

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 \$

Áðòù òĩ Ũñèñĩ ðãñéãñŨöáé ôçĩ áĩòéĩãððéóç éáé ĩñãŨíùóç ôçò ñŨãáð áĩŨððòĩçð òĩõ FreeBSD, ùóĩĩ áòĩñŨ óôçĩ ðñĩãòĩéĩáóßá ðĩéĩòééþĩ áêäüóãùĩ òĩõ Êãéòĩõñãééĩĩ Óðóðßĩáòĩõ FreeBSD. Âĩçããß ĩã éãððñŨŨñáéá ôçĩ ĩãèĩãĩéĩãßá ðĩõ ÷ñçóéĩĩðĩéãßðáé áéá ðéð áðßóçĩãð áêäüóãéð òĩõ FreeBSD éáé ðãñéãñŨöáé óá ãñãáéãßá ðĩõ áßĩáé áéáéŸóéĩá óá ùóĩõð áĩáéáóŸñĩóáé ĩá ðãñŨãĩĩĩ ðãñãĩãðñĩðĩéçĩŸĩãð áêäüóãéð òĩõ FreeBSD áéá áóùðãñééþ ð ãĩðĩñééþ ÷ñþóç éáé áĩŨððòĩç ðñĩũĩĩòùĩ.

Ðßĩáéáò Ðãñéã ÷ñŸĩùĩ

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1 Áéóáãũãþ

Ç áĩŨððòĩç òĩõ FreeBSD áßĩáé ĩéá ðĩéŸ áñé÷ðþ áéããééãóßá. Őĩ FreeBSD áðĩðãéãßðáé áðũ óóĩãéóóĩñŸð ÷éééŨãũĩ áĩéñþðũĩ áðũ ùéĩ òĩĩ èũóĩĩ. Ç ñŨãá òĩõ FreeBSD ðãñŸ ÷áé ðñũóãáóç ĩŸóù áĩþĩòĩĩõ CVS[1] óá ùéĩòð, Ÿðóé þóðã ĩá ĩðĩñãß ùðĩéĩò èŸéãé ĩá áãé ĩçĩŸĩáóá log, áéãóĩñŸð (patches) ðĩõ Ÿ÷ĩõĩ óá áéŨöĩñã development branches, éáé Ũéãá ÷ãñãéðçñéóóééŨ ðĩõ áĩçéĩŸĩ ôçĩ áĩŨððòĩç, óá ĩðĩßá ðñĩéŸððĩõĩ áðũ ôçĩ ÷ñþóç áĩũð áððòçñĩŸ óðóðßĩáòĩõ áéá÷ãßñéóçð éþãééá. Áðòù áðĩðŸéãóá éáé òĩĩ ðéĩ óçĩáĩóééũ ðãñŨãĩĩĩóá Ÿéĩçð áéá Ÿĩá ĩããŨéĩ áñééũ áðũ óáéáĩóĩŸ÷ĩò ðñĩãããĩĩáðéóóŸð áðũ ùéĩ òĩĩ èũóĩĩ óóĩ FreeBSD. Áßĩáé ðñĩóãĩŸð, áŸãáéá, ðùð ðĩéŸ óŸĩðñã éã áß÷ã áßĩáé áĩðãéþð ÷ãĩóééþ ç éãðŨóóáóç áĩ áß÷ãĩ ùéĩé, áðũ ùéĩ òĩĩ èũóĩĩ, ðñũóãáóç ĩá ãñŨþĩõĩ óóĩ éþãééá. Äé’ áðòù, ĩũĩ ĩéá “ãðééããĩŸĩç” ñŨãá áðũ ðãñßðĩõ 300 Ũóñã Ÿ÷ĩõ ðñũóãáóç ĩá ãñŨþĩõĩ óóĩ CVS repository. Áðòĩß ĩé committers[6] áßĩáé ððãŸéòñĩé áéá òĩ ĩããáéŸóãñĩ ĩŸñĩò ôçò áĩŨððòĩçðð ðĩõ áßĩãðáé óóĩ FreeBSD. ĩéá

ἐπιτοῖνετε-*ἡ* *Ἑσθέρ* [7] (core team) ἁδὴ ἁέᾶῖᾱῖᾱῖ Ἐϋϋῖῖῖ ὀῖῖῖῖῖῖῖῖῖῖῖ ἁέῖ Ἐᾱῖῖῖ ἁέᾱ ἱᾱ ὀᾱῖ Ἐ÷ᾱῖ ἔἘῖῖῖῖῖ ἁῖῖῖῖῖ ἔᾱῖῖῖῖῖ ἔᾱῖ ἱᾱῖ ἔᾱῖᾱῖᾱῖῖῖῖ ὀῖῖ ὀῖῖῖῖ ὀῖῖῖῖῖῖῖῖῖῖῖ.

Ίε οά÷ýðάοίε ηόειηβ άίΰδδοίγφ οίο FreeBSD άάί άόβήοί έάέ θίεý ÷ ηύή άέα οί ίάέάέΰήέοίά οίο όόόόβίάοίό άίΰδδοίγφ όά ίέα Ύέαιόγ ίά θίέυόόά θίό ίά άίβέάέ ίά ÷ ηέόέήίθίέάβόάέ άοήΎύό. Άέα ίά έόέάβ άόόυ όί άέέέέίά, ç άίΰδδοίγ άβίάόάέ όάόόυ÷ ηήίά όά άοί όάνΰέέέέά ίήήδΰόέα. Ί έýήείό έίήήυό άίΰδδοίγφ άβίάέ ί **HEAD** þ *trunk* όόί CVS repository ίάό, άήυόόύό έάέ ύό “FreeBSD-CURRENT”, þ “-CURRENT” άί όόίόήβά.

[illegible][illegible]

Όρία÷πο οόÝεirióáé áðu ôiôð ÷ñPóðáð iáo áíáoiñÝð ðñiáεçiÜôui éáé áéðPóáéð áéá éáéirýnéá ÷áñáéðçñéóóééÜ, éáôÜ ôç áéÜñéáéá ôiô éýééiô ôçð éÜèá Ýéáioçð. Ié áíáoiñÝð ðñiáεçiÜôui áéóÜáñióáé óôçi áÜôç **GNATS**[9] iÝóu e-mail, iá ôçi áóáñiãP send-pr(1), P iÝóu ôiô web-interface ôiô ðáñÝ÷áðáé óôçi áéáýéôióç <http://www.FreeBSD.org/send-pr.html>. Áêôüð áðu óéð áéÜôüñáð éßóðáð çáêôññiééý óá÷óáññáßiô iá éÝiá óá ðá÷íééÜ ÷áñáéðçñéóóééÜ ôiô FreeBSD ôðÜñ÷áé éáé ç éßóðá çáêôññiééP éßóðá ÁéÝá÷iô éáé ÁíáóóÜééóçð Ðiéúôçóáð ôiô FreeBSD (<http://lists.FreeBSD.org/mailman/listinfo/freebsd-qa>), ç iðiá ðáñÝ÷áé Ýiá öüñiôí áéá óðæçðPóáéð ó÷áðééÜ iá óéð éáððñÝñáéáð ôçð “ññáÜñúôçð ôui áéäüóäñ”.

