

Ç ĨñãŨíùóç ôùí Âêäüóãùí ôĩõ FreeBSD

Murray Stokely

murray@FreeBSD.org

\$FreeBSD: doc/el_GR.ISO8859-7/articles/releng/article.sgml,v 1.8 2008/12/08
03:10:52 keramida Exp \$

Άδου òĩ Ũñēñĩ ðãñēãñŨõãē òçĩ áĩðēĩãðððēóç ēãē ĩñãŨíùóç òçð ñŨããð áĩŨðððĩçð òĩõ FreeBSD, ũóĩĩ áõĩñŨ òðçĩ ðñĩãðĩēĩãóßã ðĩēĩðēēĩĩ ãēãüóãùĩ òĩõ Èãēðĩõñãēēĩĩ Óðóðßĩãðĩõ FreeBSD. Âĩçããß ĩã ēãððñŨñãēã òçĩ ĩãēĩãēĩãßã ðĩõ ÷ ñçóēĩĩðĩēãßðãē ãēã ðēð ãðßçĩãð ãēãüóãēð òĩõ FreeBSD ēãē ðãñēãñŨõãē òã ãñããēãßã ðĩõ ãßĩãē ãēãēŸóēĩã òã ũóĩõð ãĩãēãóŸñĩĩóãē ĩã ðãñŨãĩĩĩ ðãñãĩãðñĩĩðĩēçĩŸĩãð ãēãüóãēð òĩõ FreeBSD ãēã ãóùðãñēēß ð ãĩðĩñēēß ÷ ñßóç ēãē áĩŨðððĩç ðñĩũĩĩðũĩ.

Ðßĩãēãð Ðãñēã ÷ ñŸĩũĩ

| | | |
|---|---|----|
| 1 | Áēóããũãß | 1 |
| 2 | Ç Âēããēēãóßã Âçĩēĩõñãßãð ĩēãð çãĩóçð | 2 |
| 3 | Ĩãðããēßððēóç òçð çãĩóçð | 5 |
| 4 | Âēãñß òũĩ Âêäüóãùĩ | 8 |
| 5 | Âðãēðãóēĩũðçðã | 9 |
| 6 | Ĩãēßĩãðã ðĩõ Ðßñãĩã ãðũ òçĩ çãĩóç 4.4 òĩõ FreeBSD | 10 |
| 7 | ĨãēñĩóēēŸð ÊãðãðēŸĩóãēð | 10 |
| 8 | Âð ÷ ãñēóðßãð | 11 |
| 9 | ÁĩãõĩñŸð | 11 |

1 Áēóããũãß

Ç áĩŨðððĩç òĩõ FreeBSD ãßĩãē ĩēã ðĩēŸ áĩē ÷ ðß ãēããēēãóßã. Òĩ FreeBSD ãðĩðãēãßðãē ãðũ òõĩãēóõĩñŸð ÷ ēēēŨãũĩ ãĩēñßðũĩ ãðũ ũēĩ òĩĩ ēũðĩĩ. Ç ñŨãã òĩõ FreeBSD ðãñŸ ÷ ãē ðñũóããóç ĩŸóũ ãĩßĩðĩõ CVS[1] òã ũēĩõð, Ÿðóē ðóðã ĩã ĩðñãß ũðĩēĩð èŸēãē ĩã ããē ĩçĩŸĩãðã log, ãēãõĩñŸð (patches) ðĩõ Ÿ ÷ ĩðĩ òã ãēŨõĩñã development branches, ēãē Ũēēã ÷ ãñãēðçñēóðēēŨ ðĩõ ãĩçēĩŸĩ òçĩ áĩŨðððĩç, òã ĩðĩßã ðñĩēŸððĩĩ ãðũ òçĩ ÷ ñßóç ãĩũð ãðððçñĩŸ òðóðßĩãðĩõ

ǻéǻ ÷ āñēóçð òpǻééǻ. Āóòü āðĭōŸēǻóǻ éǻé òĭĭ ðēĭ óçĭǻíóéēü ðǻñŨǻĭíóǻ Ÿēĭçð ǻéǻ Ÿĭǻ ĭǻǻŨēĭ āñēēĭü āðü òǻéǻíðĭŸ ÷ ĭðð ðñĭǻñǻĭǻóéóðŸ ðü üēĭ òĭĭ ēüóĭĭ óðĭ FreeBSD. Āǻíǻé ðñĭóǻŸð, āŸǻǻéǻ, ðüð ðĭēŸ óŸĭðñǻ éǻ āß ÷ ā āǻíǻé áĭðǻēð ÷ áĭðéēð ç éǻðŨóðǻóç áĭ āß ÷ áĭ üēĭé, āðü üēĭ òĭĭ ēüóĭĭ, ðñüóǻǻóç ĭǻ ññŨøĭĭ óðĭ ēpǻééǻ. Āē' áðòü, ĭüĭ ĭéǻ "ǻðēēǻñŸĭç" ñŨǻǻ āðü ðǻñßðĭō 300 Ũðñǻ Ÿ ÷ ĭōĭ ðñüóǻǻóç ĭǻ ññŨøĭĭ óðĭ CVS repository. Āðōĭĭ ĭē *committers*[6] āǻíǻé ððǻŸēðĭē ǻéǻ òĭ ĭǻǻǻŸýðǻñĭ ĭŸñĭð òçð áĭŨðððĭçðð ðĭō āǻíǻóǻé óðĭ FreeBSD. ĭéǻ *ēǻĭðñēēð-ñŨǻǻ*[7] (core team) āðü ǻéǻēǻñēĭŸñĭð ðñĭǻñǻĭǻóéóðŸ òēēŸǻǻóǻé ǻéǻ ĭǻ ðǻñŸ ÷ ǻé ēŨðĭēĭō āǻǻĭð ēǻēĭǻpǻççç éǻé ĭéǻ éǻðǻŸðēðĭçç óðĭ óŸĭēĭ òùĭ committers.

ĭē óǻ ÷ Ÿóǻóĭē ñēēĭß áĭŨðððĭçð òĭō FreeBSD āǻĭ áðpñĭō ēǻé ðĭēŸ ÷ ñüĭ ǻéǻ òĭ ĭǻēǻēŨñéóǻ òĭō óðóðpǻǻðĭō áĭŨðððĭçð óǻ ĭéǻ Ÿēǻĭóç ĭǻ ðĭēüðçðǻ ðĭō ĭǻ áĭßǻǻé ĭǻ ÷ ñçóéĭĭðĭēǻðǻé āðñŸüð. Āéǻ ĭǻ ēðēǻß āðòü òĭ āßēçĭǻ, ç áĭŨðððĭçç āǻíǻóǻé óǻðòü ÷ ñĭǻ óǻ āōĭ ðǻñŨēēçéǻ ĭĭñðŨóéǻ. ĭ ēŸñēĭð ēĭñüð áĭŨðððĭçð āǻíǻé ĭ *HEAD* p *trunk* óðĭ CVS repository ĭǻð, āŸüóðüð éǻé ùð "FreeBSD-CURRENT", p "-CURRENT" áĭ óðĭðñßǻ.

ǻǻð ðēĭ óǻēǻñüð ēĭñüð óðĭðçñǻðǻé, āŸüóðüð ĭǻ òĭ üñǻ "FreeBSD-STABLE" p ðēĭ óŸĭðñǻ "-STABLE". Ēǻé ĭē āōĭ ēĭñüß āǻíǻé āðĭēçēǻðŸñē óðĭ ēŸñēĭ CVS repository, óðçĭ Ēǻéēüñĭéǻ, éǻé áĭóéǻñŨñĭóǻé ĭŸóü **CVSup**[2] óǻ mirrors ðǻĭŸŸ óðĭĭ ēüóĭĭ. Ōĭ FreeBSD-CURRENT[8] āǻíǻé ç "ðñðçç óǻēñŨ" òçð áĭŨðððĭçð òĭō FreeBSD éǻēðð óǻ āðòü āßñĭóǻé ðñpǻǻ üēǻð ĭē éǻéŸĭñēǻð ǻēēǻǻŸð. Ōĭ FreeBSD-STABLE āǻíǻé ĭ ēĭñüð áĭŨðððĭçð āðü òĭĭ ĭðĭßĭ òðēŨ ÷ ñĭóǻé ĭē āēäüóǻéð. ĭē ǻēēǻǻŸð ǻéóŸñ ÷ ĭĭóǻé óǻ āðòüĭ, òĭĭ āŸýðǻñĭ ēĭñü òĭĭ áĭŨðððĭçð, ĭǻ ðēĭ āñǻü ñðēĭü, āðĭŸ ðñpǻǻ (óŸĭòüǻ ĭǻ òçĭ ðĭēðéēēð ĭǻð) āĭēēǻóðĭŸĭ óðĭ FreeBSD-CURRENT éǻé Ÿ ÷ ĭōĭ āĭǻóǻóðǻß ðĭēŸ éǻēŨ.

