

Beginning System Administration DeCal

Week 6

March 15, 2010

Review So Far...

(hopefully)

- History of UNIX
 - Design choices
- Terminal, shell, and interaction with UNIX
- Foundation of the Internet
- Using UNIX
 - Users and **Permissions**
 - Account management (add/del/disable users)
 - File system layout

Review So Far...

(cont.)

- Software
 - Downloading and extracting packages (`wget` ,
`tar` , `gzip`)
 - Configuring and compiling (`./configure` , `make` ,
`make install`)
 - Server daemons (Apache)

Software

- Two options:
 - 1 Compile from source
 - 2 Download and install from binaries
 - Download binaries manually
 - Use a package management system
- How about both?
- When to choose which?
 - Software release cycle
 - Security and feature patches

What's the single biggest advancement Linux has brought to the industry?

It's an interesting question, and one that in my opinion has a very simple answer: Package management-or, more specifically, the ability to install and upgrade software over the network in a seamlessly integrated fashion-along with the distributed development model package management enabled.

Ian Murdock (founder of Debian)

<http://ianmurdock.com/2007/07/21/how-package-management-changed-everything/>

Package Management Systems

Overview

What is it?

- Generic category of tools that:
 - Install, upgrade, configure, (compile?), and remove software
 - Access thousands of packages with a few commands
 - Manage binaries or sources, or both

Why?

- Verify packages (checksums, digital signatures)
- Upgrade software easily (configuration files)
- Manage and fulfill dependencies

An Aside

Compiling from source

- For those who plan to build stuff from source occasionally...
 - i.e.] Your final project
- Good rule of thumb is if you're installing `xyz`, be sure to install `libxyz` and `libxyz-dev` (if they exist).

Package Management Systems

Examples

Major distributions have some system:

- Debian (.deb): dpkg, apt
- Red Hat (.rpm): YUM, YaST
- Solaris: blastwave
- Gentoo: portage
- FreeBSD: FreeBSD Ports
- Mac OS X: MacPorts

Administrivia

- Some people don't have a group.
 - Any groups willing to take an orphan?
- Remember to include brief explanations for homework and lab assignments!
- No class next week due to Spring Break.
 - All assignments will be due next class (3/29).

Debian GNU/Linux

Advanced Packaging Tool

- Not just a sole program; a set of tools that could be considered a front end to dpkg.
 - apt-get: install, update, upgrade
 - apt-cache: search
 - apt-config: dump (/etc/apt)
- Use the **man** pages!

Debian GNU/Linux

Debian Package Manager

- The main package manager for debian is dpkg. Dpkg gives you a direct interface to debian packages .debs and to the packages on your system
 - dpkg: `-list`, `-install`, `-remove`, `-search`
- Use the **man** pages!