Ἄεά íá áñòðçñáðòçείρýí íé ðεί òòíòçñçðéeίß ÷ ñÞóðáð íáð, íá Ἰέαίòç òñ FreeBSD 4.3 áñ÷ßáíá íá ÷ ñçòçείñðίείρýíá íá÷÷ñέóóóóò çíñíñýð áεáυóáυí. Ἀðòίß íé çíñíñß áçίείññáñýíóáε εßáí ðñßí òðεá÷ðáß ç ðáεέεß Ἰέαίòç. ἸáðÜ ðçí áíáείßñύòç ðçð Ἰέαίòçð, íυñ ðίεý ççίáíðéeÝð áεεááÝð εáε ðñíòεÞεáð ó÷áðéeÝð íá ðçí áóðÜεάá áßñííóáε óðίí çíñíυ ðçð Ἰέαίòçð. Ἀέυòð áðυ ðçí áñíáðυðçðá áíááÜείεòçð íÝóυ CVS, áέðáεÝóεíá patchkits òðεÜ÷ñííóáε áεá íá ðίñíýí íá áíáááείßòίí ðá óðóðÞíáðÜ ðíðð υóίε ÷ ñçòçείñðίείρýí ðéð áεáυóáεð *RELENG_X_Y*.

Οι ΟιΠια 2 αιçããß ìã ããððñŸñããð ðã ããŸðñã ððŸãã ðçð ããããããðßãð ðñ ãñßðãðãã ðßòñ ãðu ãŸãã Ÿããðç, ìŸ ÷ ñã ããã ðã ãñããðã ðñ ããçãŸŸ ðçðŸ ìãðããðððððçð ðñ ððððñããðñ ãã ðñ ΟιΠια 3 αιçããß ðçŸ ìããã ðç ããããããðßã ðçð ìãðããððððçð. Οι ΟιΠια 5 ðãñãñŸðã ðñ ðññãß ìã ððããðããß ðñ ããóãã óŸððçãã ãðu ðñßðñð ãã ðñ ΟιΠια 6 ðãñãñŸðã ãŸðñãã ãðu ðã ðñŸããðã ðñ ìŸããã ãðu ðçŸ ããããããðßã Ÿããðçð ðñ FreeBSD 4.4. ÓŸñð, ðñ ΟιΠια 7 ðãñððãŸãã ãŸðñãã ãðu ðãð ããðãðŸŸããð ðñ ãŸñðã ìã ðŸñã ç ãŸŸðððç ðñ ìŸãã.

2 Ç Äéääéêáóßá Äçïéïõñãßàò ìéàò êäïóçò

Ίε ιΎάο άέαυόάέο όις FreeBSD όόεΰ÷-σίοάέ άδύ όις -STABLE έιμιύ άίΰόόόις όάσβδισ έΰέα όΎόόάσάέο ιΰίάο. ϸ έέάέέέάόβá όσισόίειάόβáό έέάό Ύέαιόςό ίάέέΰάέ ό÷άαίς 45 ιΎσάό όσεί όςί άίάίάίάίς ϸάσσςίβá Ύέαιόςό, υόάί ι όδáyέόσδ όέάυόάίς όις FreeBSD όόΎέίάέ Ύίá άσΰίá όόέό έβόόá όυί όσισάσάέόέόόίς áέá ίá όδáέέίόβáέ όόίςό όσισάσάέόέόόΎό υόέ Ύ÷ίς 15 ιΎσάό έάέσυ ίá έΰίςίς υδέέάό áέέάΎό έΎέίς, όσεί όί δΰάσά όις έβáέέá. ΊΎόά όá άόόυ όις έάέσυ, όέέέίβ όσισάσάέόέόόΎό έΰίςίς ίέá όάέσΰ άδύ áέέάΎό όίς Ύ÷ίς ίáβίáέ όέΎίς άίυόόΎό υό “ίáέέέάσβίάόά MFC”. Ί υίςίς MFC όςίáβίáέ “Merge From CURRENT” έáέ όáέέάσΰάέ όςί áέάέέέάόβá όσισάσάέό

òĩō ēpāēēā iēāō āiēēiāōĩŸĩçð äēēāāpð áðũ òĩĩ -CURRENT ðāēñāiāóēēü ēĩñiũ áĩŪððōĩçð óðĩĩ óðāēāñiũ -STABLE ēĩñiũ.

2.1 Ğāā÷iō Ēpāēēā

ŌñēŪiōā çĩŸñāð ðñēĩ òçĩ áĩāĩāĩüĩāĩç çĩāññĩçĩā Ÿēāiōçð, ĩ ēpāēēāð òĩō repository áēóŸñ÷āðāē óā iēā ðāñbĩrāĩ “ēāēðóóŸñçóçð”. ĒāōŪ òç äēŪñēāēā áððð òçð ðāñēüāiō, üēāð iē äēēāāŸð óðĩĩ -STABLE ēĩñiũ ðñŸðāē iā Ÿ÷iōĩ òçĩ Ÿāēñēóç òçð Release Engineering Team <re@FreeBSD.org>. Ĩē äēēāāŸð ðĩō āðēōñŸðĩiōāē óā áððð òçĩ ðāñbĩrāĩ ðĩō āēāñēāb 15 çĩŸñāð ābĩāē:

- Äēĩñēpóāēð āĩüóðĩĩ ðñĩāēçĩŪðüĩ.
- Äĩçĩāñpóāēð óðçĩ ðāēiçñbùóç.
- ÄēēāāŸð ó÷āðēēŸð iā òçĩ áóðŪēāēā.
- ĨēēñŸð äēēāāŸð óðĩið ïāçāĩŸð óðōēāðĩ, üðũð ð÷. ç ðñĩōēðēç òüĩ IDs iŸüĩ óðōēāðĩ.
- Ĩðĩēāāððĩōā Ūēēç äēēāāp ðēóðāŸāē ç ñŪāā áĩŪððōĩçð üðē ðñŸðāē iā ābĩāē, iā òĩ áĩāĩāĩüĩāĩ ðŪiōā ñbōēĩ.

ĨāōŪ òēð ðñpóāð 15 ĩŸñāð ēāēðóóŸñçóçð, òðēŪ÷iāðāē iēā āiēēiāóóēēp Ÿēāiōç āēā iā ÷ñçóēĩĩðĩēçēāb óāĩ āiēēið òçð ðāēēēpð Ÿēāiōçð ēāē ĩ ēpāēēāð áēóŸñ÷āðāē óā iēā ðāñbĩrāĩ “ðāāpĩāðĩð”. ðēŸĩĩ ābĩāē ðĩēŸ ðēĩ āŸóēĩēĩ iā ābĩiōĩ iŸāð äēēāāŸð óðĩ óŸóðçĩā, āēðũð ēē áĩ äēĩñēpñĩiōĩ ēŪðĩēĩ ðĩēŸ òĩāāñiũ bugp ēŪðĩēĩ ðñüāēçĩā áóðŪēāēāð. ĒāōŪ òç äēŪñēāēā òĩō ðāāpĩāðĩð òĩō ēpāēēā, òĩðēŪ÷ēóðĩĩ ĩbā āiēēiāóóēēp Ÿēāiōç òðēŪ÷iāðāē ēŪēā āāāñŪāā, ĩŸ÷ñē iā ābĩāē Ÿðĩēiç ç ðāēēēp Ÿēāiōç. Ōēð çĩŸñāð āēñēāpð ðñēĩ òçĩ ðāēēēp Ÿēāiōç, ç ñŪāā ðĩō ābĩāē òðāŸēðĩç āēā òēð āēāüóāēð ābĩāē óā óðĩā÷p āðēēĩēĩüĩbā iā òçĩ ñŪāā áóðŪēāēāð, òçĩ ñŪāā óðĩðpñçóçð òçð ðāēiçñbùóçð, ēāē òçĩ ñŪāā óðĩðpñçóçð òüĩ ports, āēā iā āāāāēüēĩŸĩ ðũð üēā óā āðāñābðçðā ēĩñŪðēā āēā iēā ðēpñç Ÿēāiōç ābĩāē āēāēŸóēiā.