ĒǻðŨ òçĭ ðǻñßĭǻĭ ðĭō ĭǻóĭēǻǻǻß āðü òç ĭéǻ Ÿēǻĭóç òðçĭ āðüǻĭç, òðēŨ ÷ ñĭóǻé éǻēçĭǻñēĭŨ snapshots āðü óǻ ĭç ÷ áĭpǻǻǻ òçð ñŨǻǻð òĭō FreeBSD éǻé āǻíǻé ǻéǻēŸóéĭǻð āðü òĭĭ āĭðçñǻðçðp [ftp://stable.FreeBSD.org/](http://stable.FreeBSD.org/). Ç ĭǻǻŨēç ǻéǻéǻðēĭüðçðǻ òùĭ āēðǻēŸóéĭŸ snapshots, éǻēðð éǻé ç ðŨóç òçð ēĭēŸüðçðǻð òùĭ ÷ ñçóðp ĭǻð ĭǻ áĭçĭǻñpñĭō óǻ ĭç ÷ áĭpǻǻǻ òĭðð ĭǻ òéð ðñüóðǻóǻð -STABLE āēäüóǻéð ĭŸóü CVSup éǻé "make world"[8] āĭçēĭŸĭ ĭǻ ēñǻðēŸóǻé òĭ FreeBSD-STABLE óǻ ĭéǻ ðĭēŸ áĭēüðéóðç éǻðŨóðǻóç áēüĭǻ éǻé ðñēĭ āñ ÷ ðǻǻé ĭ ēŸēēĭð òùĭ āēŸǻ ÷ üĭ ðĭēüðçðǻð āēñēǻpð ðñēĭ āðü òçĭ ǻēŨēǻóç ĭéǻð Ÿēǻĭóçð òĭō FreeBSD.

Ōðĭǻ ÷ pð óðŸēñĭóǻé āðü òĭðð ÷ ñpóðǻð ĭǻð áĭǻǻñŸð ðñĭǻçĭŨðüĭ éǻé ǻéðpóǻéð ǻéǻ éǻéŸĭñēǻ ÷ āñǻēðçñēóðēēŨ, éǻðŨ òç ǻēŨñēǻé ðĭō ēŸēēĭð òçð ēŨēǻ Ÿēǻĭóçð. ĭē áĭǻǻñŸð ðñĭǻçĭŨðüĭ ǻéóŨǻĭóǻé òðçĭ āŨóç **GNATS**[9] ĭŸóü e-mail, ĭǻ òçĭ āóǻñĭǻp send-pr(1), p ĭŸóü òĭō web-interface ðĭō ðǻñŸ ÷ ǻóǻé òðçĭ ǻéǻŸðĭóç <http://www.FreeBSD.org/send-pr.html>. Āēðüð āðü òéð ǻēŨñǻð ēßóðǻð çēǻēðñĭēēĭŸ ðǻ ÷ ðǻññǻßĭō ĭǻ ēŸŸǻ óǻ óǻ ÷ ĭēēŨ ÷ āñǻēðçñēóðēēŨ òĭō FreeBSD òðŨñ ÷ ǻé éǻé ç ēßóðǻ FreeBSD Quality Assurance mailing list (<http://lists.FreeBSD.org/mailman/listinfo/freebsd-qa>), ç ĭðĭǻ ðǻñŸ ÷ ǻé ŸŸǻ òüñĭōĭ ǻéǻ óðǻçðpóǻéð ó ÷ ǻðēēŨ ĭǻ òéð ēǻððñŸñǻéǻð òçð "ññǻŨŸüóçð òùĭ āēäüóǻñŸ".

Āéǻ ĭǻ āĭðçñǻðçēĭŸĭ ĭē ðēĭ óðĭðçñçðēēĭß ÷ ñpóðǻð ĭǻð, ĭǻ Ÿēǻĭóç òĭō FreeBSD 4.3 āñ ÷ ðǻǻǻ ĭǻ ÷ ñçóéĭĭðĭēĭŸĭǻ ĭǻ ÷ ùñéóðĭŸð ēĭñĭŸð āēäüóǻñŸ. Āðōĭß ĭē ēĭñüß çĭēĭðñǻŸĭóǻé ēßǻĭ ðñßĭ òðéǻ ÷ ðǻß ç ðǻēēēð Ÿēǻĭóç. ĭǻðŨ òçĭ áĭǻēĭßŸüóç òçð Ÿēǻĭóçð, ĭüĭ ðĭēŸ óçĭǻíóéēŸð ǻēēǻǻŸð éǻé ðñĭóēpēǻð ó ÷ ǻðēēŸð ĭǻ òçĭ áóðŨēǻéǻ āßñĭóǻé óðĭ ēĭñü òçð Ÿēǻĭóçð. Āēðüð āðü òçĭ āĭǻðüðçðǻ áĭǻǻŨēĭéóçð ĭŸóü CVS, āēðǻēŸóéĭǻ patchkits òðēŨ ÷ ñĭóǻé ǻéǻ ĭǻ ĭðĭñŸĭ ĭǻ áĭǻǻēĭßðĭōĭ óǻ óðóðpǻǻðŨ òĭðð üóĭē ÷ ñçóéĭĭðĭēĭŸĭ òéð āēäüóǻéð *RELENG_x_y*.

Ōĭ Ōĭpǻǻ 2 āĭçǻǻß ĭǻ ēǻððñŸñǻéǻð óǻ ǻēŨñǻǻ óðŨǻéǻ òçð ǻéǻǻēǻóðǻð ðĭō āñßóēǻóǻé ðßóü āðü ēŨēǻ Ÿēǻĭóç, ĭŸ ÷ ñē éǻé óǻ āpǻǻǻ ðĭō ĭǻçǻŸĭ óðçĭ ĭǻðǻǻēpððéóç òĭō óðóðpǻǻðĭð éǻé òĭ Ōĭpǻǻ 3 āĭçǻǻß òçĭ ðǻéǻ òç ǻéǻǻēǻóðǻ òçð ĭǻðǻǻēpððéóçð. Ōĭ Ōĭpǻǻ 5 ðǻñēǻñŨǻǻé ðüð ĭðĭñǻß ĭǻ āðǻēðǻēǻß òĭ āáóéēü óŸóðçĭǻ āðü ðñßðĭðð éǻé òĭ Ōĭpǻǻ 6 ðǻñēǻñŨǻǻé ēŨðĭēǻ āðü óǻ ðñŨǻǻǻð ðĭō ĭŨēǻǻ āðü òçĭ ǻéǻǻēǻóðǻ Ÿēǻĭóçð òĭō FreeBSD 4.4. ŌŸēĭð, òĭ Ōĭpǻǻ 7 ðǻñĭóéŨǻǻé ēŨðĭēǻð āðü òéð éǻðǻðēŸĭóǻéð ðĭō ēŸēĭðĭǻ ĭǻ ðŨñǻé ç áĭŨðððĭçç óðĭ ĭŸēēĭ.

2 Ç Āéǻǻēǻóðǻ Āçĭēĭðñǻð ĭéǻð ēǻĭóçð

ĭē ĭŸǻð āēäüóǻéð òĭō FreeBSD òðēŨ ÷ ñĭóǻé āðü òĭĭ -STABLE ēĭñü áĭŨðððĭçð ðǻñßðĭō ēŨēǻ òŸóóǻñǻéð ĭpǻǻð. Ç

āēāāēēāōāā ðñĩāōĩēĩāōāō ĩēāō Ÿēāĩōç ñāēēĩŪāē ó÷āāuĩ 45 ĩŸñāō ðñēĩ òçĩ āĩāĩāũĩāĩç çĩāññçĩā Ÿēāĩōç, ūōāĩ ĩ òðāŸēōñĩ āēāüōāuĩ òĩō FreeBSD óðŸēĩāē Ÿĩā āñŪĩā óōēō ēβōōāō òuĩ ðñĩāñāĩāōēōōĩ āēā ĩā òðāŸēōĩβōāē óōĩōð ðñĩāñāĩāōēōōŸ òēē Ÿ÷ĩōĩ 15 ĩŸñāō ēāēñũ ĩā ēŪñĩōĩ ūðĩēāō āēēāāŸ òŸēĩōĩ, ðñēĩ òĩ ðŪāũĩā òĩō ēŸāēēā. ĨŸōā ōā āōōũ òĩ ēāēñũ, ðĩēēĩβ ðñĩāñāĩāōēōōŸ ēŪñĩōĩ ĩēā ōāēñŪ āðũ āēēāāŸ ðĩō Ÿ÷ĩōĩ ĩāβĩāē ðēŸĩ āũōōŸ ò ò ñāēēāñβōĩāōā MFC”. Ĩ ũñĩō MFC òçĩāβĩāē “Merge From CURRENT” ēāē ðāñēāñŪōāē òçĩ āēāāēēāōā ðñĩōāñĩāð òĩō ēŸāēēā ĩēāō āĩēēĩāōĩŸĩç òēēāāð òðũ òĩ -CURRENT ðāēñāĩāōēēũ ēñĩũ āĩŪðōōĩç òōĩ ōōāēāñũ -STABLE ēñĩũ.

