

Ç ĩñãŨíùóç ôùí Âêäüóãùí ôĩõ FreeBSD

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03:10:52 keramida Exp \$

Áðòù òĩ Ũñèñĩ ðãñéãñŨöáé ôçĩ áĩòéĩãððéóç éáé ĩñãŨíùóç ôçò ñŨãáð áĩŨððòĩçð òĩõ FreeBSD, ùóĩĩ áðĩñŨ óôçĩ ðñĩãðòĩéĩáóßá ðĩéĩðééðĩ äêäüóãùĩ òĩõ Êäéðĩðñäéçĩ Óðóðßĩáðĩð FreeBSD. Âĩçããß ĩã èãððñŨñäéá ôçĩ ĩãèĩãĩèĩãßá ðĩõ ÷ñçóéĩðĩèĩãßóáé äéá ðéð äðßóçĩãð äêäüóãéð òĩõ FreeBSD éáé ðãñéãñŨöáé óã ãñãáéãßá ðĩõ äßĩáé äéáéŸóéĩá óã ùóĩðð ãĩãéáóŸñĩíðáé ĩá ðãñŨãĩĩðĩ ðãñãĩãðñĩðĩéçĩŸĩãð äêäüóãéð òĩõ FreeBSD äéá áóùðãñéèèè ð ãĩðĩñéèè ÷ñðóç éáé áĩŨððòĩç ðñĩũĩĩðùĩ.

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1 Áéóããũãð

Ç áĩŨððòĩç òĩõ FreeBSD äßĩáé ĩéá ðĩéŸ áñé÷ðð äéããééãóßá. Òĩ FreeBSD áðĩðãéãßóáé äðũ óóĩãéóóñŸð ÷ééèŨãũĩ áĩèñðùĩ äðũ ùéĩ òĩĩ èũóĩĩ. Ç ñŨãá òĩõ FreeBSD ðãñŸ ÷ãé ðñũóãáóç ĩŸóũ áĩðĩðĩð CVS[1] óã ùéĩðð, Ÿðóé þóðã ĩá ĩðĩñãß ùðĩéĩð èŸéãé ĩá äãé ĩçĩŸĩáðã log, äéãðñŨŸð (patches) ðĩõ Ÿ÷ĩðĩ óã äéŨðĩñã development branches, éáé Ũèèã ÷ãñãéðçñéóðéèŨ ðĩõ äĩçèĩŸĩ ôçĩ áĩŨððòĩç, óã ĩðĩßá ðñĩéŸððĩðĩ äðũ ôçĩ ÷ñðóç áĩũð áðððçñĩŸ óðóðßĩáðĩð äéã÷ãßñéóçð èðãééã. Áðòù áðĩðŸéãóã éáé òĩĩ ðéĩ óçĩáĩóéèũ ðãñŨãĩĩðã Ÿéĩçð äéá Ÿĩã ĩããŨéĩ ãñéèũ äðũ óãéãĩðĩŸ÷ĩð ðñĩãããĩãðéóðŸð äðũ ùéĩ òĩĩ èũóĩĩ óðĩ FreeBSD. Âßĩáé ðñĩðãĩŸð, ãŸããéã, ðùð ðĩéŸ óŸĩðñã éã äß÷ã äßĩáé áĩðãèèð ÷ãĩðéèè ç éãðŨóðáóç áĩ äß÷ãĩ ùéĩé, äðũ ùéĩ òĩĩ èũóĩĩ, ðñũóãáóç ĩá ãñŨðĩðĩ óðĩ èðãééã. Äé’ áðòù, ĩũĩ ĩéã “ãðééããĩŸĩç” ñŨãá äðũ ðãñßðĩð 300 Ũðñã Ÿ÷ĩðĩ ðñũóãáóç ĩá ãñŨðĩðĩ óðĩ CVS repository. Áðòĩß ĩé committers[6] äßĩáé ððãŸéðñĩé äéã òĩ ĩãããéŸðãñĩ ĩŸñĩð ôçò áĩŨððòĩçðð ðĩõ äßĩãðáé óðĩ FreeBSD. ĩéã

[illegible]

Ίε οά÷ýðάοίε ñðείηβ άίŨððòñçð òιò FreeBSD άάί άòßñíò έάέ ðίεý ÷ ññíí άέά òι ίάέάέŨñέóíá òιò òðòðßíáðιð άίŨððòñçð òά ίέά Ύέαιòç ίά ðίεύòçðά ðìò ίά άίβæάέ ίά ÷ ñçóέíιðίέάßðάέ άòñŨýð. Άέά ίά έðέåß áðòυ òι áβέέçíá, ç άίŨððòñç áßíáðάέ òáðòυ÷ ñííá òά άòι ðάνŨέέçέá ίíñðŨóéá. Ί έýñέιð έíñιυð άίŨððòñçð áßíάέ ι **HEAD** ð **trunk** òòι CVS repository ίάð, áñυòðυð έάέ υð “FreeBSD-CURRENT”, ð “-CURRENT” άί òóíòñßá.

Για όποιον ενδιαφέρει το θέμα, ορίστε ορισμένα links:

- FreeBSD-STABLE: η πιο σταθερή έκδοση του FreeBSD, η οποία είναι η βάση για την ανάπτυξη των επόμενων εκδόσεων. Είναι η πιο αξιόπιστα και η πιο σταθερή έκδοση του FreeBSD.
- FreeBSD-CURRENT: η πιο πρόσφατη έκδοση του FreeBSD, η οποία είναι η βάση για την ανάπτυξη των επόμενων εκδόσεων. Είναι η πιο πρόσφατη και η πιο σταθερή έκδοση του FreeBSD.
- FreeBSD-HEAD: η πιο πρόσφατη έκδοση του FreeBSD, η οποία είναι η βάση για την ανάπτυξη των επόμενων εκδόσεων. Είναι η πιο πρόσφατη και η πιο σταθερή έκδοση του FreeBSD.

[illegible]

Όρία÷πο οόÝεirióáé áðu ôiôð ÷ñPóðáð iáo áíáöiñÝð ðñiáεçìÜòùì éáé áéðPóáéð áéá éáéirýnéá ÷áñáéðçñéóóééÜ, éáôÜ ôç áéÜñéáéá ôiô éýééiô ôçð éÜèá Ýéáiôçð. Ié áíáöiñÝð ðñiáεçìÜòùì áéóÜáñióáé óôçì áÜôç **GNATS**[9] iÝóù e-mail, iá ôçì áöáñiñáP send-pr(1), P iÝóù ôiô web-interface ôiô ðáñÝ÷áðáé óôçì áéáýéôióç <http://www.FreeBSD.org/send-pr.html>. Áêòùð áðu óéð áéÜöiññáð èβóðáð çáêòññiééý óá÷öáññáβiô iá èÝiá óá ðá÷iééÜ ÷áñáéðçñéóóééÜ ôiô FreeBSD ôðÜñ÷áé éáé ç èβóðá çáêòññiééP èβóðá ÁéÝá÷iô éáé ÁíáóóÜééóçð Ðiéúôçóáð ôiô FreeBSD (<http://lists.FreeBSD.org/mailman/listinfo/freebsd-qa>), ç iðiβá ðáñÝ÷áé Ýiá öüñiôì áéá óðæçðPóáéð ó÷áðééÜ iá óéð éäððñÝñáéáð ôçð “ññáÜñúôçð òùì áéäüóäùñ”.

