Beginning System Administration DeCal

Week 6

March 03, 2009

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!

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!