2.2 Ēbóóā ĀēŸā÷iō òçð Ōāēēēpð ēāiōçð

Ÿðāĩ āñēāðŸð āiēēiāóóēēŸð āēāüóāēð Ÿ÷iōĩ ābĩāē āēāēŸóēiāð, Ÿ÷iōĩ āiēēiāóóāb áðũ āñēāðü ēüóĩ ēāē üēā óā òĩāāñŪ ēŸĩāóā Ÿ÷iōĩ áĩāēēēāb, ç ðāēēēp Ÿēāiōç ĩðĩñāb iā āñ÷bóāē.

2.2.1 Äçĩēĩññābā òĩō ēĩñiĩŸ ēāiōçð

Ÿðũð ðāñēāñŪøāĩ òççĩ áēóāāüāp, ĩē ēĩñiĩb RELENG_x_y ābĩāē iēā ó÷āðēēŪ iŸā ðñĩōēðēç òççĩ ĩāēĩāēĩābā òüĩ āēāüóāpĩ iāð. Ōĩ ðñpðĩ āpĩā òççĩ äçĩēĩññābā áððĩŸ òĩō ēĩñiĩŸ ābĩāē iā āāāāēüēābðā üðē āĩōēāŸāðā iā òçĩ ðāēāðóābā Ÿēāiōç òĩō ðçāābĩð ēpāēēā áðũ òĩĩ RELENG_x ēĩñiũ áðũ òĩĩ iðĩbĩ ēā òðēŪiāðā òĩ iŸĩ ēĩñiũ.

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

Ōĩ āðüiāĩ āpĩā ābĩāē iā äçĩēĩññāpóāðā iēā āðēēŸðā (tag) óðĩ òçĩābĩ āēēbĩçóçð òĩō ēĩñiĩŸ, póðā iā ĩðĩñābðā iā āābðā òēð āēāöĩñŸð iā òçĩ āñ÷p òĩō ēĩñiĩŸ āŸēĩēā óðĩ ĩŸēēĩ iā òĩ CVS:

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

Ēāē òüðā ĩðĩñābðā iā äçĩēĩññāpóāðā òĩ iŸĩ ēĩñiũ iā:

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

Όχιὰβὺός: *Ἰέ ἀθεέῃ Ὑδαῶ RELENG_* ἀβιάε ἀἀόιἀδι Ὑῖἀδ ἀέά ÷ ἡΠόϋ ἀδῦ οἶῶδ CVS-meisters ἐάέ ὄϋι ἡῪᾶᾶ οὐῖ ἀἔᾶῶῶῖ.*

Ἰ ὑπὸν “*ἀδελφὸς*” ἀβιάς ἡνιερὰβὰ οἷο CVS. Οἱαβιάς Ἰά ὑμῖα οἷο ἐαδερῖααῖς ἰά ὁαῖαῖαῖαῖ Ἰίγ Ἰεαῖογ οἷο ἐπαῖα ὁοῖ ÷ ὑμῖ. × ἡγὼεῖηδιῖερῖοαὸ ἀδελφὸς ὁοῖ δγᾶβῖ ἐπαῖα ἀγῖαῖα ὑδιῖῖ ὁαῖα ὁοῖ Ἰῖεῖῖ ἀαῖαῖα ὁοῖ FreeBSD ἰα ἀῖαῖα ἰα ÷ ἡγὼεῖηδιῖεῖα ἀεῖαῖα οἷ Ἰαῖ ἐπαῖα οἷ ÷ ἡγὼεῖηδιῖεῖαῖ αῖα ὁαῖ ἀδβῖαῖα ἀαῖαῖα ὁγὸ ἡῖαῖα οἷο FreeBSD.

2.2.2 ÁóîÛííîáò ôíí Áñéèü êäïóçò

Ἐνῆι ἰθαῖ ἡ ἀοέεΥόα, ἰαοάαεουοοεοοάβ ἑαῖ ἀοιείαοοάβ ἡ οάεεῆβ Υἑαῖορ, ὃνΥθαῖ ἰά αῖβῖοῖ αἑἑάαΥὸ οοά ὃαῖαεῆῆου
 ἁῖ÷ἁῖα ἁῖα ἰά ὃαῖεΥ÷ῖοῖ οῖῖ οῖοῖοῖ ἁῖεῖῆι Υἑαῖορὸ ἁῖα 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

[illegible]

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

Ç äòãññĭãP **sysinstall** ðñÝðáé äðßòçð íá áíçíãñùèãß íä òĭí òùòòù áñéèùĭ òùĭ ports éáé òĭ ÷pñĭ òĭō äßòéĭō ðĭō äðáéòäßòáé áéá òçĭ ÓòèèĭãP òùĭ Ports. ÁòðÝð íé ðèçñĭòĭñßàð òðŬñ÷ĭòĭ óòĭ äñ÷ãßĭ
src/release/sysinstall/dist.c.

Áōiŷ iēēēçñùēāß ç ðñīāōiēiāóāß òçð iŷāð āðßçìçð Ýēāiōçð, ðñÝðāē íā áíçīāñþóāðā iāñēēŪ āñ÷āß āēā íā áíçīāñþóāðā òiī ēüōiī āēā òç iŷā Ýēāiōç òiō FreeBSD.

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

2.2.3 Āçīēiōñāßā òuì Āōēēāðī òçð ēāiōçð

¼ðāí ç òāēēēß Ýēāiōç āßiāē Ýōiēiç, ç ðāñāēŪðū āíōiēß ēā āçīēiōñāþóāē òçí āðēēÝðā `RELENG_4_8_0_RELEASE`.

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

İē ððāŷēðñē òçð Ōāēiçñßùçð ēāē òuì Ports āßiāē āðōiß ðiō ðñÝðāē íā āçīēiōñāþóāē òēð āðēēÝðāð `RELEASE_4_8_0` óā ēāðŪēēçēā āŷiōñā ðçāāßiō ēþāēēā.

İāñēēÝð òñÝð, iðñāß íā ÷ñāēāóðāß íā āßiōi ēŪðīēāð āēēāāÝð òāēāðōāßā óðēāiß *iāðŪ* òçí òiðñēÝðçç òuì āðēēāðī. ĀāiēēŪ, āāi āßiāē āŷōēiēi íā āßiāē ēŪðē òÝōiēi āōiŷ òi CVS āðēōñÝðāē íā iāðāēēiþóāē ēŪðīēið òēð āðēēÝðāð iā āíōiēÝð ùðð ò `cvs tag -d tagname filename`. Āßiāē ðñēŷ óçīāíðēēü ùiðð āððÝð iē āēēāāÝð òçð òāēāðōāßāð óðēāiþð íā óçīāēüēiŷi iā òēð óuóðÝð āðēēÝðāð āēā òçí óðāēāñēiŷiç Ýēāiōç. İē āðßçìāð āēāüóāēð òiō FreeBSD ðñÝðāē íā āßiāē ðŪiðā āŷēiēi íā āíāðāñā÷ēiŷi. ŌiðēēÝð āēēāāÝð óōi ðāñēāŪēēiī òiō iç÷āiēiŷi òuì āēāüóāuī āāi āðēōñÝðñiðāē.

