

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:~ -lwshsu- 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:~ -lwshsu- 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 you 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/`