

Ç ĩñãŨíùóç ôùí Âêäüóãùí ôĩõ FreeBSD

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\$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 áðĩñŨ óôçĩ ðñĩãðòĩéĩáóßá ðĩéĩðééðĩ äêäüóãùĩ òĩõ Êäéðĩðñäéçĩ Óðóðßĩáðĩð FreeBSD. Âĩçããß ĩã äãððñŨŨñáéá ôçĩ ĩãèĩãĩèĩãßá ðĩõ ÷ ñçóéĩĩðĩéãßðáé äéá ðéð äðßóçĩãð äêäüóãéð òĩõ FreeBSD éáé ðãñéãñŨöáé óá ãñãáéãßá ðĩõ äßĩáé äéáéŸóéĩá óá ùóĩðð áĩáéáóŸñĩóáé ĩá ðãñŨãĩðĩ ðãñãĩãðñĩðĩéçĩŸĩãð äêäüóãéð òĩõ FreeBSD äéá áóùðãñééð ð ãĩðĩñééð ÷ ñðóç éáé áĩŨððòĩç ðñĩũĩĩðùĩ.

Ðßĩáéãð Ðãñéã ÷ ĩŨŸĩùĩ

1 Áéóáãũãð	1
2 Ç Äéãäééãóßá Äçĩéĩðñãßáð ĩéãð çãĩóçð	2
3 ĩãóããèððéóç ôçò çãĩóçð	5
4 Äéãñð òùĩ Âêäüóãùĩ	8
5 Âðãéðãóéĩũòçóá	9
6 ĩãèßĩáðá ðĩõ Ððñãĩã áðũ ôçĩ çãĩóç 4.4 òĩõ FreeBSD	10
7 ĩãèñĩóééŸð ÊãðãðéŸĩóáéð	10
8 Âð ÷ ãñéóóßáð	11
9 ÁĩãðñŨŸð	11

1 Áéóáãũãð

Ç áĩŨððòĩç òĩõ FreeBSD äßĩáé ĩéá ðĩéŸ áñé ÷ ðð äéãäééãóßá. Õĩ FreeBSD áðĩðãéãßðáé áðũ óóĩãéóóñŨŸð ÷ éééŨãũĩ áĩèñðùĩ áðũ ùéĩ òĩĩ èũóĩĩ. Ç ñŨãá òĩõ FreeBSD ðãñŸ ÷ äé ðñũóãáóç ĩŸóũ áĩðĩðĩð CVS[1] óá ùéĩðð, Ÿðóé þóðã ĩá ĩðĩñãß ùðĩéĩð èŸéãé ĩá äãé ĩçĩŸĩáðá log, äéãðñŨŸð (patches) ðĩõ Ÿ ÷ ĩðĩ óá äéŨðñĩãä development branches, éáé Ũèãá ÷ ãñãáðçñéóóééŨ ðĩõ äĩçèĩŸĩ ôçĩ áĩŨððòĩç, óá ĩðĩßá ðñĩéŸððĩðĩ áðũ ôçĩ ÷ ñðóç áĩũð áðððçñĩŸ óðóðßĩáðĩð äéá ÷ ãßñéóçð èðãééá. Áðòù áðĩðŸéãóá éáé òĩĩ ðéĩ óçĩáĩóéèũ ðãñŨãĩðá Ÿéĩçð äéá Ÿĩá ĩããŨéĩ ãñéèũ áðũ óáéáĩðĩŸ ÷ ĩðð ðñĩãñãĩãðéóóŸð áðũ ùéĩ òĩĩ èũóĩĩ óóĩ FreeBSD. Âßĩáé ðñĩðãĩŸð, áŸãáéá, ðùð ðĩéŸ óŸĩðñĩá éã äß ÷ ã ãßĩáé áĩðãèð ÷ áĩðééð ç éãðŨðóáóç áĩ äß ÷ áĩ ùéĩé, áðũ ùéĩ òĩĩ èũóĩĩ, ðñũóãáóç ĩá ãñŨðĩðĩ óóĩ èðãééá. Äé’ áðòù, ĩũĩ ĩéá “ãðééããĩŸĩç” ñŨãá áðũ ðãñßðĩð 300 Ũðñĩá Ÿ ÷ ĩðĩ ðñũóãáóç ĩá ãñŨðĩðĩ óóĩ CVS repository. Áðòĩß ĩé committers[6] äßĩáé ððãŸéðñĩé äéá òĩ ĩããáéŸðãñĩ ĩŸñĩð ôçò áĩŨððòĩçðð ðĩõ äßĩãðáé óóĩ FreeBSD. ĩéá

[illegible]

Ίε οά÷ýðάοίε ñðείηβ άίŨððòñçò òιò FreeBSD άάί άòßñíò έάέ ðίεý ÷ ññíí άέά òι ίάέάέŨñέóíá òιò óðóðßíáðιò άίŨððòñçò óά ίέά Ύέαιòç ίά ðίεúðçòά ðιò ίά άίβæάέ ίά ÷ ñçóέíιðίέάßðάέ άòñŨýð. Άέά ίά έðέάß áðòι òι άβέέçíá, ç άίŨððòñç άßíáðάέ ááðòι÷ ñííá óά άòι ðάνŨέέçέά ίιíðŨóέά. Ί έýñέιð έίñιιιð άίŨððòñçò άßίάέ ι **HEAD** ð **trunk** óðι CVS repository ίάð, άíιúóðιð έάέ ùð “FreeBSD-CURRENT”, ð “-CURRENT” άί óðίòñßά.

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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 Ðiéúôçðóáð ôiô FreeBSD (<http://lists.FreeBSD.org/mailman/listinfo/freebsd-qa>), ç iðiá ðáñÝ÷áé Ýiá öüñiô iáéá 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. Ἀóòίß íé çíñíñß áçίείññáñýíóáε εßáí ðñßí òðεá÷ðáß ç ðáέέεß Ἰέαίòç. Ἰáð ðçí áíáείßñύòç ðçð Ἰέαίòçð, íυñ ðίεý ççίáíóéeἸ ðεεάἸ ðεé ðñíòεÞεáð ó÷áòéeἸ ìá ðçí áóóἸεάéá áßñίíóáé ðóñ çíñíñ ðçð Ἰέαίòçð. Ἀέυòð áðυ ðçí áñíáóυðçðá áíááἸείεòçð íἸóυ CVS, áέðáεἸóείá patchkits òðεἸ ÷ ñίíóáé áεá íá ðίñíñý íá áíáááείßóίòí ðá ðóððÞíáðἸ ðíðð υóίε ÷ ñçòçείñðίείρýí ðéð áεáυóáéð *RELENG_X_Y*.