2.1 ĵāā÷ĩō ēŸāēēā

ŌñēŪĩōā çĩŸñāō ðñēĩ òçĩ āĩāĩāũĩāĩç çĩāññçĩā Ÿēāĩōç, ĩ ēŸāēēā òĩō repository āēōŸñ÷āōāē ōā ĩēā ðāñβĩāĩ “ēāēōōŸñçōçð”. ĒāōŪ òç āēŪñēāēā āōðð òç ðāñēũāĩō, ūēāō ĩē āēēāāŸ òōĩ -STABLE ēñĩũ ðñŸðāē ĩā Ÿ÷ĩōĩ òçĩ Ÿāēñēōç òç ð Release Engineering Team <re@FreeBSD.org>. Ĩē āēēāāŸ ðĩō āðēōñŸŸĩōāē ōā āōð òçĩ ðāñβĩāĩ ðĩō āēāñēāβ 15 çĩŸñāō āβĩāē:

- ĀēñēŸōāēð āũōōĩ ðñĩāēçĩŪōuĩ.
- ĀĩçĩāñŸōāēð òōçĩ òāēĩçñβũōç.
- ĀēēāāŸ ò÷āōēēŸ ñā òçĩ āōŪēāēā.
- ĩēēñŸ òēēāāŸ òōĩōð ĩāçāĩŸ òōōēāðĩ, ūðũ ð.÷. ç ðñĩōēðēç òuĩ IDs ĩŸũĩ ōōōēāðĩ.
- Ĩðĩēāāðĩōā Ūēēç āēēāāð ðēōōāŸāē ç ñŪāā āĩŪðōōĩç òēē ðñŸðāē ĩā āβĩāē, ĩā òĩ āĩāĩāũĩāĩ ðŪĩōā ñβōēĩ.

ĨāōŪ òēð ðñŸōāō 15 ĩŸñāō ēāēōōŸñçōçð, òōēŪ÷ĩāōāē ĩēā āĩēēĩāōōēēŸ Ÿēāĩōç āēā ĩā ðñçōēĩĩðĩēçēāβ ōāĩ āĩēēĩβ òç òāēēēð Ÿēāĩōç ēāē ĩ ēŸāēēā òēōŸñ÷āōē ōā ĩēā ðāñβĩāĩ “ðāāŸĩāōĩð”. ðēŸĩ āβĩāē ðēŸ ðēĩ āŸōēēē ĩā āβñĩōĩ ĩŸā òēēāāŸ òōĩ ōŸōōçĩā, āēōũ ēē āĩ āēñēŸñĩōĩ ēŪðĩēē ðēŸ ōĩāāñũ bugŸ ēŪðĩēē ðñũāēçĩā āōōŪēāēāð. ĒāōŪ òç āēŪñēāēā òĩ ðāāŸĩāōĩ òĩō ēŸāēēā, òĩōēŪ÷ēōōĩ ĩβā āĩēēĩāōēēŸ Ÿēāĩōç òōēŪ÷ĩāōāē ēŪēā āāāñŪāā, ĩŸ÷ñē ĩā āβĩāē Ÿōēēç ç òāēēēŸ Ÿēāĩōç. Ōēð çĩŸñāō āēñēāð ðñēĩ òçĩ òāēēēŸ Ÿēāĩōç, ç ñŪāā ðĩō āβĩāē òðāŸēōĩç āēā òēð āēāüōāēð āβĩāē ōā òōĩā÷Ÿ āðēēēēēēē ĩā òçĩ ñŪāā āōōŪēāēāð, òçĩ ñŪāā òōĩðñçōçð òç òāēĩçñβũōçð, ēāē òçĩ ñŪāā òōĩðñçōçð òuĩ ports, āēā ĩā āāāāēũēēēē ðũ òēā ōā āðāñāβōçðā ēñĩŪōēā āēā ĩēā ðēŸñç Ÿēāĩōç āβĩāē āēāēŸōēēā.

2.2 ēβōōā ĀēŸā÷ĩō òç òāēēēð ãēāĩōçð

Ÿōāĩ āñēāðŸ ñēēēĩāōōēēŸ òēāüōāēð Ÿ÷ĩōĩ āβĩāē āēāēŸōēēāð, Ÿ÷ĩōĩ ñēēēĩāōōāβ āðũ āñēāðũ ēũōĩ ēāē ūēā ōā ōĩāāñŪ ēŸĩāōā Ÿ÷ĩōĩ āĩāēēēāβ, ç òāēēēŸ Ÿēāĩōç ĩðññāβ ĩā āñ÷βōāē.

2.2.1 Āçĩēĩōñāβā òĩō ēñĩũŸēāĩōçð

Ÿðũ ðāñēāñŪōāĩā òōçĩ āēōāāũāŸ, ĩē ēñĩũβ RELENG_X_Y āβĩāē ĩēā ò÷āōēēŪ ĩŸā ðñĩōēðēç òōçĩ ĩāēĩāēēāβā òuĩ āēāüōāĩ ĩāð. Ōĩ ðñŸōĩ āŸĩā òōçĩ āçĩēĩōñāβā āðōĩŸ òĩō ēñĩũŸēāĩāē ĩā āāāāēũēāβōā ūēē āĩōēāŸāōā ĩā òçĩ òāēāðōāβā Ÿēāĩōç òĩ ðçāāβĩō ēŸāēēā āðũ òĩ RELENG_X ēñĩũ āðũ òĩ ĩðĩβĩ ēā òōēŪĩāōā òĩ ĩŸĩ ēñĩũ.

```
/usr/src# cvs update -rRELENG_4 -P -d
```

Ōĩ āðũāñ āŸĩā āβĩāē ĩā āçĩēĩōñāβāðā ñēā āōēēŸōā (tag) òōĩ òçĩāβĩ āēēēĩçōçð òĩō ēñĩũŸēāĩ, Ÿōōā ĩā ĩðññāβōā ĩā āāβōā òēð āēāōĩñŸ ñā òçĩ āñ÷Ÿ òĩō ēñĩũŸēāĩŸēēēā òōĩ ĩŸēēēĩ ĩā òĩ CVS:

```
/usr/src# cvs rtag -rRELENG_4 RELENG_4_8_BP src
```

Êáé ôüôâ ìďĩñâßôâ íá açìèĩõñãPóáôâ ôĩ íÝĩ êĩñü ìâ:

```
/usr/src# cvs rtag -b -rRELENG_4_8_BP RELENG_4_8 src
```

ΌγιαΒυός: *Ἰε ἀοέεΥοὰδ RELENG_* ἀΒίαε ἀαοίαοἰΥίαδ ἀεά ÷ ηΠόζ ἀδῦ οἰῶδ CVS-meisters εάε όγί ηἰῶα οὐί
ἀεἶῶοἶ.*

[illegible]

2.2.2 ÁõîÛííîáò ôíí Áñéèü êäïóçò

Δνείρ ιδᾶε ὃ ἀοέεΥόα, ιᾶοᾶεϋοοέοοᾶβ ἑᾶε ἀοίρειαοᾶβ ὃ οᾶέεβ Υέαιρόσ, δνΥᾶε ιᾶ ᾶβῖοῖ ᾶεᾶᾶΥᾶ οᾶᾶ δᾶᾶεῸου ᾶν÷ᾶβᾶ ᾶεᾶ ιᾶ δᾶᾶεΥ÷ῖοῖ οῖῖ οὔοᾶ ᾶᾶεῖῖ Υέᾶῖοσᾶ ᾶεᾶ οῖ FreeBSD:

- doc/en_US.ISO8859-1/books/handbook/mirrors/chapter.sgml
- doc/en_US.ISO8859-1/books/porters-handbook/book.sgml
- doc/share/sgml/freebsd.ent
- src/Makefile.incl
- src/UPDATING
- src/gnu/usr.bin/groff/tmac/mdoc.local
- src/release/Makefile
- src/release/doc/en_US.ISO8859-1/share/sgml/release.dsl
- src/release/doc/share/examples/Makefile.relnotesng
- src/release/doc/share/sgml/release.ent
- src/share/examples/cvsup/standard-supfile
- src/sys/conf/newvers.sh
- src/sys/sys/param.h
- src/usr.sbin/pkg_install/add/main.c
- www/en/docs.sgml
- www/en/cgi/ports.cgi
- ports/Tools/scripts/release/config

Ἰε̅ ὀ̅ϱ̅ι̅α̅ε̅ρ̅ῶ̅α̅ε̅δ̅ Ὑ̅ε̅α̅ι̅ῶ̅ϱ̅ῶ̅ ἑ̅α̅ε̅ ὀ̅α̅ ἁ̅ñ÷ἁ̅β̅α̅ ἰ̅α̅ ὀ̅ε̅ῶ̅ ἁ̅ε̅ι̅ñ̅ε̅ρ̅ῶ̅α̅ε̅δ̅ ὀ̅ϱ̅ῶ̅ ὀ̅α̅ε̅ῶ̅ὀ̅α̅β̅α̅ῶ̅ ὀ̅ῶ̅ε̅α̅ι̅Ῥ̅ῶ̅ ὃ̅ñ̅Υ̅ῶ̅ε̅ ἁ̅δ̅β̅ῶ̅ϱ̅ῶ̅ ἰ̅α̅ ὃ̅ñ̅ι̅ὀ̅α̅ñ̅ι̅ῶ̅ὀ̅ῶ̅ι̅ϱ̅ῶ̅
 ὀ̅ῶ̅ϱ̅ῶ̅ ῒ̅Υ̅α̅ Ὑ̅ε̅α̅ι̅ῶ̅ϱ̅ (ὀ̅ῶ̅ι̅ ἑ̅ñ̅ι̅ῶ̅ ὀ̅ϱ̅ῶ̅ Ὑ̅ε̅α̅ι̅ῶ̅ϱ̅) ἑ̅α̅ε̅ ἰ̅α̅ ἁ̅δ̅α̅ñ̅α̅ñ̅α̅ὀ̅ῶ̅ι̅ϱ̅ῶ̅ ἑ̅α̅ὀ̅Ü̅ε̅ε̅c̅á̅ (ὀ̅ῶ̅ι̅ὀ̅ ἁ̅ϱ̅ῶ̅ ἑ̅ñ̅ι̅ῶ̅ϱ̅ῶ̅ stable ἑ̅α̅ε̅ current):

- `src/release/doc/en_US.ISO8859-1/relnotes/common/new.sgml`

- `src/release/doc/en_US.ISO8859-1/errata/article.sgml`

Ç áðáññíáð **sysinstall** ðñÝðáé áðβóçð íá áñçíáññùéáß íá òñí òùóòù áñéèìù òùí ports éáé òí ÷ þññ òîð áβóêîð ðîð áðáéðáðβóáé áéá òçí Óðêîñáð òùí Ports. ÁððÝð íé ðêçññîññáð ððÛñ÷íðí òðí áñ÷÷áß

`src/release/sysinstall/dist.c`.

