

# Ç ĩñãŨíùóç ôùí Âêäüóãùí ôĩõ FreeBSD

Murray Stokely

murray@FreeBSD.org

\$FreeBSD: release/8.4.0/el\_GR.ISO8859-7/articles/releng/article.xml 39632

2012-10-01 11:56:00Z gabor \$

\$FreeBSD: release/8.4.0/el\_GR.ISO8859-7/articles/releng/article.xml 39632

2012-10-01 11:56:00Z gabor \$

Άδου οĩ Ũñēñĩ ðāñēāñŨōāē ôçĩ áíôēíāðþðēóç ēāē ĩñãŨíùóç ôçð ñŨāāð áíŨððôĩçð ôĩõ FreeBSD, ũôĩĩ áöĩñŨ óôçĩ ðñĩāðĩēíāóßā ðĩēĩðēēþĩ āēäüóãùĩ ôĩõ Êāēôĩõñāēēĩŷ Óðóðßĩāðĩõ FreeBSD. Âĩçããß ĩā ēāððñŨñāēā ôçĩ ĩāēĩāĩēĩāßā ðĩõ ÷ñçóēĩĩðĩēāßðāē āēā ðēð āðßóçĩāð āēäüóāēð ôĩõ FreeBSD ēāē ðāñēāñŨōāē óā āñāāēāßā ðĩõ āßĩāē āēāēŸóēĩā óā ũôĩõð āĩāēāóŸñĩĩóāē ĩā ðāñŨāĩĩĩ ðāñāĩāðñĩðĩēçĩŸĩāð āēäüóāēð ôĩõ FreeBSD āēā āóùðāñēēþ ð āĩðĩñēēþ ÷ñþóç ēāē áíŨððôĩç ðñĩũĩĩôñĩ.

## Ðßĩāēāð Ðāñēā÷ñŸĩùĩ

1 Âéóāãũāþ .....	1
2 Ç Âēāāēēāóßā Âçĩēĩõñāßāð ĩēāð çāĩóçð.....	2
3 ĩāóāāēþðôēóç ôçð çāĩóçð .....	5
4 Âēāñþ ôùĩ Âēäüóãùĩ .....	8
5 Âðāēóāóēĩũðçðā .....	9
6 ĩāēßĩāóā ðĩõ Ðþñāĩā áðũ ôçĩ çāĩóç 4.4 ôĩõ FreeBSD .....	10
7 ĩāēēĩñōēēŸð Êāðāðēŷĩōāēð .....	10
8 Âð÷āñēóðßāð .....	11
9 ÁĩāōĩñŸð .....	11

## 1 Âéóāãũāþ

Ç áíŨððôĩç ôĩõ FreeBSD āßĩāē ĩēā ðĩēŷ āĩē÷ðþ āēāāēēāóßā. Ôĩ FreeBSD áðĩðāēāßðāē áðũ óðĩāēóōĩñŸð ÷ēēēŨāũĩ āĩēñþðũĩ áðũ ũēĩ ôĩĩ ēũôĩĩ. Ç ñŨāā ôĩõ FreeBSD ðāñŸ÷āē ðñũóāāóç ĩŸóũ āĩþĩðĩĩõ CVS[1] óā ũēĩõð, Ÿðóē þóðā ĩā ĩðĩñāß ũðĩēĩð ēŸēāē ĩā āāē ĩçŷĩāóā log, āēāōĩñŸð (patches) ðĩõ Ÿ÷ĩĩĩ óā āēŨōĩñā development branches, ēāē Ũēēā ÷āñāēðçñēóðēēŨ ðĩõ āĩçēĩŷĩ ôçĩ áíŨððôĩç, óā ĩðĩßā ðñĩēŷððĩĩĩ áðũ ôçĩ ÷ñþóç āĩũð áððóçñĩŷ óðóðßĩāðĩõ āēā÷āßñēóçð ēþāēēā. Áððũ áðĩðŸēāóā ēāē ôĩĩ ðēĩ ôçĩāĩóēēũ ðāñŨāĩĩĩā Ÿēĩçð āēā Ÿĩā ĩāāŨēĩ āñēēĩũ áðũ óāēāĩôŷ÷ĩõð ðñĩāñāĩĩāóēóðŸð áðũ ũēĩ ôĩĩ ēũôĩĩ óôĩ FreeBSD. Âßĩāē ðñĩóāĩŸð, āŸāāēā, ðũð ðĩēŷ óŷĩðñā ēā āß÷ā āßĩāē āĩóāēþð ÷āĩðēēþ ç ēāðŨóðāóç āĩ āß÷āĩ ũēĩē, áðũ ũēĩ ôĩĩ ēũôĩĩ, ðñũóāāóç ĩā āñŨøĩĩĩ óôĩĩ ēþāēēā. Âē' áððũ, ĩũĩĩ

ιέα “áðέääÝíç” ñÛää áðù ðáñβðìò 300 Ûòñá Ý÷ìò ðñüóááç íá ãñÛìòí óòí CVS repository. Áðòìβ ιέ *committers*[6] áβιáέ ððáyèðñíέ áέá òí ιάάáyòáñí ιÝñìò òçð áíÛððòíçðð ðìò áβιáðáέ óòí FreeBSD. Ιέα *έáìòñέέP-ñÛää*[7] (core team) áðù áέάέáñέíÝñìò ðñíáñáιιáðέóóÝð áέéÝáðáέ áέá íá ðáñÝ÷áέ εÛðìέìò áβáìòð έάέìáPáçóç έάέ ιέα έάðáyèðñíç óòí óýñíέ òùí committers.

Ιέ ðá÷ýðáòιέ ñðèìβ áíÛððòíçð òìò FreeBSD ááí áðPñìò έάέ ðñέý ÷ññí áέá òí ιάέάεÛñέóιá òìò óðóðPιáðìò áíÛððòíçð óá ιέα Ýέáìòç ιá ðñέüòçðá ðìò ιá áιβáέ ιá ÷ñçóέìðñέáβóáέ áðñÝùð. Áέá ιá εðέáβ áðòù òí áβέέçιá, ç áíÛððòíç áβιáðáέ óáðòù÷ñíá óá áòí ðáñÛέέçέá ññðÛóέá. Ι έýñέìò έìñìüð áíÛððòíçð áβιáέ ι *HEAD* P *trunk* óòí CVS repository ιáð, áñüóòüð έάέ ùð “FreeBSD-CURRENT”, P “-CURRENT” áí óðìòñβá.