Οι ΌιΠια 2 αϊααβ ια εαδδδνΥναεαδ οα αεΰοινα οδΰαεα οςδ αεααεεαοβαδ διο ανβδεαδαε δβου αδυ εΰεα Υεαϊος, ιΥ ÷νε εαε οα αβιαοα διο ιααϊαϊ οδς ιαοααεβοδδεος διο οοοδβιαοιδ εαε οι ΌιΠια 3 αϊααβ οςι βαεα ος αεααεεαοβα οςδ ιαοααεβοδδεοδ. Οι ΌιΠια 5 δανεανΰοαε δυο ιδινιβ ια αδαεοαεαβ οι ααοεευ ογοςδια αδυ ονβδιοδ εαε οι ΌιΠια 6 δανεανΰοαε εΰδιοεα αδυ οα δνΰααοα διο ιΰεαα ιαδυ οςι αεααεεαοβα Υεαϊοδ διο FreeBSD 4.4. ΟΥεϊδ, οι ΌιΠια 7 δανιροεΰαε εΰδιοεαο αδυ οεδ εαοαδευιραεδ διο εΥεϊοα ια δΰναε ς αΓΰδδοις οοι ιΥεεϊ.

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 όόάγέόσισό έέάυόάίς όις FreeBSD όόΎέίάέ Ύίá άσΰίá όόέό έβόόá όυί όσισάσάέόέόόίς έέά ίá όόάέέόίβáέ όόίςό όσισάσάέόέόόΎό υόέ Ύ÷ίς 15 ιΎσάό έάέσυ ίá έΰσισό υόέάό άέέάΎό έΎέίς, όσεί όί δΰάυίá όις έβáέά. ΊΎόά όá άόόυ όις έάέσυ, όέέέίβ όσισάσάέόέόόΎό έΰσισό ίέά όάέσΰ άδύ άέέάΎό όις Ύ÷ίς ίáβίáέ όέΎίς άίυόόΎό υό “ίáέάέάσβίάόά MFC”. Ί υίόίς MFC όςίáβίáέ “Merge From CURRENT” έάέ όάέέάσΰάέ όςί έέάέέέάόβá 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 áĩāĩāĩüiāĩç çĩāññĩçĩā Ÿēāiōçð, ĩ ēpāēēāð òĩō repository áēóŸñ÷āðāē óā iēā ðāñbĩrāi “ēāēðóóŸñçóçð”. ĒāðŪ òç äēŪñēāēā áðððð òçð ðāñēüāið, 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 ðāñbĩrāi ðĩō āēāñēāb 15 çĩŸñāð ābĩāē:

- Äēĩñēpóāēð āĩüóðĩ ðñiāēçĩŪðüĩ.
- Äĩçĩāñpóāēð óðçĩ ðāēiçñbùóç.
- ÄēēāāŸð ó÷āðēēŸð iā òçĩ áóðŪēāēā.
- ĨēēñŸð äēēāāŸð óðĩið ïāçāĩŸð óðóēāðĩ, üðũð ð÷. ç ðñiōēðēç òüĩ IDs iŸüĩ óðóēāðĩ.
- Ĩðrēāābðĩōā Ūēēç äēēāāb ðēóðāŸāē ç ñŪāā áĩŪððōĩçð üðē ðñŸðāē iā ābĩāē, iā òĩ áĩāĩāĩüiāĩ ðŪiōā ñbóēĩ.

ĨāðŪ òēð ðñpóāð 15 ĩŸñāð ēāēðóóŸñçóçð, òðēŪ÷iāðāē iēā āiēēiāóóēēp Ÿēāiōç āēā iā ÷ñçóēĩðĩēçēāb óāĩ āiēēið òçð ðāēēēpð Ÿēāiōçð ēāē ĩ ēpāēēāð áēóŸñ÷āðāē óā iēā ðāñbĩrāi “ðāāpĩāðĩð”. ðēŸĩ ābĩāē ðrēŸ ðēĩ āŸóērēĩ iā ābĩiōĩ iŸāð äēēāāŸð óðĩ óŸóðçĩā, āēðũð ēē áĩ äēĩñēpñĩĩ ēŪðĩēĩ ðrēŸ òĩāāñi bugp ēŪðĩēĩ ðñüāēçĩā áóðŪēāēāð. ĒāðŪ 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 āðēēiēĩüĩbā ĩā 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 Ğāiōçð

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

2.2.1 Äçĩēĩñābā òĩō ēĩñiŸ Ğāiōçð

Ÿðũð ðāñēāñŪøāĩ òççĩ áēóāāüāp, ĩē ēĩñiñb RELENG_x_y ābĩāē iēā ó÷āðēēŪ iŸā ðñiōēðēç òççĩ ĩāēĩrēĩābā òüĩ āēāüóāpĩ iāð. Ōĩ ðñpðĩ āpĩā òççĩ äçĩēĩñābā áððĩŸ òĩō ēĩñiŸ ābĩāē iā āāāāēüēābðā üðē āĩōēāŸāðā ĩā 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 äçĩēĩñābāðāðā iēā āðēēŸðā (tag) óðĩ òçĩābĩ āēēbĩçóçð òĩō ēĩñiŸ, pððā iā ĩðĩñābðā iā āābðā òēð āēāöĩñŸð ĩā òçĩ āñ÷p òĩō ēĩñiŸ āŸērēā óðĩ ĩŸēēĩ ĩā òĩ CVS:

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

Ēāē òüðā ĩðĩñābðā iā äçĩēĩñābāðāðā òĩ iŸĩ ēĩñiũ ĩā:

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

ΌçιαΒυθός: *Íé āōééYōāō RELENG_* āβιάέ āāōíāōīYíāō āéá ÷ñΠόç āđū ōīōō CVS-meisters éáé ōçí ñŪāā ōūí āēāūōāūí.*