[illegible]

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 ãìçããß ðçŸ ìããã ðç ããããããðßã ðçð ìãðããððððçð. Οι ΟιΠια 5 ðãñãñŸŸãã ðñ ðññãß ìã ððããðããß ðñ ããðãã ðŸððçãã ãðu ðñßðñð ãã ðñ ΟιΠια 6 ðãñãñŸŸãã ãŸðñãã ãðu ðã ðñŸãããðã ðñ ìŸããã ãðu ðçŸ ããããããðßã Ÿããðçð ðñ FreeBSD 4.4. ŸŸñð, ðñ ΟιΠια 7 ðãñððãŸããã ãŸðñãã ãðu ðãð ããðãñŸŸããð ðñ ãŸññãã ìã ðŸñãã ç ãñŸðððç ðñ ìŸããã.

2 Ç Äéääéêáóßá Äçïéïõñãßáo ìéáò êäïóçò

Ίε ιΎάο άέαυόάέο όις FreeBSD όόεΰ÷-σίοάέ άδύ όις -STABLE έιμιύ άίΰόόόις όαήβδισ έΰέα όΎόόάήάέο ιΰίάο. ϸ έέάέέέάόβα όήιόάιέιόάό έέάό Ύέαιός ιάέέΰάέ ό÷άαί 45 ιΎήάό όήέί όςί άίάίάίάίς ϸιήήήίβα Ύέαιός, υόάί ι όόάγέόήό άέάυόάί όις FreeBSD όόΎέίάέ Ύίά άήΰία όόέό έβόόά όυί όήιήάιήάέόόόί έέά ίά όόάέέίόίάέ όόίόό όήιήάιήάέόόΎό υόέ Ύ÷ίόί 15 ιΎήάό έάέήυ ίά έΰήίό υόέάό άέέάΎό έΎέίόί, όήέ όί δΰάυία όις έπαέέα. ΊΎόά όά άόόυ όις έάέήυ, όήέέίβ όήιήάιήάέόόΎό έΰήίό ίέά όάέήΰ άδύ άέέάΎό όις Ύ÷ίόί ιάβίάέ όέΎίς άήυόόΎό υόό “ιάέάέάήόίάόά MFC”. Ί υήίό MFC όςίάβίάέ “Merge From CURRENT” έάέ όάέέάήΰάέ όςί έέάέέέάόβα όήιόάήιήάό

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

2.1 ĩēāā ÷ iō ēpāēēā

ŌñēŪiōā çĩŸñāð ðñēĩ òçĩ áĩāiāĩuiāĩç çĩāññĩçĩā Ÿēāiōçð, ĩ ēpāēēāð òĩō repository áēóŸñ ÷ āðāē óā iēā ðāñbĩrāĩ “ēāēðóóŸñçóçð”. ĒāōŪ òç ãēŪñēāēā áððpð òçð ðāñēüāið, üēāð iē ãēēāāŸð óðĩĩ -STABLE ēĩñiũ ðñŸðāē iā Ÿ ÷ iōĩ òçĩ Ÿāēñēóç òçð Release Engineering Team <re@FreeBSD.org>. Ĩē ãēēāāŸð ðĩō āðēōñŸðĩiōāē óā áððp òçĩ ðāñbĩrāĩ ðĩō ãēāñēāb 15 çĩŸñāð ābĩāē:

- Ąēĩñēpóāēð āĩüóðĩĩ ðñĩāēçĩŪðüĩ.
- Ąĩçĩāñpóāēð óðçĩ ðāēĩçñbùóç.
- ĄēēāāŸð ó ÷ āðēēŸð iā òçĩ áóðŪēāēā.
- ĨēēñŸð ãēēāāŸð óðĩið ïāçāĩŸð óðóēāðĩ, üðũð ð. ÷. ç ðñĩóēðēç òuĩ IDs iŸüĩ óðóēāðĩ.
- Ĩðĩēāāpðĩōā Ūēēç ãēēāāp ðēóðāŸāē ç ñŪāā áĩŪððōĩçð üðē ðñŸðāē iā ābĩāē, iā òĩ áĩāiāĩuiāĩ ðŪiōā ñbóēĩ.

ĨāōŪ òēð ðñpóāð 15 ĩŸñāð ēāēðóóŸñçóçð, òðēŪ ÷ iāðāē iēā āiēēiāóóēēp Ÿēāiōç ãēā iā ÷ ñçóēĩĩðĩēçēāb óāĩ āiēēĩp òçð ðāēēēpð Ÿēāiōçð ēāē ĩ ēpāēēāð áēóŸñ ÷ āðāē óā iēā ðāñbĩrāĩ “ðāāpĩāðĩð”. ðēŸĩĩ ābĩāē ðĩēŸ ðēĩ āŸóēĩēĩ iā ābĩiōĩ iŸāð ãēēāāŸð óðĩ óŸóðçĩā, āēðũð ēē áĩ āēĩñēpñĩĩ ēŪðĩēĩ ðĩēŸ òĩāāñiũ bugp ēŪðĩēĩ ðñuāēçĩā áóðŪēāēāð. ĒāōŪ òç ãēŪñēāēā òĩō ðāāpĩāðĩð òĩō ēpāēēā, òĩōēŪ ÷ éóðĩĩ ĩbā āiēēiāóóēēp Ÿēāiōç òðēŪ ÷ iāðāē ēŪēā āāāñŪāā, ĩŸ ÷ ñē iā ābĩāē Ÿĩēĩç ç ðāēēēp Ÿēāiōç. Ōēð çĩŸñāð āēñēāpð ðñēĩ òçĩ ðāēēēp Ÿēāiōç, ç ñŪāā ðĩō ābĩāē òðāŸēðĩç ãēā òēð āēāüóāēð ābĩāē óā óðĩā ÷ p āðēēĩēĩüĩbā iā òçĩ ñŪāā áóðŪēāēāð, òçĩ ñŪāā óðĩðpñçóçð òçð ðāēĩçñbùóçð, ēāē òçĩ ñŪāā óðĩðpñçóçð òuĩ ports, ãēā iā āāāāēüēĩŸĩ ðũð üēā óā āðāñābðçóā ēĩñŪðēā ãēā iēā ðēpñç Ÿēāiōç ābĩāē ãēāēŸóēĩā.

