May 14, 2010

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What is a FooBSD

- Customized version of FreeBSD*
- Targeted towards clusters of x86 servers (PXE, etc.)
- Typically used for private extensions, hacks, early MFCs, etc.
Main Topics

- Managing the Source Tree
- Automated Installs
- Handling Upgrades
Managing the Source Tree

- Push changes upstream when possible!
- Use source code control with FooBSD as a branch of FreeBSD
  - CVS + patches
  - CVS → p4
  - SVN mirror via SVK
  - Other
Staying Current

- Consider tracking stable branches rather than releases
- Merge early and often!
  - Merge conflicts easier to handle in small batches
  - 7.3-FOO-20100514
- Change log
Building Releases

- Use FreeBSD's existing `make release` build process
  - Easy to get up and running quickly
  - Is not tied to sysinstall
- Devise a custom build process
  - More work from scratch
Automated Installs

- Use an `install.cfg` script to automate `sysinstall`
  - Not very flexible out of the box
  - Can leverage `sysinstall`'s ability to manage different media, etc.

- Build your own install environment
  - Can be very flexible
  - Requires a bit more work to setup
Making **sysinstall** More Flexible

- Generate install config files at runtime during install
- Use shell scripts to generate config files that are subsequently executed
- Add more tools to **sysinstall**'s MFS root (dialog, kenv)
- Pass variables via `loader.conf` settings (media or per-colo settings)
install.cfg:

# Figure out the disk configuration
command=/bin/sh /stand/dodisk.sh
system
cconfigFile=/stand/disk.cfg
loadConfig
dodisk.sh:

disk=`kenv -q install.disk`

# Generate the config for the disk
cat > /stand/disk.cfg <<EOF
disk=${disk}
partition=all
bootManager=standard
diskPartitionEditor
...
EOF
Upgrading Existing Installs

- Reinstall the machine
- Install a new world over NFS
  - Slow, lots of NFS I/O to run make
- Would be nice to replace with a simple tarball extraction
  - Would have to handle edge cases like ld-elf.so.1.old
- freebsd-upgrade
Updating /etc I

- mergemaster
  - No 3-way merge
  - Updates in place
  - Hard to automate

- etcmerge
  - 3-way merge
  - Updates in a separate tree
Updating `/etc` II

- `etcupdate`
  - 3-way merge
  - Updates in place
  - Best effort first pass
Conclusion

- Many other ways and tools as well
- Other related issues (packages)
Q&A

  - domedia.sh picks install media and network interface
  - dodisk.sh picks disk
- Questions?