Ἰ uniõ “*ἀόεεΥόα*” ἀβίαέ ι̃ι̃ι̃ι̃ε̃α̃β̃α̃ ο̃ι̃ο̃ CVS. Ὁ̃ϋ̃α̃β̃ι̃α̃έ̃ Ὑ̃ι̃α̃ ũm̃ã ο̃ι̃ο̃ ε̃α̃ε̃ι̃ñβ̃α̃ε̃ ι̃ε̃α̃ ο̃α̃ε̃α̃ε̃ñε̃ι̃Ὑ̃ι̃ϋ̃ Ὑ̃ε̃ãĩõς ο̃ι̃ο̃ ε̃p̃ãẽẽã ο̃õĩ ÷ ñũĩĩ. × ñϋ̃õẽĩĩõĩẽp̃ĩõãõ ἀο̃ε̃ε̃Υ̃õãõ ο̃õĩĩ δ̃ϋ̃ããb̃ĩ ε̃p̃ãẽẽã ãr̃ϋ̃ẽŨĩã ũõĩẽĩĩ õõẽŨĩãẽ ο̃õĩ ĩὙ̃ẽẽĩĩ ãẽãũõãẽd ο̃ĩõ FreeBSD ĩã ãñβ̃õẽãẽ ε̃ãẽ ĩã ÷ ñϋ̃õẽĩĩõĩẽãb̃ ãẽñẽãp̃õ õĩĩ β̃ãẽĩ ε̃p̃ãẽẽã ο̃ĩõ ÷ ñϋ̃õẽĩĩõĩẽp̃ẽϋ̃ẽã ãẽã õẽd ãδ̃β̃õϋ̃ĩãd ãẽãũõãẽd ο̃ϋ̃õ ḥ̃Ũããd ο̃ĩõ FreeBSD.

2.2.2 ÁóîÛííîáò ôíí Áñéèü êäïóçò

Ἐνῆι ἰθαῖ ἡ ἀοέεΥόα, ἰαοάαεουοοεοοάβ ἑαῖ ἀοιείαοοάβ ἡ οάεεῆβ Υἑαῖορ, ὃνΥῖαῖ ἰά ἀβῖῖοῖ ἀεῖάαΥὸ οοά ὃαῖάεῆῆου
 ἂν÷ἂβἂ ἑάἑ ἰά ὃαῖεΥ÷ῖοῖ ὀῖῖ οὐοῆῆ ἂῖεῆῆῆ Υἑαῖορὸ ἑάἑ ὀῖ 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 ðēçñīöíñßāð öðÜñ÷íöí öóí āñ÷āßí
src/release/sysinstall/dist.c.

Áōiŷ iēēēçñùēāß ç ðñīāōiēiāóāß òçð iŷáð āðßóçìçð Ýēāiōçð, ðñÝðāē íá áíçìāñþóāðā iāñēēŪ āñ÷āßā āēá íá áíçìāñþóāðā òiī ēüōiī āēá òç iŷá 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 òāēēēß Ýēāiōç āßiāē Ýōiēiç, ç ðāñāēŪðū āíōiēß 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 Ōāēiçñßuòçð ēāē òuì Ports āßiāē āðōiß ðiō ðñÝðāē íá āçìēiōñāþóiōi òēð āðēēÝðāð `RELEASE_4_8_0` óā ēāðŪēēçēā āŷiōñā ðçāāßiō ēþāēēā.

İāñēēÝð òñÝð, ìðñāß íá ÷ñāēáðōāß íá āßiōi ēŪðñēāð āēēāāÝð òāēāðōāßā óðēāiß *iaôŪ* òçí òiðñēÝðçðç òuì āðēēāðī. ĀāíēēŪ, āāi āßiāē āŷōēiēi íá āßiāē ēŪðē òÝōiēi āōiŷ òi CVS āðēōñÝðāē íá iāðāēēiþóāē ēŪðñēið òēð āðēēÝðāð iā āíōiēÝð ùðð ò `cvs tag -d tagname filename`. Āßiāē ðñēŷ óçìāíðēēü ùiðð āððÝð iē āēēāāÝð òçð òāēāðōāßāð óðēāiþð íá óçìāēüēiŷi iā òēð óuóðÝð āðēēÝðāð āēá òçí óðāēāñēiŷiç Ýēāiōç. İē āðßóçìāð āēāuóāēð òiō FreeBSD ðñÝðāē íá āßiāē ðŪíðā āŷēiēi íá āíāðāñā÷ēiŷi. ŌiðēēÝð āēēāāÝð óōi ðāñēāŪēēēi òiō iç÷āíēiŷi òuì āēāuóāuī āāi āðēōñÝðñiðāē.

3 İāðāāēþðōēóç òçð ēāiōçð

İē “āēāuóāēð” òiō FreeBSD ìðñiŷi íá iāðāāēüððēóðiŷi āðü iðñēiñāþðiðā Ý÷āē Ýíá ó÷āðēēŪ āñþāñi iç÷Ūiçìā ēāē ðñüóāáç óōi repository òiō ðçāāßiō ēþāēēā. (¼ēiē Ý÷iōi āððß òç āðñāðüðçðā, āōiŷ ðāñÝ÷iōiā ðñüóāáç iŷóu āiþiðñiō CVS! Āāßðā òi Āā÷āēñßāēi òiō FreeBSD āēā ðāñēóóüðāñāð ēāððñÝñāēāð.) Ç iüiç āēāēēß āðāßðççç āßiāē íá ððŪñ÷āē ððñiððñēiç óōiī ððñþíā óāð āēá òçí óððēāðß `vn(4)`. (Óōi `-CURRENT`, āððß ç óððēāðß Ý÷āē āíðēēāðāóāēāß āðü òçí iŷá óððēāðß āßóēið āāóēōiŷiñ òā iþiç `md(4)`.) Áí ç óððēāðß āāi āßiāē āíōüiāðüiŷiç óōiī ððñþíā óāð, òüðā i ēāðŪēēçēið iāçāuð ēā òñðüñēāß āððüiāðā üðāí āēðāēāðōāß ç āíðñēß `vnconfig(8)` ēāðŪ òç āēŪñēāēā òçð òŪçðð òiðñēiāóßāð òiō iŷóið āēēßiççð. ¼ēā ðā āñāāēāßā ðiō ÷ñāēŪāēñiðāē āēá íá iāðāāēüððßóāðā iēā Ýēāiōç āßiāē āēāēÝðēiā óā iññðß ðçāāßiō ēþāēēā óōiī ēāðŪēēēi `src/release`. ĀððŪ ðā āñāāēāßā Ý÷iōi ùð óēiðü íá ðāñÝ÷iōi üðē ÷ñāēŪāēðāē āēá íá ÷ðßāēñiðāē iē āēāuóāēð òiō FreeBSD iā Ýíá óññāðß ēāē óðāēāñēiŷiñ òñüðñi. İēā ðēþñçð Ýēāiōç ìðñāß íá iāðāāēüððēóðāß ÷ñçōēiñðñēiþiðāð āððŪ ðā āñāāēāßā iā iēā ēāē iüñi āíðñēß, óðñāñēēāiāññÝiçð ēāē òçð āçìēiōñāßāð āíüð ISO āñ÷āßið ēāðŪēēçēi āēá íá ēāāß óā CDROM, iē āēóēÝððāð āēēßiççð, ēāēþð ēāē i ēāðŪēēçēið āāēāðŪóðāçð iŷóu FTP. Āððß ç āíðñēß āßiāē òððēēß ç `make release`.