Ιάð ðέí óðáέáñüð έìñìüð óðìòçñáβóáέ, áñüóòüð ιá òí ùñíá “FreeBSD-STABLE” P ðέí óýìòñá “-STABLE”. Έάέ ιέ áòí έìñìüβ áβιáέ áðñέçέáðìÝñíέ óòí έýñέí CVS repository, óçí Έáέέóññíέá, έάέ áíðέáñÛìíðáέ ιÝòù **CVSup**[2] óá mirrors ðáíðíý óòñí έüòì. Òí FreeBSD-CURRENT[8] áβιáέ ç “ðñðçç óáέñÛ” òçð áíÛððòíçð òìò FreeBSD έáέðð óá áðòù áβñíðáέ ðñðá üέàð ιέ έάέíññέáð áέέááÝð. Òí FreeBSD-STABLE áβιáέ ι έìñìüð áíÛððòíçð áðù òñí ðñíβì òðέÛ÷ñíðáέ ιέ áέäüóáέð. Ιέ áέέááÝð áέóÝñ÷ñíðáέ óá áðòù, òñí ááyòáñí έìñìü áíÛððòíçð, ιá ðέí áñáü ñðèìü, áòíý ðñðá (óýìòñíá ιá óçí ðñέέðέέP ιáð) áñέέιáðóðíý óòí FreeBSD-CURRENT έάέ Ý÷ìò ááðáóóðáβ ðñέý έάέÛ.

ΈáðÛ óçí ðáñβñáì ðìò ιáðñέáááβ áðù òç ιέα Ýέáìòç óçí áðñíáíç, òðέÛ÷ñíðáέ έάέçìáñέíÛ snapshots áðù óá ιç÷áíPιáðá òçð ñÛääð òìò FreeBSD έάέ áβιáέ áέάέÝóέιáð áðù òñí áìòðçñáðçðP <ftp://stable.FreeBSD.org/>. Ç ιάáÛέç áέάέáðóέìüðçðá òùí áέðáέÝóέìñí snapshots, έáέðð έάέ ç ðÛóç òçð έìέñüðçðáð òùí ÷ñçóðñí ιáð ιá áíçìáñβñìò óá ιç÷áíPιáðÛ òìò ιá ðέð ðñüóáðáð -STABLE áέäüóáέð ιÝòù CVSup έάέ “make world”[8] áñçέíý ιá έñáðέÝðáέ òí FreeBSD-STABLE óá ιέα ðñέý áíέüðέóðç έáðÛðááç áέñüá έάέ ðñέí áñ÷βóáέ ι έýέèìò òùí áéÝá÷÷ñí ðñέüòçðáð áέñέáðð ðñέí áðù óçí áέÛέáóç ιέáð Ýέáìòçð òìò FreeBSD.

Óðíá÷÷ð óðÝέññíðáέ áðù òìòð ÷ñPóðáð ιáð áíáðñÝð ðñíáέçìÛòùí έάέ áέðPóáέð áέá έάέñññέá ÷áñáέðçñέóðέέÛ, έáðÛ òç áέÛñέáέá òìò έýέèìò òçð εÛέá Ýέáìòçð. Ιέ áíáðñÝð ðñíáέçìÛòùí áέóÛáññáέ óçí áÛóç **GNATS**[9] ιÝòù e-mail, ιá óçí áðáññíáP [send-pr\(1\)](mailto:send-pr(1)), P ιÝòù òìò web-interface ðìò ðáñÝ÷áέ óçí áέáyèðñíç <http://www.FreeBSD.org/send-pr.html>. Áέðüð áðù ðέð áέÛìñáð εβóðáð çέáέðññíέέíý ðá÷ðáñññáβìò ιá εÝíá óá ðá÷íέέÛ ÷áñáέðçñέóðέέÛ òìò FreeBSD ððÛñ÷áέ έάέ ç εβóðá FreeBSD Quality Assurance mailing list (<http://lists.FreeBSD.org/mailman/listinfo/freebsd-qa>), ç ðñíβá ðáñÝ÷áέ Ýíá òññìòí áέá ððáçðPóáέð ó÷áðέέÛ ιá ðέð έáððñÝñáέáð òçð “ññáÛñóçð òùí áέäüóàùí”.

Áέá ιá áìòðçñáðçέíý ιέ ðέí óðìòçñçðέέìβ ÷ñPóðáð ιáð, ιá Ýέáìòç òìò FreeBSD 4.3 áñ÷βóáιá ιá ÷ñçóέìñðñέíýá ιá÷÷ñέóðíýð έìñìýð áέäüóáùí. Áðòìβ ιέ έìñìüβ áçìέìòñáñíýðáέ εβáì ðñβí òðέá÷ðáβ ç ðáέέέP Ýέáìòç. ΙáðÛ óçí áíáέìñüç òçð Ýέáìòçð, ñññ ðñέý óçíáíðέέÝð áέέááÝð έάέ ðñíðέðέáð ó÷áðέέÝð ιá óçí áóóÛέáέá áβññíðáέ óòñí έìñìü òçð Ýέáìòçð. Áέðüð áðù óçí áðñáðüðçðá áíááÛέìέóçð ιÝòù CVS, áέðáέÝóέιá patchkits òðέÛ÷ñíðáέ áέá ιá ðññíýí ιá áíááέìβóìòí óá óðóðPιáðÛ òìòð ùóíέ ÷ñçóέìñðñέíý ðέð áέäüóáέð *RELENG\_X\_Y*.

Òí ÒìPιá 2 áñçááβ ιá έáððñÝñáέáð óá áέÛìñá óðÛáέá òçð áέááέéáóβáð ðìò áñβóέáðáέ ðβóù áðù εÛέá Ýέáìòç, ιÝ÷ñέ έάέ óá áPιáðá ðìò ñáçáñíý óçí ιáðááèððóέóç òìò óðóðPιáðìò έάέ òí ÒìPιá 3 áñçááβ óçí βáέá òç áέááέéáóβá òçð ιáðááèððóέóçð. Òí ÒìPιá 5 ðáñέáñÛóáέ ðüð ðññáβ ιá áðáέðáέáβ òí ááóέέü óýóðçιá áðù ðñβðìòð έάέ òí ÒìPιá 6 ðáñέáñÛóáέ εÛðñέá áðù óá ðñÛáιáðá ðìò ιÛέáιá áðù óçí áέááέéáóβá Ýέáìòçð òìò FreeBSD 4.4. Óýέìò, òí ÒìPιá 7 ðáñìòóέÛáέé εÛðñέáð áðù ðέð έáðáðέýíáέð ðìò εÝέìòιá ιá ðÛñáέ ç áíÛððòíç óòí ιÝέέí.