2.2 Ēbóóā ĄēŸā ÷ iō òçð Ōāēēēpð ēāiōçð

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

2.2.1 Ąçĩēĩñābā òĩō ēĩñiĩŸ ēāiōçð

Ÿðũð ðāñēāñŪøāĩ óðçĩ áēóāāüāp, iē ēĩñiĩb RELENG_x_y ābĩāē iēā ó ÷ āðēēŪ iŸā ðñĩóēðēç óðçĩ ĩāēĩāēĩābā òuĩ āēāüóāĩ iāð. Ōĩ ðñpðĩ āpĩā óðçĩ āçĩēĩñābā 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 āðüāĩ āpĩā ābĩāē iā āçĩēĩñāpóāðā iēā āðēēŸðā (tag) óðĩ óçĩābĩ 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 āçĩēĩñāpóāðā òĩ iŸĩ ēĩñiũ iā:

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

Όχι!Βούρο: *Ἰε ἀδὲέῒΥοᾶδ RELENG_ * ἀβίᾱέ ἀἀόι!ἀδῖΥίᾱδ ἀέᾱ ÷-ἡΠόρς ἄδῦ δῖῶδ CVS-meisters ἑᾱέ ὀρῖ ἡῦᾱᾱ δῦῖ ἀἑᾱῦοᾱῦῖ.*

Ἰ uniõ “*ἀδελῆΎδα*” ἀβίαε̃ ι̃νι̃ε̃τα̃β̃α̃ ο̃ι̃ο̃ CVS. Ὁ̃για̃β̃ίαε̃ Ὑ̃ία̃ ũm̃iã ο̃ι̃ο̃ ε̃α̃ε̃ι̃ν̃β̃α̃ε̃ ι̃ε̃α̃ ο̃α̃ε̃α̃ε̃ν̃ε̃ι̃ Ὑ̃ί̃ς Ὑ̃ε̃α̃ι̃ο̃ς ο̃ι̃ο̃ ε̃πα̃ε̃ε̃α̃ ο̃ο̃ι̃ ÷ nũfi. × ñς ο̃ε̃ι̃ι̃δι̃ε̃ρ̃ι̃ο̃α̃ο̃ ἀδελῆΎδα̃ ο̃ο̃ι̃ δ̃ς α̃α̃β̃ι̃ ε̃πα̃ε̃ε̃α̃ α̃ρ̃ς Ὑ̃ι̃α̃ ũδι̃ε̃ι̃ ο̃ο̃ε̃ Ὑ̃ι̃α̃ε̃ ο̃ο̃ι̃ ι̃ Ὑ̃ε̃ε̃ι̃ ἀε̃α̃ũο̃α̃ε̃δ̃ ο̃ι̃ο̃ FreeBSD ι̃α̃ α̃ν̃β̃ο̃ε̃α̃ε̃ ε̃α̃ε̃ ι̃α̃ ÷ ñς ο̃ε̃ι̃ι̃δι̃ε̃α̃β̃ α̃ε̃ν̃ε̃α̃ρ̃δ̃ ο̃ι̃ι̃ β̃α̃ε̃ι̃ ε̃πα̃ε̃ε̃α̃ ο̃ι̃ο̃ ÷ ñς ο̃ε̃ι̃ι̃δι̃ε̃β̃ε̃ς̃ε̃α̃ α̃ε̃α̃ ο̃ε̃δ̃ α̃δ̃β̃ο̃γ̃ι̃α̃δ̃ ἀε̃α̃ũο̃α̃ε̃δ̃ ο̃ς̃δ̃ ἡ̃ Ὑ̃α̃α̃δ̃ ο̃ι̃ο̃ FreeBSD.

2.2.2 ÁóîÛííîáò ôíí Áñéèü êäïóçò

Ἐνῆι ἰθαῖ ἅ ἀοέεΥόα, ἰαοάαεῦοοεοόαβ εἰε ἀοιείαοόαβ ἅ οἰεεῖβ Υἑαῖορ, ὃνΥθαῖ ἰά αἴἱἱοῖ αἑεἑάΥο οόα ὃαἡεῖῤοῦ αἡ÷αἑα ἑεἑ ἰά ὃαἡεΥ÷ῖοῖ οἡῖ οῦοοῦ αἡεἑῖῤ Υἑαῖορὃ ἑεἑ οἡ 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 äöäññīāP **sysinstall** ðñÝðäē äðßöçð íá áíçíāññēāß íā öñí öùöóü āñēēüü öñí ports éáē öī ÷pñī öīō āßöēīō ðīō äðäēöāßöáē áēá öçí ÖöēēīāP öñí Ports. ÁöðÝð íē ðēçñīöññāð öðÜñ÷īöí öóí āñ÷āßī
src/release/sysinstall/dist.c.

Áōiŷ iēēēçñùēāß ç ðñīāōiēiāóāß òçð iŷāð āðßóçìçð Ýēāiōçð, ðñÝðāē íā áìçìāñþóāðā ìāñēēŪ āñ÷āßā āēā íā áìçìāñþóāðā 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 Āçìēiōñāßā òuì Āōēēāðī òçð ēāiōçð

¼ðāí ç òāēēēþ Ýēāiōç āßiāē Ýōiēiç, ç ðāñāēŪðū āíōiēþ ēā āçìēiōñāþóāē òçí āðēēÝðā `RELENG_4_8_0_RELEASE`.

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

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

ÌāñēēÝð òiñÝð, ìðñāß íā ÷ñāēāóðāß íā āßiōi ēŪðīēāð āēēāāÝð òāēāðōāßā óðēāiþ *ìāðŪ* òçí òiðñēÝðçðç òuì āðēēāðþī. ĀāíēēŪ, āāí āßiāē āŷōēiēi íā āßiāē ēŪðē òÝōiēi āōiŷ òi CVS āðēōñÝðāē íā ìāðāēēiþóāē ēŪðīēið òēð āðēēÝðāð ìā āíōiēÝð ùðð ò `cvs tag -d tagname filename`. Āßiāē ðñēŷ óçìāíðēēü ùiðð āððÝð iē āēēāāÝð òçð òāēāðōāßāð óðēāiþð íā óçìāēüēiŷi ìā òēð óuóðÝð āðēēÝðāð āēā òçí óðāēāēñēiŷiç Ýēāiōç. İē āðßóçìāð āēāüóāēð òiō FreeBSD ðñÝðāē íā āßiāē ðŪíðā āŷēiēi íā āíāðāñā÷ēiŷi. ŌiðēēÝð āēēāāÝð óōi ðāñēāŪēēēi òiō iç÷āíēiŷi òuì āēāüóāuī āāí āðēōñÝðñiðāē.

3 Ìāðāāēþðōēóç òçð ēāiōçð

İē “āēāüóāēð” òiō FreeBSD ìðñiŷi íā ìāðāāēüððēóðīŷi āðü iðīēiñāþðiðā Ý÷āē Ýiā ó÷āðēēŪ āñþāñi iç÷Ūiçìā ēāē ðñüóāāóç óōi repository òiō ðçāāßiō ēþāēēā. (¼ēiē Ý÷iōi āððþ òç āðīāðüðçðā, āōiŷ ðāñÝ÷iōiā ðñüóāāóç iŷōü āiþiðiō CVS! Āāßðā òi Āā÷āēñßāēi òiō FreeBSD āēā ðāñēóóüðāñāð ēāððñÝñāēāð.) Ç iuiç āēāēēþ āðāßðççç āßiāē íā ððŪñ÷āē ððiððñēiçç óōiī ððñþiā óāð āēā òçí óðōēāðþ `vn(4)`. (Óōi `-CURRENT`, āððþ ç óðōēāðþ Ý÷āē āíðēēāðāóāēāß āðü òçí iŷā óðōēāðþ āßóēið āāóēóŷiŷið óā ìiþiç `md(4)`.) Áí ç óðōēāðþ āāí āßiāē āíōüiāðüŷiçç óōiī ððñþiā óāð, òüðā ì ēāðŪēēçēið iāçāüð ēā òiñðüēāß āððüiāðā üðāí āēðāēāððāß ç āíðēþ `vnconfig(8)` ēāðŪ òç āēŪñēāēā òçð òŪòçð òiðēiāóðāð òiō iŷōið āēēßiççð. ¼ēā ðā āñāāēāßā ðiō ÷ñāēŪæiñóāē āēā íā ìāðāāēüððßóāðā iēā Ýēāiōç āßiāē āēāēÝóēiā óā iññðþ ðçāāßiō ēþāēēā óōiī ēāðŪēiāi `src/release`. ĀððŪ ðā āñāāēāßā Ý÷iōi ùð óēiðü íā ðāñÝ÷iōi üðē ÷ñāēŪæiñóāē āēā íā ÷ðæiñóāē iē āēāüóāēð òiō FreeBSD ìā Ýiā óōiāðþ ēāē óðāēāēñēiŷi òñüði. İēā ðēþñçð Ýēāiōç ìðñāß íā ìāðāāēüððēóðāß ÷ñçōēiðñēþiðāð āððŪ ðā āñāāēāßā ìā iēā ēāē iüñi āíðēþ, óðiðāñēēāiāññÝiçð ēāē òçð āçìēiōñāßāð āíüð ISO āñ÷āßiō ēāðŪēēçēi āēā íā ēāāß óā CDROM, iē āēóēÝððāð āēēßiççð, ēāēþð ēāē ì ēāðŪēēçēið āāēāðŪóðāóçð iŷōü FTP. Āððþ ç āíðēþ āßiāē òðōēēþ ç `make release`.