3 İāðāāēþðōēóç òçð ēāiōçð

İē “āēāüóāēð” òiō FreeBSD iðñiŷi íā iāðāāēüððēóðīŷi āðü iðīēiñāþðiðā Ý÷āē Ýiā ó÷āðēēŪ āñþāñi iç÷Ūiçīā ēāē ðñüóāāç óōi repository òiō ðçāāßiō ēþāēēā. (¼ēiē Ý÷iōi āððß òç āðīāðüðçðā, āōiŷ ðāñÝ÷iōiā ðñüóāāç iŷōü āiþiðiō CVS! Āāßðā òi Āā÷āēñßāēi òiō FreeBSD āēā ðāñēóóüðāñāð ēāððñÝñāēāð.) Ç iüiç āēāēēß āðāßðççç āßiāē íā ððŪñ÷āē ððiððñēiç óōiī ððñþiā óāð āēā òçí óðōēāðß `vn(4)`. (Óōi `-CURRENT`, āððß ç óðōēāðß Ý÷āē āíðēēāðāóāēāß āðü òçí iŷā óðōēāðß āßçēiō āāóēōiŷiñ òā iþiç `md(4)`.) Áí ç óðōēāðß āāi āßiāē āíōüiāðüiŷiç óōiī ððñþiā óāð, òüðā i ēāðŪēēçēið iāçāüð ēā òñðüēāß āððüiāðā üðāí āēðāēāðōāß ç āíðēß `vnconfig(8)` ēāðŪ òç āēŪñēāēā òçð òŪççð āðīēiāóßāð òiō iŷōiō āēēßiççð. ¼ēā ðā āñāāēāßā ðiō ÷ñāēŪæiñóāē āēā íā iāðāāēüððßóāðā iēā Ýēāiōç āßiāē āēāēÝóēiā óā iññðß ðçāāßiō ēþāēēā óōiī ēāðŪēiēi `src/release`. ĀððŪ ðā āñāāēāßā Ý÷iōi ùð óēiðü íā ðāñÝ÷iōi üðē ÷ñāēŪæiñóāē āēā íā ÷ðæiñóāē iē āēāüóāēð òiō FreeBSD iā Ýiā óōiāðß ēāē óðāēāñēiŷiñ òñüði. İēā ðēþñçð Ýēāiōç iðñāß íā iāðāāēüððēóðāß ÷ñçōēiñðēþiðāð āððŪ ðā āñāāēāßā iā iēā ēāē iüñi āíðēß, óðiðāñēēāiāññÝiçð ēāē òçð āçīēiōñāßāð āíüð ISO āñ÷āßiō ēāðŪēēçēi āēā íā ēāāß óā CDROM, iē āēóēÝððāð āēēßiççð, ēāēþð ēāē i ēāðŪēēçēið āāēāðŪóóāçð iŷōü FTP. Āððß ç āíðēß āßiāē òðōēēß ç `make release`.

3.1 Ç āiðēß `make release`

Āēā íā iāðāāēüððßóāðā āðēð÷þð iēā Ýēāiōç, ðñÝðāē ðñþóā íā ððŪñ÷iōi ðā ēāðŪēēçēā āñ÷āßā iŷōā óōiī ēāðŪēiēi `/usr/obj`. İðñāßðā íā ðā āçīēiōñāþóāðā āßðā iā òçí āíðēß `make world` þ āðēŪ `make buildworld`. Āēā íā

ðáðý÷-áé áðßóçð ç ìáðááëðððéóç òçð Ýêáîóçð ðñÝðáé íá äðáððá ðéð éáðÛëëçéäð ðéíÝð éáé ðá èÛðíéäð ìáðááëçðÝð:

- CHROOTDIR - Ì éáðÛëíáðð ðîõ èá ÷ ñçóéíðíéçéäð ðáí ðáñéáÛëëí chroot áéá üëç òçí ìáðááëðððéóç òçð Ýêáîóçð.
- BUILDNAME - Õî üñíá òçð Ýêáîóçð ðîõ èá ìáðááëüðððáððá.
- CVSROOT - Ì éáðÛëíáðð ðóñí ìðíßí áñßðéáðáé òí CVS repository.
- RELEASETAG - Ç áðééÝðá CVS ðîõ áíðéóðíé÷-áß ðóçí Ýêáîóç òçí ìðíßá èÝéäðá íá ìáðááëüðððáððá.

Áí ááí Ý÷-áðá ðáç ðñüóááóç ðá èÛðíéí ðíðéëü CVS repository ìá ðñí èðáééá ðîõ FreeBSD, ìðíáððá ðÛíðá íá ððéÛíáððá òí áéëü óáð ðíðéëü CVS mirror ìá òí CVSup (http://www.FreeBSD.org/doc/en_US.ISO8859-1/books/handbook/synching.html#CVSUP). ÕðÛñ÷-áé Ýíá supfile, ðóí áñ÷-áßí /usr/share/examples/cvsup/cvs-supfile, òí ìðíßí ìðíáððá íá ÷ ñçóéíðíéçéäðá áéá íá áíðéáñÛððá òí CVS repository ðîõ FreeBSD ðóí áéëü óáð ðíðéëü mirror.

Áí ðáñáëáßðáððá òçí áðééÝðá RELEASETAG, ðüðá èá ìáðááëüðððéóðáß íéá ðëðñçð Ýêáîóç áðü òçí èíñðð ðîõ HEAD (áç. ðîõ -CURRENT) èíñíý. Ìé áêüüóáéð ðîõ ððéÛ÷-ñíðáé áðü áððüí òñí èíñü, ðóíðëðð áíáðÝñíðáé ðáí “-CURRENT snapshots”.

ÕðÛñ÷-íðí éáé ðíééÝð Ûëëäð ìáðááëçðÝð ðîõ ìðíñíý íá ÷ ñçóéíðíéçéçý íá íá ðáñáíáðñíðíéçéäðá òçí Ýêáîóç óáð. Ìé ðéí ðíééÝð áðü áððÝð ðéð ìáðááëçðÝð ðáñéáñÛñíðáé ðóçí èíñðð ðîõ áñ÷-áßíð src/release/Makefile. Ç áêñéáðð áíðíë ðîõ ÷ ñçóéíðíéçéäð áéá íá ððéá÷-ðáß ç áðßóçð Ýêáîóç 4.7 ðîõ FreeBSD (x86 ðéáððüñíá) ðóáí:

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

Õí Makefile ðîõ ÷ ñçóéíðíéçéäð áéá íá ìáðááëüðððáíðáé ìé áêüüóáéð ìðíáß íá ÷ ùñéóðáß ðá áñéäðÛ ìá÷-ùñéóðÛ ìáðáíý ðîõð áñíáðá.

- Äçíëíðñáß áñüð éáéáñíý ðáñéáÛëëíððð ðá íéá ìá÷-ùñéóðð éáñáñ÷-ßá éáðáëüüí ìá òçí áíðíëð “make installworld”.
- Áíáñüáß áðü òí CVS ìéáð éáéñýñéáð Ýêáîóçð ðîõ ðçááßíð èðáééá ðîõ ðððððíáððð, òçð ðáêñññüóçð éáé òñí ports ìÝðá ðóçí éáñáñ÷-ßá éáðáëüüí ìáðááëðððéóçð òçð Ýêáîóçð.
- Ñðéíðáéð ðñí áñ÷-áßí ðóñí éáðÛëíá /etc éáé /dev ìÝðá ðóí ðáñéáÛëëí chroot.
- ÁéðÝéáóç òçð áíðíëðð chroot ìÝðá ðóçí éáñáñ÷-ßá éáðáëüüí ðîõ áðíéíÛððçéá, áéá íá ìçí ìðíáß òí áñüðáñéëü ðáñéáÛëëí íá áðçñáÛðáé òç ìáðááëðððéóçð òçð Ýêáîóçð.
- ÁéðÝéáóç òçð áíðíëðð make world ìÝðá ðóí ðáñéáÛëëí chroot.
- Ìáðááëðððéóç ðñí áêðáëÝóéíð ðîõ áßíáé ò÷-áðééÛ ìá òí óýóçíá Kerberos.
- Ìáðááëðððéóç ðîõ ððñðíá GENERIC.
- Äçíëíðñáß áñüð ðáéééíý éáðáëüüíð ðóñí ìðíßí èá ìáðááëüðððéóðíý éáé èá áðíèçéáððéíý ìé áêðáëÝóéíð ìñðÝð ðñí ðáéééðí ðáéÝðñí.
- Ìáðááëðððéóç éáé ááéáðÛððáóç ðñí áñááéáßíð ðîõ ÷ ñáéÛáíðáé áéá òçí ðñíáðíéíáððá òçð Ýêáîóçð éáé òç ìáðáðñíðð òçð ðáêñññüóçð áðü òñí ðçááßíð èðáééá (SGML) ðá html éáé áñ÷-áßá éáéíÝñð ðîõ èá ðóñíáýíðí òçí Ýêáîóçð.
- Ìáðáðñíðð éáé ááéáðÛððáóç òçð ðáêñññüóçð (áá÷-áéñßáéá ÷ ñððóç, áéóáñüáééÛ éáßíáíá, óçíáéðáéð Ýêáîóçð, èßððáð ððíááðððçðáðð ðéééíý, èèð.)