## 2 Ç Áέááέéáóβá Áçìέìòñáβáð ιέáð έäìíóçð

Ιέ ιÝáð áέäüóáέð òìò FreeBSD òðέÛ÷ñíðáέ áðù òñí -STABLE έìñìü áíÛððòíçð ðáñβðìò εÛέá óÝóáñáέð ðPιáð. Ç áέááέéáóβá ðñíáðñέíáóβáð ιέáð Ýέáìòçð ñáέέíÛáέ ó÷ááüí 45 ιÝñáð ðñέí óçí áíááíñíáíç çñáññçíβá Ýέáìòçð, ùðáí ι ððáyèðñìò áέäüóáùí òìò FreeBSD óðÝέíáέ Ýíá áñÛìá óðέð εβóðáð òùí ðñíáñáιιáðέóóðñí áέá ιá ððáñέðìβóáέ óðìòð ðñíáñáιιáðέóóÝð ùέé Ý÷ìò 15 ιÝñáð έáέññ ιá εÛñìò ùðñέáð áέέááÝð εÝέìòí, ðñέí òí ðÛáñüá òìò έðáέέá. ΙÝóá óá

áòòü òĩĩ éáénü, ðĩēēĩß ðñĩāñāñĩáòéóóŸò ēŪñĩōĩ ĩéá óáēñŪ áðü áēēááŸò ðĩō Ÿ ÷ ĩōĩ ĩāßĩáē ðēŸĩĩ āñüóóŸò ùò “ĩāēáēāñßōĩáóá MFC”. Ī ũñĩō MFC óçĩāßĩáē “Merge From CURRENT” éáē ðāñēāñŪōāē óçĩ áēááēēáóßā ðñĩóāñĩĩāßò òĩō ēßāēēá ĩéáò āĩēēĩáóĩŸĩçò áēēáāßò áðü òĩĩ -CURRENT ðāñēāñĩáóēēü ēĩñĩü áñŪðòōĩçò óòĩĩ óóāēāñü -STABLE ēĩñĩü.

## 2.1 ĩāā ÷ ĩō ēßāēēá

ŌñēŪĩóá çĩŸñāð ðñēĩ óçĩ áĩāĩāñĩāĩç çĩāññçĩßā Ÿēāĩōçò, ĩ ēßāēēáð òĩō repository áéóŸñ ÷ āðáē óā ĩéá ðāñßĩāĩ “ēáēóóóŸñçòçò”. ÉáòŪ óç āēŪñēāēá áòðßò òçò ðāñēüāĩō, ũēāð ĩē áēēááŸò óòĩĩ -STABLE ēĩñĩü ðñŸðāē ĩá Ÿ ÷ ĩōĩ óçĩ Ÿāēñēóç òçò ĩñŪāā ĪñāŪtūoçò òuĩ Āēäüoäüĩ <re@FreeBSD.org>. Īē áēēááŸò ðĩō āðēóñŸðĩĩóáē óā áòðß òçĩ ðāñßĩāĩ ðĩō áēāñēāß 15 çĩŸñāð āßĩáē:

- Āēĩñēßóāēð āñüóóßĩ ðñĩāēçĩŪðuĩ.
- Āĩçĩāñßóāēð óóçĩ ðāēĩçñßüóç.
- ĀēēááŸò ó ÷ āðēēŸò ĩā óçĩ áóðŪēāēá.
- ĪēēñŸò áēēááŸò óòĩōð ĩāçāĩŸò ðòóēāðßĩ, ũðüð ð. ÷. ç ðñĩóēßēç òuĩ IDs ĩŸüĩ óóóēāðßĩ.
- Īðĩēāāßðĩōā Ūēēç áēēáāß ðēóóāŸāē ç ĩñŪāā áñŪðòōĩçò ũóē ðñŸðāē ĩá āßĩáē, ĩā òĩ áĩāĩāñĩāñĩ ðŪĩóā ñßóēĩ.

ĪāòŪ ðēò ðñßóāð 15 ĩŸñāð ēáēóóóŸñçòçò, òðēŪ ÷ ĩāðáē ĩéá āĩēēĩáóóēēß Ÿēāĩōç áēá ĩá ÷ ñçóēĩĩðĩēçēāß óāĩ āĩēēĩß òçò ðāēēēßò Ÿēāĩōçò éáē ĩ ēßāēēáð áéóŸñ ÷ āðáē óā ĩéá ðāñßĩāĩ “ðāāßĩāĩōĩō”. ðēŸĩĩ āßĩáē ðĩēŸ ðēĩ āŸóēĩēĩ ĩá āßĩōĩ ĩŸāð áēēááŸò óòĩ āŸóóçĩā, āēòüð ēē áĩ āēĩñēßñĩōĩ ēŪðĩēĩ ðĩēŸ óĩāāñü bugß ēŪðĩēĩ ðñüāēçĩā áóóŪēāēáð. ÉáòŪ óç āēŪñēāēá òĩō ðāāßĩāĩð òĩō ēßāēēá, òĩōēŪ ÷ éóòĩĩ ĩßā āĩēēĩáóóēēß Ÿēāĩōç òðēŪ ÷ ĩāðáē ēŪēā āāāñŪāā, ĩŸ ÷ ñē ĩá āßĩáē Ÿóĩēĩç ç ðāēēēß Ÿēāĩōç. Ōēò çĩŸñāð áēñēāðð ðñēĩ óçĩ ðāēēēß Ÿēāĩōç, ç ĩñŪāā ðĩō āßĩáē òðāŸēōĩç áēá ðēò āēäüoäēð āßĩáē óā óòĩā ÷ ð āðēēĩēñĩßā ĩā óçĩ ĩñŪāā áóðŪēāēáð, óçĩ ĩñŪāā óòĩōßñçòçò òçò ðāēĩçñßüóçò, éáē óçĩ ĩñŪāā óòĩōßñçòçò òuĩ ports, áēá ĩá āāāēüēĩŸĩ ðüð ũēā óā áðāñāßòçòā ēñĩŪóēá áēá ĩéá ðēßñç Ÿēāĩōç āßĩáē áēáēŸóēĩā.

