

# 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 οĩ Ũñēñĩ δāñēāñŨōāē ôçĩ áíôēíāôþðēóç ēāē ĩñãŨíùóç ôçð ñŨāāð áíŨððôĩçð ôĩõ FreeBSD, ũóĩí áôĩñŨ óôçĩ ðñĩāôĩēíāóßā ðĩēĩôēēþĩ āēäüóãùí ôĩõ ÊāēôĩõñāēēĩŨ Óðóðßĩāôĩõ FreeBSD. Âĩçāāß ĩā ēāððñŨñāēā ôçĩ ĩāēĩāĩēĩāßā ðĩõ ÷ñçóēĩĩðĩēāßōāē āēā ôēð āðßôçĩāð āēäüóãēð ôĩõ FreeBSD ēāē δāñēāñŨōāē óā āñāāēāßā ðĩõ āßĩāē āēāēŸôēĩā óā ũóĩõð āĩāēāôŸñĩĩôāē ĩā ðāñŨāĩĩôĩ ðāñāĩāðñĩðĩēçĩŸĩāð āēäüóãēð ôĩõ FreeBSD āēā áóũðāñēēþ ð āĩðĩñēēþ ÷ñþóç ēāē áíŨððôĩç ðñĩũĩĩôũĩ.

## Ðßĩāēāð Ðāñēā ÷ñŸĩũĩ

1	Άέόάãũāþ .....	1
2	Ç Äēāāēēāóßā Äçĩēĩõñāßāð ĩēāð çāĩôçð.....	2
3	ĩāōāāēþôēóç ôçð çāĩôçð.....	5
4	Äēāñþ ôũĩ Âēäüóãùí .....	8
5	Âðāēôāóēĩũôçōā .....	9
6	ĩāēßĩāōā ðĩõ Ðñāĩā āðũ ôçĩ çāĩôç 4.4 ôĩõ FreeBSD .....	10
7	ĩāēēĩĩôēēŸð ÊāôāðēŸĩōāēð .....	10
8	Âð ÷āñēóðßāð .....	11
9	ÁĩāōĩñŸð .....	11

## 1 Άέόάãũāþ

Ç áíŨððôĩç ôĩõ FreeBSD āßĩāē ĩēā ðĩēŸ āñē÷ðþ āēāāēēāóßā. Ôĩ FreeBSD áðĩôāēāßōāē āðũ óôĩāēóôĩñŸð ÷ēēēŨāũĩ áēñþðũĩ āðũ ũēĩ ôĩĩ ēũóĩĩ. Ç ñŨāā ôĩõ FreeBSD ðāñŸ ÷āē ðñũóāāóç ĩŸóũ áĩþĩôĩĩõ CVS[1] óā ũēĩõð, Ÿðóē þóðā ĩā ĩðĩñāß ũðĩēĩõ ēŸēāē ĩā āāē ĩçĩŸĩāóā log, āēāôĩñŸð (patches) ðĩõ Ÿ÷ĩõĩ óā āēŨōĩñā development branches, ēāē Ũēēā ÷āñāēðçñēóôēēŨ ðĩõ āĩçēĩŸĩ ôçĩ áíŨððôĩç, óā ĩðĩßā ðñĩēŸððĩõĩ āðũ ôçĩ ÷ñþóç āĩũð áððôçñĩŸ óðóðßĩāôĩõ āēā÷āßñēóçð ēþāēēā. Áðũ āðĩôŸēāōā ēāē ôĩĩ ðēĩ ôçĩāĩôēēũ ðāñŨāĩĩôā Ÿēĩçð āēā Ÿĩā ĩāāŨēĩ āñēēĩũ āðũ ôāēāĩôĩŸ÷ĩõ ðñĩāñāĩāðēóðŸð āðũ ũēĩ ôĩĩ ēũóĩĩ óôĩ FreeBSD. Áßĩāē ðñĩōāĩŸð, āŸāāēā, ðũð ðĩēŸ óŸĩðñā ēā āß÷ā āßĩāē áĩôāēþð ÷āĩôēēþ ç ēāðŨóðāóç áĩ āß÷āĩ ũēĩē, āðũ ũēĩ ôĩĩ ēũóĩĩ, ðñũóāāóç ĩā āñŨøĩĩ óôĩ ēþāēēā. Äē’ áðũ, ĩũĩ ĩēā “āðēēāñŸĩç” ñŨāā āðũ ðāñßðĩõ 300 Ũōñā Ÿ÷ĩõ ðñũóāāóç ĩā āñŨøĩĩ óôĩ CVS repository. Áðôĩß ĩē committers[6] āßĩāē ððāŸēðñĩē āēā ôĩ ĩāāāēŸôāñĩ ĩŸñĩõ ôçð áíŨððôĩçðð ðĩõ āßĩāðāē óôĩ FreeBSD. ĩēā

[illegible]

Ίε οά÷ýðάοίε ηόειηβ άίΰδδοίγφ οίο FreeBSD άάί άόβήοί έάέ θίεý ÷ ηύήί άέα οί ίάέαέΰήεοία οίο όόόόβιάόίό άίΰδδοίγφ όά ίέα Ύέαιόγ ίά θίεύόόόά θίο ίά άίβέαέ ίά ÷ ηέόέήίθίέαβόάέ άοήΎύό. Άέα ίά έόέαβ άόόυ οί άέβέεήά, ç άίΰδδοίγ άβίάόάέ όάόόυ÷ ηήίά όά άοί όάνΎέεέέα ίήήθΰόέα. Ί έýήείό έίήήύό άίΰδδοίγφ άβίάέ ί **HEAD** þ *trunk* όόί CVS repository ίάό, άήύόόύό έάέ ύό “FreeBSD-CURRENT”, þ “-CURRENT” άί όόίόήβά.

[illegible][illegible]

Όμοια ÷ πο οόÝεíñíοάέ áδù õìòð ÷ ñÞóðàð íáð áíáõíñÝð ðñíáεçíÛòúí έάé áéðÞóáéð äéá έάéíýñéá ÷ áñáéðçñéóóééÛ, έáoÛ ôç áéÛñéáéá õîò éýέéíò ôçð éÛèá Ýέáñòçð. Íé áíáõíñÝð ðñíáεçíÛòúí áéóÛáñíοάé óôçí áÛòç **GNATS**[9] íÝóù e-mail, íá ôçí áòáññíäÞ send-pr(1), Þ íÝóù õîò web-interface ðîò ðáñÝ ÷ áðáé óôçí áέáyέòíóç <http://www.FreeBSD.org/send-pr.html>. Áêòùð áδù όέð áéÛöñíäð έßóðàð çåâéðñííέéýí óá÷ öáññáßòò íá èÝía óá ðá÷-íééÛ ÷ áñáéðçñéóóééÛ õîò FreeBSD òðÛñ÷áé έάé ç έßóðá FreeBSD Quality Assurance mailing list (<http://lists.FreeBSD.org/mailman/listinfo/freebsd-qa>), ç îðíßá ðáñÝ ÷ áé Ýía öüñíòì áéá óóæçðÞóáéð ó÷ áðéέÛ íá όέð έäððòñÝñáéáð ôçð “íñáÛûòóçð ðúí áéäüóáñ”.  


