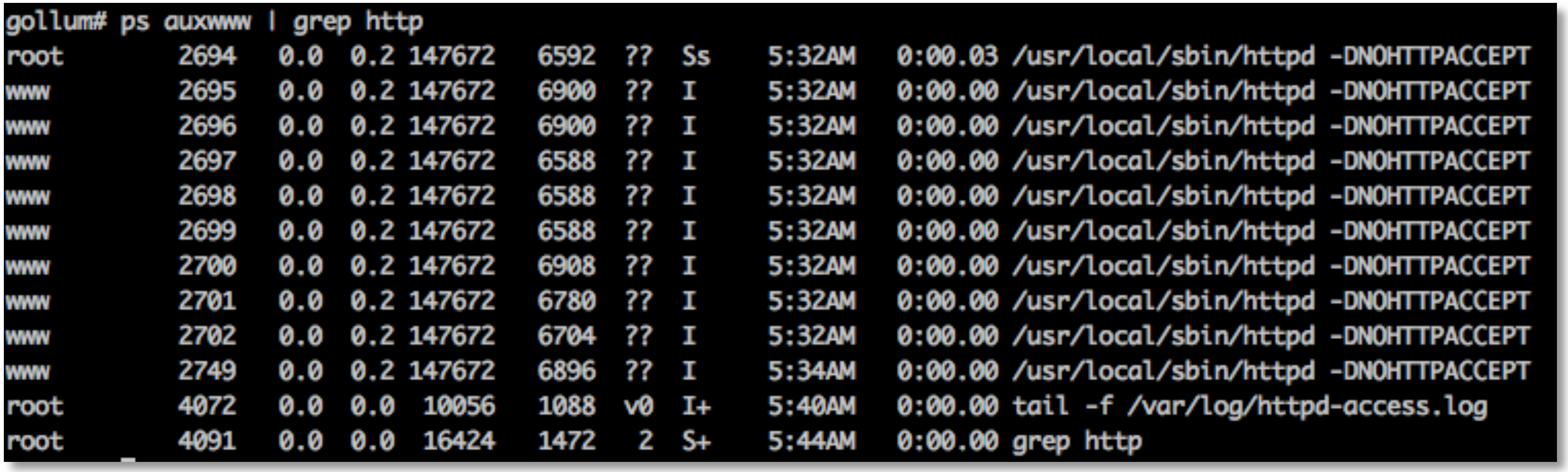
Starting and stopping services

Standard method

```
sudo service named [stop|start|
restart]
```

Check for a process by name

```
–ps auxwww | grep http
```



```
gollum# ps auxwww | grep http
root       2694   0.0  0.2 147672   6592  ??  Ss     5:32AM   0:00.03 /usr/local/sbin/httpd -DNOHTTPACCEPT
www        2695   0.0  0.2 147672   6900  ??  I      5:32AM   0:00.00 /usr/local/sbin/httpd -DNOHTTPACCEPT
www        2696   0.0  0.2 147672   6900  ??  I      5:32AM   0:00.00 /usr/local/sbin/httpd -DNOHTTPACCEPT
www        2697   0.0  0.2 147672   6588  ??  I      5:32AM   0:00.00 /usr/local/sbin/httpd -DNOHTTPACCEPT
www        2698   0.0  0.2 147672   6588  ??  I      5:32AM   0:00.00 /usr/local/sbin/httpd -DNOHTTPACCEPT
www        2699   0.0  0.2 147672   6588  ??  I      5:32AM   0:00.00 /usr/local/sbin/httpd -DNOHTTPACCEPT
www        2700   0.0  0.2 147672   6908  ??  I      5:32AM   0:00.00 /usr/local/sbin/httpd -DNOHTTPACCEPT
www        2701   0.0  0.2 147672   6780  ??  I      5:32AM   0:00.00 /usr/local/sbin/httpd -DNOHTTPACCEPT
www        2702   0.0  0.2 147672   6704  ??  I      5:32AM   0:00.00 /usr/local/sbin/httpd -DNOHTTPACCEPT
www        2749   0.0  0.2 147672   6896  ??  I      5:34AM   0:00.00 /usr/local/sbin/httpd -DNOHTTPACCEPT
root       4072   0.0  0.0  10056   1088  v0  I+     5:40AM   0:00.00 tail -f /var/log/httpd-access.log
root       4091   0.0  0.0  16424   1472   2  S+     5:44AM   0:00.00 grep http
```

Viewing files

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

```
man sudo
less /usr/local/etc/nagios/nagios.cfg-sample
```

- Space bar for next page
- “b” to go backwards
- “q” to quit
- “/” and a pattern (/text) to search

“`less` is more”

Troubleshooting: Logfiles

Log files are critical to solve problems. They reside (largely) in /var/log/

Some popular log files include:

/var/log/messages

/var/log/httpd-error.log

/var/log/maillog

/etc/namedb/log/* (this class only)

To view the last entry in a log file:

```
tail /var/log/messages
```

To view new entries as they happen:

```
tail -f /var/log/messages
```

Connecting via SSH to machines

Login to your virtual machine using ssh. On Windows use putty.exe - download from:

http://the.earth.li/~sgtatham/putty/latest/x86/putty.exe

or

http://noc.ws.nsrc.org/

Connect as user "*sysadm*" to:

- auth1.grpX ➔ 10.10.X.1
- auth2.grpX ➔ 10.10.X.2
- resolv.grpX ➔ 10.10.X.3

Where "X" is your group number. The password is given in class.

Logging in

Linux/MacOS

First, open a terminal, then:

```
  ssh -l sysadm auth1.grpX.ws.nsrc.org
```

Windows

Putty (or other SSH program) connect to:

```
  auth1.grpX.ws.nsrc.org
```

1. As user "*sysadm*"
2. Accept the key
3. Repeat for `resolv.grpX` and `auth2.grpX` **(if configured)**

"X" is the number of your group

After you are logged in…

- Experiment with the `ee` editor
  - … or `vi` or `joe` or `jed` if you prefer
- Edit the “message of the day” to identify your virtual machine as yours:
  - `sudo ee /etc/motd`
- Log out and log in again to see your changes. Repeat this for each virtual machine…

Questions

?