Áðîý ðîðêçññùéáß ç ðññáðîñíáðá òçð íÝáð áðβóçðð Ýéäîçð, ðñÝðáé íá áñçíáññóáðá ðáñéèÛ áñ÷÷áß áéá íá áñçíáññóáðá òñí èùòñ áéá òç íÝá Ýéäîç òîð FreeBSD.

- `www/en/includes.xsl`
- `www/en/includes.sgml`
- `www/es/includes.sgml`
- `www/en/releases/*`
- `src/share/misc/bsd-family-tree`

2.2.3 Äçìéîññáðá òùí Áðééáððí òçð êäîçð

¼ðáí ç òáééêð Ýéäîç áßíáé Ýòñíç, ç ðáñáéÛðù áíðñð éá äçìéîññáðáé òçí áðééÝðá `RELENG_4_8_0_RELEASE`.

`/usr/src# cvs rtag -rRELENG_4_8 RELENG_4_8_0_RELEASE src`

Íé ððáýéðñíé òçð Óäèçññùóçð éáé òùí Ports áßíáé áððñß ðîð ðñÝðáé íá äçìéîññáðáðîñí òéð áðééÝðáð `RELEASE_4_8_0` òðá éáðÛéççéá äÝíðñá ðçááßñð êðáééá.

ÏáñééÝð òññÝð, ðññáß íá ÷ ðñáéáððáß íá áßññí ðÛðñéáð áééáÝð ðáéáððáßá òðéáñð *íððÛ* òçí òñðñéÝðççð òùí áðééáððí. ÁáñéèÛ, ááí áßíáé áýðèñí íá áßíáé ðÛðé òÝðñí áðîý òñ CVS áðéðñÝðáé íá ðáðáéñðáé ðÛðñèð òéð áðééÝðáð íá áíðñéÝð ùððð `cvs tag -d tagname filename`. Áßíáé ðñý òçíáíðéèù ùñð áððÝð íé áééáÝð òçð òáéáððáðáð òðéáñð íá òçíáéùñíý íá òéð òùóðÝð áðééÝðáð áéá òçí òðáéáññéíÝíç Ýéäîç. Íé áðβóçíáð áéäùóáéð òîð FreeBSD ðñÝðáé íá áßíáé ðÛíðá áýèñí íá áíáðáñá÷èñí. ÒððééÝð áééáÝð òðí ðáñéáÛéñí òîð ïç÷áñéñý òùí áéäùóáùí ááí áðéðñÝðñíáé.

3 ðáðáäèðððéóç òçð êäîçð

Íé “áéäùóáéð” òîð FreeBSD ðñññíý íá ðáðáäèðððéóðñíý áðù ðññíáððñíðá Ý÷áé Ýíá ò÷áðéèÛ áñðáññí ïç÷Ûíçíá éáé ðññóááóç òðí repository òîð ðçááßñð êðáééá. (¼èñé Ý÷íðí áððð òç äñíáðùðçðá, áðîý ðáñÝ÷íðá ðññóááóç ïÝòù áñññññð CVS! Ááððá òñ Áá÷áññáéñí òîð FreeBSD áéá ðáñéóóùðáñáð éáððñÝñáéð.) Ç ùñç áééáèð áðáððççð áßíáé íá ððÛñ÷áé ððñððñéíç òðññ ððññíá òáð áéá òçí òððéáðð `vn(4)`. (Óðí -CURRENT, áððð ç òððéáðð Ý÷áé áíðééáððáðáð áðù òçí íÝá òððéáðð áßðñèð ááðéóñÝññ òá ïñç `md(4)`.) Áí ç òððéáðð ááí áßíáé áíðñíáðùñÝíç òðññ ððññíá òáð, òùðá ï éáðÛéççèð ðáçáùð éá òññðùéáß áððñíáðá ùðáí áéðáéáððáß ç áíðñð `vnconfig(8)` éáðÛ òç áéÛñéáá òçð ðÛóçð áðñíáðáð òîð ïÝòñí áéèßççðð. ¼éá ðá áñááéáßá ðîð ÷ ðñáéÛáñíðáé áéá íá ðáðáäèðððáðá ðéá Ýéäîç áßíáé áéáéÝðñíá òá ïññðð ðçááßñð êðáééá òðñ éáðÛéñí `src/release`. ÁððÛ ðá áñááéáßá Ý÷íðí ùð òéñðù íá ðáñÝ÷íðí ùðé ÷ ðñáéÛáñíðáé áéá íá ÷ððáñíðáé ïé áéäùóáéð òîð FreeBSD ðá Ýíá òññáðð éáé òðáéáññéíÝñí òññðñ. Íéá ðèðñçð Ýéäîç ðññáß íá ðáðáäèðððéóðáß ÷ ðçðñíðñéðñáð áððÛ ðá áñááéáßá ðá ðéá éáé ùññ áíðñð, òððáññéáñáññÝíçð éáé òçð äçìéîññáðáð áññð ISO áñ÷÷áßíð éáðÛéççèñí áéá íá éááß òá CDROM, ïé áéééÝððáð áéèßççðð, éáèðð éáé ï éáðÛéççèð ááéáðÛðáóçð ïÝòù FTP. Áððð ç áíðñð áßíáé òððéêð ç `make release`.

3.1 Ç áíôïëþ make release

Ἄεά íá íàðáæuðòßòáðà àðéçð÷þò íεά Ἰέαιός, ðñÝðáε ðñþðά íá òðÛñ÷íòí ðά εάðÛεεçεά áñ÷áßá íÝóá ðóíí εάðÛεíαι
 /usr/obj. Ἰðíñáßòá íá ðά àçíεíñòñáßòáðà áßòá íá ðçí áíñíεþ make world Þ àðεÛ make buildworld. Ἄεά íá
 ðáòý÷÷áε áðßòçð ç íàðáæþòðéóç ðçð Ἰέαιόςð ðñÝðáε íá áþòáðà ðéð εάðÛεεçεάð ðεíÝð εάε óá εÛðíεάð íàðáæεçÝð:

- [illegible]

Αί άάί Υ÷άάά Παç ðñúάάάç άά εÛðείí ðíðéú CVS repository íά ðíí êpåééά ðíð FreeBSD, ðíññáßά ðÛíάά íά
 ððéÛíάά ðí áéú άά ðíðéú CVS mirror íά ðí CVSup
 (http://www.FreeBSD.org/doc/en_US.ISO8859-1/books/handbook/synching.html#CVSUP). ÕðÛñ÷άé Ýíá supfile,
 ðíí άñ÷άßí /usr/share/examples/cvsup/cvs-supfile, ðí ðíßí ðíññáßά íά ÷ñçóéíðíéßάά άéά íά
 áíðéñÛøάά ðí CVS repository ðíð FreeBSD ðíí áéú άά ðíðéú mirror.

Αί δανάεάβθάοά όçi άόέέΎόά RELEASETAG, ύüόά έά ίάόάέüüόέόόάβ ίεά δεPñçό Ύέäίόç άδü όçi έίñōß öïō HEAD
 (άçέ. öïō -CURRENT) έίñüý. Íé äέäüόάέó ðïō ööéÜ÷ñíόάέ άδü άόöüí öíí έίñüü, ööíPèüó áíáoΎñíόάέ óáí
 “-CURRENT snapshots”.

[illegible]

```
make release CHROOTDIR=/local3/release \
BUILDNAME=4.7-RELEASE \
CVSROOT=/host/cvs/usr/home/ncvs \
RELEASETAG=RELENG_4_7_0_RELEASE
```

Οι Makefile δῶ ÷ ηςοείηδῖεάβδαε άέα ίά ιάδάάευόδβæίφοάε τέ άάυιόάδ ιδῖηάβ ίά ÷ υῖεόόάβ οά άηέαοŨ ίά ÷ υῖεόόŨ
 ιάδάρυ όῖοδ άΠιάόά.