---

Ἀέά ίά ἀτῶδῆῆᾶῶεῖρῖ ἰέ δέῖ ὀῶῶῆῆῆῶεῖῖῖ ÷ ῆῖῖῶῶᾶ ἰᾶῶ, ἰᾶ ῖῖᾶῖῶῶ ὀῖῖ FreeBSD 4.3 ᾶῆ÷ῖῶᾶᾶ ἰᾶ ÷ ῆῆῶῖῖῖῖῖῖῖῖῖ ἰᾶ÷ῖῆῶῶῶῶῶ ἑῖῆῖῖῶῶ ᾶᾶῶῶᾶῖ. Ἀῶῶῖῖ ἰῖ ἑῖῆῖῖῖ ᾶῖῖῖῖῆῖῖῖῖῖᾶῖ ἑῖῖῖ ῏ῆῖῖ ὀῶᾶ÷ῶᾶῖ ῆ ὀᾶῖῖῖῖ ῖῖᾶῖῶῶ. ἰᾶῶ ὀῆῖ ᾶῖᾶῖῖῖῖῖῖ ὀῆῶ ῖᾶῖῶῶῶ, ἰῖῖ ῏ῖῖῖ ὀῖῖῖῖῖῖῖῖ ὀᾶῖῖῖῖ ἑᾶῖ ῏ῖῖῖῖῖῖ ὀ÷ᾶῖῖῖῖῖ ἰᾶ ὀῖῖ ᾶῶῶῖῖᾶᾶ ᾶῖῖῖῖᾶῖ ὀῶῖ ἑῖῆῖῖ ὀῆῶ ῖᾶῖῶῶῶ. Ἀᾶῶῶ ᾶ῏ῖ ὀῖῖ ᾶῖῖᾶῶῖῶῶᾶ ᾶῖᾶᾶῖῖῖῖῖῖ ἰῖῖῖ CVS, ᾶᾶᾶῖῖῖῖᾶᾶ ῖῖῖῖ ÷ῖῖῖᾶῖ ᾶᾶ ἰᾶ ἰ῏ῖῖῖῖ ἰᾶ ᾶῖᾶᾶᾶῖῖῖῖῖ ὀᾶ ὀῶῶῖῖᾶῶῖῖ ὀῖῶῶ ὀῖῖῖ ÷ῖῆῶῖῖῖῖῖῖῖ ὀῶῶ ᾶᾶῶᾶῶᾶῶ *RELENG\_X\_Y*.

Οι ΟιΠια 2 αιçããß ìá åãððñÝííæãð ðá æÛöïííá ððÛæá ðçð æéáæéæáðßáð ðï ãííßöéãðáé ðßóó ãðu èÛéá Ýéãïðç, ìÝ ÷íé éáé ðá áΠιαðá ðï ðãçãýí ðçðí ìãðáæððöéðç ðï ððððΠιαðï ðáé ðï ΟιΠια 3 αιçããß ðçí Βæáé ðç æéáæéæáðßá ðçð ìãðáæððöéðçð. Οι ΟιΠια 5 ðãíéãñÛðæ ðóð ðïííßß ìá áðæððæßß ðï ááóééó óýððçìá ãðu ðíßðïðð éáé ðï ΟιΠια 6 ðãíéãñÛðæ èÛïíéá ãðu ðá ðíÛáìáðá ðï ìÛéãìá ãðu ðçí æéáæéæáðßá Ýéãïðçð ðï FreeBSD 4.4. ÕÝíò, ðï ΟιΠια 7 ðãíïðöéÛææ èÛïíéãð ãðu ðéð éãðãöéýíðæð ðï èÝéíðìá ìá ðÛíæ ç áíÛðððç ððï ìÝééí.

2 Ç Äéääéêáóßá Äçïéïõñãßáo ìéáò êäïóçò

Ίε ϊΎαο αεαυοάοδ οΐο FreeBSD οοεΰ÷ ρΐοάε αδϋ οΐϊ -STABLE εΐνϋ αΐΰδδοΐοδ δαΐβδϋο εΰεα οΎϋοάναοδ ϊΐΐαδ. Ϙ αεαεεεαοβα δΐναΐοεΐαοβαδ ιεάδ Ύεαΐοδ ϊαεεΐΰαε ο÷ ααϋ 45 ϊΎναδ δΐεϊ οϘϊ αΐαΐαϋαΐϘ ϘαΐΐΐϘϊβα Ύεαΐοδ, υοαϊ ϊ οδΎγεοΐοδ αεαυοαϋ οΐο FreeBSD οοΎεΐαε Ύΐα αΐΰαα οοεδ εβοαδ οαϊ δΐναΐαααοεοοϋϊ αεα ϊα οδΐρεοϊοαε οοϋοδ δΐναΐαααοεοοΎδ υοε Ύ÷ ϊοϊ 15 ϊΎναδ εαεϋ ϊα εΰϋοϊ υδΐεαδ αεεααΎδ οΎεϋοϊ, δΐε οϊ δΰαααα οΐο εραεεα. ΊΎοα οα αοοϋ οΐϊ εαεϋ, δΐεεϊ δΐναΐαααοεοοΎδ εΰϋοϊ ιεα οαεϋΰ αδϋ αεεααΎδ δϋο Ύ÷ ϊοϊ ιαβΐαε δεΎϋ ρϋυοοΎδ υο “ϊαεαεαΐβοααοα MFC”. Ί υϋοϊ MFC οϘαβΐαε “Merge From CURRENT” εαε δαΐεαΐΰοαε οϘϊ αεαεεεαοβα δΐναΐαααδ

òtō ēpāēēā iēāð āiēēiāōiŸiçð āēēāāpð áðū òtī -CURRENT ðāēñāiāðēēü ēiñiū áfŪððōiçð òðití òðāēāñiū -STABLE ēiñiū.