- Îāóāāēpôôéóc òuĩ “ôõĩðēáõĩŸĩũĩ” (crunched) āēôāēŸóēĩũĩ ðĩō ēā ÷ ñçóēĩĩðĩēçēĩŸĩ óóēð āēóēŸôôāð āāēáðŪóóáócð.
- Āçĩēĩōñābā òuĩ ðāēŸôũĩ ôçð āāēáðŪóóáócð ēāē òuĩ ðāēŸôũĩ ðçāābĩō ēpāēēā.
- Āçĩēĩōñābā òuĩ ìŸóũĩ āēēbĩçóçð ēāē ôçð āēóēŸôôāð “fixit”.
- Āçĩēĩōñābā ôçð ēāñāñ÷bāð ēāóāēüũĩ āēā ôçĩ āāēáðŪóóáóc ìŸóũĩ FTP.
- (ðñĩíēñāôēēŸ) Āçĩēĩōñābā òuĩ ISO āñ÷ābũĩ āēā ìŸóā CDROM/DVD media.

Āēā ðāñēóóũðāñāð ðēçñĩōĩñbāð ó÷āôēēŸ ìā ôçĩ āēāēēāóbā āçĩēĩōñābāð ìēāð Ÿēāĩóçð, āābôā ôçĩ óāēbāā ôāēĩçñbũóçð release(7).

3.2 Îāóāāēpôôéóc òuĩ XFree86

Ōĩ āñāóēēũ ðāñēāŪēēĩ **XFree86** ābĩāē Ÿĩā óçĩāĩóēēũ ēñĩŪðē ēŪēā Ÿēāĩóçð āēā ðĩēēĩŸð ÷ ñpôóāð ðĩō ēŸēĩōĩ òĩ FreeBSD āēā óóāēĩŸð āñāóāð. ðñēĩ ôçĩ Ÿēāĩóç 4.6-RELEASE òĩ FreeBSD, ìē āðbóçĩāð āēüüóāēð òĩō FreeBSD ÷ ñçóēĩĩðĩēĩŸóāĩ ôçĩ Ÿēāĩóç 3.x òuĩ **XFree86**. Ĭ ðēĩ āŸēĩēĩð ðñũðĩð ìā ìāóāēũðôðóāðā āóðŸð óēð āēüüóāēð ābĩāē ìā ÷ ñçóēĩĩðĩēĩŸóāĩ òĩ ðñũāñāĩā `src/release/scripts/X11/build_x.sh`. Áðũũ òĩ ðñũāñāĩā āðāēðāb ìā ābĩāē pāç óçĩŸĩā óõĩ óŸóçĩŪ óāð òũõĩ òĩ ðāñēāŪēēĩ XFree86 Ÿõĩ ēāē ç āēpôóā Tcl/Tk. ÎāðŪ ôçĩ ìāóāāēpôôéóc òuĩ ēāðŪēēçēũ X servers, òĩ ðñũāñāĩā ēā ðāēāðŪñāē Ÿēā óā āñ÷ābā óā óðēēĩāŸð āñ÷ābũĩ ðĩō ðāñēĩŸĩāē ìā āñāē òĩ `sysinstall(8)` ìŸóā óõĩ ēāðŪēēĩā `XF86336` óõĩ ìŸõĩ āāēáðŪóóáócð.

Îāēēĩpĩóāð ìā ôçĩ Ÿēāĩóç 4.6-RELEASE òĩō FreeBSD, òĩ `sysinstall(8)` āāēāēéóðŪ ôçĩ Ÿēāĩóç 4.x òuĩ XFree86, óāĩ ēāñĩēēŪ ðāēŸóā. ÁððŪ ìðĩñāb ìā ābĩāē ābôā óā ðāēŸóā ðĩō āçĩēĩŸñāçõā òĩ cluster òuĩ ports p ìðĩēāāðĩðā Ūēēā ðāēŸóā ðĩō Ÿ÷ĩōĩ āçĩēĩōñāçēāb āðũ Ÿĩā ports tree ìā ôçĩ ēāðŪēēçç āðēēŸóā.

Óçĩābũóc: Ābĩāē ðĩēŸ óçĩāĩóēēũ ìā áðāēñŸóāðā āðũ òĩ āñ÷ābĩ `/etc/make.conf` ìðĩēāóāpðĩðā òĩðēēŸð ñõēĩbóāēð Ÿ÷āðā ēŪĩāē. Āēā ðāñŪāāēāĩā, āāĩ ābĩāē ēāēp ēāŸā ìā āēāĩŸĩāðā āēðāēŸóēĩā ðĩō Ÿ÷ĩōĩ ìāóāāēũðôéóðāb óā ēŪðĩēĩ óðāēāēñēĩŸĩĩ óŸóçĩā ìā ìñēóĩŸĩç ôçĩ óēĩp ôçð ìāóāāēçðpð `CPUTYPE` āēā āāēðēóõĩðĩbçóç òuĩ āēðāēŸóēĩũĩ āēā ēŪðĩēĩ óðāēāēñēĩŸĩĩ āðāĩāñāóðp.

3.3 ðñĩāñŪĩĩāðā Ōñbôũĩ (“ports”)

Ç Óðēēĩāp òuĩ Ports òĩō FreeBSD (<http://www.FreeBSD.org/ports>) ābĩāē ìēā óðēēĩāp ìā ðāñēóóũðāñā āðũ 20,000 ðñĩāñŪĩĩāðā āðũ òñbôĩðð, ðĩō ābĩāē āēāēŸóēĩā āēā FreeBSD. Ĭē Ports Management Team <portmgr@FreeBSD.org> ābĩāē òðāŸððĩēē āēā ôçĩ óõĩðpñçóç āĩũð āŸĩóñĩō āðũ ðçāābĩ ēpāēēā āēā óā ports, ðĩō ìðĩñāb ìā ÷ ñçóēĩĩðĩēçēāb āēā ìā āçĩēĩōñāçēĩŸĩ óā ðāēŸóā ìā óā ðñĩāñŪĩĩāðā ðĩō óðñāŸĩōĩ óēð āðbóçĩāð āēüüóāēð òĩō FreeBSD.

Ç āēāāēēāóbā óõĩðpñçóçð ôçð óðēēĩāpð òuĩ ports ābĩāē ēŪðē ðĩō āāĩ ìðĩñĩŸĩā ìā ēāēŸõĩðĩā āāp. ìā ìā÷ũñēóðũ Ūñēñĩ, ìā ðbôēĩ Ç ÎñāŪtūóc ēāĩōçð òuĩ ðāēŸôũĩ ĒĩāēóĩēēŸ āðũ Ōñbôĩðð ([./releng-packages/article.html](http://releng-packages/article.html)), ēāēŸððāē āðũ òĩ ēŸĩā.