3.1 Ç āíðñēß `make release`

Āēā íá iāðāāēüððßóāðā āðēð÷þð iēā Ýēāiōç, ðñÝðāē ðñþðā íá ððŪñ÷iōi ðā ēāðŪēēçēā āñ÷āßā iŷóā óōiī ēāðŪēēēi `/usr/obj`. İðñāßðā íá ðā āçìēiōñāþóāðā āßðā iā òçí āíðñēß `make world` þ āðēŪ `make buildworld`. Āēā íá

ðáðý÷-áé áðßóçð ç ðáðááêðððéóç òçð Ýêáîóçð ðñÝðáé íá áððáðá ðéð éáðÛêêçðð ðéíÝð éáé ðá ðÛðéáð ðáðááêçðÝð:

- CHROOTDIR - Ì éáðÛêéáðð ðîõ éá ÷ ñçóéíððéççéáß ðáí ðáñéáÛêéí chroot áéá üêç òçí ðáðááêðððéóç òçð Ýêáîóçð.
- BUILDNAME - Õî üñíá òçð Ýêáîóçð ðîõ éá ðáðááêçðððððáðá.
- CVSROOT - Ì éáðÛêéáðð ððñí ððßí ãñßðéáððé ðî CVS repository.
- RELEASETAG - Ç áðééÝðá CVS ðîõ áíðéóððé÷÷ áß ðóçí Ýêáîóç òçí ððßá ðÝéáðá íá ðáðááêçðððððáðá.

Áí ááí Ý÷-áðá ðáç ðñüóááóç ðá ðÛðéí ðððéü CVS repository íá ðñí êðáééá ðîõ FreeBSD, ððñáðá ðÛðá íá ððéÛáðá ðí áéüü óáð ðððéü CVS mirror íá ðñ CVSsup (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, ðñ ððßí ððñáðá íá ÷ ñçóéíððéççéáß áéá íá áíðéáñÛððá ðñ CVS repository ðîõ FreeBSD ððí áéüü óáð ðððéü mirror.

Áí ðáñááêçððá òçí áðééÝðá RELEASETAG, ðððá éá ðáðááêçðððððáß íéá ðêðñçð Ýêáîóç áðü òçí êñððð ðîõ HEAD (áç. ðîõ -CURRENT) êññíý. Ìé áêüüóáðð ðîõ ððéÛ÷-ñíðáé áðü áððñí ðñí êññíü, ððíðèðð áíáðÝññíðáé ðáí “-CURRENT snapshots”.

