Installing Applications in FreeBSD

Overview

- Two technologies
  - Packages
  - Ports
- Packages
  - contains pre-compiled copies of all the commands for the application, as well as any configuration files or documentation
- Ports
  - a collection of files designed to automate the process of compiling an application from source code
- Both packages and ports understand *dependencies*

Overview

- Package benefits
  - Packages do not require any additional compilation
- Ports benefits
  - you can tweak the compilation options to generate code that is specific to a different processor
  - Some applications have building options to let you tweak the features you want

Package System

- pkg_add(1)
  - `pkg_add pkg_name`
    - `# pkg_add lsof-4.56.4.tgz`
  - `pkg_add -r pkg_name`
    - If you don't have a source of local packages
    - If you are using FreeBSD-CURRENT or FreeBSD-STABLE, pkg_add will download the latest version of your application
    - If your are using FreeBSD-RELEASE, it will grab the version of the package that was built with your release
    - PACKAGESITE environment variable

Managing Packages

- pkg_info(1)

```
x:~ -lwhsu- pkg_info
adns-1.4              Easy to use, asynchronous-capable DNS client library and ut
amap-5.2              Application mapper
apache-2.2.6_1        Version 2.2 of Apache web server with prefork MPM.
apr-gdbm-db42-1.2.7_1 The Apache Group's Portability Library
autoconf-2.61_2       Automatically configure source code on many Un*x platforms
```

- pkg_version(1)

```
x:~ -lwhsu- pkg_version -IvL =
adns-1.4                            <    needs updating (index has 1.4_1)
apache-2.2.6_1                      <    needs updating (index has 2.2.9)
apr-gdbm-db42-1.2.7_1               <    needs updating (index has 1.3.3.1.3.4)
autoconf-2.61_2                     <    needs updating (index has 2.62)
```

- pkg_delete(1)
  # pkg_delete xchat-1.7.1

Ports system

- Find your application
  - cd /usr/ports
  - make search name=program name
  - make search key=string
  - psearch(1)
    - ports-mgmt/psearch
- change to the directory for the port you want to install
- Type "make install clean" to install your application
  - make
  - make install
  - make clean

Ports system

- When your type "make", the ports system uses fetch(1) to download the files
  - MASTER_SITES
  - /etc/make.conf

```
MASTER_SITE_BACKUP?=  \
        http://ftp.tw.freebsd.org/distfiles/${DIST_SUBDIR}/
MASTER_SITE_OVERRIDE?=  ${MASTER_SITE_BACKUP}
MASTER_SORT_REGEX=      \.tw/ \.tw\. \.edu/ \.edu\.
```

- Using pkg_delete pkg_name to delete your application

Obtaining the Ports Collection

- sysinstall/cd-rom
- cvsup (or csup, … etc)
  - /usr/bin/csup -L 2 /usr/local/etc/cvsup-ports
  - Or you can do "make update" in ports directory if your make.conf was set properly.
    - What is needed?

```
SUP_UPDATE=      yes
SUP=             /usr/bin/csup
SUPFILE=         /usr/local/etc/src-supfile
PORTSSUPFILE=    /usr/local/etc/ports-supfile
SUPFLAGS=        -L 2
SUPHOST=         freebsd.cs.nctu.edu.tw
```

- portsnap(8)
  - portsnap fetch
  - portsnap extract
  - portsnap update
  - Portsnap cron

Upgrading Ports using portupgrade

- pkg_version
  - summarize installed versions of packages
  - Useful options: -v, -L
- portupgrade
  - The utility is designed to easily upgrade installed ports
  - cd /usr/ports/ports-mgmt/portupgrade; make install clean
  - Useful options: -a, -R, -r, -N
  - portinstall = portupgrade -N
  - portversion
    - Similar to pkg_version
    - It check version info stores in /usr/ports/INDEX-6.db (built from INDEX-6)
- To get new INDEX file
  - cd /usr/ports ; make index   (very slow)
  - cd /usr/ports ; make fetchindex   (faster, pre-build in server side)
    (portsdb -F)
- Try this command flow:
  - cd /usr/ports ; make update fetchindex ; portversion -vL=

portaudit

- portaudit
  - check if installed ports are listed in a database of published security vulnerabilities
  - security/portaudit
  - portaudit -Fda

```
lucky7:~ -lwhsu- sudo portaudit -Fda
New database installed.
Database created: Tue Dec  9 17:10:01 CST 2008
Affected package: php5-5.2.7
Type of problem: php5 -- potential magic_quotes_gpc vulnerability.
Reference: <http://www.FreeBSD.org/ports/portaudit/1f9e2376-c52f-
11dd-8cbc-00163e000016.html>

1 problem(s) in your installed packages found.

You are advised to update or deinstall the affected package(s)
immediately.
```

Maintain / Trouble Shooting

- Update ports tree
- /usr/ports/UPDATING
- cd /usr/ports && make fetchindex
- portsdb –Fu (you don't need this most of time)
  - Generate the ports database named INDEX.db from INDEX
  - make
- pkgdb -F
  - An interactive tool for fixing the package registry database
- portupgrade -a
- portinstall again

- "ports-mgmt" category in ports/