3.4 Āñ÷ābā ISO ôçð ēāĩóçð

Îāēēĩpĩóāð ìā ôçĩ Ÿēāĩóç 4.4 òĩō FreeBSD, ç ñŪāā ĀĩŪððõĩçð òĩō FreeBSD āðĩōŪóēóā ìā āēāĩŸĩāē ēāē óā ôŸóóāñā ISO āñ÷ābā ðĩō ðñpôā ðĩōēĩŸóāĩ ìē āðāēñābāð *BSDi/Wind River Systems/FreeBSD Mall* óðēð “āðbóçĩāð” āēāmŸð CDROM ðĩō Ÿēāĩāĩ. ĒŪēā Ÿĩā āðũ óā ôŸóóāñā ISO āñ÷ābā ðñŸðāē ìā ðāñēŸ÷āē Ÿĩā āñ÷ābĩ `README.TXT` ðĩō

ðǎñéǎñÛöǎé óǎ ðǎñéǎ÷ìíǎíǎ òîõ ǎßóèîõ, êé Ýíǎ ǎñ÷ǎßí CDROM.INF ðîõ ðǎñéÝ÷ǎé ìǎðǎ-ðéçñîîññßǎð ǎéǎ íǎ ìðññǎß òî ðñüǎñǎìǎ sysinstall(8) íǎ ǎéÝǎñǎé éǎé íǎ ÷ñçóéîîðîéßóǎé áðòü òî ǎßóèî, éǎèð òé Ýíǎ ǎñ÷ǎßí filename.txt ðîõ ðǎñÝ÷ǎé íéǎ èßóðǎ ǎñ÷ǎßüí òîõ CDROM. Áðòß ç èßóðǎ ìðññǎß íǎ ǎçîéîñǎçèǎß ðîéý áðéÛ, ùð ǎñßð:

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

Íé óðǎéǎèñéíÝíǎð áðǎéòßóǎéð ǎéǎ èÛèǎ Ýíǎ áðü áðòÛ óǎ CD ðǎñéǎñÛîîíóǎé ðǎñǎéÛòü:

3.4.1 Áßóèîò 1

Í ðñðòîð ǎßóèîð ǎßíǎé ó÷ǎǎüí áðîééǎéóóééÛ áðîðÝéǎóíǎ òçð ǎíóîéßð make release. Íé ìüíǎð ǎééǎǎÝð ðîõ ðñÝðǎé íǎ ǎßíóîí óóîí éǎðÛéîǎñ disc1 ǎßíǎé ç ðñîíòèßéç ðîõ éǎðÛéîǎñ tools, òüí XFree86, éǎé üóî òî ǎóíǎðüí ðǎñéóóüðǎññüí ðǎéÝòüí ìðññíýí íǎ ÷ñÝóíóîí óóîí ǎßóèî. Í éǎðÛéîǎñ tools ðǎñéÝ÷ǎé ǎñǎǎéǎßǎ ðîõ áðéòñÝðîíóîí óǎ ÷ñßóðǎð Ûéèüí éǎéðîñǎéèßí óðóðçîÛòüí íǎ òðéÛîîí òéð ǎéóéÝððǎð ǎéèßíçóçð. Áðòüð ì ðñðòîð ǎßóèîð ðñÝðǎé íǎ òðéÛ÷ǎéǎé bootable Ýðóé ðóðǎ íǎ ìðññíýí íé ÷ñßóðǎð òüí ìüíðÝññüí ððîéíǎéóððí íǎ áðîðǎýǎíóîí òî óðÛǎéí ǎçîéîñǎßǎð òüí ǎéóéǎððí ǎéèßíçóçð.

Áí íéǎ ǎéǎóîñǎðéèß Ýéǎíóç òüí XFree86 éǎ ǎéǎíÝíǎðǎé ìǎ òçí Ýéǎíóç áðòß, ðñÝðǎé íǎ ǎçîñǎñüèǎß òî ðñüǎñǎìǎ sysinstall(8) ǎéǎ òçí íÝǎ èÝóç éǎé íé ñǎçǎßǎð ǎǎéǎðÛóðǎóçð. Í ó÷ǎðéèüð èðǎééǎð òðÛñ÷ǎé óóîí éǎðÛéîǎñ src/release/sysinstall óóîí -STABLE èîñüü ð óóîí éǎðÛéîǎñ src/usr.sbin/sysinstall óóîí -CURRENT èîñüü. ÓðǎéǎèñéíÝíǎ, óǎ ǎñ÷ǎßǎ dist.c, menus.c, éǎé config.c éǎ ÷ñǎéǎóðǎß íǎ ǎçîñǎñüèíýí.

3.4.2 Áßóèîò 2

Í ǎǎýðǎñîð ǎßóèîð ǎßíǎé áðßóçð áðîðÝéǎóíǎ òçð ǎíóîéßð make release éǎðÛ Ýíǎ ìǎǎÛéí ìÝñîð. Áðòüð ì ǎßóèîð ðǎñéÝ÷ǎé Ýíǎ “live filesystem” ðîõ ìðññǎß íǎ ÷ñçóéîîðîéçèǎß áðü òî sysinstall(8) ǎéǎ íǎ ǎñǎðǎóóíýí ðññǎèßíǎðǎ óǎ íéǎ ǎǎéǎðÛóðǎóç òîõ FreeBSD. Èé áðòüð ì ǎßóèîð ðñÝðǎé íǎ ǎßíǎé bootable. Éǎ ðñÝðǎé áðßóçð íǎ ðǎñéÝ÷ǎé Ýíǎ óóîíðéǎóíÝíí ǎíðßǎñǎóîí òîõ CVS repository óóîí éǎðÛéîǎñ CVSROOT éǎé ǎßǎìǎðǎ áðü ǎðññééÛ ðññǎñÛñǎðǎ óóîí éǎðÛéîǎñ commerce.

3.4.3 Áßóèîé 3 éǎé 4

Íé òðüéîéðîé ǎðí ǎßóèîé ðǎñéÝ÷ǎéí ǎðéðñüüéǎðǎ ðǎéÝóǎ èíǎéóíééý ǎéǎ òî FreeBSD. Óǎ ðǎéÝóǎ éǎ ðñÝðǎé íǎ ǎßíǎé ñǎǎíðîéçíÝíǎ, Ýðóé ðóðǎ èÛèǎ ðǎéÝòí íǎ ǎßíǎé óóîí ðǎéí ǎßóèí ìǎ üéǎ óǎ ðǎéÝóǎ áðü óǎ ñðíßǎ ǎñǎñðÛóǎé ǎéǎ íǎ ǎǎéǎðǎóðǎéǎß éǎé íǎ òñÝíǎé. ðǎñéóóüðǎñǎð ðéçñîîññßǎð ǎéǎ òçí ǎçîéîñǎßǎ áðòðí òüí ǎßóèüí ǎíǎóÝññíóǎé óóîí Ûñèññ Ç ÎñãÛîùόç èǎíóçð òüí ðǎéÝòüí Èíǎéóíééý áðü Òñßòîðð (../releng-packages/article.html).