ÕðÛñ÷-ðñí éáé ððééÝð Ûêéáð ðáðááêçðÝð ðîõ ððñíý íá ÷ ñçóéíððéççéíý áéá íá ðáñááðñíððéççéáðá òçí Ýêáîóç óáð. Ìé ðéí ððééÝð áðü áððÝð ðéð ðáðááêçðÝð ðáñéáñÛðñíðáé ðóçí êññððð ðîõ áñ÷-áßíð src/release/Makefile. Ç áêñéáðð áíððð ðîõ ÷ ñçóéíððéççéáß áéá íá ððéá÷-ðáß ç áðßóçç 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
```

Õñ Makefile ðîõ ÷ ñçóéíððéççéáß áéá íá ðáðááêçðððððáñíðáé ðé áêüüóáðð ððñáß íá ÷ ðñéóðáß ðá áñéáðÛ ðá÷-ðñéóðÛ ðáðáíý ðîðð áðñáðá.

- Äçðéððñáß áñüð éáéáñíý ðáñéáÛêéíððð ðá íéá ðá÷-ðñéóðð éáñáñ÷-ßá éáðáéüüí íá òçí áíððð “make installworld”.
- Áñáñáð áðü ðñ CVS íéáð éáéñýñéáð Ýêáîóçð ðñð ðçááßíð êðáééá ðñð ðððððáðáðð, òçð ðáêñññüóçð éáé ðñí ports ðÝðá ðóçí éáñáñ÷-ßá éáðáéüüí ðáðááêçððððéóçð òçð Ýêáîóçð.
- Ñðéíððáðð ðñí áñ÷-áßí ððñí éáðÛêéí /etc éáé /dev ðÝðá ððí ðáñéáÛêéí chroot.
- ÁêðÝéáóç òçð áíðððð chroot ðÝðá ðóçí éáñáñ÷-ßá éáðáéüüí ðîõ áðéíÛððçéá, áéá íá ðçí ððñáß ðñ áñððáñéü ðáñéáÛêéí íá áðçñáÛðáé òç ðáðááêçðððéóçð òçð Ýêáîóçð.
- ÁêðÝéáóç òçð áíðððð make world ðÝðá ððí ðáñéáÛêéí chroot.
- ðáðááêçðððéóç ðñí áêðáéÝóéíð ðîõ áßíáé ò÷-áðééÛ íá ðñ ðýóóçíá Kerberos.
- ðáðááêçðððéóç ðñð ððñðá GENERIC.
- Äçðéððñáß áñüð ðáéééíý éáðáéüüí ððñí ððßí éá ðáðááêçðððððíý éáé éá áððéççéáððéíý ðé áêðáéÝóéíð ðñðÝð ðñí ðáéééðí ðáéÝðð.
- ðáðááêçðððéóç éáé ááéáðÛððáóç ðñí áñááéáßí ðñð ÷ ðáéÛáñíðáé áéá òçí ðññáðéíáðá òçð Ýêáîóçð éáé òç ðáðáðñíðð òçð ðáêñññüóçð áðü ðñí ðçááßíð êðáééá (SGML) ðá html éáé áñ÷-áßá éáéíÝñð ðñð éá ððñááýðñí òçí Ýêáîóçð.
- ðáðáðñíðð éáé ááéáðÛððáóç òçð ðáêñññüóçð (áá÷-áéñßáéá ÷ ððððç, áéóáñüáééÛ éáßíáíá, òçíáêðáðð Ýêáîóçð, êßððá ððñááðððçðáðð ðéééíý, êêð.)

- Îāóāāēpôôéóc òuĩ “ôõĩðēáõĩŸĩũĩ” (crunched) āēôāēŸóēĩũĩ ðĩō ēā ÷ ñçóēĩĩðĩēçēĩŸĩ óôēð 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 óççĩŸĩā óõĩ óŸóççĩŸ óāð òũũĩ òĩ ðāñēāŪēēĩ XFree86 Ÿũĩ 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 ēāðŪēēĩ `XF86336` óõĩ ìŸóĩ 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 āçĩēĩŸñāçóā 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 ñòēĩbóāēð Ÿ÷āðā ēŪĩāē. Āēā ðāñŪāāēāĩā, āāĩ ābĩāē ēāēp ēāŸā ìā āēāĩŸĩāðā āēðāēŸóēĩā ðĩō Ÿ÷ĩōĩ ìāóāāēũðôéóðāb óā ēŪðĩēĩ óðāēāēñēĩŸĩĩ óŸóççĩā 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 ēāēŸðĩðĩā āāp. ìā ìā÷ũñēóðũ Ūñēñĩ, ìā ðbôēĩ Ç ÎñāŪtūóc ēāĩóçð 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 ĀĩŪðððĩçð òĩō FreeBSD āðĩŪóēóā 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 ǎßóêîõ, êé Ýíǎ ǎñ÷ǎßí CDROM.INF ðîõ ðǎñéÝ÷ǎé ìǎðǎ-ðêçñîîññßǎð ǎéǎ íǎ ìðññǎß òî ðñüǎñǎìǎ sysinstall(8) íǎ ǎéÝǎñǎé êǎé íǎ ÷ñçóêîîðîéßóǎé áðòü òî ǎßóêî, êǎêð òé Ýíǎ ǎñ÷ǎßí filename.txt ðîõ ðǎñÝ÷ǎé ìéǎ êßóðǎ ǎñ÷ǎßüí òîõ CDROM. Áðòß ç êßóðǎ ìðññǎß íǎ ǎçìéîñǎçêǎß ðîéý áðêÛ, ùð ǎñßð:

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