3.1 Ç āiðēþ `make release`

Āēā íā ìāðāāēüððßóāðā āðēð÷þð iēā Ýēāiōç, ðñÝðāē ðñþðā íā ððŪñ÷iōi ðā ēāðŪēēçēā āñ÷āßā iŷōā óōiī ēāðŪēiāi `/usr/obj`. İðñāßðā íā ðā āçìēiōñāþóāðā āßðā ìā òçí āíðēþ `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 ððíßí áñßðéáðáé òí CVS repository.
- RELEASETAG - Ç áðééÝðá CVS ðîõ áíðéóðíé÷-áß ðóçí Ýêáîóç òçí ððíßá èÝéäðá íá ìáðááëüðððáððá.

Áí ááí Ý÷-áðá ðáç ðñüóááóç ðá èÛðíéí ðíðéëü CVS repository ìá ðñí èðáééá ðîõ FreeBSD, ððíáððá 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, ððí áñ÷-áßí /usr/share/examples/cvsup/cvs-supfile, òí ððíßí ððíáððá íá ÷ ñçóéíðíéçéäð áéá íá áíðéáñÛððá òí CVS repository ðîõ FreeBSD ððí áéëü óáð ðíðéëü mirror.

Áí ðáñáëáßðáððá òçí áðééÝðá RELEASETAG, ðððá èá ìáðááëüðððéóðáß íéá ðëðñçð Ýêáîóç áðü òçí èíñðð ðîõ HEAD (áç. ðîõ -CURRENT) èíññí. Ìé áêüüóáéð ðîõ ððéÛ÷-ñíðáé áðü áððüí ðñí èíññí, ððíðèðð áíáðÝññíðáé ðáí “-CURRENT snapshots”.