## 2.2 Ēßóóā ĀēŸā ÷ ĩō òçò Ōāēēēßò ēāĩōçò

¼óāĩ āñēāðŸò āĩēēĩáóóēēŸò āēäüoäēð Ÿ ÷ ĩōĩ āßĩáē áēáēŸóēĩāð, Ÿ ÷ ĩōĩ āĩēēĩáóóāß áðü āñēāðü ēüóĩĩ éáē ũēá óā óĩāāñŪ ēŸĩāóā Ÿ ÷ ĩōĩ áĩāēðēāß, ç ðāēēēß Ÿēāĩōç ĩðñāß ĩá āñ ÷ ðóāē.

### 2.2.1 Āçĩēĩōñāßā òĩō ēĩñĩŸ ēāĩōçò

¼ðüð ðāñēāñŪøāĩá óóçĩ áéóáāñāß, ĩē ēĩñĩĩß RELENG\_X\_Y āßĩáē ĩéá ó ÷ āðēēŪ ĩŸā ðñĩóēßēç óóçĩ ĩāēĩāĩēĩāßā òuĩ āēäüoäßĩ ĩāð. Ōĩ ðñßōĩ āßĩā óóçĩ āçĩēĩōñāßā áòðĩŸ òĩō ēĩñĩŸ āßĩáē ĩá āāāēüēāßòā ũóē āĩōēāŸāðā ĩā óçĩ ðāēāðóāßā Ÿēāĩōç òĩō ðçāāßĩō ēßāēēá áðü òĩĩ RELENG\_X ēĩñĩü áðü òĩĩ ĩðĩßĩ ēā òðēŪĩāðā òĩ ĩŸĩ ēĩñĩü.

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

Ōĩ áðüñāñ āßĩā āßĩáē ĩá āçĩēĩōñāßóāðā ĩéá āðēēŸðā (tag) óòĩ óçĩāßĩ āēēßĩçòçò òĩō ēĩñĩŸ, ðóóā ĩá ĩðñāßòā ĩá āāßòā ðēò áēáóĩñŸò ĩā óçĩ āñ ÷ ð òĩō ēĩñĩŸ āŸēĩēā óòĩ ĩŸēēĩ ĩā òĩ CVS:

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

Éáē òüðā ĩðñāßòā ĩá āçĩēĩōñāßóāðā òĩ ĩŸĩ ēĩñĩü ĩā:

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

**Όχι!Βούρο:** *Ἰε ἀδόςέΥοᾶδ RELENG\_\* ἀβίάε ᾱᾱό!ᾱδ!Υίᾱδ ᾱᾱά ÷ ᾱΠόρς ᾱᾱῦ ὀϊῶδ CVS-meisters ἑάε ὀρῖ ᾱῦᾱᾱ ὀῦῖ ᾱᾱᾱῦᾱῦῖ.*

Ἰ uniõ “*ἀδελφὸς*” ἀβίαε ι̃νι̃ε̃ρ̃α̃β̃α̃ ο̃ιο̃ CVS. Ὁ̃για̃βίαε Ἰ̃ία ũm̃ã ο̃ιο̃ ἐ̃α̃ε̃ι̃ν̃β̃α̃ε̃ ι̃ε̃α̃ ο̃ο̃α̃ε̃α̃ε̃ν̃ε̃ι̃ Ἰ̃ι̃ς Ἰ̃ε̃α̃ι̃ο̃ς ο̃ιο̃ ἐ̃ρ̃α̃ε̃ε̃α̃ ο̃ο̃ι̃ ÷ nũfi. × ñς ο̃ε̃ι̃ι̃δι̃ε̃ρ̃ι̃ο̃α̃ο̃ ἀδελφὸς ο̃ο̃ι̃ δ̃ς α̃β̃ι̃ ἐ̃ρ̃α̃ε̃ε̃α̃ α̃ρ̃ς Ὑ̃ι̃α̃ ũδι̃ε̃ι̃ ο̃ο̃ε̃ Ὑ̃ι̃α̃ε̃ ο̃ο̃ι̃ Ἰ̃Ἰ̃ε̃ε̃ι̃ ἀ̃ε̃α̃ũõãẽd ο̃ιο̃ FreeBSD ι̃α̃ ἀ̃ν̃β̃ο̃ε̃α̃ε̃ ἐ̃α̃ε̃ ι̃α̃ ÷ ñς ο̃ε̃ι̃ι̃δι̃ε̃α̃β̃ α̃ε̃ν̃ε̃α̃ρ̃õ ο̃ι̃ι̃ β̃α̃ε̃ι̃ ἐ̃ρ̃α̃ε̃ε̃α̃ ο̃ιο̃ ÷ ñς ο̃ε̃ι̃ι̃δι̃ε̃β̃ε̃ς̃ε̃α̃ α̃ε̃α̃ ο̃ε̃õ ἀ̃δ̃β̃ο̃γ̃ι̃ãõ ἀ̃ε̃ãũõãẽd ο̃ς̃õ ἡ̃ Ὑ̃ããõ ο̃ιο̃ FreeBSD.

