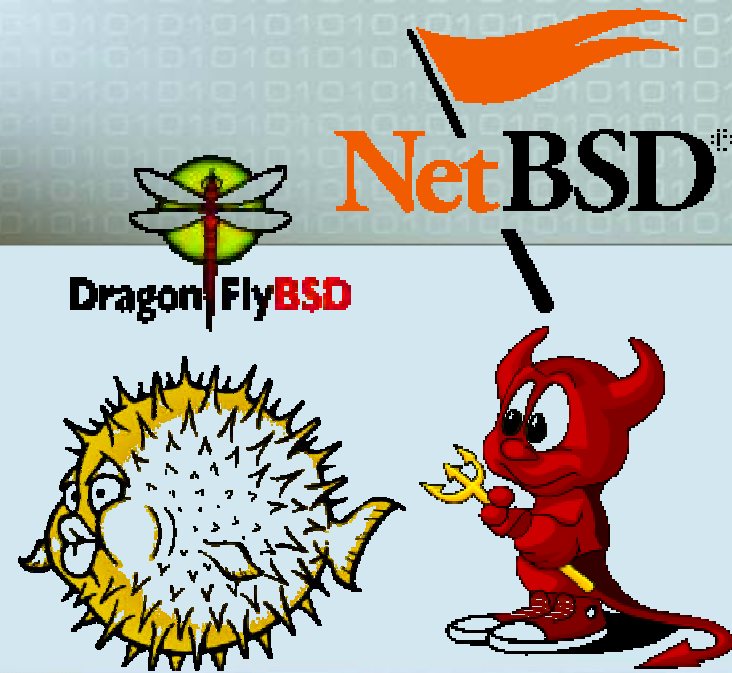




Introduction to *BSD

Brandon Mitchell



The Past

- Sixth Edition UNIX – May 1975
- 'Berkley Software Distribution' - 1977
- Networking Tape/2 – 1990
 - The Lawsuit
- Bill Jolitz releases 386BSD – 1992
 - The Six Files
- 4.4BSD-Lite – June 1994
 - Release 2 – June 1995

The Present

- FreeBSD – 1992
 - Performance Platform
- NetBSD – 1992
 - Portable Platform
- OpenBSD – 1996
 - Forked NetBSD
 - Secure Platform
- DragonFly BSD – 2001
 - Forked FreeBSD
 - Scalable Platform

The Kernel

- Multi-threaded SMP architecture
 - Full Preemption
 - Multi-threaded network stack
 - Multi-threaded VM subsystem
- M:N Userland Threading
- TrustedBSD Kernel Security Model
- Kernel Queues
 - Improve asynchronous response
 - e.g. file and socket I/O
- Accept Filters

The Fast File System

- Soft Updates
 - Caches Meta-data
 - Background fsck(8)
 - Snapshots
- Fully parallel VFS for UFS/FFS
- GEOM-based Disk Encryption
- Merged VM and FFS buffer cache
 - Dynamically tunes for performance

The Network Stack

- Fully Parallel and Multi-threaded
- Netgraph Pluggable
 - Clean abstraction allows easy extension
 - Encapsulation, tunneling, encryption
- Internet Protocol v6
- Stateful IP Firewalling
 - ipf(8)
 - ipfw(8)
 - pf(8)