## 2.1 Ĵāā÷iō Ēpāēēā

ŌñēŪiōā çìŸñāð ðñēi òçí áíáíāfuiāiç çìāññiçíā Ÿēāiōçð, i ēpāēēāð òtō repository áēóŸñ÷āðāē óā iēā ðāñβtāi “ēāēðóðŸñçóçð”. ĒāðŪ òç āēŪñēāēā áððð òçð ðāñēüāið, üēāð iē āēēāāŸð òðití -STABLE ēiñiū ðñŸðāē íā Ÿ÷iōi òçí Ÿāēñēóç òçð Release Engineering Team <re@FreeBSD.org>. Īē āēēāāŸð ðtō āðēōñŸðñiōāē óā áððð òçí ðāñβtāi ðtō āēāñēāβ 15 çìŸñāð āβiāē:

- Āēiñēpōāēð āfūōðpí ðñiāēçìŪðut.
- Āiçìāñpōāēð òðçí ðāēiçñβùóç.
- ĀēēāāŸð ó÷āðēēŸð iā òçí áóðŪēāēā.
- ĪēēñŸð āēēāāŸð òðitōð iāçāiŸð òðōēēāðpí, üðuð ð÷. ç ðñiōēðēç òut IDs iŸui òðōēāðpí.
- Īðtēāāβðtōā Ūēēç āēēāāβ ðēóðāŸāē ç ñŪāā áfŪððōiçð üðē ðñŸðāē íā āβiāē, iā òi áíáíāfuiāiñ ðŪiōā ñβōēi.

ĪāðŪ òēð ðñpōāð 15 iŸñāð ēāēðóðŸñçóçð, òðēŪ÷iāðāē iēā *āiēēiāóðēēp Ÿēāiōç* āēā íā ÷ñçóēiñðtēçēāβ óāí āiēēiβ òçð ðāēēēpð Ÿēāiōçð ēāē i ēpāēēāð áēóŸñ÷āðāē óā iēā ðāñβtāi “ðāāpíāðtō”. ðēŸiñ āβiāē ðtēŸ ðēi āŸóētēi íā āβiñi iŸāð āēēāāŸð òðtí óŸóðçíā, āēðuð ēē áí āēiñēpñiñi ēŪðtēi ðtēŸ òiāāñi bugp ēŪðtēi ðñuāēçiā áóðŪēāēāð. ĒāðŪ òç āēŪñēāēā òtō ðāāpíāðtō òtō ēpāēēā, òtōēŪ÷ēóðtí iβā āiēēiāóðēēp Ÿēāiōç òðēŪ÷iāðāē ēŪēā āāāñŪāā, iŸ÷ñē íā āβiāē Ÿiñiç ç òāēēēp Ÿēāiōç. Ōēð çìŸñāð āēñēāpð ðñēi òçí ðāēēēp Ÿēāiōç, ç ñŪāā ðtō āβiāē òðāŸēðiç āēā òēð āēāüōāēð āβiāē óā òðtíā÷p āðēēiēfuiāíā iā òçí ñŪāā áóðŪēāēāð, òçí ñŪāā òðtōðñçóçð òçð ðāēiçñβùóçð, ēāē òçí ñŪāā òðtōðñçóçð òut ports, āēā íā āāāāēüēiŸi ðuð üēā óā āðāñāβðçðā ēñŪðēā āēā iēā ðēpñç Ÿēāiōç āβiāē āēāēŸóēiā.

## 2.2 Ēβóóā ĀēŸā÷iō òçð Ōāēēēpð ēāiōçð

¼ðutí āñēāðŸð āiēēiāóðēēŸð āēāüōāēð Ÿ÷iōi āβiāē āēāēŸóēiāð, Ÿ÷iōi āiēēiāóðāβ áðū āñēāðü ēüðtí ēāē üēā óā òiāāñŪ ēŸiāóā Ÿ÷iōi áíāēōēāβ, ç ðāēēēp Ÿēāiōç iðñiñāβ íā āñ÷βóāē.

### 2.2.1 Āçtēiññāβā òtō ĒiñiŸ ēāiōçð

¼ðuð ðāñēāñŪðāiā òðçí āēóāāüāp, iē ēiñiñβ RELENG\_x\_y āβiāē iēā ó÷āðēēŪ iŸā ðñiōēðēç òðçí iāētātēiāβā òut āēāüōāpí iāð. Ōi ðñpðtí āpíā òðçí āçtēiññāβā áððtŸ òtō ēiñiŸ āβiāē íā āāāāēüēāβðā üðē ātōēāŸāðā iā òçí òāēāððāβā Ÿēāiōç òtō ðçāāβið ēpāēēā áðū òtī RELENG\_x ēiñiū *áðū òtī iðtŸi* ēā òðēŪiāðā òi iŸi ēiñiū.

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

Ōi áðuiāñi āpíā āβiāē íā āçtēiññāβāðāðā iēā *āðēēŸðā* (tag) òðtí òçíāβi āēēβiçóçð òtō ēiñiŸ, pððā íā iðñiñāβðā íā āāβðā òēð āēāðtñŸð iā òçí āñ÷p òtō ēiñiŸ āŸētēā òðtí iŸēēiñi iā òi CVS:

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

Ēāē òuðā iðñiñāβðā íā āçtēiññāβāðāðā òi iŸi ēiñiū iā:

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

**Όχιὰβὺός:** *lé āōééYōāō RELENG\_\* ābíáé āāóíāōīYíāō āéá ÷ñPóc āđū ōīōō CVS-meisters éáé ōcī ñŪāā ōūī āēāūōāūī.*

Ἰ uniõ “*ἀόεεΥόα*” ἀβίαέ ι̃ι̃ι̃ι̃ε̃α̃β̃α̃ ο̃ι̃ο̃ CVS. Ο̃ς̃ι̃α̃β̃ι̃ãẽ Υ̃ί̃ã ũm̃ã ο̃ι̃ο̃ ε̃ãẽι̃ñβ̃ããẽ ι̃ẽã ο̃õãẽãẽñẽι̃Υ̃ί̃ς̃ Υ̃ẽãĩõς̃ ο̃ι̃ο̃ ẽp̃ãẽẽã ο̃õĩ ÷ ñũĩĩ. × ñς̃ο̃ẽĩĩõĩẽp̃ĩõãõ ἀõẽẽΥ̃õãõ ο̃õĩĩ δ̃ς̃ããβ̃ĩ ẽp̃ãẽẽã ãr̃ς̃ẽŨĩã ũõĩẽĩĩ õõẽŨĩãẽ ο̃õĩ ĩΥ̃ẽẽĩĩ ãẽãũõãẽd̃ ο̃ĩõ FreeBSD ĩã ãñβ̃õẽãẽ ẽãẽ ĩã ÷ ñς̃ο̃ẽĩĩõĩẽãb̃ ãẽñẽãp̃õ ο̃ĩĩ β̃ãẽĩ ẽp̃ãẽẽã ο̃ĩõ ÷ ñς̃ο̃ẽĩĩõĩẽp̃ẽς̃ẽã ãẽã ο̃ẽd̃ ãδ̃β̃õς̃ĩãõ ãẽãũõãẽd̃ ο̃ς̃õ ḥ̃Ũããd̃ ο̃ĩõ FreeBSD.