ÕðÛñ÷-íðí éáé ððééÝð Ûëëäð ìáðááëçðÝð ðîõ ððíññí íá ÷ ñçóéíðíéçéçí áéá íá ðáñáíáððíðíéçéçéäð òçí Ýêáîóç óáð. Ìé ðéí ððééÝð áðü áððÝð ðéð ìáðááëçðÝð ðáñéáñÛñíðáé ðóçí èíñðð ðîõ áñ÷-áßíð src/release/Makefile. Ç áêñéáðð áíðíð ðîõ ÷ ñçóéíðíéçéçéäð áéá íá ððéá÷-ðáß ç áðßóçð Ýêáîóç 4.7 ðîõ FreeBSD (x86 ðéáððüñíá) ððáí:

```
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 ððíñáß íá ÷ ññéóðáß ðá áñéäðÛ ìá÷-ññéóðÛ ìáðáíý ðîõð áðíáðá.

- Äçíéðñáß áñüð éáéáññý ðáñéáÛëëíððð ðá íéá ìá÷-ññéóðð éáñáñ÷-ßá éáðáëüüí ìá òçí áíðíðð “make installworld”.
- Áíáñüá ððü òí CVS ìéáð éáéññéáð Ýêáîóçð ðîõ ðçááßíð èðáééá ðîõ ðððððíáððð, òçð ðáèíçññüóçð éáé ðñí ports ìÝðá ðóçí éáñáñ÷-ßá éáðáëüüí ìáðááëðððéóçð òçð Ýêáîóçð.
- Ñðéíðáéð ðñí áñ÷-áßí ððñí éáðÛëíá /etc éáé /dev ìÝðá ððí ðáñéáÛëëí chroot.
- ÁéðÝéáóç òçð áíðíðð chroot ìÝðá ðóçí éáñáñ÷-ßá éáðáëüüí ðîõ áðíéíÛððçéá, áéá íá ìçí ððíñáß òí áñüðáñéëü ðáñéáÛëëí íá áðçñáÛðáé òç ìáðááëðððéóçð òçð Ýêáîóçð.
- ÁéðÝéáóç òçð áíðíðð make world ìÝðá ððí ðáñéáÛëëí chroot.
- Ìáðááëðððéóç ðñí áéðáëÝóéíð ðîõ áßíáé ò÷-áðééÛ ìá ðí òýóóçíá Kerberos.
- Ìáðááëðððéóç ðîõ ððñðíá GENERIC.
- Äçíéðñáß áñüð ðáéééñý éáðáëüüíð ððñí ððíßí èá ìáðááëüðððéóðíý éáé èá áðíèçéáððéñý ìé áéðáëÝóéíð ìñðÝð ðñí ðáéééðí ðáéÝðð.
- Ìáðááëðððéóç éáé ááéáðÛððáóç ðñí áñááéáßí ðîõ ÷ ñáéÛáñíðáé áéá òçí ðñíáðíéíáððá òçð Ýêáîóçð éáé òç ìáðáðñíðð òçð ðáèíçññüóçð áðü ðñí ðçááßíð èðáééá (SGML) ðá html éáé áñ÷-áßá éáéíÝñð ðîõ èá ððñááýíðí òçí Ýêáîóçð.
- Ìáðáðñíðð éáé ááéáðÛððáóç òçð ðáèíçññüóçð (áá÷-áéñßáéá ÷ ñððóç, áéóáñüáééÛ éáßíáíá, òçíáéðáéð Ýêáîóçð, èßððáð ððíááðððçðáðð ðéééñý, èèð.)

- Îāóāāēpôóéóc òuĩ “òõĩðéáõĩŸĩũĩ” (crunched) āēðāēŸóēĩũĩ ðĩō éā ÷ ñçóēĩĩðĩēçēĩŸĩ óóēð āéóēŸôðāð āāēáðŪóóáócð.
- Āçĩēĩōñāβā òuĩ ðāēŸôũĩ ôçð āāēáðŪóóáócð éāē òuĩ ðāēŸôũĩ ðçāāβĩō ēpāēēā.
- Āçĩēĩōñāβā òuĩ ìŸóũĩ āēēβĩçóçð éāē ôçð āéóēŸôðāð “fixit”.
- Āçĩēĩōñāβā ôçð éāñāñ÷βāð éāóāēüũĩ āēā ôçĩ āāēáðŪóóáóc ìŸóũĩ FTP.
- (ðñĩíēñāôēēŸ) Āçĩēĩōñāβā òuĩ ISO āñ÷āβũĩ āēā ìŸóā CDROM/DVD media.

Āēā ðāñéóóũðāñāð ðēçñĩōĩñβāð ó÷āðēēŸ ìā ôçĩ āēāēēāóβā āçĩēĩōñāβāð ìēāð Ÿēāĩóçð, āāβôā ôçĩ óāēβāā ôāēĩçñβũóçð release(7).

3.2 Îāóāāēpôóéóc òuĩ XFree86

Ōĩ āñāóēēũ ðāñēāŪēēĩ **XFree86** āβĩāē Ÿĩá óçĩáĩóēēũ ēñĩŪðē ēŪēā Ÿēāĩóçð āēā ðĩēēĩŸð ÷ ñβóóāð ðĩō ēŸēĩōĩ òĩ FreeBSD āēā óóāēĩŸð āñāóáβāð. ðñēĩ ôçĩ Ÿēāĩóç 4.6-RELEASE òĩō FreeBSD, ìē āðβóçĩāð āēüüóāēð òĩō FreeBSD ÷ ñçóēĩĩðĩēĩŸóáĩ ôçĩ Ÿēāĩóç 3.x òuĩ **XFree86**. Ĭ ðēĩ āŸēĩēĩð ðñũðĩð ìā ìāóāēũðôðóáðā áððŸð óēð āēüüóāēð āβĩāē ìā ÷ ñçóēĩĩðĩēĩŸóáĩ òĩ ðñũāñāĩā `src/release/scripts/X11/build_x.sh`. Áðũũ òĩ ðñũāñāĩā áðāēðāβ ìā āβĩāē ðāç óóçĩŸĩá óõĩ óŸóçĩŸ óāð òũũĩ òĩ ðāñēāŪēēĩ XFree86 Ÿũĩ éāē ç āēpóóā Tcl/Tk. ÎāðŪ ôçĩ ìāóāāēpôóéóc òuĩ éāðŪēēçēũĩ X servers, òĩ ðñũāñāĩā éā ðāēāðŪñāē Ÿēā óā āñ÷āβā óā óðēēĩāŸð āñ÷āβũĩ ðĩō ðāñēĩŸĩāē ìā āñāē òĩ `sysinstall(8)` ìŸóā óõĩ ēāðŪēēĩāĩ `XF86336` óõĩ ìŸóĩ āāēáðŪóóáócð.

Îāēēĩpĩóāð ìā ôçĩ Ÿēāĩóç 4.6-RELEASE òĩō FreeBSD, òĩ `sysinstall(8)` āāēāēéóðŪ ôçĩ Ÿēāĩóç 4.x òuĩ XFree86, óáĩ ēāñĩēēŪ ðāēŸóā. ÁððŪ ìðĩñāβ ìā āβĩāē āβôā óā ðāēŸóā ðĩō āçĩēĩŸñāçóā òĩ cluster òuĩ ports ð ìðĩēāāðĩðā Ūēēā ðāēŸóā ðĩō Ÿ÷ĩōĩ āçĩēĩōñāçēāβ áðũ Ÿĩá ports tree ìā ôçĩ ēāðŪēēçç āðēēŸóā.

Óçĩāβũóç: Āβĩāē ðĩēŸ óçĩáĩóēēũ ìā áðāēñŸóáðā áðũ òĩ āñ÷āβĩ `/etc/make.conf` ìðĩēāóāðĩðĩā òĩðēēŸð ñòēĩβóāēð Ÿ÷āðā ēŪĩāē. Āēā ðāñŪāāēāĩā, āāĩ āβĩāē ēāēp ēāŸā ìā āēáĩŸĩāðā āēðāēŸóēĩā ðĩō Ÿ÷ĩōĩ ìāóāāēũðôéóðāβ óā ēŪðĩēĩ óðāēāēñēĩŸĩĩ óŸóçĩā ìā ìñēóĩŸĩç ôçĩ óēĩp ôçð ìāóāāēçððð `CPUTYPE` āēā āāēðéóõĩðĩβçóç òuĩ āēðāēŸóēĩũĩ āēā ēŪðĩēĩ óðāēāēñēĩŸĩĩ áðāĩāñāáóðp.

3.3 ðñĩāñŪĩĩáðā Ōñβôũĩ (“ports”)

Ç Óðēēĩāp òuĩ Ports òĩō FreeBSD (<http://www.FreeBSD.org/ports>) āβĩāē ìēā óðēēĩāp ìā ðāñéóóũðāñā áðũ 20,000 ðñĩāñŪĩĩáðā áðũ òñβôĩðð, ðĩō āβĩāē āēāēŸóēĩā āēā FreeBSD. Ĭē Ports Management Team `<portmgr@FreeBSD.org>` āβĩāē òðāŸððĩē āēā ôçĩ óõĩðpñçóç āĩũð āŸĩóñĩō áðũ ðçāāβĩ ēpāēēā āēā óā ports, ðĩō ìðĩñāβ ìā ÷ ñçóēĩĩðĩēçēāβ āēā ìā āçĩēĩōñāçēĩŸĩ óā ðāēŸóā ìā óā ðñĩāñŪĩĩáðā ðĩō óðñāŸĩōĩ óēð āðβóçĩāð āēüüóāēð òĩō FreeBSD.