Îé óðǎéǎêñéíÝíǎð áðǎéòßóǎéð ǎéǎ êÛêǎ Ýíǎ áðü áðòÛ òǎ CD ðǎñéǎñÛîîíóǎé ðǎñǎéÛòü:

3.4.1 Áßóêîõ 1

Î ðñðòîð ǎßóêîõ ǎßíǎé ó÷ǎǎüí áðîééǎéóóéêÛ áðîðÝéǎóíǎ òçð ǎíóîéßð make release. Îé ìüíǎð ǎééǎǎÝð ðîõ ðñÝðǎé íǎ ǎßñîí óóñí êǎðÛéñǎñ disc1 ǎßíǎé ç ðññíóèßê ðîõ êǎðÛéñǎñ tools, òüí XFree86, êǎé üóí òî ǎóíǎóüí ðǎñéóóüðǎññí ðǎéÝòüí ìðññíý íǎ ÷ñÝóíóí óóí ǎßóêî. Î êǎðÛéñǎñ tools ðǎñéÝ÷ǎé ǎñǎǎéǎßǎ ðîõ áðéòñÝðîí óǎ ÷ñßóðǎð Ûéèüí êǎéòîñǎéêñí óðóðçíÛòüí íǎ óðéÛñîí óéð ǎéóéÝððǎð ǎéêßíçóçð. Áðòüð ì ðñðòîð ǎßóêîõ ðñÝðǎé íǎ óðéÛ÷ǎéǎé bootable Ýðóé ðóðǎ íǎ ìðññíý íé ÷ñßóðǎð òüí ìüðÝññüí ððîéñǎéóðñí íǎ áðîðǎýǎñí òî óðÛǎéí ǎçìéîñǎßǎð òüí ǎéóéǎððñí ǎéêßíçóçð.

Áí ìéǎ ǎéǎóñǎðéêß Ýéǎñóç òüí XFree86 êǎ ǎéǎíÝíǎðǎé ìǎ òçí Ýéǎñóç áðòß, ðñÝðǎé íǎ ǎçìǎññèǎß òî ðñüǎñǎìǎ sysinstall(8) ǎéǎ òçí íÝǎ òÝóç êǎé íé ñǎçǎßǎð ǎǎéǎðÛóðǎóçð. Î ó÷ǎðéèüð êñǎééǎð òðÛñ÷ǎé óóñí êǎðÛéñǎñ src/release/sysinstall óóñí -STABLE êññüß ð óóñí êǎðÛéñǎñ src/usr.sbin/sysinstall óóñí -CURRENT êññüß. ÓðǎéǎêñéíÝíǎ, òǎ ǎñ÷ǎßǎ dist.c, menus.c, êǎé config.c êǎ ÷ñǎéǎóðǎß íǎ ǎçìǎññèýíý.

3.4.2 Áßóêîõ 2

Î ǎǎýðǎññð ǎßóêîõ ǎßíǎé áðßóçð áðîðÝéǎóíǎ òçð ǎíóîéßð make release êǎðÛ Ýíǎ ìǎǎÛéí ìÝññð. Áðòüð ì ǎßóêîõ ðǎñéÝ÷ǎé Ýíǎ “live filesystem” ðîõ ìðññǎß íǎ ÷ñçóêîîðîéçêǎß áðü òî sysinstall(8) ǎéǎ íǎ ǎñǎðǎóóíýí ðññǎéßíǎðǎ óǎ ìéǎ ǎǎéǎðÛóðǎóç òîõ FreeBSD. Êé áðòüð ì ǎßóêîõ ðñÝðǎé íǎ ǎßíǎé bootable. Êǎ ðñÝðǎé áðßóçð íǎ ðǎñéÝ÷ǎé Ýíǎ óóíðéǎóíÝñí ǎíóßǎñǎóñ òîõ CVS repository óóñí êǎðÛéñǎñ CVSROOT êǎé ǎßǎìǎðǎ áðü ǎðññéêÛ ðññǎñÛñǎðǎ óóñí êǎðÛéñǎñ commerce.

3.4.3 Áßóêîõ 3 êǎé 4

Îé ððüéñéðîé ǎðí ǎßóêîõ ðǎñéÝ÷ǎéí ððéðññüéǎðǎ ðǎéÝóǎ éñǎéóíééý ǎéǎ òî FreeBSD. Óǎ ðǎéÝóǎ êǎ ðñÝðǎé íǎ ǎßíǎé ñǎǎñðîéçíÝíǎ, Ýðóé ðóðǎ êÛêǎ ðǎéÝòí íǎ ǎßíǎé óóñí ðǎéí ǎßóêî ìǎ üéǎ óǎ ðǎéÝóǎ áðü óǎ ñðíßǎ ǎñǎñðÛóǎé ǎéǎ íǎ ǎǎéǎðǎóðǎéǎß êǎé íǎ ðñÝíǎé. ðǎñéóóüðǎññð ðêçñîîññßǎð ǎéǎ òçí ǎçìéîñǎßǎ áðòñí òüí ǎßóêüí ǎíǎóÝññíóǎé óóñí Ûñèññ Ç ÎñǎÛîùόç êǎñóçð òüí ðǎéÝòüí Éñǎéóíééý áðü Òñßðîðð (../releng-packages/article.html).

4 Áéǎññß òüí Áêäüüóàùí

4.1 ÁñððçñǎðçðÝð FTP

¼ðǎí ç Ýéǎñóç ǎßíǎé Ýóíéíç, Ý÷ǎé ǎñééíǎóðǎß ǎéðǎñðð, êǎé Ý÷ǎé ðǎéǎðǎñéóðǎß ǎéǎ ǎéǎññß, ì éýñéñð FTP ǎñððçñǎðçðð ðñÝðǎé íǎ ǎçìǎññèǎß. Îé áðßóçñéé ǎñððçñǎðçðÝð FTP òîõ FreeBSD ǎßíǎé üéñé mirrors ǎñüð éýñéñð ǎñððçñǎðçðð óóñí ñðíßí Ý÷ǎéí ðññóǎǎóç ìüñ Ûééñé FTP ǎñððçñǎðçðÝð. Áðòüð ì ǎñððçñǎðçðð ǎßíǎé ǎñüðüð ùð ftp-master. ¼ðǎí ç Ýéǎñóç ǎßíǎé Ýóíéíç, ðñÝðǎé íǎ ǎçìǎññèýíý òǎ ðǎñǎéÛòü ǎñ÷ǎßǎ óóñí ftp-master:

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

Ἰέα ἀδὲP web οἶθεBάα θῖτο δᾱνέY ÷ ᾰε ᾱἄβεθᾱο ὁᾱ ᾷεÜöñῖτόδ οçῐᾱíðéēýð FTP ἐἀόᾱëüāῖτόδ ᾱέα ôçῐ ὀñY ÷ ῖῥῶᾱ Yéäiíoç öῖto FreeBSD.

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

I éadóUeräno ádu öiri rðirBi iðinryí íá áBrrðí ääéáoáóóÜöáéó iYóu FTP, üðuo öiri Y÷äé ðnriáoieiÜöáé ç áfóieP make release.