### 2.2.2 ÁóïÛííîáò ôíí Áñéèü êäïóçò

Ἐνῆι ἰθαῖ ἡ ἀοέεΥόα, ἰαοάαεουοοεοοάβ ἑαῖ ἀοιείαοοάβ ἡ οάεεῒβ Υέαιόρ, ὃνΥθαῖ ἰά ἀβῖῖό ἡεῖάαΥό οοά ὃαῖάεῒου  
 ἂν÷ἂβ ἡεῖ ἰά ὃαῖεΥ÷ῖό ὃῖ ὅουόου ἂῖεῒι Υέαιόρὃ ἡεῖ ὃῖ 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 òñí òùòóù āñēēìù òùì ports éáē òī ÷pñī òīō āßöēīō ðīō äðäēòāßöáē áēá òçí ÓöēēīāP òùì Ports. ÁöðÝð íē ðēçñīññīñßāð òðŰñ÷īōí òóī āñ÷āßī  
src/release/sysinstall/dist.c.

Άσπυ ιεῖεεεεεεεεεε ε δνιιιιιιιιιιιι εδδ εῖΥάδ αδδδδδδδδδ Υέεεεεεε, δνΥέεε ιά αῖαῖαῖαῖαῖα ιαῖεεεε αῖ÷αῖα αέα ιά αῖαῖαῖαῖαῖα οῖι εῖοῖι αέα εε εῖΥά Υέεεεε εῖο 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 Äçìéĩõñãßá ôùí Âôéêâôþí ôçò êäïóçò

1/40áí ç ôãëêêP Ýêäiôç åßiáé Ýôieiç, ç ðãñáéÜòù áíôieP èá àçieiõñãPóáé ôçí âôêêÝôá RELENG\_4\_8\_0\_RELEASE.

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

RELEASE\_4\_8\_0 óóá éáóÜëçëä äÝíóñá ðçāāβíø ēpāëéä.

ΙαάεεΥό οινΥό, ιδιναβ ίά ÷ ηαεάοοάβ ίά αβιιόι εÜθιεάο αεεάαΥό οάεαδoαβá οόεαιβ *ιαδÜ* ογι οθιεΥόογος οοι αοεεαορι. ΆαίεεÜ, ααί αβίαε άγoεiei ίά αβίαε εÜοε οΥοiei αοiy οi CVS αδεονΥθαε ίά ιαοαεειβoαε εÜθιεiο οεο αοεεΥόαο ίά ιάοιεΥό üθüο `cvs tag -d tagname filename`. Άβίαε θieiγ ογιαόεεü üüò αδoΥό iε αεεάαΥό ογο οάεαδoαβáο οόεαιβo ίά ογιαεüειγi ίά οεο οοοόΥό αοεεΥόαο αεά ογι οοαεαηειΥίγ Υεαιόγ. Ιε αδβoγiαò αεäüοάεο οiò FreeBSD θηΥθαε ίά αβίαε δÜiόá άγeiei ίά ιάαθαηá÷ειγi. ΟiδεεΥό αεεάαΥό οοi θáηεÜÜεει οiò ιγ÷ιίεειγ οοι αεäüοäüi ααί αδεονΥθiíοαε.

### 3 ðàáãëþôôéóç ôçò ëäïóçò

Ιε "aeauaaeo" oio FreeBSD ioiniia ia laaiaaeuooeooiia adu ioieiaaBpooa Y ÷ ae Yia o ÷ aeoeU anPaini ic ÷ Uicia eae dnuoaaoc ooi repository oio dcaabio epaeaa. (4eie Y ÷ ioi aooP oc aioiaouocoa, aoiy danY ÷ ioia dnuoaaoc iYou aipioio CVS! AaBoa oi Aa ÷ aenBaei oio FreeBSD aea daneaouoanaa eadonYnaea.) C iuic aeaeep adabococ abiaa ia oou ÷ ae oiooPneic ooi dnoPia oao aea oc ooeaop vn(4). (Ooi -CURRENT, aooP c ooeaop Y ÷ ae aioeaaaooaaba adu oc iYia ooeaop aboeio aaoeoiYio oa iBic md(4). Ai c ooeaop aai abiaa aioiaouuYic ooi dnoPia oao, ouoa i eaoUeeceio iacaud ea oionueab adouiaoa uoa aeaaeaooaB c aioieP vnconfig(8) eaoU oc aeUnea ea oc oUocd aioiaaoba oio iYio aeBicocd. 4ea oa anaaba oio ÷ naeUaioae aea ia laaiaaeuooBaa ia YeaioB abiaa aeaeYoeia oa iioP dcaabio epaeaa ooi eaoUeia src/release. AooU oa anaaba Y ÷ ioi uo oeio ia danY ÷ ioi uoe ÷ naeUaioae aea ia ÷ obaioae ie aeauaaeo oio FreeBSD ia Yia oiaop eae oaeaeeneiYi onou. Iea dePncd YeaioB ioiaa ia laaiaaeuooeooB ÷ nceioieioa adou oa anaaba ia ia eae iui aioieP, oioaneaiaaYic eae oc aieioiaa adu ISO an ÷ abio eaoUeecei aea ia eaaB oa CDROM, ie aeoeYoaB aeBicocd, eaeb eae i eaoUeeceio aaeadUoaocd iYou FTP. AooP c aioieP abiaa ooeep c make release.

### 3.1 Ç áíôïëþ make release

[illegible]

[illegible]

- CHROOTDIR - Ἡ ἐὰὸὐεῖαῖρὸ δῖο ἐὰ ð-ñçóεῖῖθῖεçéαß óáῖ ðáñéáὐεῖῖῖ chroot áεά ὑεç ðçῖ ἰάðááεῖðòðéóç ðçð Ἰεαῖρçð.
- BUILDNAME - Ὀῖ ὑῖῖά ðçð Ἰεαῖρçð δῖο ἐὰ ἰάðááεῖῖðòðßóáðá.
- CVSROOT - Ἡ ἐὰὸὐεῖαῖρὸ óῖῖῖ ἰῖῖῖῖ áñßóéáðáé ðῖ CVS repository.
- RELEASETAG - Ç áðééἸóá CVS δῖο αῖðéóῖῖ÷÷÷ß ðçῖ Ἰεαῖρçð ðçῖ ἰῖῖῖῖ èἸεáðá ἰά ἰάðááεῖῖðòðßóáðá.