Ç āēāāēēāóβā óõĩðpñçóçð ôçð óðēēĩāpð òuĩ ports āβĩāē ēŪðē ðĩō āāĩ ìðĩñĩŸĩā ìā ēāēŸðĩðĩā āāp. Ĭā ìā÷ũñēóðũ Ūñēñĩ, ìā ðβôēĩ Ç ÎñāŪtūóc ēāĩóçð òuĩ ðāēŸôũĩ ĒĩāēóĩēēŸ áðũ Ōñβôĩðð ([./releng-packages/article.html](http://releng-packages/article.html)), ēāēŸððāē áðũ òĩ ēŸĩā.

3.4 Āñ÷āβā ISO ôçð ēāĩóçð

Îāēēĩpĩóāð ìā ôçĩ Ÿēāĩóç 4.4 òĩō FreeBSD, ç ñŪāā ĀĩŪðððĩçð òĩō FreeBSD áðĩōŪóēóā ìā āēáĩŸĩāē éāē óā ôŸóóāñā ISO āñ÷āβā ðĩō ðñpóā ðĩōēĩŸóáĩ ìē āðāēñāβāð *BSDi/Wind River Systems/FreeBSD Mall* óðēð “āðβóçĩāð” āēāmŸð CDROM ðĩō Ÿēáĩāĩ. ĒŪēā Ÿĩá áðũ óā ôŸóóāñā ISO āñ÷āβā ðñŸðāē ìā ðāñēŸ÷āē Ÿĩá āñ÷āβĩ `README.TXT` ðĩō

ðǎñéǎñÛöǎé óǎ ðǎñéǎ÷ìíǎíǎ òîõ ǎßóêîõ, êé Ýíǎ ǎñ÷ǎßí CDROM.INF ðîõ ðǎñéÝ÷ǎé ìǎðǎ-ðêçñîîññßǎð ǎéǎ íǎ ìðññǎß òî ðñüǎñǎìǎ sysinstall(8) íǎ ǎéÝǎñǎé éǎé íǎ ÷ñçóêîîðîéßóǎé áðòü òî ǎßóêî, éǎêð òé Ýíǎ ǎñ÷ǎßí filename.txt ðîõ ðǎñÝ÷ǎé íéǎ êßóðǎ ǎñ÷ǎßüí òîõ CDROM. Áðòß ç êßóðǎ ìðññǎß íǎ ǎçîéîñǎçéǎß ðîéý áðêÛ, ùð ǎñßð:

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

Íé óðǎéǎêñéíÝíǎð áðǎéòßóǎéð ǎéǎ êÛéǎ Ýíǎ áðü áðòÛ òǎ CD ðǎñéǎñÛîîíóǎé ðǎñǎéÛòü:

3.4.1 Áßóêîõ 1

Í ðñðòîð ǎßóêîõ ǎßíǎé ó÷ǎǎüí áðîééǎéóóééÛ áðîðÝéǎóíǎ òçð ǎíóîéßð make release. Íé ìüíǎð ǎééǎǎÝð ðîõ ðñÝðǎé íǎ ǎßñîíí óóñí éǎðÛéñǎñ disc1 ǎßíǎé ç ðññíóèßê ðîõ éǎðÛéñǎñ tools, òüí XFree86, éǎé üóí òî ǎóíǎóüí ðǎñéóóüðǎññí ðǎéÝòüí ìðññíý íǎ ÷ñÝóíóí óóí ǎßóêî. Í éǎðÛéñǎñ tools ðǎñéÝ÷ǎé ǎñǎǎéǎßǎ ðîõ áðéòñÝðîíí óǎ ÷ñßóðǎð Ûééüí éǎéòîñǎéêñí óðóðçíÛòüí íǎ òðéÛñîíí òéð ǎéóéÝððǎð ǎéêßíçóçð. Áðòüð ì ðñðòîð ǎßóêîõ ðñÝðǎé íǎ òðéÛ÷ǎéǎé bootable Ýðóé ðóðǎ íǎ ìðññíý íé ÷ñßóðǎð òüí ìüðÝññüí ððîéñǎéóóðí íǎ áðîðǎýǎñí òî óðÛǎéí ǎçîéîñǎßǎð òüí ǎéóéǎððí ǎéêßíçóçð.

Áí íéǎ ǎéǎóñǎðéêß Ýéǎñóç òüí XFree86 éǎ ǎéǎíÝíǎðǎé ìǎ òçí Ýéǎñóç áðòß, ðñÝðǎé íǎ ǎçîñǎñüéǎß òî ðñüǎñǎìǎ sysinstall(8) ǎéǎ òçí íÝǎ òÝóç éǎé íé ñǎçǎßǎð ǎǎéǎðÛóðǎóçð. Í ó÷ǎðééüð êñǎééǎð òðÛñ÷ǎé óóñí éǎðÛéñǎñ src/release/sysinstall óóñí -STABLE êññü ð óóñí éǎðÛéñǎñ src/usr.sbin/sysinstall óóñí -CURRENT êññü. ÓðǎéǎêñéíÝíǎ, òǎ ǎñ÷ǎßǎ dist.c, menus.c, éǎé config.c éǎ ÷ñǎéǎóðǎß íǎ ǎçîñǎñüéíý.

3.4.2 Áßóêîõ 2

Í ǎǎýðǎññð ǎßóêîõ ǎßíǎé áðßóçð áðîðÝéǎóíǎ òçð ǎíóîéßð make release éǎðÛ Ýíǎ ìǎǎÛéí ìÝññð. Áðòüð ì ǎßóêîõ ðǎñéÝ÷ǎé Ýíǎ “live filesystem” ðîõ ìðññǎß íǎ ÷ñçóêîîðîéçéǎß áðü òî sysinstall(8) ǎéǎ íǎ ǎñǎðǎóóíý ðññǎéßíǎðǎ óǎ íéǎ ǎǎéǎðÛóðǎóç òîõ FreeBSD. Êé áðòüð ì ǎßóêîõ ðñÝðǎé íǎ ǎßíǎé bootable. Éǎ ðñÝðǎé áðßóçð íǎ ðǎñéÝ÷ǎé Ýíǎ óóíðéǎóíÝñí ǎíóßǎñǎóñ òîõ CVS repository óóñí éǎðÛéñǎñ CVSROOT éǎé ǎßǎìǎðǎ áðü ǎðññééÛ ðññǎñÛñǎðǎ óóñí éǎðÛéñǎñ commerce.

3.4.3 Áßóêîõ 3 éǎé 4

Íé òðüéñéðîé ǎðí ǎßóêîõ ðǎñéÝ÷ǎéí ǎðéðññüéǎðǎ ðǎéÝóǎ éñǎéóíééý ǎéǎ òî FreeBSD. Óǎ ðǎéÝóǎ éǎ ðñÝðǎé íǎ ǎßíǎé ñǎǎñðîéçíÝíǎ, Ýðóé ðóðǎ êÛéǎ ðǎéÝðî íǎ ǎßíǎé óóñí ðǎéí ǎßóêî ìǎ üéǎ óǎ ðǎéÝóǎ áðü óǎ ñðíǎ ǎñǎñðÛóǎé ǎéǎ íǎ ǎǎéǎðǎóðǎéǎß éǎé íǎ òñÝíǎé. ðǎñéóóüðǎññð ðêçñîîññßǎð ǎéǎ òçí ǎçîéîñǎßǎ áðòðí òüí ǎßóêüí ǎíǎóÝññíóǎé óóñí Ûñèññ Ç ÎñãÛîùόç êǎñóçð òüí ðǎéÝòüí Éñǎéóíééý áðü Òñßðîðð (../releng-packages/article.html).

4 Áéǎññß òüí Áêäüüóàùí

4.1 ÁñðççñǎðçðÝð FTP

¼ðǎí ç Ýéǎñóç ǎßíǎé Ýóñéíç, Ý÷ǎé ǎñééíǎóðǎß ǎéðǎñðð, éǎé Ý÷ǎé ðǎéǎðǎñéóóǎß ǎéǎ ǎéǎññß, ì éýñéñð FTP ǎñðççñǎðçðð ðñÝðǎé íǎ ǎçîñǎñüéǎß. Íé áðßóçñéé ǎñðççñǎðçðÝð FTP òîõ FreeBSD ǎßíǎé üéñé mirrors ǎñüð éýñéñð ǎñðççñǎðçðð óóñí ñðíßí Ý÷ǎéí ðññóǎǎóç ìüñ Ûééñé FTP ǎñðççñǎðçðÝð. Áðòüð ì ǎñðççñǎðçðð ǎßíǎé ǎñüóüð ùð ftp-master. ¼ðǎí ç Ýéǎñóç ǎßíǎé Ýóñéíç, ðñÝðǎé íǎ ǎçîñǎñüéíý òǎ ðǎñǎéÛòü ǎñ÷ǎßǎ óóñí ftp-master:

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

Ιέα ἀδῆP web οἶθεῖἄἄ ὄτῳ ὀἶνεY ÷ ἄε ἄἄθεῖῶἄ ὁἄ ἄεÜῖῖῖῖῖ ὁçῖἄῖῖῖῖῖῖ FTP ῖἄῖῖῖῖῖῖῖ ἄῖἄ ὁçῖ ὁῖY ÷ ῖῖῖἄ Yῖῖῖῖῖ ὁῖῖ FreeBSD.

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

I éaðÜetäð äðü öñ òðìßì ìðññýí íá áßñòí äæéáoóóðÜóáèð ÌÝóù FTP, üðüð öñ Ý÷æ ðññäöìèÜóáè ç áföieP make release.

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

¼ëá ôá ðñĩĩãôããëùôôéóìÝíá ðáéÝôá ãéá ôçì ôñÝ÷ĩõóá Ýëäĩõç.

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

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

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