- Ἀξιειπὸναβὰ ἀφὺδ ἐἀεῖνῖρ ᾄνεάῤῥεῖνῖοῖδ ὀὰ ἰεὰ ἰὰ÷ῡνῆοόᐁ ἑᾗᾗᾗ÷ᐁ ᐁᾗ ἑᾗᾗᾗᾗᾗᾗ ἰᾗ ὄῥῖ ᾗῖῖῖᐁᐁ “make installworld”.
- Ἀἰᾗᾗᾗᐁᐁ ᾗᾗᾗ ὀῖ CVS ἰεᾗᾗ ἑᾗῖῖῖῖῖῖᾗ Ἰῖᾗῖῖῖᾗ ὀῖῖ ὄῥᾗᾗᐁῖῖ ἑᐁᾗᾗᾗ ὀῖῖ ὀῖὀὀᐁᐁᾗῖῖῖᾗ, ὄῥᾗ ὀᾗῖῖῖᐁᐁᐁὀᾗᾗ ἑᾗᾗ ὀῖῖ ports ἰῖῖᾗ ὀῥῥῖ ἑᾗᾗᾗ÷ᐁ ᐁᾗ ἑᾗὀᾗᾗᾗᾗᾗ ἰᾗὀᾗᾗᾗᐁὀὀὀὀᾗᾗ ὄῥᾗ Ἰῖᾗῖῖῖᾗ.
- Ἴῖὀῖᐁὀᾗᾗὀ ὀῖῖ ᾗᾗ÷ᐁᐁῖ ὀῖῖ ἑᾗὀῖᾗᾗ /etc ἑᾗᾗ /dev ἰῖῖᾗ ὀῖῖ ᾄᾗᾗᾗᐁῖῖῖ chroot.
- ἈῖὀἸῖᾗὀᾗ ὄῥᾗ ᾗῖὀῖᐁᐁ chroot ἰῖῖᾗ ὀῥῥῖ ἑᾗᾗᾗ÷ᐁ ᐁᾗ ἑᾗὀᾗᾗᾗᾗᾗ ὀῖὀ ᾗὀῖῖᐁᐁὀὀὀᾗᾗ, ᾗᾗ ἰᾗ ἰῥῖ ἰὀῖᾗᐁ ὀῖ ᾗῖὀᾗᾗᾗᾗᾗ ᾄᾗᾗᾗᐁῖῖῖ ἰᾗ ᾗὄῥᾗᐁᐁὀᾗ ὄῥ ἰᾗὀᾗᾗᾗᐁὀὀὀὀᾗ ὄῥᾗ Ἰῖᾗῖῖῖᾗ.
- ἈῖὀἸῖᾗὀᾗ ὄῥᾗ ᾗῖὀῖᐁᐁ make world ἰῖῖᾗ ὀῖῖ ᾄᾗᾗᾗᐁῖῖῖ chroot.
- ἰᾗὀᾗᾗᾗᐁὀὀὀὀᾗ ὀῖῖ ᾗὀὀᾗᾗᾗὀὀῖῖ ὀῖὀ ᾗᐁᾗᾗ ὀ÷ᐁὀὀᾗᐁ ἰᾗ ὀῖ ὀῖὀὀᾗᾗ Kerberos.
- ἰᾗὀᾗᾗᾗᐁὀὀὀὀᾗ ὀῖὀ ὀὀᾗᐁᾗ GENERIC.
- Ἀῥῖῖὀᾗᐁᐁᾗ ᾗῖὀ ὀᾗᾗᾗᾗᾗ ἑᾗὀᾗᾗᾗῖῖ ὀὀῖῖ ἰὀῖᐁῖ ἑᾗ ἰᾗὀᾗᾗᾗὀὀὀὀὀῖῖ ἑᾗᾗ ἑᾗ ᾗὀῖῥῥᾗᾗὀὀῖῖ ἰᾗ ᾗὀᾗᾗᾗὀὀᾗᾗ ἰᾗᾗᐁᐁ ὀῖὀ ὀᾗᾗᾗᐁῖ ᾄᾗᾗᐁᐁ.

- ĩāôāāēpôôéôç ēāē āāēāôŨôôāôç òùĭ āñāāēāßùĭ ðĭô ÷ ñāēŨæĭŕôāē āēā ôçĭ ðñĭāôĭēĭāôßā ôçð Ÿēäĭôçð ēāē ôç ĭāôāôñĭðß ôçð ôāēĭçñßùôçð āðù ôĭĭ ðçāāßĭ ēpāēēā (SGML) ôā html ēāē āñ÷āßā ēāēĭŸĭŕô ðĭô ēā ôôĭāāŸĭŕôĭ ôçĭ Ÿēäĭôç.
- ĩāôāôñĭðß ēāē āāēāôŨôôāôç ôçð ôāēĭçñßùôçð (āā÷āēñßāēā ÷ ñpôôç, āēôāāüāēēŨ ēāßĭāĭā, ôçĭāēpôāēô Ÿēäĭôçð, ēßôôâô ôôĭāāôüôçðâôð ôēēēĭŸ, ēēð.)
- ĩāôāāēpôôéôç òùĭ “ôôĭðēāôĭŸĭŕ” (crunched) āēôāēŸôēĭŕ ðĭô ēā ÷ ñçôēĭðĭēçēĭŸĭ ôôēô āēôēŸôôâô āāēāôŨôôāôçð.
- Äçĭēĭôñāßā òùĭ ðāēŸôŭĭ ôçð āāēāôŨôôāôçð ēāē òùĭ ðāēŸôŭĭ ðçāāßĭô ēpāēēā.
- Äçĭēĭôñāßā òùĭ ĭŸôŭĭ āēēßĭçôçð ēāē ôçð āēôēŸôôâô “fixit”.
- Äçĭēĭôñāßā ôçð ēāñāñ÷ßâð ēāôāēüāŭĭ āēā ôçĭ āāēāôŨôôāôçð ĭŸôŭ FTP.
- (ðñĭāēñāôēēŨ) Äçĭēĭôñāßā òùĭ ISO āñ÷āßùĭ āēā ĭŸôā CDROM/DVD media.

Āēā ðñēôôôüôñāð ðçēñĭŕŕŭñßâð ô÷āôēēŨ ĭā ôçĭ āēāāēēāôßā äçĭēĭôñāßâð ĭēâð Ÿēäĭôçð, āāßôā ôçĭ ôāēßāā ôāēĭçñßùôçð release(7).

3.2 ĩāôāāēpôôéôç òùĭ XFree86

Ôĭ āñāôēēü ðñēāŨēēĭ **XFree86** āßĭāē Ÿĭā ôçĭāĭôēēü ēñĭŨôē ēŨēā Ÿēäĭôçð āēā ðĭēēŸð ÷ ñpôôâð ðĭô ēŸēĭŕôĭ ôĭ FreeBSD āēā ôôāēĭŸð āñāāôßâð. ðñēĭ ôçĭ Ÿēäĭôç 4.6-RELEASE ôĭô FreeBSD, ĭē āðßôçĭāð āēäüôāēð ôĭô FreeBSD ÷ ñçôēĭðĭēŸŕôāĭ ôçĭ Ÿēäĭôç 3.x òùĭ **XFree86**. ĭ ðēĭ āŸēĭŕôð ðñüðĭô ĭā ĭāôāāēüôðßôāôā āôðŸð ôēð āēäüôāēð āßĭāē ĭā ÷ ñçôēĭðĭēpôāôā ôĭ ðñüāñāĭā `src/release/scripts/X11/build_x.sh`. Áðôü ôĭ ðñüāñāĭā āðāēôāß ĭā āßĭāē pāç ôôçĭŸĭā ôôĭ ôŸôôçĭŨ ôâð ôüôĭ ôĭ ðñēāŨēēĭ **XFree86** üôĭ ēāē ç āēpôôā Tcl/Tk. ĩāôŨ ôçĭ ĭāôāāēpôôéôç òùĭ ēāôŨēēçēŭĭ X servers, ôĭ ðñüāñāĭā ēā ðāēâðŨñāē üēā ôā āñ÷āßā ôā ôôēēĭāŸð āñ÷āßùĭ ðĭô ðñēĭŸĭāē ĭā āñāē ôĭ `sysinstall(8)` ĭŸôā ôôĭ ēāôŨēĭāĭ `XF86336` ôôĭ ĭŸôĭ āāēāôŨôôāôçð.

ĭāēēĭpĭâð ĭā ôçĭ Ÿēäĭôç 4.6-RELEASE ôĭô FreeBSD, ôĭ `sysinstall(8)` āāēāēôôŨ ôçĭ Ÿēäĭôç 4.x òùĭ XFree86, ôāĭ ēāñĭēēŨ ðāēŸôā. ÁôðŨ ĭðĭñāß ĭā āßĭāē āßôā ôā ðāēŸôā ðĭô äçĭēŸñāçôā ôĭ cluster òùĭ ports p ĭðĭēāāpðĭôā Ũēēā ðāēŸôā ðĭô Ÿ÷ĭŕĭ äçĭēĭôñāçēāß āðù Ÿĭā ports tree ĭā ôçĭ ēāôŨēēçēç āôēēŸôā.