Άí αάí Υ÷άάά Παç ðñúάάάç άά έÛðέí έðέέú CVS repository íά έí έπαέέα έíθ FreeBSD, ίðíñάßά ðÛíάά íά  
 όέÛíάά έí άέέú άάό έðέέú CVS mirror íά έí CVSup  
 ([http://www.FreeBSD.org/doc/en\\_US.ISO8859-1/books/handbook/synching.html#CVSUP](http://www.FreeBSD.org/doc/en_US.ISO8859-1/books/handbook/synching.html#CVSUP)). ÆðÛñ÷άέ Υíά supfile,  
 όάí άñ÷άßí /usr/share/examples/cvsup/cvs-supfile, έí ίðíßí ίðíñάßά íά ÷ñçόέííðέέΠάάά άέα íά  
 άíόέάñÛάάά έí CVS repository έíθ FreeBSD όάí άέέú άάό έðέέú mirror.

Áí ðáñáëäþøðå ðçí áðéëÝóå RELEASETAG, öüðå åå íaðåääèùððéóðåß íéå ðëÞñçð Ýéäíöç äðu ðçí èíñòð òìð HEAD  
 (äçë. òìð -CURRENT) èíñíý. Íë äêäüóåðð ðìð öðëÛ÷íííðåé äðu äððúí òíí èíñìù, öðíÞèùð áíáoÝíííðåé áái  
 “-CURRENT snapshots”.

ÖðÚñ÷íøí éáé ðíēēÝð Üēēāð íāðāāēçðÝð ðíø ðíñííýí íá ÷ñçøēíñðíēçēíýí āēá íá ðāñāíāðññðíēÞōāðā ðçí ÝēāíøÞ ōāð. Íē ðēí ðíēēÝð āðú āððÝð øēð íāðāāēçðÝð ðāñēāñÜññíðāē ōççí ēíññðÞ ðíð āñ÷āññø src/release/Makefile. Ç āēñēāðð āíðíēÞ ðíð ÷ñçøēíñðíēÞēçēā āēá íā öðēá÷ðāñ ç āðßðçíç Ýēāíøç 4.7 ðíð FreeBSD (x86 ðēāðöüññā) Þāáf:

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

Ὅτι Makefile δῖο ÷ η̣ς ὁ εἰς δῖε ἀβδαε̣ ἀεά ἰά ἰαδα̣α̣ε̣υ̣ο̣δ̣ο̣β̣α̣ι̣ο̣α̣ε̣ ἰε̣ ἀε̣α̣υ̣ο̣α̣ε̣δ̣ ἰδῖη̣α̣β̣ ἰά ÷ υ̣η̣ε̣ο̣ο̣α̣β̣ ο̣α̣ ἀη̣ε̣α̣ο̣Ũ ἰα̣ ÷ υ̣η̣ε̣ο̣ο̣Ũ ἰα̣ο̣ά̣ρ̣ ὁ̣ι̣ο̣δ̣ ἀ̣Π̣ια̣ο̣ά̣.

- Ἀγείριοναβὰ ἀφὺδ ἐἀεάνιγ δᾶνέαῤῗεῖριτὸ οᾶ ἰέα ἰᾶ÷ῤῗεὸδP εᾶñᾶñ÷βὰ ἐἀὸἀεῦᾶῦ ἰᾶ ὀγί ἀίῶῖεP “make installworld”.
- ἈἰᾶῦᾶP ᾶῦ ὅἱ CVS ἰεᾶὸ ἐἀεῖγῖνέᾶὸ Ἰέᾶῖρὸçð ὅἱ ὀçᾶᾶἸῶ ἐpᾶέᾶ ὅἱ ὀῶῶPἰᾶῖτὸ, ὀçð ὀᾶῖçῖñḂῦὸçð ἐᾶέ ὀῦἱ ports ἰῤῶᾶ ὀçγί εᾶñᾶñ÷βὰ ἐἀὸἀεῦᾶῦ ἰᾶὸᾶᾶεpῶῶεὸçð ὀçð Ἰέᾶῖρὸçð.
- Ἰῶεἰβὸᾶέὸ ὀῦἱ ᾶñ÷ᾶḂῦ ὀῖἱ ἐᾶὸῤῗεῖᾶ /etc ἐᾶέ /dev ἰῤῶᾶ ὀῖἱ δᾶñέαῤῗεῖἱ chroot.
- ἌεὸἸέᾶὸç ὀçð ἀίῶῖεPð chroot ἰῤῶᾶ ὀçγί εᾶñᾶñ÷βὰ ἐἀὸἀεῦᾶῦ ὅἱ ᾶῖῖἰῤῶῶçðᾶ, ᾶέα ἰᾶ ἰçἱ ἰῶñᾶḂ ὅἱ ᾶῖῦὀᾶñέῦ ὀñᾶñέαῤῗεῖἱ ἰᾶ ᾶὀçñᾶῤῶᾶέ ὀç ἰᾶὸᾶᾶεpῶῶεὸç ὀçð Ἰέᾶῖρὸçð.
- ἌεὸἸέᾶὸç ὀçð ἀίῶῖεPð make world ἰῤῶᾶ ὀῖἱ δᾶñέαῤῗεῖἱ chroot.
- ἰᾶὸᾶᾶεpῶῶεὸç ὀῦἱ ᾶεὸᾶῖῤῶῖῦ ὅἱ ᾶἸᾶῖ ὀ÷ᾶὀῖῖῤ ἰᾶ ὅἱ ὀῖῶὀçἰᾶ Kerberos.
- ἰᾶὸᾶᾶεpῶῶεὸç ὅἱ ὀῶñPἰᾶ GENERIC.
- Ἀçἱῖῖῖῖῖᾶ ᾶῖῦδ ὀᾶῖῖῖῖ ἑᾶὸᾶῖῦᾶῖ ὀῖἱ ἰῶἱἱ ἑᾶ ἰᾶὸᾶᾶῖῦὀῶεὸῶἱῖ ἑᾶέ ἑᾶ ᾶὀῖçῖᾶὀῖῖῖ ἰῖ ᾶεὸᾶῖῤῶᾶ ἰῖñῶῤ ὀῦἱ ὀᾶῖῖῖῖ ὀᾶῖῤῶἱ.
- ἰᾶὸᾶᾶεpῶῶεὸç ἐᾶέ ᾶᾶῖᾶῤῶὀᾶὸç ὀῦἱ ᾶñᾶᾶῖḂῦ ὅἱ ÷ñᾶῖῤῗἰᾶῖ ᾶέα ὀçἱ ὀñᾶὀῖῖᾶὀᾶ ὀçð Ἰέᾶῖρὸçð ἐᾶέ ὀç ἰᾶὸᾶὀñῖP ὀçð ὀᾶῖçῖñḂῦὸçð ᾶῦ ὅἱ ὀçᾶᾶἱ ἐpᾶέᾶ (SGML) ὀᾶ html ἐᾶέ ᾶñ÷ᾶᾶ ἑᾶῖῤῗἰ ὅἱ ἑᾶ ὀῶñᾶῖῖῖῖ ὀçἱ Ἰέᾶῖρὸçð.
- ἰᾶὸᾶὀñῖP ἐᾶέ ᾶᾶῖᾶῤῶὀᾶὸç ὀçð ὀᾶῖçῖñḂῦὸçð (ᾶᾶ÷ᾶῖñḂᾶῖ ÷ñPὀçç, ᾶῖᾶᾶῖᾶῖῖ ἑᾶἸᾶἰᾶ, ὀçἰᾶῖῖᾶῖ Ἰέᾶῖρὸçð, ῖḂῶὀᾶ ὀῶἰᾶὀῦὀçὀᾶὀ ὀῖῖῖῖ. ῖῖῖ.)