The UserLand

■ Ports

- Individually Compiled and Optimized
- *cd /usr/ports/*; make install clean*

■ Packages

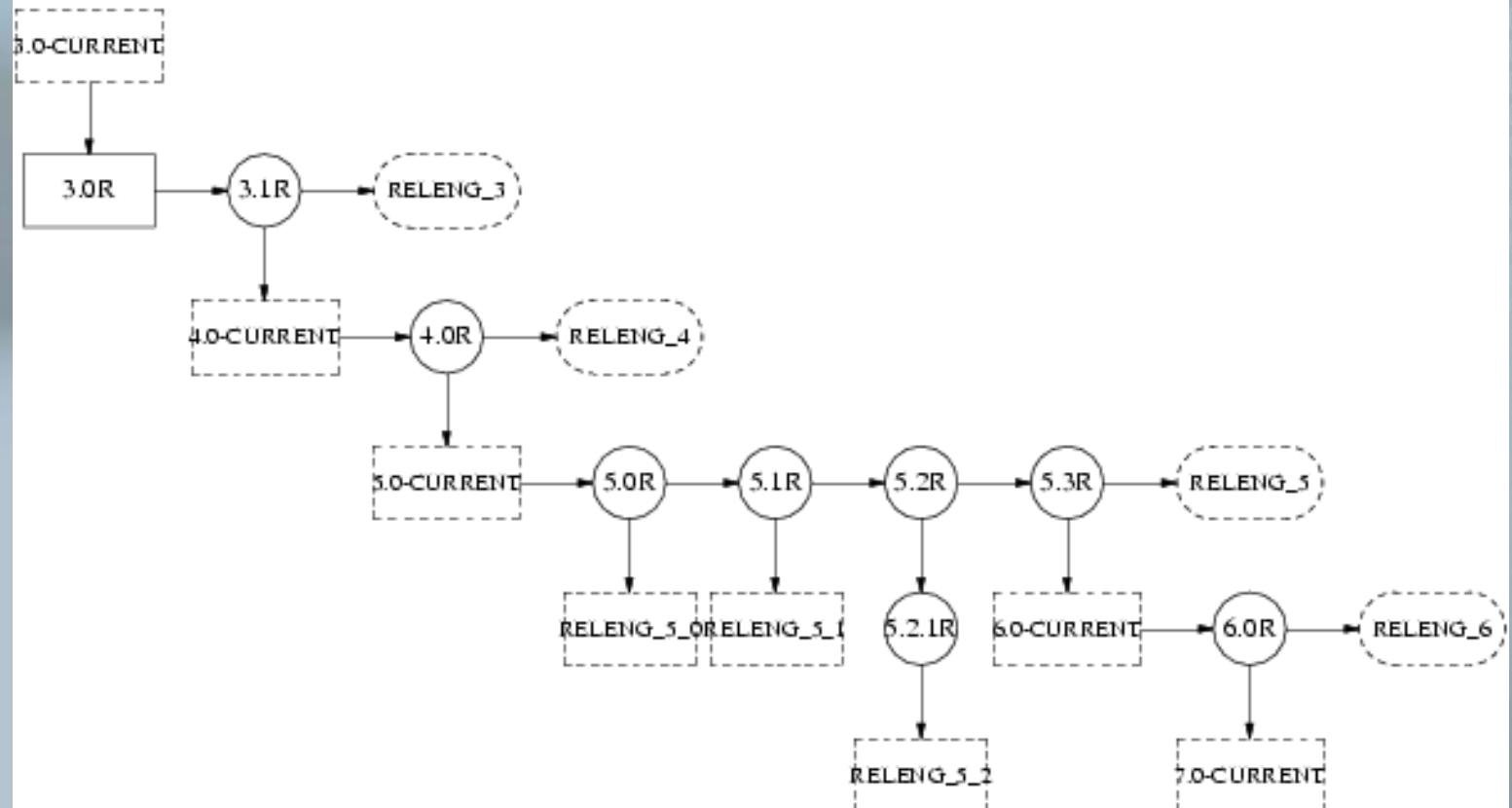
- Pre-compiled Ports for each architecture
- *pkg_add -r **

■ Upgrades

- *portupgrade -a*

Release Engineering

HEAD (Main Development Branch)



Use The Source

- Synchronize The Source
- Build The World
- Build The Kernel
- Install The Kernel
- 'Merge' Configurations
- Install The World



Ties That Bind

- The BSD License
- The Kernel + World + UserLand
- Source-level Version Control
- The Organization
 - Core and The Committers
- Ports and Packages
- Unix File System v2