

Beginning System Administration DeCal

Week 6

October 20, 2008

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`)
 - ▶ Configuration (`.conf` files, `/etc`)

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

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

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!