- Îāóāāēpôôéóc òuĩ “òõĩðēáõĩŸĩũĩ” (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 òĩō 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 òũũĩ òĩ ðāñēāŪēēĩ XFree86 üũĩ ēāē ç āēpôóā Tcl/Tk. ÎāðŪ ôçĩ ìāóāāēpôôéóc òuĩ ēāðŪēēçēũĩ X servers, òĩ ðñũāñāĩā ēā ðāēāðŪñāē üēā óā āñ÷ābā óā óðēēĩāŸð āñ÷ābũĩ 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, 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.

**Óçĩābũóç:** 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 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 23,000 ðñĩāñŪĩĩāðā āðũ òñbôĩðð, ðĩō ābĩāē āēāēŸóēĩā āēā FreeBSD. Ĭē Ports Management Team <[portmgr@FreeBSD.org](mailto: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 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 ĀĩŪðððĩçð 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÷üíǎíǎ òîõ ǎßóêîõ, êé Ýíǎ ǎñ÷ǎßí CDROM.INF ðîõ ðǎñéÝ÷ǎé íǎðǎ-ðêçñîüññßǎð ǎéǎ íǎ ïðññǎß òî ðñüǎñǎíǎ sysinstall(8) íǎ ǎéÝǎñǎé êéǎ íǎ ÷ñçóêîüðîéßóǎé áðòü òî ǎßóêî, êǎêð òé Ýíǎ ǎñ÷ǎßí filename.txt ðîõ ðǎñÝ÷ǎé íéǎ êßóðǎ ǎñ÷ǎßüí òîõ CDROM. Áðòß ç êßóðǎ ïðññǎß íǎ ǎçíêîñǎçêǎß ðîéý áðêÛ, ùð ǎñðò:

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

Íé óðǎéǎêñéíÝíǎð áðǎéòßóǎéð ǎéǎ êÛêǎ Ýíǎ áðü áðòÛ òǎ CD ðǎñéǎñÛöüíóǎé ðǎñǎéÛòü:

### 3.4.1 Áßóêîõ 1

Í ðñðòîð ǎßóêîõ ǎßíǎé ó÷ǎǎüí áðîééǎéóóéêÛ áðîðÝéǎóíǎ òçð ǎíóîéßðð make release. Íé üíǎð ǎééǎǎÝð ðîõ ðñÝðǎé íǎ ǎßñîí óóüí êáðÛêîñ disc1 ǎßíǎé ç ðñîóèßê ðîõ êáðÛêîñ tools, òüí XFree86, êéǎ üóí òî ǎóíǎóüí ðǎñéóóüðǎñüí ðǎéÝòüí ïðññíý íǎ ÷ñÝóüí óóüí ǎßóêî. Í êáðÛêîñ tools ðǎñéÝ÷ǎé ǎñǎǎéǎßǎ ðîõ áðéòñÝðîí óǎ ÷ñßóðǎð Ûêêüí êǎéòîñǎéêñí óðóðçíÛòüí íǎ óðéÛñîí óéð ǎéóéÝððǎð ǎéêßíçóçð. Áðòüð ï ðñðòîð ǎßóêîõ ðñÝðǎé íǎ óðéÛ÷ǎéǎé bootable Ýðóé ðóðǎ íǎ ïðññíý íé ÷ñßóðǎð òüí üíðÝññüí ððîéíǎéóðñí íǎ áðîðǎýǎíóí òî óðÛǎéí ǎçíêîñǎßǎð òüí ǎéóéǎððñí ǎéêßíçóçð.

Áí íéǎ ǎéǎóñǎðéêß Ýêǎíóç òüí XFree86 êǎ ǎéǎíÝíǎðǎé íǎ òçí Ýêǎíóç áðòß, ðñÝðǎé íǎ ǎçíǎñüèǎß òî ðñüǎñǎíǎ sysinstall(8) ǎéǎ òçí íÝǎ ðÝóç êéǎ íé íǎçǎßǎð ǎǎéǎðÛóðǎóçð. Í ó÷ǎðééüð êñǎééǎð ððÛñ÷ǎé óóüí êáðÛêîñ src/release/sysinstall óóüí -STABLE êññü ð óóüí êáðÛêîñ src/usr.sbin/sysinstall óóüí -CURRENT êññü. ÓðǎéǎêñéíÝíǎ, òǎ ǎñ÷ǎßǎ dist.c, menus.c, êéǎ config.c êǎ ÷ñǎéǎóðǎß íǎ ǎçíǎñüèíýí.

### 3.4.2 Áßóêîõ 2

Í ǎǎýðǎñîð ǎßóêîõ ǎßíǎé áðßóçð áðîðÝéǎóíǎ òçð ǎíóîéßðð make release êáðÛ Ýíǎ íǎǎÛêîñ ïÝñîð. Áðòüð ï ǎßóêîõ ðǎñéÝ÷ǎé Ýíǎ “live filesystem” ðîõ ïðññǎß íǎ ÷ñçóêîüðîéçêǎß áðü òî sysinstall(8) ǎéǎ íǎ ǎíǎðǎóóüíýí ðññǎéßíǎóǎ óǎ íéǎ ǎǎéǎðÛóðǎóç òîõ FreeBSD. Êé áðòüð ï ǎßóêîõ ðñÝðǎé íǎ ǎßíǎé bootable. Êǎ ðñÝðǎé áðßóçð íǎ ðǎñéÝ÷ǎé Ýíǎ óóüðéǎóüíÝñí ǎíðßǎñǎóüí òîõ CVS repository óóüí êáðÛêîñ CVSROOT êéǎ ǎßǎíǎóǎ áðü ǎðññéêÛ ðññǎñÛñǎóǎ óóüí êáðÛêîñ commerce.