```

λέά όοίâîëêêP όοίôùîâóóç äéá ôîí êáoÜëîäî .../.../.../ports/i386/packages-X.Y-release.

```

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

Ôá áñ÷åßá ISO.

Άέα ᾄῃεϳϳουδᾱῇᾶ δῆçñïröîῇḂao ϳ÷ᾰðéēŬ îᾰ ðçí îᾱŬŭòøç ôüî mirror ᾗᾑᾱῇḂð FTP öîŭ FreeBSD, ᾄᾱᾱᾑᾑḂ ᾱᾱḂoᾰ öî Ŭṇṇṇ ÖðēŬ÷ŭîôᾰd Ýíᾱ FreeBSD mirror (/./hubs/).

[illegible]

4.2 Àáæéêþ Áíáðáñáũùãþ ôúi CD-ROM

Ἐὰ σοὶ δὲ ἔχνη ἐὰν ὀνόμαϊ: Ὅτι αἰτῶ ὅτι ἂν ὁ ISO ἀνὰ ἄλλου τοῦ FreeBSD ὅτι εἰς αὐτὴν τοῦ ἰδιωτῆρος ἵα εἰσέλθω ἵα αἰσθάνωμαι, ἕως ἡμέρας αἰτῶ ὅτι εἰς αὐτὴν ἵα ἰδιωτῆρος ἵα αἰσθάνωμαι.

5 Āăēôáóéìüôçôá

[illegible]

5.1 ĀçîēîōñāāĀ ĐñîóáñîîóíŸíuî Āéóēāôôpî Āēēβîçôçð.

ĐîēēŸð āāēāóáóôŪóāēð Ÿ÷îîí đîēýđēîēāð áđāēðPóāēð đîō ìđîñāā ìā ôç óāēñŪ òîōð íā áđāēôîŸí ôçî đñîóēPēç đāñēóóúðāñuî ðāçāpî P āñāāēāβuî ÷ñPóôç óôēð āēóēŸôðāð āāēāðŪóóáóçð. Ī “îðāēŪēēēîð” òñuđîð íā òî ēŪíāðā áðòu āβíāē íā ēŪíāðā òēð āēēāāŸð óāð óôîí ēāðŪēîāî đîō Ÿ÷āē āôîēîŪóāē ìāðŪ òî ôŸēîð ôçð ç āēāāēēāóāā make release:

- ĐāñŪóðā òā patches óāð P đñîóēŸóðā òā āđēðēŸíí āñ÷āā ìŸóā óôîí ēāðŪēîāî chroot ôçð Ÿēāîôçð.
- `rm ${CHROOTDIR}/usr/obj/usr/src/release/release.[59]`
- ìāðāēüððóðā đŪēē òî sysinstall(8), òî đðñPíā, P üđîēā Ūēēā đñîāñŪîāðā Ÿ÷îîí āđçñāāóðāā áđu òēð āēēāāŸð óāð.
- `chroot ${CHROOTDIR} ./mk floppies`

Īē íŸāð āēóēŸôðāð āāēāðŪóóáóçð ēā āçîēîōñāçēîŸí óôîí ēāðŪēîāî \${CHROOTDIR}/R/stage/floppies.

ĀíāēēāēðēēŪ, ìđîñāāðā íā ÷ñçóēîîđîēPóāðā òî make target boot.flp, P ìđîñāāðā íā òñŸíāðā áđāðēāāð òî script òî āçîēîōñāāā òā óðððPíāðā āñ÷āβuî src/release/scripts/doFS.sh.

Īđîñāāðā āðβôçð íā ēāñîβóðāð þóðā āēēŸð óāð āēēāāŸð íā đāñāóôîŸí ìā ìññðP patch óôçî Ÿēāîôç üðuð ēā òôēŪ÷îāðāē, āβñîðāð òēîP óôçî ìāðāāēçðP LOCAL_PATCH üðāí òñŸíāðā ôçî āîðîēP make release.

5.2 Đñîāñāîîāðβæîîóāð òî sysinstall

Ōî āñāāēāāî āāēāðŪóóáóçð ēāē ñŸēîēóçð òîō FreeBSD, òî sysinstall(8), ìđîñāā íā đñîāñāîîāðēóðāā āēā íā ēŪíāē đēî āŸēîēāð òēð áðòñîāðîđîēçîŸíāð āāēāðáóôŪóāēð òā đîēēŪ ìç÷āíPíāðā. Áðòu òî ÷āñāēðçñēóðēēu òîō đñîāñŪîîāðîð ìđîñāā íā ÷ñçóēîîđîēçēāā òā óðîāðóáðu ìā òî PXE[13] ôçð Intel āēā íā ìāēēîPóāē ç āāēāðŪóóáóçð áđu òî āβēððî, P òā óðîāðóáðu ìā đñîóáñîîóíŸíāð āēóēŸôðāð āēēβîçôçð ēē Ÿíā sysinstall script. íā đāñŪāāēāîā áđu òŸðîēî sysinstall script ìđîñāāðā íā āñāāðā òðî āñ÷āβuî src/release/sysinstall/install.cfg.

6 ìāēPíāðā òîō ĐPñāîā áđu ôçî êäîîç 4.4 òîō FreeBSD

Ç āēāāēēāóāā āðîēîāðāð òçð Ÿēāîôçð 4.4 òîō FreeBSD ìāēβîçðā āðβôçîā ôçî Īç ÁðāîŸóðîð 2001. ìāðŪ áđu áððP ôçî çîāññîçîā, üēāð ìē āēēāāŸð óôîí ēîñîü RELENG_4 òîō FreeBSD Ÿðñāðā íā Ÿ÷îîí Ÿāēñēóç áđu ôçî Release Engineering Team <re@FreeBSD.org>. Ç đñþðç āîēēîāðóðēēP Ÿēāîôç āēā ôçî āñ÷ēðāēðîîēēP x86 Ÿāēîā āēāēŸóēîç óôēð 16 ÁðāîŸóðîð, ēē āēîēîðēPēçēā áđu 4 āēüîā āîēēîāðóðēēŸð āēāüóāēð đîō ðāPāçóāí ôçî òāēēēP Ÿēāîôç óôēð 18 òîō ÓāððŸîāñç. Ī òðāŸēðñð áððŪēāēāð Ÿðāēîā ôçîāîðēēü ñuēî ēāðŪ ôçî āēŪñēāēā ôçð òāēāððāðāð āāñŪāāð ēāēðð ēŪðîēā đñîāēPíāðā áððŪēāēāð āñŸēçēāí òā đñîçāîŸîāîāð, āîēēîāðóðēēŸð āēāüóāēð. ÓðñîēēŪ, đŪîü áđu 500 email óðŪēēçēāí ôçî Release Engineering Team <re@FreeBSD.org> òā āēŪóðçîā ìēēñüðāñî áđu Ÿíā ìPíā.