Ôçĭāßôüç: Āßĭāē ðĭēŸ ôçĭāĭôēēü ĭā āôāēñŸôāôā āðù ôĭ āñ÷āßĭ `/etc/make.conf` ĭðĭēāôāpðĭôā ôĭðēēŸð ñôēĭßôāēð Ÿ÷āôā ēŨĭāē. Āēā ðāñŨāāēāĭā, āāĭ āßĭāē ēāēp ēāŸā ĭā āēāĭŸĭāôā āēôāēŸôēĭā ðĭô Ÿ÷ĭŕĭ ĭāôāāēüôðēôôāß ôā ēŨðĭēĭ ôôāēāēñēĭŸĭŕ ôŸôôçĭā ĭā ĭñēôĭŸĭç ôçĭ ôēĭp ôçð ĭāôāāēçðpð `CPU_TYPE` āēā āāēôēôôĭðĭßçôç òùĭ āēôāēŸôēĭŕ āēā ēŨðĭēĭ ôôāēāēñēĭŸĭŕ āðāĭāñāāôðp.

3.3 ðñĭāñŨĭāôā Ôñßôŭĭ (“ports”)

Ç Ôðēēĭāp òùĭ Ports ôĭô FreeBSD (<http://www.FreeBSD.org/ports>) āßĭāē ĭēā ôðēēĭāp ĭā ðñēôôüôñāā āðù 20,000 ðñĭāñŨĭāôā āðù ôñßôĭôð, ðĭô āßĭāē āēāēŸôēĭā āēā FreeBSD. ĭē Ports Management Team <portmgr@FreeBSD.org> āßĭāē ôðāŸēðĭŕē āēā ôçĭ ôôĭôpñçôç āĭüð āŸĭôñĭô āðù ðçāāßĭ ēpāēēā āēā ôā ports, ðĭô ĭðĭñāß ĭā ÷ ñçôēĭðĭēçēāß āēā ĭā äçĭēĭôñāçēĭŸĭ ôā ðāēŸôā ĭā ôā ðñĭāñŨĭāôā ðĭô ôôĭāāŸĭŕôĭ ôēð āðßôçĭāð āēäüôāēð ôĭô FreeBSD.

Ç āēāāēēāôßā ôôĭôpñçôçð ôçð ôðēēĭāpð òùĭ ports āßĭāē ēŨôē ðĭô āāĭ ĭðĭñĭŸĭā ĭā ēāēŸŕŕŕĭā āāp. ĭā ĭā÷ñēôôü Ũñēñĭ, ĭā ôßôēĭ Ç ĨñāŨîúôç ēäĭôçð òùĭ ðāēŸôŭĭ ĔĭāēôĭēēŸĭ āðù Ôñßôĭôð ([../releng-packages/article.html](http://releng-packages/article.html)), ēāēŸðâē āôðü ôĭ ēŸĭā.

3.4 Āñ ÷ āḂá ISO òçò ēāîíócò

Îāēēŕîóád îā òçî Ýēāîóc 4.4 òîō FreeBSD, ç ÎŪāā ÁíŪðòðîçò òîō FreeBSD áðîŪóēóā íā āēáíŸîāē ēāē óā òŸóóāñā ISO āñ ÷ āḂá ðîŵ ðñŕóā ðîŵēîŸóáí îē āðāēñāḂāð *BSDi/Wind River Systems/FreeBSD Mall* óòēð “āðḂóçîāð” āēāñŸò CDROM ðîŵ Ýēáíáí. ĒŪēā Ÿíá áðü óā òŸóóāñā ISO āñ ÷ āḂá ðñŸðāē íā ðāñēŸ ÷ āē Ÿíá āñ ÷ āḂî README.TXT ðîŵ ðāñēāñŪóāē óā ðāñēā ÷ üîáíá òîŵ āḂóēîŵ, ēē Ÿíá āñ ÷ āḂî CDROM.INF ðîŵ ðāñēŸ ÷ āē îāðā-ðēçñîŵîñḂāð āēá íā îðîñāḂ òî ðñüāñāîîā sysinstall(8) íā āēŸāîāē ēāē íā ÷ ñçóēîŵðîēḂóāē áðòü òî āḂóēî, ēāēðð ēē Ÿíá āñ ÷ āḂî filename.txt ðîŵ ðāñŸ ÷ āē íēá ēḂóðā āñ ÷ āḂüî òîŵ CDROM. ÁðòḂ ç ēḂóðā îðîñāḂ íā äçîēîñāçēāḂ ðîēŸ áðēŪ, ùò āñḂð:

```
/stage/cdrom# find . -type f | sed -e 's/^\.\\/' | sort > filename.txt
```

Îē óðāēāēñēîŸíāð áðāēóḂóāēð āēá ēŪēā Ÿíá áðü áðòŪ óā CD ðāñēāñŪŵîŸóāē ðāñāēŪòü:

3.4.1 ĀḂóēîŵ 1

Î ðñŕòðò āḂóēîŵ āḂíāē ó ÷ āāüî áðîēēāēóóēēŪ áðîŸēāóîā òçò áíŵîŕḂð make release. Îē üîŸāð āēēāāŸò ðîŵ ðñŸðāē íā āḂîŵîŸ óŵîŸ ēáðŪēîŵāî disc1 āḂíāē ç ðñîŵēḂēç òîŵ ēáðŪēîŵāî tools, òüî **XFree86**, ēāē üŵîŸ òî āŵíáðüŸ ðāñēóóüðāñüî ðāēŸòüî îðîñîŸí íā ÷ ùñŸŵîŸîŸ óðîŸ āḂóēî. Î ēáðŪēîŵāî tools ðāñēŸ ÷ āē āñāāēāḂā ðîŵ áðēðñŸðîŸîŸ óā ÷ ñḂóðāð ŪēēüŸ ēāēðîŵñāēēŕîŸ óðòçîŸŪòüî íā òðēŪŵîŸîŸ òēð āēóēŸððāð āēēḂîçóçò. Áðòüð î ðñŕòðò āḂóēîŵ ðñŸðāē íā òðēŪ ÷ íāðāē bootable Ÿðóē Ḃóðā íā îðîñîŸí îē ÷ ñḂóðāð òüî üîŸŸñŸüî ððîēîāēóðŕí íā áðîŵāŸāŵîŸ òî óðŪāēî äçîēîñāḂāð òüî āēóēāðòðŕí āēēḂîçóçò.

Áí îēá āēáŵîñāðēēḂ Ÿēāîóc òüî XFree86 ēā āēáíŸîāðāē îā òçî Ÿēāîóc áðòḂ, ðñŸðāē íā áíçîñāñēāḂ òî ðñüāñāîîā sysinstall(8) āēá òçî íŸá ēŸóç ēāē îē îāçāḂāð āāēáðŪóóáçòçò. Î ó ÷ áðēēüð ēŕāēēáð òðŪñ ÷ āē óŵîŸ ēáðŪēîŵāî src/release/sysinstall óŵîŸ -STABLE ēîñüü Ḃ óŵîŸ ēáðŪēîŵāî src/usr.sbin/sysinstall óŵîŸ -CURRENT ēîñüü. ÓðāēāēñēîŸíá, óā āñ ÷ āḂā dist.c, menus.c, ēāē config.c ēā ÷ ñāēáóðāḂ íā áíçîñāñēîŸí.

3.4.2 ĀḂóēîŵ 2

Î āāŸðāñîð āḂóēîŵ āḂíāē áðḂóçò áðîŸēāóîā òçò áíŵîŕḂð make release ēáðŪ Ÿíá îāāŪēîŸ îŸñîð. Áðòüð î āḂóēîŵ ðāñēŸ ÷ āē Ÿíá “live filesystem” ðîŵ îðîñāḂ íā ÷ ñçóēîŵðîēçēāḂ áðü òî sysinstall(8) āēá íā āîāðáóŵîŸîŸ ðñîāēḂîāðā óā îēá āāēáðŪóóáçò òîŵ FreeBSD. Ēē áðòüð î āḂóēîŵ ðñŸðāē íā āḂíāē bootable. Ēā ðñŸðāē áðḂóçò íā ðāñēŸ ÷ āē Ÿíá óðîðēāŵîŸŸîŸ áíðḂāñāŵîŸ òîŵ CVS repository óŵîŸ ēáðŪēîŵāî CVSROOT ēāē āāḂāîáðā áðü āîðîñēēŪ ðñîñāñŪîāðā óŵîŸ ēáðŪēîŵāî commerce.

3.4.3 ĀḂóēîē 3 ēāē 4

Îē òðüēîēðîē āŵîŸ āḂóēîē ðāñēŸ ÷ îŵîŸ áðēðñüóēāðā ðāēŸðā ēîāēóîēēŸŸ āēá òî FreeBSD. Óā ðāēŸðā ēā ðñŸðāē íā āḂíāē ñāāîðîēçîŸŸíá, Ÿðóē Ḃóðā ēŪēā ðāēŸðîŸ íā āḂíāē óŵîŸ ḂāēîŸ āḂóēîŸ îā üēā óā ðāēŸðā áðü óā îðîḂā āîāñŵŪðāē āēá íā āāēáðáóðāēāḂ ēāē íā òñŸîāē. ðāñēóóüðāñāð ðēçñîŵîñḂāð āēá òçî äçîēîñāḂā áðòðŕí òüî āḂóēîŸ áíáŵŸñîŸíðāē óŵîŸ Ūñēñî Ç ÎñāŪîúóc çēāîócò òüî ðāēŸðüî ēîāēóîēēŸŸ áðü ÒñḂŵîŵð (../releng-packages/article.html).