### 2.2.2 ÁõîÛííîáò ôíí Áñéeìü êäíóçò

Θνήει ιδᾶε ς ἀοέεΥόα, ιαοᾶεουοοεοοᾶβ εᾶε ἀοιειαοοᾶβ ς οᾶεεβ Υέαιροϋ, ὃνΥῶε ιά αββιροι ᾶεεᾶᾶΥο οοᾶ ὀανᾶεῸου  
 ᾶν÷ᾶβᾶ ᾶεᾶ ιά ὀᾶνεΥ÷ιροι οῖρι ουοοῦ ᾶνεέιυ Υέαιροϋ ᾶεᾶ οῖ FreeBSD:

- doc/en\_US.ISO8859-1/books/handbook/mirrors/chapter.xml
- doc/en\_US.ISO8859-1/books/porters-handbook/book.xml
- doc/share/xml/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/xml/release.dsl
- src/release/doc/share/examples/Makefile.relnotesng
- src/release/doc/share/xml/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.xml
- www/en/cgi/ports.cgi
- ports/Tools/scripts/release/config

Ἰε οὐκ ἐπεβάλετο Ἰεαῖος ἐπὶ τοῦ ἀν-ἀβὰ ἰα οὐδὲ ἀετῆρ ἐβάλετο οὐδὲ ἀεὶ ἀδοαβὰδ οὐδὲ ἀν-δὴν Ἰεαῖος ἀδβοῦς ἰα θῆναι ἀνιόδοις  
 ὁδὸς Ἰῶ Ἰεαῖος (ὁδὸς ἐμὴ οὐδὲ Ἰεαῖος) ἐπὶ ἰα ἀδὰ ἀνὰ ἀοδοίς ἐὰν ὕψος (ὁδὸς αὐτὴ ἐμὴ οὐδὲ stable ἐπὶ current):

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

Ç áòáññīāP **sysinstall** ðñÝðáé áðßòçò íá áíçíáññēāß íà ôīī ōúóôū áñēēīū òūī ports éáé ôī ÷ þñī ôīō āßóēīō ðīō áðáéôāßóáé áéá ôçī ŌōēēīāP òūī Ports. ÁōōÝō íé ðēçñīōīñßāð òðŪñ÷īōī óōī áñ÷āßī  
src/release/sysinstall/dist.c.

Άσπυ ρεῖρεεεεεεεεεεε ε δνιιιιιιιιιιιιιιιι οδε ρΥάο αδβοεοδε Υεεεεεεε, δνΥδεε ιά αϊαϊαηβράοα ιανέεΕΥ αη÷αβά εεά ιά αϊαϊαηβράοα οιι εουοιι εεά δε ρΥά Υεεεεεεε οιο FreeBSD.

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

### 2.2.3 Äçìéĩõñãßá ôùí Âôéêâôþí ôçò êäïóçò

1/40áí ç ôãëëêP Ýêäiöç åßiáé Ýôieìç, ç ðãñáéÜòù áíöieP èá äçieiõñãPóáé ôçí åöëéÝóá RELENG\_4\_8\_0\_RELEASE.

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

RELEASE\_4\_8\_0 óóá éáóÜëëçä äÝíóñá ðçāāβíø ēpāēēá.

ΙαάεεΥδ οινΥδ, ιδινάβ ιά ÷ ηαέαοοάβ ιά αβιθι εΥθρεάδ αέαάΥδ οάεαδοαβ αόεαιβ ιαδΥ όγι οιδρεΥόζός ουι αόεεαορι. ΆαρεεΥ, ααρ άβιάε άγόερε ιά αβιάε εΥοε όΥοιει αοιγ οι CVS αδεονΥθαε ιά ιαοαεεριθάε εΥθιερι οεο αόεεΥοαο ιά ιάοιρεΥδ υθυο cvs tag -d tagname filename. Άβιάε θιεγ όγιαόεευ υθυο αδΥδ ιε αέαάΥδ όζδ οάεαδοαβαο οόεαιβδ ιά όγιαευειγ ιά οεο ουοόΥδ αόεεΥοαο αέα όγι οσαεαειεΥίζ Υεαιόζ. Ιε αδβόγιαο αεαυοάεδ οϊο FreeBSD θηΥθαε ιά άβιάε δΥιόα άγερε ιά ιάαδαηα÷ειγ. ΟιδεεΥδ αέαάΥδ οοι δαηέαΥεερι οϊο ιζ÷ιρεεγ ουι αεαυοαυι ααρ αδεονΥθιόαε.

### 3 ðàáãëþôôéóç ôçò ëäïóçò

Ιε "aeauaaeo" oio FreeBSD ioiniiri ia iaadaaeuodoeoioiri adu ioiieiaBpiora Y ÷ ae Yia o ÷ aoeU anPaini ic ÷ Uicia eae dnuoaaaoe ooi repository oio dcaabio epaeaa. (4eie Y ÷ ioi aooP oc aioiaouocoa, aoiy danY ÷ ioia dnuoaaaoe iYou aipioio CVS! AaBoa oi Aa ÷ aenBaei oio FreeBSD aeaa daneoeouoanao eadonYnaeo.) C iuic aeaeep adabococ abiae ia oou ÷ ae oiooBneic ooi dnoBia oao aeaa oci ooeaoP vn(4). (Ooi -CURRENT, aooP c ooeaoP Y ÷ ae aioeaaaoaoeab adu oci iYia ooeaoP aboeio aaoeoiYno oa iBic md(4).) Ai c ooeaoP aai abiae aioiaouuYic ooi dnoBia oao, ouoa i eaoUeeceio iaauo ea oionueab adouiaoa uoi aeoeaeaoaB c aioieP vnconfig(8) eaoU oc aeUnea ea oc oUocd aioiaaoBa oio iYio aeBicocd. 4ea oa anaeeBa oio ÷ naeUeioae aeaa ia iaadaeudoboa ia Yeaoc abiae aeaeYoeia oa iioP dcaabio epaeaa ooi eaoUeia src/release. AooU oa anaeeBa Y ÷ ioi uo oeio ia danY ÷ ioi uoe ÷ naeUeioae aeaa ia ÷ obaeioae ie aeauaaeo oio FreeBSD ia Yia oiaop eae oaeaeeneYi onoi. Iea dePncd Yeaoc ioiaB ia iaadaeudoeoia ÷ ncioieieioao aooU oa anaeeBa ia ia eae iui aioieP, oioaneiaaamYicd eae oc aieioiaBa aiuo ISO an ÷ abio eaoUeecei aeaa ia eaaB oa CDROM, ie aeoeYooao aeBicocd, eaepd eae i eaoUeeceio aaeeaoUoaooc iYou FTP. AooP c aioieP abiae ooeep c make release.

### 3.1 Ç áíôïëþ make release

[illegible]

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](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 ðáñáëáßððá òçí áðééÝðá RELEASETAG, ðüðá èá ìáðááëüðððéóðáß íéá ðëðñçð Ýêáîóç áðü òçí èíñðð ðîõ HEAD (áçë. ðîõ -CURRENT) èíññí. Ìé áêüüóáéð ðîõ ððéÛ÷-ñíðáé áðü áððüí òñ èíññí, ðóíðëüð áíáðÝññíðáé ðáí “-CURRENT snapshots”.