### 3.4.3 Áßóêîõ 3 êéǎ 4

Íé ððüêîéðîé ǎðí ǎßóêîõ ðǎñéÝ÷ǎéí ǎðéðñüóéǎðǎ ðǎéÝóǎ êñǎéóíéêñý ǎéǎ òî FreeBSD. Óǎ ðǎéÝóǎ êǎ ðñÝðǎé íǎ ǎßíǎé ñǎǎñðîéçíÝíǎ, Ýðóé ðóðǎ êÛêǎ ðǎéÝòü íǎ ǎßíǎé óóüí ðǎéí ǎßóêî íǎ üéǎ óǎ ðǎéÝóǎ áðü óǎ ïðñǎ ǎíǎñðÛóǎé ǎéǎ íǎ ǎǎéǎðǎóðǎéǎß êéǎ íǎ ðñÝíǎé. ðǎñéóóüðǎñǎð ðêçñîüññßǎð ǎéǎ òçí ǎçíêîñǎßǎ áðòñí òüí ǎßóêüí ǎíǎóÝññíóǎé óóüí Ûñêññ Ç ÎñãÛîùόç êǎíóçð òüí ðǎéÝòüí Êñǎéóíéêñý áðü Õñßòîðð (./releng-packages/article.html).

## 4 Áéǎíñß òüí Áêäüüóàùí

### 4.1 ÁîððçñǎðçðÝð FTP

¼ðǎí ç Ýêǎíóç ǎßíǎé Ýóîéíç, Ý÷ǎé ǎñééíǎóðǎß ǎéðǎíðð, êéǎ Ý÷ǎé ðǎéǎðǎñéóðǎß ǎéǎ ǎéǎíñß, ï êýñéîð FTP ǎîððçñǎðçðð ðñÝðǎé íǎ ǎçíǎñüèǎß. Íé áðßóçñéé ǎîððçñǎðçðÝð FTP òîõ FreeBSD ǎßíǎé üéé mirrors ǎíüð êýñéîð ǎîððçñǎðçðð óóüí ïðññí Ý÷ǎéí ðññóǎǎóç üüí Ûêêüí FTP ǎîððçñǎðçðÝð. Áðòüð ï ǎîððçñǎðçðð ǎßíǎé ǎñüóüð ùð ftp-master. ¼ðǎí ç Ýêǎíóç ǎßíǎé Ýóîéíç, ðñÝðǎé íǎ ǎçíǎñüèíýí òǎ ðǎñǎéÛòü ǎñ÷ǎßǎ óóüí ftp-master:





## 5.1 ĀçîēîōñāāĀ ĐñîóáñîîóíŸíuî Āéóēāôôpí Āēēβîçóçò.

ĐîēēŸò āāēāóáóôŪóāēò Ÿ÷îîí đîēýđēîēāò áđāēôĀóāēò đîō ìđîñāā ìā ôç óāēñŪ òîōđ íā áđāēôîŸí ôçî đñîóēĀēç đāñēóóúôđāñuî ðāçāpí Ā āñāāēāβuî ÷ñĀóôç óôēò āēóēŸôôāđ āāēāôŪóóáóçò. Ī “îđāēŪēēēîō” òñuđîō íā òî ēŪîāôā áôôu āβîāē íā ēŪîāôā ôēò āēēāāŸò óāò óôîí ēāôŪēîāî đîō Ÿ÷āē āôîēîŪóāē ìāôŪ òî ôŸēîō ôçò ç āēāāēēāóáā make release:

- ĐāñŪóôā óā patches óāò Ā đñîóēŸôôā óā āđēđēŸîí āñ÷āā ìŸóā óôîí ēāôŪēîāî chroot ôçò Ÿēāîóçò.
- `rm ${CHROOTDIR}/usr/obj/usr/src/release/release.[59]`
- ìāôāēüôôđóôā đŪēē òî sysinstall(8), òîí đòñĀîā, Ā üđîēā Ūēēā đñîāñŪîāóā Ÿ÷îîí āđçñāāóóāā áđu ôēò āēēāāŸò óāò.
- `chroot ${CHROOTDIR} ./mk floppies`

Īē îŸāò āēóēŸôôāđ āāēāôŪóóáóçò ēā āçîēîōñāçēîŸí óôîí ēāôŪēîāî \${CHROOTDIR}/R/stage/floppies.

ĀîāēēāēôēēŪ, ìđîñāāôā íā ÷ñçóēîîđîēĀóāôā òî make target boot.flp, Ā ìđîñāāôā íā òñŸîāôā áđāôēāāô òî script òî āçîēîōñāāāā óā óôôôĀîāóā āñ÷āāuî src/release/scripts/doFS.sh.

Īđîñāāôā āđβóçò íā ēāñîβóāôā Āóôā āēēŸò óāò āēēāāŸò íā đāñāóôîŸí ìā ìñôĀ patch óôçî Ÿēāîóç üđuò ēā ôôēŪ÷îāôāē, āβñîîāô òēĀĀ óôçî ìāôāāēçôĀ LOCAL\_PATCH üôāí òñŸîāôā ôçî āîôîēĀ make release.

## 5.2 Đñîāñāîîāôβæîîóāò òî sysinstall

Ōî āñāāēāāî āāēāôŪóóáóçò ēāē ñŸēîóçò òîō FreeBSD, òî sysinstall(8), ìđîñāā íā đñîāñāîîāôēóóāā āēā íā ēŪîāē đēî āŸēîēāò ôēò áôôñîāôîđîēçîŸîāò āāēāóáóôŪóāēò óā đîēēŪ ìç÷āîĀîāóā. Áôôu òî ÷āñāēôçñēóóôēu òîō đñîāñŪîîāôîō ìđîñāā íā ÷ñçóēîîđîēçēāā óā óôîāôāóîu ìā òî PXE[13] ôçò Intel āēā íā ìāēēîĀóāē ç āāēāôŪóóáóçò áđu òî āβēôôî, Ā óā óôîāôāóîu ìā đñîóáñîîóíŸîāò āēóēŸôôāđ āēēβîçóçò ēē Ÿîā sysinstall script. íā đāñŪāāēāîā áđu ôŸôîēî sysinstall script ìđîñāāôā íā āñāāôā óôî āñ÷āāuî src/release/sysinstall/install.cfg.