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

¼ëá ôá ðññîáôáãëùôôéóìÝíá ðáéÝôá ãéá ôçí ôñÝ÷ïôá Ýëäïç.

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

Îéá óõïâîëëêP óõïôùîâõóç ãéá ôîí êáôÛëîãî .../.../.../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 ᾄναε6ουδᾶνᾷ δεçñïröĩnḂao ó÷âðéēŬ ïä ôçĩ īñāŬfùôç ôũĩ mirror äéáñḂò FTP öĩø FreeBSD, ᾄñáéäëþ äåßôå öĩ Ũñēñ ÖðeŬ÷fīřôäd Ýíá FreeBSD mirror (/./hubs/).

[illegible]

4.2 Àíáðáñáũùã òúi CD-ROM

Ἐὰ σοὶ δὲ ἔχνη ἐὰν ὀρίηται: Ὅτι αἰτῶ ὅτι ἂν ἴσῃς ὅτι ISO ἂν ÷ ἂν ὅτι FreeBSD ὁ ἔῤῥωθι ὅτι ἰδιῶτα ἰὰ ἔῤῥωθι ἰαἰῶτα ἰαἰῶτα ἰαἰῶτα ἰαἰῶτα, ἔὰ ἰῤῥωθι ἰαἰῶτα ÷ ὅτι ἰδιῶτα ἰαἰῶτα ἰαἰῶτα ἰαἰῶτα.

5 Åăăêôáóéìüôçôá

Δάνυετ θῖο οἱ FreeBSD ἀβῖαε Ἰῖα θεΠῆαδ εἰεοῖοῖῆεεῦ οὔοοοῖα, ἀὰρ οδῖῖῖ-÷ἄε εὔοε θῖο ἰά οάο ἀῖαἄεὔᾶε ἰά ÷ῆοεῖῖθῖεΠόαδῶ οἱ οὔοοοῖα ἀεῆεἶαδ οὔδου οἱ Ἰ÷ῖοῖα θαεἶοὔῆαε ἀῖαδῶ ἄεἶ ἄεἶῖῖ. ÷ῖοῖα θῆῖοδᾶεΠόᾶε ἰά ο÷ἄεὔοῖοῖα οἱ οὔοοοῖα Ἰόοε θῖο ἰά ἀβῖαε ὑοῖ οἱ ἄῖοῖαοῖ ἔεῖ ἄδᾶεοὔοεῖῖ, ἄεἶ ἰά ἀβῖαε ἄὔεῖῖ ἰά ÷ῆοεῖῖθῖεῖεἶᾶβ οἶᾶ ἄὔοε ὀὔῖ ἰῖῖᾶ ὔεεἶ ἄῖθῖῖεῖὔ ὀῆῖῖῖῖῖῖᾶ ἰά ἰῖῖῖῖῖ ἰά οόεῆ÷ῖῖῖ. Ἰ ἰῖῖῖ “εἶῖῖῖᾶ” θῖο Ἰ÷ῖοῖα ο÷ἄοεὔῖ ἰᾶ ἄῖοῖ ἀβῖαε ὀὔδ ἄῖ ο÷ἄεὔᾶεἶᾶ ἰᾶ ἄεἶᾶἶᾶἶᾶ οἱ FreeBSD ἰᾶ ἰᾶᾶὔεοδ εεἶᾶἶεᾶ ἄεἶᾶᾶἸό, οᾶδ ἄῖεἶῖῖῖῖῖῖᾶ ἰᾶ ὀᾶεῖεῆεῖῖῖᾶ ὀεδ ἄεἶᾶᾶἸό οᾶδ. Ç εῖῖῖῖῖῖῖᾶ θῖο FreeBSD ἰῖῖῖᾶ ἰῖῖ ἰᾶ ἄῖεΠόᾶε οόῖ ὀῖῖῖῖῖῖῖ ἄῖῖῖ θῖο ÷ῆοεῖῖθῖεῖῖῖ οἱ εῖᾶεῖῖῖῖ ἄεῆεἶαδ οὔδου οἱ ἄεἶῖῖῖῖῖᾶ ἄῖᾶδ. Ἀῖεἶῖῖῖῖῖῖᾶ εἶε ἄᾶ÷ῖᾶῖῖᾶ εὔᾶ ἄεἶᾶᾶΠ θῖο ὀῆῖῖῖᾶβ ὀῖ ἰῖὔὀῖῖ ἔεῖ ἄῖεἶᾶᾶἸῖῖῖ ἄῖεἶᾶᾶἸῖ ἄῖεἶᾶὔῖᾶῖᾶ ἄεἶ ἄεἶ÷ᾶῆῖῖῖῖ, ἄεἶ ὀᾶῖᾶἄεἶᾶ, ἄεὔῖ ἄῖῖ εἶ ὀῆἸᾶε ἰᾶ ὀᾶῖῖῖῖᾶ εἶᾶᾶᾶ ἰᾶ ἰῖῖῖῖῖ ἰᾶ ἄῖᾶῖῖῖῖῖᾶ ἄεἶ ἄῖῖὀᾶῖᾶ ὀ÷ἄοεὔῖ ἰᾶ εὔοε οὔῖῖῖ.

5.1 Āçîēîñāāā ĐñîóāñîîíŪíúí Āéóēāôôpí Āēēβîççð.

ĐîēēŪ ãāēāóáóôŪóāēð Ŷ÷îí đîēýđēîēāð áđāēðPóāēð đîō ðîñāā ðā òç óāēñŪ òîō ðā áđāēðîŷí òçî đñîóēPēç đāñēóóúðāñîí ðāçāpí P āñāāēāāŪ ÷ñPóðç òóēð āēóēŶôðāð āāēāðŪóóāçð. Ī “ðāēŪēēēîð” òñüðîð ðā òî ēŪîāðā áððü āβîāē íā ēŪîāðā òēð āēēāāŶð óāð òóîí ēāðŪēîāî đîō Ŷ÷āē āðîēîŪóāē ðāðŪ òî òŶēîð òçð ç āēāāēēāóáā make release:

- ĐāñŪóðā òā patches óāð P đñîóēŶóðā òā āðēðēŶîí āñ÷āā íŶóā òóîí ēāðŪēîāî chroot òçð Ŷēāîçð.
- `rm ${CHROOTDIR}/usr/obj/usr/src/release/release.[59]`
- ðāðāēüððóðā đŪēē òî sysinstall(8), òî đññPíā, P üðîēā Ūēēā đñîāñŪîāðā Ŷ÷îí āðçñāāóðāā áðü òēð āēēāāŶð óāð.
- `chroot ${CHROOTDIR} ./mk floppies`

Īē íŶāð āēóēŶóðāð āāēāðŪóóāçð ēā āçîēîñāçēîŷí òóîí ēāðŪēîāî \${CHROOTDIR}/R/stage/floppies.

ĀíāēēāēðēēŪ, ðîñāāðā ðā ÷ñçóēîðîēPóāðā òî make target boot.flp, P ðîñāāðā ðā òñŶîāðā áðāðēāāð òî script ðîō āçîēîñāāā òā òóððîāðā āñ÷āā ŷrc/release/scripts/doFS.sh.

Īðñāāðā āðβçð ðā ēāñîβóðāð þóðā āēēŶð óāð āēēāāŶð ðā đāñāóðîŷí ðā ðññP patch òçî Ŷēāîç üðüð ēā òēēŪ÷îāāē, āññîðāð òēîP òçî ðāðāēçðP LOCAL_PATCH üðāí òñŶîāðā òçî āîðîēP make release.

5.2 Đñîāñāîāðβēîîðāð òî sysinstall