ÕðÛñ÷-íðí éáé ðíéëÝð Ûëëäð ìáðááëçðÝð ðîõ ìðíñíí íá ÷ ñçóéíðíéçéçíí áéá íá ðáñáíáðñíðíéçéäðá òçí Ýêáîóç ðáð. Ìé ðéí ðíéëÝð 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 ðéáðüüñíá) 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 ìðíáß íá ÷ ùñéóðáß ðá áñéäðÛ ìá÷-ùñéóðÛ ìáðáíý ðîõð áñíðáð.

- Äçíëíðñáß áñüð éáéáñíý ðáñéáÛëëíððð ðá íéá ìá÷-ùñéóðð éáñáñ÷-ßá éáðáëüüí ìá òçí áíðíëð “make installworld”.
- Áíáñüá ððü òí CVS ìéáð éáéñíñéáð Ýêáîóçð ðîõ ðçááßíð èðáééá ðîõ ðððððíáððð, òçð ðáêñññüóçð éáé ðñí 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 ð÷-áðééÛ ìá òí óýóçíá Kerberos.
- Ìáðááëðððéóç ðîõ ððñðíá GENERIC.
- Äçíëíðñáß áñüð ðáéééíý éáðáëüüíð ðóñí ìðíßí èá ìáðááëüðððéóðííí éáé èá áðíèçéáððéíý ìé áêðáëÝóéíð ìñðÝð ðñí ðáéééðí ðáéÝðñí.
- Ìáðááëðððéóç éáé ááéáðÛððáóç ðñí áñááéáßíð ðîõ ÷ ñáéÛáñíðáé áéá òçí ðñíáðíéíáððá òçð Ýêáîóçð éáé òç ìáðáðñíðð òçð ðáêñññüóçð áðü òñí ðçááßíð èðáééá (SGML) ðá html éáé áñ÷-áßá éáéíÝñíð ðîõ èá ðóñíáñýíðí òçí Ýêáîóçð.
- Ìáðáðñíðð éáé ááéáðÛððáóç òçð ðáêñññüóçð (áá÷-áéñßáéá ÷ ñððóç, áéóáñüáééÛ éáßíáíá, óçíáëðáéð Ýêáîóçð, èßððáð ððíááðüðçðáðð ðéééíý, èëð.)

- ĩāóāāēpôóéóc òuĩ “òõĩðéáõĩŸĩũĩ” (crunched) āēðāēŸóéũĩ ðĩō éā ÷ ñçóéĩĩðĩéçēĩŸĩ óóéð āéóēŸôðāð āāēáðŪóóáócð.
- Āçĩēĩōñābā òuĩ ðāēŸòuĩ ôçð āāēáðŪóóáócð éāē òuĩ ðāēŸòuĩ ðçāābĩō ēpāēēā.
- Āçĩēĩōñābā òuĩ ĩŸóuĩ āēēbĩçóçð éāē ôçð āéóēŸôðāð “fixit”.
- Āçĩēĩōñābā ôçð éāñāñ÷bāð éāóāēüũĩ āēā ôçĩ āāēáðŪóóáóc ĩŸóũ FTP.
- (ðñĩíēñāôēēŪ) Āçĩēĩōñābā òuĩ ISO āñ÷ābũĩ āēā ĩŸóā CDROM/DVD media.

Āēā ðāñéóóũðāñāð ðēçñĩōĩñbāð ó÷āðēēŪ ĩā ôçĩ āēāāēēáóbā āçĩēĩōñābāð ĩēāð Ÿēāĩóçð, āābôā ôçĩ óāēbāā ôāēĩçñbũóçð release(7).

### 3.2 ĩāóāāēpôóéóc òuĩ XFree86

Ōĩ āñāóēēũ ðāñēāŪēēĩ **XFree86** ābĩāē Ÿĩá óçĩáĩóēēũ ēñĩŪðē ēŪēā Ÿēāĩóçð āēā ðĩēēĩŸð ÷ ñpôóāð ðĩō ēŸēĩōĩ òĩ FreeBSD āēā óóāēĩŸð āñāáóbāð. ðñēĩ ôçĩ Ÿēāĩóç 4.6-RELEASE òĩō FreeBSD, ĩē āðbóçĩāð āēüüóāēð òĩō FreeBSD ÷ ñçóéĩĩðĩēĩŸóáĩ ôçĩ Ÿēāĩóç 3.x òuĩ **XFree86**. Ĩ ðēĩ āŸēĩēĩð ðñũðĩð ĩā ĩāóāāēũðôðóáðā áððŸð óéð āēüüóāēð ābĩāē ĩā ÷ ñçóéĩĩðĩēĩŸóáĩ òĩ ðñũāñāĩā `src/release/scripts/X11/build_x.sh`. Áðũũ òĩ ðñũāñāĩā áðāēðāb ĩā ābĩāē pāç óçĩŸĩá óõĩ óŸóçĩŪ óáð òũõĩ òĩ ðāñēāŪēēĩ XFree86 Ÿõĩ éāē ç āēpóóā Tcl/Tk. ĩāðŪ ôçĩ ĩāóāāēpôóéóc òuĩ éāðŪēēçēũĩ X servers, òĩ ðñũāñāĩā éā ðāēāðŪñāē Ÿēā óā āñ÷ābā óā óðēēĩāŸð āñ÷ābũĩ ðĩō ðāñēĩŸĩāē ĩā āñāē òĩ `sysinstall(8)` ĩŸóā óõĩ ēāðŪēēĩāĩ `XF86336` óõĩ ĩŸõĩ āāēáðŪóóáócð.

ĩāēēĩpĩóáð ĩā ôçĩ Ÿēāĩóç 4.6-RELEASE òĩō FreeBSD, òĩ `sysinstall(8)` āāēāēéóðŪ ôçĩ Ÿēāĩóç 4.x òuĩ XFree86, óáĩ ēāñĩēēŪ ðāēŸóā. ÁððŪ ĩðĩñāb ĩā ābĩāē ābôā óā ðāēŸóā ðĩō āçĩēĩŸñāçõā òĩ cluster òuĩ ports p ĩðĩēāāðĩðā Ūēēā ðāēŸóā ðĩō Ÿ÷ĩōĩ āçĩēĩōñāçēāb āðũ Ÿĩá ports tree ĩā ôçĩ ēāðŪēēçç āðēēŸóā.