4 Äéáíïß òùí Âêäüóåùí

4.1 ÁîõđçñăôçôÝò FTP

¼ðáí ç Ýëäüŕç áßíáé Ýðíëíç, Ý÷áé äüëíáŕóðáß äëðáŕð, éáé Ý÷áé ðáéáðáñéŕóðáß áéá áéámß, í éýñëíð FTP áíŕðçñáðçðð ðñÝðáé íá áíçíáñùëáß. Íé áðßŕçííé áíŕðçñáðçðÝð FTP òíŕ FreeBSD áßíáé üëíé mirrors áíúð éýñëíŕ áíŕðçñáðçðð óŕíŕ íðíßí Ý÷íŕí ðñúóááŕç íüŕí Üëëíé FTP áíŕðçñáðçðÝð. Áðóúð í áíŕðçñáðçððð áßíáé áíúðóúð ùð ftp-master. ¼ðáí ç Ýëäüŕç áßíáé Ýðíëíç, ðñÝðáé íá áíçíáñùëýŕí óá ðáñáéÜòð áñ÷áßá óŕíŕ ftp-master:

[/pub/FreeBSD/index.html](#)

Iéa áðēP web óáēBáā ðīō ðānēY ÷ áē āāēōāō óā āēÜōīñīōō óçīáíōēēīyō FTP ēāōāēūāīōō āēá óçī ðñY ÷īōá Yēāīōç ðīō FreeBSD.

```
/pub/FreeBSD/releases/arch/X.Y-RELEASE/
```

Y eadÜeraio adu oi iðibi iðinryí ía abirioí aaéaoáoóÜóáoó iÝóu FTP, uðuó oi Ý÷áé ðniãoiéiÜóáé ç áfóieP make release.

```
/pub/FreeBSD/ports/arch/packages/packages-X.Y-release/
```

¼ëá ôá ðñîîâôâãëùôôéóìÝíá ðáëÝôá äéá ôçí ôñÝ÷îõóá Ýëäîç.

```
/pub/FreeBSD/releases/arch/X.Y-RELEASE/tools
```

Îéá óõîârëêêP óõîôùîãõóç ãéá ôîí êáôÛëîãî .../.../.../tools.

```
/pub/FreeBSD/releases/arch/X.Y-RELEASE/packages
```

```

Ἰέα όοἰâîëëêP όóíôùîâõóç ãéá ôîí éâôÛëîâî .../.../.../ports/i386/packages-X.Y-release.

```

```
/pub/FreeBSD/releases/arch/ISO-IMAGES/x.Y/x.Y-*.iso
```

Ôá áñ÷åßá ISO.

Ἄεά δᾱνεόόυόᾱᾱᾱό δῆçññññᾱό ó÷ᾱόεῦ ἰᾱ όçñ ἱᾱᾱῦῖύόç ðñ mirror ᾱᾱᾱᾱᾱᾱ FTP ðñ FreeBSD, ᾱᾱᾱᾱᾱᾱ ᾱᾱᾱᾱ ὀῖ Ὤñññ Ὤόῦ÷ᾱᾱᾱᾱ ῒᾱ FreeBSD mirror (../hubs/).

Iðirnað íá ðÛnæ ænéaðÝð þnáð aðu öcí óóéaiþ ðið eá áiciãñùeðß i ftp-master iÝ÷ñé íá áiciãñùeýí óócí ðeáéiøçóbá oiðð óá ðñþoið aðeðÝäið FTP mirror íá öcí ÝÁ Ýeäioç. ÅðeáÜeeäðáé ie oðåýèotíe Ýeäioçoð íá óóíáñicèýí íá öcí cëæêõñiiêeþ ëböðá ôui mirror sites ôið FreeBSD

(<http://lists.FreeBSD.org/mailman/listinfo/freebsd-hubs>) ὁπότε ἀντιγράψτε τὸν ἀδελφὸν ὑπολογιστὴν ὑμῶν εἰς τὸν ἰσχυρὸν ὑπολογιστὴν τοῦ FreeBSD.

4.2 ÀáæéêÞ ÁíáðáñáãùãÞ ôùí CD-ROM

[illegible]

5 Āðāēôāóēîüôçôā

Đāñŭēî ðîŭ òî FreeBSD āβīāē Ÿīā ðēĤñāð ēāēôîŭñāēēŭ óýôçīā, āāî òðŨñ÷āē ēŨôē ðîŭ íā óāð áíāāēŨāē íā ÷ñçóēîŭðīēĤóāðā òî óýôçīā āēñēāĤð ŭðŭð òî Ÿ÷îŭā ðāēāðŨñāē āīāβð āēā āēāñĤ. ÷îŭā ðñîððāēĤóāē íā ó÷āāēŨôîŭā òî óýôçīā Ÿôôē ðîŭ íā āβīāē ŭôî òî āôīāôŭî ðēî āðāēðŨôēîŭ, āēā íā āβīāē āýēŭēî íā ÷ñçóēîŭðīēçēāβ óāí āŨôç ðŨŭñ óôçî ŭðīā Ũēēā āîðñēēŨ ðñîŭŭîā íā ïðñîŷî íā óôçñē÷ēîŷî. Ĩ ŭñŭð “ēāŭîŭāð” ðîŭ Ÿ÷îŭā ó÷āðēēŨ ĩā áðôŭ āβīāē ðŭð áí ó÷āāēŨāēôā íā āēāíāβīāðā òî FreeBSD ĩā ĩāāŨēçð ēēβīāēāð āēēāāŸð, óāð āŭēāññŷîŭîā íā ôāēîçñēĤóāðā ôēð āēēāāŸð óāð. Ç ēîēîŭôçôā òîŭ FreeBSD ïðññāβ ĩŭŭí íā āîçēĤóāē óôçî ððîŭóðñēîç áðôĤî ðîŭ ÷ñçóēîŭðīēŷî òî ēŭāēôîēŭ āēñēāĤð ŭðŭð òî āēāŷîŭîā āīāβð. Āŭēāññŷîŭîā ēāē āā÷ŭîāðā ēŨēā āēēāāĤ ðîŭ ðñîŭēāβ óçî áŭŨððîç ðēî āŭāēēāŷîŭí āñāāēāβŭí āāēāðŨôôāóçð ēāē āēā÷āβñēóçð, āēā ðāñŨāāēāîā, āēēŨ āāî ēā ðñŸðāē íā ðñēîŷîŷāē ēāíāβð íā ïðñîŷîā íā āðāîĤóôîŭîā ēāē āñŭðĤóāēð ó÷āðēēŨ ĩā ēŨôē ôŸôîēî.

5.1 Āçîēîŭñāβā ðñîŭāñîŭîŷîŭî ĀēóēāðôĤî Āēēβîçôçð.

ĐŕēēŸð āāēāðāóðŨôāēð Ÿ÷îŭî ðŕēŷðēŭēāð āðāēðĤóāēð ðîŭ ïðññāβ ĩā ôç óāēñŨ òîŭð íā āðāēôŷîŷî óçî ðñîŭēĤēç ðñēóôŭðāñŭî ŭāçāĤî Ĥ āñāāēāβŭí ÷ñĤóçç óôēð āēóēŸðôāð āāēāðŨôôāóçð. Ĩ “ïðāēŨēēēîŭ” òñŭðîð íā òî ēŨîāðā áðôŭ āβīāē íā ēŨîāðā ôēð āēēāāŸð óāð óôŭî ēāðŨēŭîā ðîŭ Ÿ÷āē āôîēîŨôāē ĩāðŨ òî ôŸēîð ôçð ç āēāēēāóβā make release:

- ĐāñŨôôā óā patches óāð Ĥ ðñîŭēŸôôā óā āðēðēŸîŷî āñ÷āβā ĩŸôā óôŭî ēāðŨēŭîā chroot ôçð Ÿēāŭôçð.
- `rm ${CHROOTDIR}/usr/obj/usr/src/release/release.[59]`
- ĩāðāēŭððôðā ðŨēē òî sysinstall(8), òŭî ððñĤíā, Ĥ ŭðîēā Ũēēā ðñîñŨîāðā Ÿ÷îŭî āðçñāāóðāβ áðŭ ôēð āēēāāŸð óāð.
- `chroot ${CHROOTDIR} ./mk floppies`

Ĩē ŭŸāð āēóēŸðôāð āāēāðŨôôāóçð ēā āçîēîŭñāçēŷîŷî óôŭî ēāðŨēŭîā \${CHROOTDIR}/R/stage/floppies.

ĀíāēēāēðēēŨ, ïðññāβðā íā ÷ñçóēîŭðīēĤóāðā òî make target boot.flp, Ĥ ïðññāβðā íā ðñŸîāðā āðāðēāβāð òî script ðîŭ āçîēîŭñāāβ ôā óðôðĤíāðā āñ÷āβŭî src/release/scripts/doFS.sh.

Ĩðññāβðā āðβôçð íā ēāñŭîβôðā Ĥóðā āēēŸð óāð āēēāāŸð íā ðññāóðîŷî ĩā ĩññôĤ patch óôçî Ÿēāŭôç ŭðŭð ēā ôôēŨ÷îāðāē, āβñŭîāð ôēĤĤ óôçî ĩāðāāēçðĤ LOCAL_PATCH ŭôāí ðñŸîāðā óçî áŭîŭēĤ make release.