Ç ēîēîüðçðā òùí ÷ñçóðpî ìāð Ÿēāîā óāðŸð üðē ç áððŪēāēā ēāē ç óðāēāñüðçðā ìēāð Ÿēāîôçð āāí ēŪ 'ðñāðā íā ēððēŪæāðāē āēā ēāíāüð āβāñð ðñîēāðîβāð P çîāññîçîāð đîō Ÿ÷îîí òāēāā óāí òðu÷îē áđu đñēí. Ōî FreeBSD Ÿ÷āē ìāāāēþóāē āñāîāðēēŪ ēāðŪ ôçî āēŪñēāēā ôçð æuðð òîō óāí óŸóóçîā, ēāē ç áíŪāēç āēā óðāēāñēîŸîç đîēēðēēP ēāē ðñāŸüñçç āēā ôçî āçîēîōñāāā íŸuî āēāüóāüí āβíāē đēŸíí óāíāñP đāñēóóúðāñî áđu đîōŸ. ÁððP ç áíŪāēç ēā āβíāē āēüîā đēî ôçîāîðēēP ēāēðð òî FreeBSD ēā āñ÷āāē íā ìāðāŸŸñāðāē òā íŸāð đēāðòüñîāð.

7 ÎáëïíîééÝò Êáóãðëýíóáèò

Ãßíáé æüðéèðò óçíáóßáð ïé ðñáéðééÝò éáé ç ïñÃÛîóç òçð ðéááééáóßáð äçíéíðñáð òùí Æêüüóàùí íáð íá óðíááßæíðí íá òçí óðíá÷ð ðóíáíùíáíç ÆÛóç òùí ÷ñçóðíí íáð. Ìá ÆÛóç áððð òç óéÝðç Æñááæüíáóðá ðéèçñÛ áéá íá ðáèíçñéðóíðíá òçí ðéááééáóßá ðáñááüðò òùí Æêüüóàùí òîõ FreeBSD.

- *ÐáñÛëèççç áèðÝéáóç* - ÌáñéèÛ ïÝñç òçð ïáðáæððððéóçð ïéáð ÆáéáðÛóðáóçð ïðñíýí íá Æñíðí “ðñéý ðáñÛëèçççá”. Õá ðéí ðñéèÛ áðü ðá óðÛáéá Æßíáé I/O intensive, ïðüðá ç ýðáñíç ðñéèðí ððçèðð-ðá÷-ýðçðáð Æßóèùí Æßíáé ðéí óçíáíðéèð áðü òçíí ÷ñðç ðñéèðí Æðáíñááóðíí áéá íá áðéðá÷ðñéáß èÛðüð ç ðéááééáóßá ðîõ make release. Áí ðéáóñíáðéèèß Æßóèíé ÷ñçóéíðñéççéýíí áéá ðíðíáðá òçð éáñáñ÷ð ðîõ chroot(2) ðáñéáÛëèíðò, ðüðá ðí CVS checkout òùí éáðáæüíáí ports éáé doc ïðñíáß íá Æßíáé ðáððü÷ñííá íá òçí áñðñèð make world ððñí Ûëèí Æßóèí. ×ñçóéíðñéèðíáð ïéá RAID éýóç (hardware ð software) ïðñíáß íá ïáèðóáé ÆñáóðéèÛ ðñí óðñéèè ÷ññí ðîõ ÷ñáèÛæáðáé íá ïáðáæüðððéóðáß ïéá ðèðñçð Ýéáñóç.
- *Ïáðáæððððéóç Æêüüóàùí áéá ðéáóñíáðééÝò áñ÷éðáèðñééÝò* - ÈÝéáðá íá ïáðáæüðððóáðá ïéá Ýéáñóç áéá IA-64 ð Alpha ðá èÛðñéíí x86 áðáíñááóðð? make TARGET=ia64 release.
- *ÄñéèÝð áéá èÛèç* - ×ñáéáæüíáóðá éáéýðáñá Æñááéáßá áéá áððüíáðí Ýéáá÷í ïñèüðçðáð ððñí FreeBSD.
- *Ãñááéáßá ÆáéáðÛóðáóçð* - Õñ ðñüññáñÛ íáð áéá òçí ÆáéáðÛóðáóç ðîõ FreeBSD Ý÷áé ïáðáñÛóáé ðññ ðñéèý ðññ áñáíáññí ÷ññí æüðð ðîõ. ÕðÛñ÷íðí ÆÛóñíáð ïñÛáð ðîõ ÆñáÛéíðáé áéá íá ðéíðñéèðóíðí èÛðñéíí Ûëèí, ðéí ïñðÝññí ïç÷áíéðü ÆáéáðÛóðáóçð. Ìéá áðü ðéð ðéí ððñó÷ñíáð, Æßíáé ç ïñÛáá libh[5] ðñí ððñ÷áéáé òçí ðéíðñéèçççç áñüð Ýñððñí, ïÝñ ðññðñð ðáéáðáñðóíáððñ éñáéóíééý éáé áñüð GUI ðññáñÛñáððñ ÆáéáðÛóðáóçð.

8 Æð÷áñéóðßáð

Èá ðéáéá íá Æð÷áñéóðßáð ðññ Jordan Hubbard, ðñí ïñ Ýäüóá òçí ððéáéñßá íá ðÛññ èÛðñéá áðü òçí Æðéýíç òçð Ýéáñóçð 4.4 ðñí FreeBSD, éáèð éáé áéá ïèç òçí ÆñéáéÛ ðñí Ý÷áé èÛñáé Æáð éáé ÷ññíéá áéá íá Æßíáé ðñí FreeBSD áððü ðñí Æßíáé óðñáñá. ÕðéèèÛ, ç Ýéáñóç Æáñ éá ðóáí ðñðÝ ðññáðñí íá ïññéèçññéáß ÷ññð ïèç òçí ó÷áðéèð ïá òçí Ýéáñóç ÆñéáéÛ ðñí Ýéáíáí ïé Satoshi Asami <asami@FreeBSD.org>, Steve Price <steve@FreeBSD.org>, Bruce A. Mah <bmah@FreeBSD.org>, Nik Clayton <nik@FreeBSD.org>, David O’Brien <obrien@FreeBSD.org>, Kris Kennaway <kris@FreeBSD.org>, John Baldwin <jhb@FreeBSD.org> éáé ïèíé ïé ððñéíéðñé ðñí áð÷ñéýíðáé ïá òçí áñÛððñí ðñí FreeBSD. ÈÝèü áðßóçð íá Æð÷áñéóðßáð ðñíðð Rodney Grimes <rgrimes@FreeBSD.org>, Poul-Henning Kamp <phk@FreeBSD.org>, éáé ïèñð ðñíð Ûëèíðð ðñí ÆñáÛóççáí áéá íá ððéÛññí ðá Æñááéáßá áéá ðéð Æêüüóáèð óðéð ðñððáð ïÝñáð òçð äçíéíðñáð ðñí FreeBSD. Áððü ðñ Ûñèñí Ý÷áé áðçñááóðáß áðü èáßíáíá ó÷áðéèèÛ ïá òçí ïñÃÛîóç òùí Æêüüóàùí áðü ðñ CSRG[14], òçí ïñÛáá ðñí NetBSD[11], éáé òçí ðññðáóç áéá ïéá ðéááééáóßá ïñÃÛîóçð òùí Æêüüóàùí ðñí John Baldwin[12].

9 ÁíáðñÝò

[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>)