Package building

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Overview

- Past
  - ➢ Limitations and implementation
- Present
  - ➢ Improvements in progress
- Future
  - ➢ Discussion

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Cluster usage

- Building binary packages for download
  - Release
  - Stable
  - Current
- Build testing ports infrastructure
- Build testing major ports changes
- Build testing high impact src changes
- Regression and load testing of HEAD
  - ZFS
  - NFS
  - Network
  - CPU
  - memory

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Challenges

Cluster

- Unstable clustering code
- Head node (pointyhat) unstable
- Nodes unstable
- Hardware limitations
- People limitations
    - Log analysis only partly automated
    - Tracking "pointyhat mails"
    - High number of transient cluster errors

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Improvement: Two cluster head nodes

- Stable pointyhat
  - not running HEAD
  - Building downloadable stable and release packages
- Development pointyhat
  - Running HEAD
  - Building –exp builds (src and ports)
  - Development of cluster code

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Challenges

Distribution

- Disk space
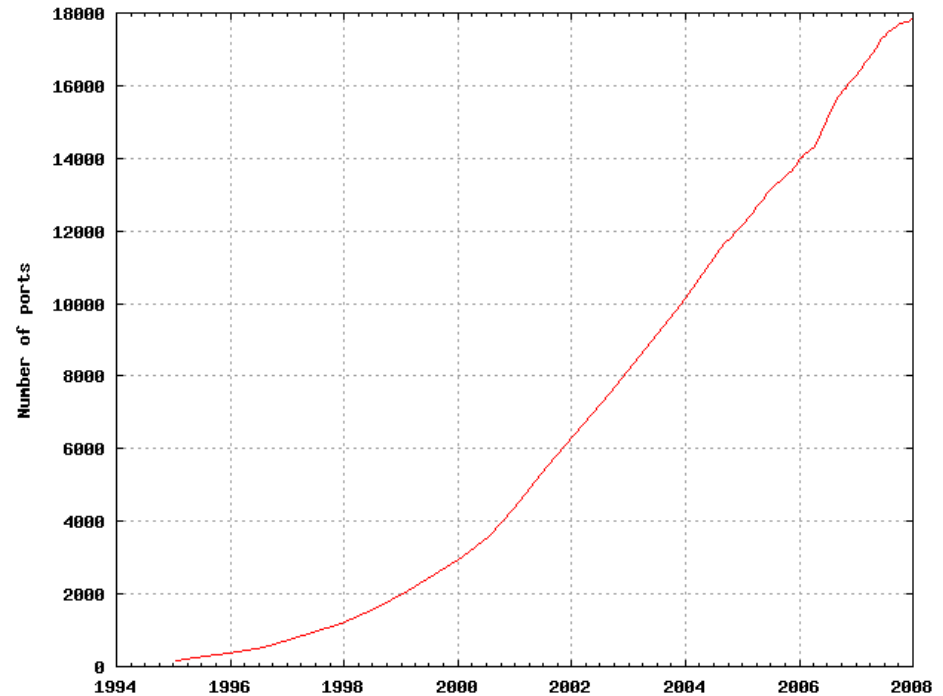- Mirror synchronization

Currently building:

Archs: i386, amd64, (sparc64), (ia64), (powerpc)

Branches: 6, 7, 8, 9; 6R, 7R, 8R

Total: 18 build environments

Size per package set (arch, branch): 25-30Gb

Total size: >650Gb

Today - Release packages

- src: RELENG_X_Y
- ports: RELEASE_X_Y_0
- FTP: packages-x.y-release
- ISO images
- Never updated after release

Today – stable packages

- src: RELENG_X (HEAD)
- ports: HEAD
- FTP: packages-X-stable (packages-x-current)
- Updated irregularly

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Challenges – src ABI

ABI changes not backwards compatible

➢ Packages require latest src

ABI changes are forward compatible

➢ Build packages against older ABI

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Stable packages - Work in progress

- Predictable and constant src: RELENG_X_Y
  (Y = oldest security supported release)

- Predictable upload intervals
  - Dedicated cluster head node
  - Dedicated cluster nodes

- Replaces today's packages-X-stable
  - Packages work over larger range of src ABIs
  - No additional size for distribution
  - Only requires additional cluster resources

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Challenges – ports ABI

- Packages built as a full set
- Packages require same ports tree as at time of building
  - Dependency versions
  - Shared library versions

Previous solution:

- Branch ports tree
- Backport security issues
- ➢ Too time consuming and abandoned

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Future - discussion

Stable ports ABI:

- Branching
- Quarterly releases
- …

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