4 Áéǎíñß òüí Áêäüüóàùí

4.1 ÁîððçñǎðçðÝð FTP

¼ðǎí ç Ýéǎíóç ǎßíǎé Ýóîéíç, Ý÷ǎé ǎñééíǎóðǎß ǎéðǎíðð, éǎé Ý÷ǎé ðǎéǎðǎñéóðǎß ǎéǎ ǎéǎíñß, ì éýñéîð FTP ǎñððçñǎðçðð ðñÝðǎé íǎ ǎçîñǎñüèǎß. Íé áðßóçíéé ǎñððçñǎðçðÝð FTP òîõ FreeBSD ǎßíǎé üéîé mirrors ǎñüð éýñéîð ǎñððçñǎðçðð óóîí ñðíßí Ý÷ǎéí ðññóǎǎóç ìüí Ûéèéé FTP ǎñððçñǎðçðÝð. Áðòüð ì ǎñððçñǎðçðð ǎßíǎé ǎñüðüð ùð ftp-master. ¼ðǎí ç Ýéǎíóç ǎßíǎé Ýóîéíç, ðñÝðǎé íǎ ǎçîñǎñüèíýí óǎ ðǎñǎéÛòü ǎñ÷ǎßǎ óóîí ftp-master:

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

Ιέα ἀδελφ web οἰσβῶα δῖο δᾶνέΥ ÷ ἁέ ἁἰβεοᾶο ὁᾶ ἁεῦῶιῖῖοδ ὁçῖᾶῖῖῖῖῖῖ FTP ῖᾶῖᾶῖῖῖῖῖ ῖῖᾶ ὁçῖ ὁῖῖΥ ÷ ῖῖῖᾶ ῖῖῖῖῖ ὁῖῖ FreeBSD.

```
/pub/FreeBSD/releases/arch/x.y-RELEASE/
```

I éaðÜetäð äðü öñ òðìßì ìðññýí íá áßñòí äæéäöóðÜöæè ìÝóù FTP, üðüð öñ Ý÷æ ðññäöìèÜöæ ç áðöieP make release.

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

¼ëá óá ðññĩãôáãëùôôéóìÝíá ðáéÝôá ãéá ôçí ôñÝ÷ĩôóá Ýëäĩôç.

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

Îéá óõïâîëëêÐ óõïôùîâõóç ãéá ôîí êáôÛëîäí .../.../.../tools.

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

```

λέά όοίâîëëêP όοίôùîâóóç äéá ôîí êáoÜëîāī .../.../ports/i386/packages-X.Y-release.

```

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

Ôá áñ÷åßá ISO.

Ἀέα ᾄναεοοουοᾶῆᾶδ̣ δεϑ̣ειρ̣οιῆῆḂao ρ÷ἀδεεῦ̣ ιὰ οϑ̣ι ἱῆᾰῦ̣ιὐoϑ̣ οὔι mirror ἀεάῖῆḂd FTP οἷo FreeBSD, ᾄᾶᾶεᾶῇp ᾶᾶḂo οἷ Ὑῆῆῆ̣ Ödeῦ̣÷ῖῖoᾶd Ὶῖᾰ FreeBSD mirror (/hubs/).

Ιδιόηας ία δ'Υηάε ανέαο'Υο ηηαο αδ'υ ός'ί οόεαη δ'ιω έα αί'η'αη'ηεαβ ί ftp-master ι'Υ ÷ ηέ ία αί'η'αη'ηε'ί'ς οό'ς ί δεαέ'ι'ο'ς'α ό'ι'οδ όα δ'η'η'ο'ι' αδεδ'Υ'α'ι'ο FTP mirror ία ό'ς'ί ι'Υ'α 'Υ'εα'ι'ο'ς. Άδεα'Υ'εε'α'ο'άε ίε οδ'α'γ'ε'ο'η'ε 'Υ'εα'ι'ο'ς ία οδ'ί'α'η'ί'ς'ί'ς ία ό'ς'ί 'ς'ε'α'ε'ο'η'ί'ε'η' έβ'ο'ό'α ο'υ'ι mirror sites ό'ι'ο FreeBSD (http://lists.FreeBSD.org/mailman/listinfo/freebsd-hubs) δ'η'έ'ί' α'ί'α'έ'ί'ε'η'ο'ι'ο' ό'ς'ί α'α'ί'ε'η' έε'ά'ε'α'ο'έ'ι'υ'ό'ς'ο'ά ό'ς'ο ι'Υ'α'ό 'Υ'εα'ι'ο'ς ο'ό'ι'οδ α'ί'οδ'ς'η'α'ό'ς'ο'Υ'ο FTP.

4.2 Àíáðáñáũùã òùí CD-ROM

Έὰ όόιðεçñùèαß όύίôîî: ÓôîârœÝð æέά ôçí áðíóîîrêð ôùì ISO áñ÷-âßùì ôîrø FreeBSD óά êÜðîέîí ðîrø ðîññâß íá êÜíáέ íáæέêð áíáðáñáâùâð, έάέ ðÝôñâ æêÝã÷îð ðîrø ðîññîýíí íá ðáñêîýíí.

5 Åđăêôáóéìüôçôá

[illegible]

5.1 Āçîēîōñāāā ĐñîóáñîîóíŸíúí Āéóēāôôpí Āēēβîçôçð.

ĐîēēŸð āāēāóáóôŨóáēð Ÿ÷îîí đîēýđēîēāð áđāēðPóáēð đîō ðîñāāā ðā ôç óāēñŨ òîōð íá áđāēðîŸí ôçî đñîóēPēç đñāēóóúðāñîúí ðāçāpí P āñāāēāāŨî ÷ñPóôç óôēð āēóēŸôðāð āāēāðŨóóáôçð. Ī “îðāēŨēēēîð” òñüðîð íá òî ēŨíāðā áððü āβíāē íá ēŨíāðā ôēð āēēāāŸð óáð óôñî ēáðŨēîāî đîō Ÿ÷āē āôîēîŨóāē ðāðŨ òî ôŸēîð ôçð ç āēāāēēāóáā make release:

- ĐāñŨóðā ðā patches óáð P đñîóēŸóðā ðā āðēðēŸîí āñ÷āā íŸóá óôñî ēáðŨēîāî chroot ôçð Ÿēāîôçð.
- `rm ${CHROOTDIR}/usr/obj/usr/src/release/release.[59]`
- ðāðāēüððóðā đŨēē òî sysinstall(8), òñ đðñPíā, P üðîēā Ũēēā đñîāñŨîāðā Ÿ÷îîí āðçñāāóðāā áðü ôēð āēēāāŸð óáð.
- `chroot ${CHROOTDIR} ./mk floppies`

Īē íŸāð āēóēŸôðāð āāēāðŨóóáôçð ēā āçîēîōñāçēîŸí óôñî ēáðŨēîāî \${CHROOTDIR}/R/stage/floppies.

ĀíāēēāēðēēŨ, ðîñāāðā íá ÷ñçóēîîðîēPóáðā òî make target boot.flp, P ðîñāāðā íá òñŸíāðā áðāðēāāð òî script ðîō āçîēîōñāāā ðā óðððPíāðā āñ÷āā Ÿrc/release/scripts/doFS.sh.

Īðñāāðā āðβôçð íá ēāñîβóðāð þóðā āēēŸð óáð āēēāāŸð íá đñāāóóîŸí ðā ðñðP patch óôçî Ÿēāîôç üðüð ēā ôðēŨ÷îāðāē, āññîðāð òēîP óôçî ðāðāēçðP LOCAL_PATCH üðāí òñŸíāðā ôçî āîðîēP make release.