5.2 ðñîññāîîāôβāēîŭîāð òî sysinstall

Ōî āñāāēāβî āāēāðŨôôāóçð ēāē ñŷēîēóçð òîŭ FreeBSD, òî sysinstall(8), ïðññāβ íā ðñîññāîîāðēóðāβ āēā íā ēŨîāē ðēî āýēŭēāð ôēð áðôññāðîŭðīēçîŸîāð āāēāðāóðŨôāēð óā ðŕēēŨ ĩç÷āíĤíāðā. Áðôŭ òî ÷āñāēðçñēóðēēŭ òîŭ ðñîññŨîāðîŭ ïðññāβ íā ÷ñçóēîŭðīēçēāβ óā óôŭîāðāóŭî ĩā òî PXE[13] ôçð Intel āēā íā ĩāēēîĤóāē ç āāēāðŨôôāóçð áðŭ òî āβēððîŭ, Ĥ óā óôŭîāðāóŭî ĩā ðñîŭāñŭîŭîŸîāð āēóēŸðôāð āēēβîçôçð ēē Ÿîā sysinstall script. Ĩā ðāñŨāāēāîā áðŭ ôŸôîēî sysinstall script ïðññāβðā íā āññāβðā óôî āñ÷āβî src/release/sysinstall/install.cfg.

6 ĩāēĤíāðā ðîŭ ðĤñāîā áðŭ ôçî ēēāîç 4.4 òîŭ FreeBSD

Ç āēāēēāóβā āôîēîāóβāð ôçð Ÿēāŭôçð 4.4 òîŭ FreeBSD ĩāēβîçôā āðβôçīā óçî ĩç Áðāŷŷôðîŭ 2001. ĩāðŨ áðŭ áðôĤ ôçî çĩāññçíāβ, ŭēāð ĩē āēēāāŸð óôŭî ēîñîŭ RELENG_4 òîŭ FreeBSD Ÿðññāðā íā Ÿ÷îŭî Ÿāēñēóç áðŭ ôçî Release Engineering Team <re@FreeBSD.org>. Ç ðñĤôç āŭēîāóðēēĤ Ÿēāŭôç āēā óçî āñ÷ēðāēôŭîēĤ x86 Ÿāēíā āēāēŸôēîç

οόεδ 16 Άδάργούρω, έε άετρωερεπερεά άδύ 4 άευνά άρεείαούόεέΎδ άεαυούόεδ θρω τάβαούά όόε όάεεεP Ύεαίρω όόεδ 18 θρω ΟάδθΎτανε. Ί οδάγεοθρω άούΎεάέδ Ύδαεία όείαίόέου νύετ έάθΎ όετ άέΎνεάέά όεδ όάεάούάβαδ άάανΎάαδ έάερε έΎθρεά θνωρεπιάόά άούΎεάέδ άνΎεεεία όά θνωεάρωταάδ, άρεείαούόεέΎδ άεαυούόεδ. ΟόνεεέΎ, θΎφύ άδύ 500 email όόΎεεεεία όόετ Release Engineering Team <re@FreeBSD.org> όά άέΎόόεία ίέενηούάνι άδύ Ύία ίερά.

Ç ēēīēūōçōā òūī ÷ ñçōōðī īāō Ÿēāīā ōāōŸō ùōē ç āōōŸēāēā ēāē ç ōōāēāñūōçōā īēāō Ÿēāīōçō ãāī ēŸ Ÿ' ðñāōā īā ēōōēŸēāōāē āēā ēāīāīūō āāīāīōō ðñēāōīāō ð ç īāññçīāō ðīō Ÿ ÷ īōī ōāēāō ōāī ōōū ÷ īē āōū ðñēī. Ōī FreeBSD Ÿ ÷ āē īāāēðōāē āñāīāōēēŸ ēāōŸ òç āēŸñēāēā òçō æūðð ðīō ōāī ōýōçōīā, ēāē ç āīŸāēç āēā ōōāēāēñēīŸīç ðīēēōēēð ēāē īñāŸūōçō āēā òçī āçīēīōñāā īŸŸŸī āēāūōāŸī āīāīē ðēŸīī ōāīāñð ðāñēōōūōāñī āōū ðīōŸ. Áōōð ç āīŸāēç ēā āīāīē āēūīā ðēī çōīāīōēēð ēāēðð òī FreeBSD ēā āñ ÷ ðōāē īā īāōāōŸñāōāē ōā īŸŸā ðēāōōūñīāō.

7 ìàëëïïôéêÝò Êáôãðñèýíóáéò

[illegible]

- *Δανῶεξεçç æêðÝêðç - Ìáíííç ðçð ðáðáæððððððð ðéáð áæáðÜððáðçð ðððíýí íá áβððí ðð "ððéý ðáñÜêéçá".*
Ôá ðéí ððéçÜ áðü ðá ððÜæá áβíáé I/O intensive, ððüðá ç ýðáñíç ððéçð ððççðð-ðá÷ýðçðáð áβðéüí áβíáé ðéí
ðçíáíðéêð áðü ðçí ð÷ñðç ððéçð áðáíáñááððð ðéá íá áðéðá÷ððéáβ ðÜððð ç áæááæéáðá ððð make release. Áí
áæáðððáðéêéí áβðéíé ð÷ñçðéíððéçéýí áæá ðððáðá ðçð éáñáñ÷ðáð ððð chroot(2) ðáñéáÜêéíððð, ðüðá ðð CVS
checkout ððí éáðáæüáñí ports éáé ððç ðððñáβ íá áβíáé ðáððü÷ññíá ðá ðçí áíðððð make world ððð Üêéí áβðéí.
÷ñçðéíððéçððáð ðéá RAID éýðç (hardware ð software) ðððñáβ íá ðáçððáé áñáððéêÜ ððð ððððéçéç ð÷ññí ððð
ð÷ñáéÜæáðáé íá ðáðáæüðððððáβ ðéá ðððñçð Ýéäðç.
- *Ìáðáæðððððç æêüüðáñí áéá áæáðððáðéÝð áñ÷éðáððððéÝð - ÈÝéáðá íá ðáðáæüððððáðá ðéá Ýéäðç áéá IA-64 ðð*
Alpha ðá ðÜððéíí x86 áðáíáñááððð? make TARGET=ia64 release.
- *ÁðééíÝð áéá vÜêç - ÷ñáéáæüðáðá éáéýðáñá áñááéáβá áéá áððüíáðð Ýéäá÷í ðñéüðçðáð ððð FreeBSD.*
- *Áñááæðá ÁæéáðÜððáðçð - Ôð ðñüáñáñÜ ðáð áéá ðçí áæááÜððáðçð ððð FreeBSD Ý÷áé ðáðáñÜðáé ðñí ððéçý ððí*
áíáíáñíáñí ð÷ññí æððð ððð. ÔðÜñ÷ððí æÜðñáð ðñááð ððð áñáÜæððáé áéá íá ðéðððððððí ðÜððéíí Üêéí, ðéí
ðððÝññí ðç÷áéðüí áæéáðÜððáðçð. Ìéá áðü ðéð ðéí ðððð÷üáíáð, áβíáé ç ðñáá lib[5] ððð ððð÷áýáé ððçí ðéðððçðç
áñüð Ýððððð, ðÝðð ðñüððð ðáéáðáñððáðððð éðáéðééçý éáé áñüð GUI ðññáñÜñáððð áæéáÜððáðçð.

8 Ã÷áñéóôßàò

[illegible]

9 ÁíáöĩñÝò

- [1] CVS - Concurrent Versions System <http://www.cvshome.org>
- [2] CVSup - The CVS-Optimized General Purpose Network File Distribution System
<http://www.polstra.com/projects/freeware/CVSup>
- [3] <http://bento.FreeBSD.org>
- [4] FreeBSD Ports Collection <http://www.FreeBSD.org/ports>
- [5] The libh Project <http://www.FreeBSD.org/projects/libh.html>
- [6] FreeBSD Committers
http://www.FreeBSD.org/doc/en_US.ISO8859-1/articles/contributors/staff-committers.html
- [7] FreeBSD Core-Team http://www.FreeBSD.org/doc/en_US.ISO8859-1/articles/contributors/staff-core.html
- [8] FreeBSD Handbook http://www.FreeBSD.org/doc/en_US.ISO8859-1/books/handbook
- [9] GNATS: The GNU Bug Tracking System <http://www.gnu.org/software/gnats>
- [10] FreeBSD PR Statistics <http://www.FreeBSD.org/prstats/index.html>
- [11] NetBSD Developer Documentation: Release Engineering <http://www.NetBSD.org/developers/releng/index.html>
- [12] John Baldwin's FreeBSD Release Engineering Proposal <http://people.FreeBSD.org/~jhb/docs/releng.txt>
- [13] PXE Jumpstart Guide http://www.FreeBSD.org/doc/en_US.ISO8859-1/articles/pxe/index.html
- [14] Marshall Kirk McKusick, Michael J. Karels, and Keith Bostic: *The Release Engineering of 4.3BSD*
(<http://docs.FreeBSD.org/44doc/papers/releng.html>)