## 6 ìāēĀîāóā òîō ĐĀñāîā áđu ôçî êäîîóç 4.4 òîō FreeBSD

Ç āēāāēēāóáā āôîēîāóáāò ôçò Ÿēāîóçò 4.4 òîō FreeBSD ìāēβîçóā āđβóçîā ôçî Īç ÁôāîŸóôîō 2001. ìāôŪ áđu áôôĀ ôçî çîāññîçîā, üēāò ìē āēēāāŸò óôîí ēîñîü RELENG\_4 òîō FreeBSD Ÿđñāđā íā Ÿ÷îîí Ÿāēñēóç áđu ôçî Release Engineering Team <re@FreeBSD.org>. Ç đñĀôç āîēēîāóóēēĀ Ÿēāîóç āēā ôçî āñ÷ēôāēôîîēēĀ x86 Ÿāēîā āēāēŸóēîç óôēò 16 ÁôāîŸóôîō, ēē āēîēîōēĀēēā áđu 4 āēuîā āîēēîāóóēēŸò āēāüóāēò đîō ðāĀçóāí óôçî ôāēēēĀ Ÿēāîóç óôēò 18 òîō ÓāđôŸîāñç. Ī òđāŸēôñô áóôŪēāēāò Ÿđāēîā ôçîāîóēēü ñuēî ēāôŪ ôçî āēŪñēāēā ôçò ôāēāôāāôāò āāāñŪāāò ēāēĀ òŪđîēā đñîāēĀîāóā áóôŪēāēāò āñŸēçēāí óā đñîçāîŸîāîāò, āîēēîāóóēēŸò āēāüóāēò. ÓôñîēēēŪ, đŪîü áđu 500 email óôŪēēçēāí óôçî Release Engineering Team <re@FreeBSD.org> óā āēŪóôçîā ìēēñüôāñî áđu Ÿîā ìĀîā.

Ç ēîēîüôçôā òùí ÷ñçóôĀ ìāò Ÿēāîā óāôŸò üôē ç áóôŪēāēā ēāē ç óôāēāñüôçôā ìēāò Ÿēāîóçò āāí ēŪ 'đñāđā íā ēôôēŪæāôāē āēā ēāîāîüò āβāîōđ đñîēāóîāôā Ā çîāññîçîāôā đîō Ÿ÷îîí ôāēāā óāí óôü÷îē áđu đñēî. Ōî FreeBSD Ÿ÷āē ìāāāēĀóāē āñāîāôēēŪ ēāôŪ ôç āēŪñēāēā ôçò æuĀò òîō óāí óŸóóçîā, ēāē ç áîŪāēç āēā óôāēāēñēîŸîç đîēēôēēĀ ēāē ðñāŸîuôç āēā ôçî āçîēîōñāāā îŸuî āēāüóāuî āβîāē đēŸîí óāîāñĀ đāñēóóúôđāñí áđu đîōŸ. ÁôôĀ ç áîŪāēç ēā āβîāē āēuîā đēî ôçîāîóēēĀ ēāēĀ òî FreeBSD ēā āñ÷āāē íā ìāóāŸŸñāóāē óā îŸāò đēāóôüñîāò.

7 ìǎëëĩíôéeêÝò Êáôǎõèýíóǎéo

[illegible]

- *ḐānÜēēççē āēōYēāōç - İlaneēÜ İYñç öçō İāōāāēpōōēōçō İēāō āēāēāÜōōāōçō İdñİYİ İā āßİİİİİ “ðīēý ḑānÜēēçēā”.* Ōā ðēİ ðīēēÜ āðü ōā ōōÜāēā āßİāē I/O intensive, İðüōā ç ýðāñİç ðīēēpİ ōpçēpō-ōā÷ýōçōāō āßōēüİ āßİāē ðēİ öçİāİōēēp āðü öçİİ ÷ñpōç ðīēēpİ āðāİāñāāōōpİ āēā İā āðēōā÷ōİēāß ēÜðüō ç āēāāēēāōßā öİİ make release. Áİ āēāōİñāōēēİēİ āßōēİē ÷ñçōēİİðīēçēİYİ āēā öİpİāōā öçō ēāñāñ÷ßāō öİİ chroot(2) ḑāñēāÜēēİİðİō, öüōā öİ CVS checkout öüİ ēāōāēüāüİ ports ēāē doc İdñİāß İā āßİāē āōðōü÷ñİİ İā öçİ āİōİēp make world öōİİ Üēēİ āßōēİ. ×ñçōēİİðīēpİōāō İēā RAID ēýōç (hardware p software) İdñİāß İā İāēpōāē āñāōōēēÜ öİİ öōñēēēü ÷ñüİ ðİō ÷ñāēÜāōāē İā İāōāēüōōēōōāß İēā ðēpñçō Yēēİōç.
- *İāōāāēpōōēōç āēüüōāüİ āēā āēāōİñāōēēYō āñ÷ēōāēōİēēYō - ÈYēāōā İā İāōāēüōōßōāōā İēā Yēēİōç āēā IA-64 p Alpha ōā ēÜðīēİİ x86 āðāİāñāāōōp? make TARGET=ia64 release.*
- *ÄīēēİYō āēā vÜēç - ×ñāēāæüİāōāō ēāēýōāñā āñāāēāßā āēā āōðüİāōİ Yēāā÷İ İñēüōçōāō öōİ FreeBSD.*
- *Āñāāēāßā ĀāēāōÜōōāōçō - Ōİ ðñüāñāñÜ İāō āēā öçİ āāēāōÜōōāōç öİō FreeBSD Y÷āē İāðāñÜōāē ðñİ ðīēēİY öİİ āİāİāİüāñ ÷ñüİ æÜpō öİō. ŌðÜñ÷İōİ āēÜōİñāō ñÜāāō ðİō āñāÜāİōāē āēā İā öēİðīēpōİōİ ēÜðīēİİ Üēēİ, ðēİ İİİōYññİ İç÷āİēōİÜ āāēāōÜōōāōçō. İēā āðü öēō ðēİ öðİō÷üāİāō, āßİāē ç ñÜāā libh[5] ðİō öōİ÷āYāē öōçİ öēİðİßçōç āİüō Yİōðñİō, İYİō ðñüðİō ðāēāōāñßōİāİōİ ēİāēōİēēİY ēāē āİüō GUI ðñİāñÜİāİōİ āāēāōÜōōāōçō.*

## 8 Ã÷áñéóôßàò

[illegible]

## 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](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](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](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](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>)