5.2 Đñîāñāîāôðæîîóáð òî sysinstall

Œî āñāāēāāî āāēāðŨóóáôçð ēāē ñŸēîôçð òîō FreeBSD, òî sysinstall(8), ðîñāā íá đñîāñāîāôðēóðāā āēā íá ēŨíāē ðēî āŸēîēāð ôēð áððñîāðîðîēçîŸíāð āāēāðáóôŨóáēð óā đîēēŨ ðç÷āíPíāðā. Áððü òî ÷ñāāēðçñēóðēēü òîō đñîāñŨîāðîð ðîñāā íá ÷ñçóēîîðîēçēāā óā óôñîāðāóîü ðā òî PXE[13] ôçð Intel āēā íá ðāēēîPóāē ç āāēāðŨóóáôçð áðü òî āβēððî, P óā óôñîāðāóîü ðā đñîóáñîîóíŸíāð āēóēŸôðāð āēēβîçôçð ēē Ÿíā sysinstall script. íá đāñŨāāēāîā áðü ôŸðîēî sysinstall script ðîñāāðā íá āñāāðā ððî āñ÷āā Ÿrc/release/sysinstall/install.cfg.

6 ðāēPíāðā òîō ĐPñāîā áðü ôçî êäîîôç 4.4 òîō FreeBSD

Ç āēāāēēāóáā āðîēîāðāð òçð Ÿēāîôçð 4.4 òîō FreeBSD ðāēβîçðā āðβôçîā ôçî Īç ÁðāîŸóðîð 2001. ðāðŨ áðü áððP ôçî çîāññîçîā, üēāð îē āēēāāŸð óôñî ēîñîü RELENG_4 òîō FreeBSD Ÿðñāðā íá Ÿ÷îîí Ÿāēñēóç áðü ôçî Release Engineering Team <re@FreeBSD.org>. Ç đñþðç āîēēîāóðēēP Ÿēāîôç āēā ôçî āñ÷ēðāēðîîēēP x86 Ÿāēíā āēāēŸóēîç óôēð 16 ÁðāîŸóðîð, ēē āēîēîðēPēçēā áðü 4 āēüîā āîēēîāóðēēŸð āēüüóáēð đîō ðāPāçóāí ôçî ðāēēēP Ÿēāîôç óôēð 18 òîō ÓāððŸîāñç. Ī ððāŸēðñð áóðŨēāēāð Ÿðāēíā ôçîāîðēēü ñüēî ēáðŨ ôçî āēŨñēāēā ôçð ðāēāððāðāð āāñŨāāð ēāēþð ēŨðîēā đñîāēPíāðā áóðŨēāēāð āñŸēçēāí óā đñîçāîŸîāîāð, āîēēîāóðēēŸð āēüüóáēð. ÓðñîēēŨ, đŨîü áðü 500 email óðŨēēçēāí ôçî Release Engineering Team <re@FreeBSD.org> óā āēŨóðçîā îēēñüðāñî áðü Ÿíā ðPíā.

Ç ēîēîüðçðā òùí ÷ñçóðpí ðāð Ÿēāíā óáðŸð üðē ç áóðŨēāēā ēāē ç óðāēāñüðçðā ðēāð Ÿēāîôçð āāí ēŨ 'ðñāðā íá ēððēŨæāðāē āēā ēāíāüð āβāîð đñîēāóîðāð P çîāññîçîāð đîō Ÿ÷îîí ðāēāā óāí óðü÷îē áðü đñēí. Œî FreeBSD Ÿ÷āē ðāāēþóāē āñāîāðēēŨ ēáðŨ ôçî āēŨñēāēā ôçð æüþð òîō óāí óŸóóçîā, ēāē ç áíŨāēç āēā óðāēāñēîŸîç đîēēðēēP ēāē ðñāŸîüôç āēā ôçî āçîēîōñāāā íŸüí āēüüóáüí āβíāē ðēŸîŸ óāíāñP đñāēóóúðāñî áðü đîōŸ. ÁððP ç áíŨāēç ēā āβíāē āēüîā ðēî ôçîāîðēēP ēāēþð òî FreeBSD ēā āñ÷āāē íá ðāðāŸŸñāðāē óā íŸāð ðēāððüñîāð.

7 ìäëëïíôéêÝò Êáôãõèýíóãéò

[illegible]

- [illegible]

8 Å ÷ á ñ é ó ô ß à ò

Εὰ Πεᾶέα ἰά ἀο÷ἀνεόδΠουὸ οἱ Jordan Hubbard, θῖο ἱτὸ Ὡαυόα ὀγί ἀδεᾶένβΑ ἰά δῦNνὺ εὔθιεᾶ αῶν ὀγί ἀεῳγίϋ ὀδὸ Ὡεᾶιτόδ 4.4 οἱτὸ FreeBSD, ἐᾶεῖδ ἐᾶέ ᾶέᾶ ὑεç ὀγί ᾶιρεᾶεὔ θῖο Ὡ÷ᾶε εὔἰᾶε ᾶᾶῖ ἐᾶέ ÷nυἰεᾶ ᾶέᾶ ἰά ᾶβἰᾶέ οἱ FreeBSD ᾶῶν θῖο ᾶβἰᾶέ οἱΠἰᾶᾶ. Ὤοóεὔ, ç Ὡεᾶιτόç ᾶἰᾶ εᾶ Πῶᾶἰ θῖο Ὡ ᾶῶἰᾶῶἰ ἰᾶ ἱεῖἱεçñυεᾶβ ÷nυἰδ ὑεç ὀγί Ὄ÷ᾶῶéΠ ἰᾶ ὀγί Ὡεᾶιτόç ᾶιρεᾶεὔ θῖο Ὡεᾶἰᾶ ἱέ Satoshi Asami <asami@FreeBSD.org>, Steve Price <steve@FreeBSD.org>, Bruce A. Mah <bmah@FreeBSD.org>, Nik Clayton <nik@FreeBSD.org>, David O'Brien <o'brien@FreeBSD.org>, Kris Kennaway <kris@FreeBSD.org>, John Baldwin <jhb@FreeBSD.org> ἐᾶέ υἱεῖἱ ἱέ ὀδῡἱεῖἱθῖε θῖο ᾶὌ÷ἱεῖἱᾶέ ἰᾶ ὀγί ᾶἰὔδῶἱç ὀἱτὸ FreeBSD. ÈṲèὔ ᾶδβῶδ ἰᾶ ἀο÷ἀνεόδΠουὸ οἱτὸ Rodney Grimes <rgrimes@FreeBSD.org>, Poul-Henning Kamp <phk@FreeBSD.org>, ἐᾶέ υἱεῖδ ὀἱτὸ Ὡεῖῖδ θῖο ᾶᾶᾶᯚὀῇεᾶἰ ᾶέᾶ ἰᾶ ὀῇὔἲἱἱ ὀᾶ ᾶᾶᾶεᾶβᾶ ᾶέᾶ ὀῇδ ᾶεᾶᯚᾶῇδ ὀῇῇδ θᾶῖᾶδ ἰṲᾶῇδ ὀδὸ ᾶçἱεῖἱᾶᾶᾶ ὀἱτὸ FreeBSD. Ἀὅῶ ὀἱ Ὡᾶᾶἱ Ὡ÷ᾶε ᾶδçᾶᾶὀᾶᾶ ᾶῶν εᾶβἰᾶἰᾶ Ὄ÷ᾶῶéὔ ἰᾶ ὀγί ἱᾶᾶᯚỴᯚ ὀἡ ᾶεᾶᯚᾶỴ ᾶῶν οἱ CSRG[14], ὀγί ἥᯚᾶ ὀἱτὸ NetBSD[11], ἐᾶέ ὀγί θᾶᯚᾶᯚ ᾶέᾶ ἱεᾶ ᾶεᾶᾶεᾶᯚᾶ ἱᾶᾶᯚỴᯚ ὀἡ ᾶεᾶᯚᾶỴ ὀἱ John Baldwin[12].

9 ÁíáöïñÝò

- [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>
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