**Óçĩābũóc:** Ābĩāē ðĩēŸ óçĩáĩóēēũ ĩā áðāēñŸóáðā āðũ òĩ āñ÷ābĩ `/etc/make.conf` ĩðĩēāóāpðĩðā òĩðēēŸð ñòēĩbóāēð Ÿ÷āðā ēŪĩāē. Āēā ðāñŪāāēāĩā, āāĩ ābĩāē ēāēp ēāŸā ĩā āēáĩŸĩāðā āēðāēŸóēĩā ðĩō Ÿ÷ĩōĩ ĩāóāāēũðôéóðāb óā ēŪðĩēĩ óðāēāēñēĩŸĩĩ óŸóçĩā ĩā ĩñēóĩŸĩç ôçĩ óēĩp ôçð ĩāóāāēçðpð `CPUTYPE` āēā āāēðéóõĩðĩbçóç òuĩ āēðāēŸóēĩũĩ āēā ēŪðĩēĩ óðāēāēñēĩŸĩĩ āðāĩāñāáóðp.

### 3.3 ðñĩāñŪĩĩáðā Ōñbôũĩ (“ports”)

Ç Óðēēĩāp òuĩ Ports òĩō FreeBSD (<http://www.FreeBSD.org/ports>) ābĩāē ĩēā óðēēĩāp ĩā ðāñéóóũðāñā āðũ 24,000 ðñĩāñŪĩĩáðā āðũ òñbôĩðð, ðĩō ābĩāē āēāēŸóēĩā āēā FreeBSD. ĩē ĨŪāā Āēā÷ābñéóçð òuĩ Ports `<portmgr@FreeBSD.org>` ābĩāē òðāŸððĩēē āēā ôçĩ óõĩðpñçóç āĩũð āŸĩóñĩō āðũ ðçāābĩ ēpāēēā āēā óā ports, ðĩō ĩðĩñāb ĩā ÷ ñçóéĩĩðĩēçēāb āēā ĩā āçĩēĩōñāçēĩŸĩ óā ðāēŸóā ĩā óā ðñĩāñŪĩĩáðā ðĩō óðñāŸĩōĩ óéð āðbóçĩāð āēüüóāēð òĩō FreeBSD.

Ç āēāāēēāóbā óõĩðpñçóçð ôçð óðēēĩāpð òuĩ ports ābĩāē ēŪðē ðĩō āāĩ ĩðĩñĩŸĩā ĩā ēāēŸõĩðĩā āāp. ĩā ĩā÷ũñéóðũ Ūñēñĩ, ĩā ðbôēĩ Ç ĨñāŪtūóc ēāĩóçð òuĩ ðāēŸòuĩ ĒĩāēóĩēēŸĩ āðũ Ōñbôĩðð (`./releng-packages/article.html`), ēāēŸððāē áðũ òĩ ēŸĩā.

### 3.4 Āñ÷ābā ISO ôçð ēāĩóçð

ĩāēēĩpĩóáð ĩā ôçĩ Ÿēāĩóç 4.4 òĩō FreeBSD, ç ĨŪāā ĀĩŪðððĩçð òĩō FreeBSD áðĩōŪóéóā ĩā āēáĩŸĩāē ēāē óā ôŸóóāñā ISO āñ÷ābā ðĩō ðñpóā ðĩōēĩŸóáĩ ĩē āðāēñābāð *BSDi/Wind River Systems/FreeBSD Mall* óóéð “āðbóçĩāð” āēāmŸð CDROM ðĩō Ÿēáĩāĩ. ēŪēā Ÿĩā āðũ óā ôŸóóāñā ISO āñ÷ābā ðñŸðāē ĩā ðāñēŸ÷āē Ÿĩā āñ÷ābĩ `README.TXT` ðĩō

ðǎñéǎñÛóǎé óǎ ðǎñéǎ ÷ ùíǎíǎ òìõ ǎßóèìõ, êé Ýíǎ ǎñ ÷ ǎßí CDROM.INF ðìõ ðǎñéÝ ÷ ǎé ìǎóǎ-ðéçñìõññßǎð ǎéǎ íǎ ìðññǎß òì ðñùǎñǎìǎ sysinstall(8) íǎ ǎéÝǎñǎé éǎé íǎ ÷ ñçóéìðìéßóǎé áðòù òì ǎßóèì, éǎèð òé Ýíǎ ǎñ ÷ ǎßí filename.txt ðìõ ðǎñÝ ÷ ǎé íéǎ èßóóǎ ǎñ ÷ ǎßùí òìõ CDROM. Áðòß ç èßóóǎ ìðññǎß íǎ ǎçìéìõñǎçèǎß ðìéý áðéÛ, ùò ǎñðò:

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

Ìé óðǎéǎèñéíÝíǎð áðǎéòßóǎéð ǎéǎ èÛèǎ Ýíǎ áðù áðòÛ óǎ CD ðǎñéǎñÛìíóǎé ðǎñǎéÛòù:

### 3.4.1 Áßóèìò 1

Ì ðñðòìò ǎßóèìò ǎßíǎé ó ÷ ǎǎùí áðìééǎéóóééÛ áðìòÝéǎóíǎ òçð ǎíòìéßðò make release. Ìé ìùíǎð ǎééǎǎÝò ðìõ ðñÝðǎé íǎ ǎßíòìí óòìí éǎòÛéìǎí disc1 ǎßíǎé ç ðñìóèèèç òìõ éǎòÛéìǎíò tools, òùí XFree86, éǎé ùóì òì ǎóíǎòùí ðǎñéóóùòǎñùí ðǎéÝòùí ìðññíý íǎ ÷ ùñÝóìòì óòì ǎßóèì. Ì éǎòÛéìǎíò tools ðǎñéÝ ÷ ǎé ǎñǎǎéǎßǎ ðìõ áðéòñÝðìòì óǎ ÷ ñßóóǎð Ûéèùí éǎéòìõñǎéèèí óðóòçìÛòùí íǎ òòéÛìòì òéð ǎéóéÝòóǎð ǎéèßíçóçð. Áðòùò ì ðñðòìò ǎßóèìò ðñÝðǎé íǎ òòéÛ ÷ íǎóǎé bootable Ýòóé ðóóǎ íǎ ìðññíý íé ÷ ñßóóǎð òùí ìùíòÝñíùí òðìéìǎéóóòì íǎ áðìòǎýǎìòì òì óòÛǎéì ǎçìéìõñǎßǎð òùí ǎéóéǎóòìí ǎéèßíçóçð.