Ōî āñāāēāāî āāēāðŪóóāçð ēāē ñŷēîçðð òîō FreeBSD, òî sysinstall(8), ðîñāā ðā đñîāñāîāðēóðāā āēā ðā ēŪîāē ðēî āŷēîēāð òēð áððñîāðîðîēçîŶîāð āāēāðáóðŪóāēð òā đîēēŪ ðç÷āîðāð. Áððü òî ÷āñāēðçñēóðēēü òîō đñîāñŪîāðîð ðîñāā ðā ÷ñçóēîðîēçēāā òā òðîāðāðîü ðā òî PXE[13] òçð Intel āēā ðā ðāēēîPóāē ç āāēāðŪóóāçð áðü òî āβēððî, P òā òðîāðāðîü ðā đñîóāñîîíŶîāð āēóēŶóðāð āēēβîççðð ēē Ŷíā sysinstall script. ðā đāñŪāēēāîā áðü òŶðîēî sysinstall script ðîñāāðā ðā āñāāðā òðî āñ÷āā ŷrc/release/sysinstall/install.cfg.

6 ðāēðîāðā òîō ĐPñāîā áðü òçî êāîîç 4.4 òîō FreeBSD

Ç āēāāēēāóáā āðîēîāðāð òçð Ŷēāîçðð 4.4 òîō FreeBSD ðāēβîçðā āðβçðîā òçî 1ç Áðāîŷóðîð 2001. ðāðŪ áðü áððP òçî çîāññçîā, üēāð ðē āēēāāŶð òóîí ēîñîü RELENG_4 òîō FreeBSD Ŷðñāðā ðā Ŷ÷îí Ŷāēñēóç áðü òçî Release Engineering Team <re@FreeBSD.org>. Ç đññðç āîēēîāðēēP Ŷēāîç āēā òçî āñ÷ēðāēðîēēP x86 Ŷāēîā āēāēŶóēîç òóēð 16 Áðāîŷóðîð, ēē āēîēîðēPēçēā áðü 4 āēüîā āîēēîāðēēŶð āēüüóāēð đîō ðāPāçóāí òçî òāēēēP Ŷēāîç òóēð 18 òîō ÓāððŶîāñç. Ī òðāŷēðñð áððŪēāēāð Ŷðāēîā òçîāîðēēü ñüēî ēāðŪ òçî āēŪñēāēā òçð òāēāððāðāð āāñŪāðð ēāēðð ēŪðîēā đñîāēðîāðā áððŪēāēāð āñŶēçēāí òā đñîçāîŷîāîð, āîēēîāðēēŶð āēüüóāēð. ÓññēēēŪ, đŪîü áðü 500 email òðŪēēçēāí òçî Release Engineering Team <re@FreeBSD.org> òā āēŪóçîā ðēññüðāñî áðü Ŷíā ððā.

Ç ēîēîüðçðā òùí ÷ñçððí ðāð Ŷēāîā óāðŶð üðē ç áððŪēāēā ēāē ç óðāēāññüðçðā ðēāð Ŷēāîçðð āāí ēŪ 'ðñāðā ðā ēððēŪæāðāē āēā ēāíāüð āβāñð ðñîēāðîðāð P çîāññçîāðð đîō Ŷ÷îí òāēāā òāí òðü÷îē áðü đñēí. Ōî FreeBSD Ŷ÷āē ðāāēðóāē āñāîāðēēŪ ēāðŪ òç āēŪñēāēā òçð æüðð òîō òāí óŷóçîā, ēāē ç áîŪāēç āēā òðāēāñēîŶîç đîēēðēēP ēāē ðñāŪîüçç āēā òçî āçîēîñāāā íŶüí āēüüóāñî āβîāē ðēŶîí òāíāñP đāñēóóúðāñî áðü đîōŶ. ÁððP ç áîŪāēç ēā āβîāē āēüîā ðēî çîāîðēēP ēāēðð òî FreeBSD ēā āñ÷āā ðā ðāðāŶñāðāē òā íŶāð ðēāððñîāð.

7 ìäëëïíôéêÝò Êáôãõèýíóãéò

[illegible]

- [illegible]

8 Å ÷ á ñ é ó ô ß à ò

Εὰ Πεᾶέα ἰά ἀο÷ἀνεόόΠου οἱ Jordan Hubbard, θῖο ἱὸ Ὡαυόα ὀγῖ ἀδεᾶένΒἈ ἰά δῦΝη εὔΘιεᾶ αἴθ ὀγῖ ἀδῆγῖς ὀδο Ὡεᾱτόσο 4.4 οἷο FreeBSD, ἐᾶεπο ἐᾶέ ᾶέᾶ ὑεç ὀγῖ ᾱῖρεᾶεὔ θῖο Ὡ÷ᾶε εὔἰᾶε ᾱᾱπ ἐᾶέ ÷νῡῖεᾶ ᾶέᾶ ἰά ᾱβῖᾶέ οἱ FreeBSD ἀόου θῖο ᾱβῖᾶέ οᐍἰᾱᾶᾶ. Ὤοóεὔ, ç Ὡεᾱτόç ᾱᾱῖ ἐᾶ Πόᾱῖ θῖο Ὡ ᾱοῖᾱούῖ ἰά ῖεῖεεçνῡεᾱβ ÷ñḂò ὑεç ὀγῖ ó÷ᾱόεᐍ ἰᾶ ὀγῖ Ὡεᾱτόç ᾱῖρεᾶεὔ θῖο Ὡεᾱῖᾱ ῖé 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 ὑεῖε ῖé ὀδῡῖεῖθεῖε θῖο ἀó÷ῖεῖγῖᾶέ ἰᾶ ὀγῖ ᾱῖὔððῖç θῖο FreeBSD. ÈὩἔῡ ᾱðΒόço ἰά ἀο÷ἀνεόόΠου οἷοð Rodney Grimes <rgrimes@FreeBSD.org>, Poul-Henning Kamp <phk@FreeBSD.org>, ἐᾶέ ὑεῖτοð οἷοð Ὡεῖτοð θῖο ᾱᾶᾱὔóçεᾱῖ ᾶέᾶ ἰά óóεὔἱῖοῖ ὁᾱ ᾱᾶᾶεᾶᾱ ᾶέᾶ óóð ᾱεᾱüóᾶéð óóéð ðḅᐁðᾱ ἰὩᾶð ὀço ᾱçῖeῖῥᾶᾱᾱð οἷο FreeBSD. Ἀόου οἱ Ὡᾶᾶῖ Ὡ÷ᾶε ᾱðçᾶᾱáðᾱᾱ ᾱἵθ ἐᾱḂῖᾱῖ ὄ÷ᾱóéὔ ἰᾶ ὀγῖ ἱᾶᾱὔἡúç οἱθ ᾱεᾱüóᾱῖ ᾱἵθ οἱ CSRG[14], ὀγῖ ḣὔᾱᾱ οἷο NetBSD[11], ἐᾶέ ὀγῖ ðḣῡᾱóç ᾶέᾶ ἰεᾶ ᾶεᾱᾶεᾶᾱᾱ ἱᾶᾱὔἡúçoð οἱθ ᾱεᾱüóᾱῖ οἷο 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>
- [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>)