Áí íéǎ ǎéǎóìñǎðéèß Ýéǎìóç òùí XFree86 éǎ ǎéǎíÝíǎóǎé ìǎ òçí Ýéǎìóç áðòß, ðñÝðǎé íǎ ǎçìǎñùèǎß òì ðñùǎñǎìǎ sysinstall(8) ǎéǎ òçí íÝǎ èÝóç éǎé íé ìǎçǎßǎð ǎǎéǎòÛóóǎóçð. Ì ó ÷ ǎðéèùð èðǎééǎð òðÛñ ÷ ǎé óòìí éǎòÛéìǎí src/release/sysinstall óòìí -STABLE èìñù ð óòìí éǎòÛéìǎí src/usr.sbin/sysinstall óòìí -CURRENT èìñù. ÓðǎéǎèñéíÝíǎ, óǎ ǎñ ÷ ǎßǎ dist.c, menus.c, éǎé config.c éǎ ÷ ñǎéǎóóǎß íǎ ǎçìǎñùèíýí.

### 3.4.2 Áßóèìò 2

Ì ǎǎýòǎñìò ǎßóèìò ǎßíǎé ǎðßóçð áðìòÝéǎóíǎ òçð ǎíòìéßðò make release éǎòÛ Ýíǎ ìǎǎÛéì ìÝñìò. Áðòùò ì ǎßóèìò ðǎñéÝ ÷ ǎé Ýíǎ “live filesystem” ðìõ ìðññǎß íǎ ÷ ñçóéìíðìéçèǎß áðù òì sysinstall(8) ǎéǎ íǎ ǎíǎóǎóóìýí ðñìǎéßíǎóǎ óǎ íéǎ ǎǎéǎòÛóóǎóç òìõ FreeBSD. Èé áðòùò ì ǎßóèìò ðñÝðǎé íǎ ǎßíǎé bootable. Èǎ ðñÝðǎé ǎðßóçð íǎ ðǎñéÝ ÷ ǎé Ýíǎ óòìðéǎóìÝíí ǎíóßǎñǎòì òìõ CVS repository óòìí éǎòÛéìǎí CVSROOT éǎé ǎǎßǎìǎóǎ áðù ǎìðìñééÛ ðñìǎñÛìǎóǎ óòìí éǎòÛéìǎí commerce.

### 3.4.3 Áßóèìé 3 éǎé 4

Ìé òðùéìéðìé ǎòì ǎßóèìé ðǎñéÝ ÷ ìòì áðéðñùóéǎóǎ ðǎéÝóǎ èìǎéóìééíý ǎéǎ òì FreeBSD. Óǎ ðǎéÝóǎ éǎ ðñÝðǎé íǎ ǎßíǎé ñǎǎìðìéçíÝíǎ, Ýòóé ðóóǎ èÛèǎ ðǎéÝòì íǎ ǎßíǎé óòìí ðǎéì ǎßóèì ìǎ ùéǎ óǎ ðǎéÝóǎ áðù óǎ ìðìßǎ ǎíǎñòÛóǎé ǎéǎ íǎ ǎǎéǎòǎóóǎéǎß éǎé íǎ òñÝíǎé. ðǎñéóóùòǎñǎð ðéçñìõññßǎð ǎéǎ òçí ǎçìéìõñǎßǎ áðòðì òùí ǎßóèùí ǎíǎóÝñìíóǎé óòì Ûñèñí Ç ÎñÃÛñóç èǎìóçð òùí ðǎéÝòùí Èìǎéóìééíý áðù Òñßòìòð (../releng-packages/article.html).

## 4 Áéǎíñß òùí Áêäüóàùí

### 4.1 ÁìòðçñǎòçðÝò FTP

¼óǎí ç Ýéǎìóç ǎßíǎé Ýòìéìç, Ý ÷ ǎé ǎìééìǎóóǎß ǎéòǎíðò, éǎé Ý ÷ ǎé ðǎéǎóǎñéóóǎß ǎéǎ ǎéǎíñß, ì éýñéìò FTP ǎìòðçñǎòçððò ðñÝðǎé íǎ ǎçìǎñùèǎß. Ìé ǎðßóçìéé ǎìòðçñǎòçðÝò FTP òìõ FreeBSD ǎßíǎé ùéìé mirrors ǎíùò éýñéìò ǎìòðçñǎòçðß óòìí ìðìßí Ý ÷ ìòì ðñùóǎǎóç ìùí Ûéèìé FTP ǎìòðçñǎòçðÝò. Áðòùò ì ǎìòðçñǎòçððò ǎßíǎé ǎíùóóùò ùò ftp-master. ¼óǎí ç Ýéǎìóç ǎßíǎé Ýòìéìç, ðñÝðǎé íǎ ǎçìǎñùèíýí óǎ ðǎñǎéÛòù ǎñ ÷ ǎßǎ óòìí ftp-master:

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

Ιέα ἀδῆP web οάβεΒαά θῖο δᾶνεΥ ÷ ᾰε ἄἴβεθoᾶ οᾶ ἁeÜöĩñῖoδ oçĩáíóéēĩýð FTP éâôäëüāĩōδ ᾰέá ôçĩ öñΥ ÷ īōóá Υéäiíoç öĩō FreeBSD.

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

I éadóUeraíð aðu óir iðibi iðinryí íá abííóí ááéáoáoóóÜóáéó iYóu FTP, uðuo óir Y÷áé ðniáoíeiÜóáé ç áíóieP make release.

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

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

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

Îéá óõîâîëëêP óõîôùîâõóç ãéá ôîí êâôÛëîâî .../.../.../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 ᾄναεοδουὰνᾄδ̣ ðeçñĩrĩnḃao ó÷ãðéēŨ iã õçĩ īnāŨfũõç õũĩ mirror æááñḃð FTP õĩø FreeBSD, ᾄñáæäep äåßôã õĩ Ũñẽñĩ ÖðeŨ÷fĩřòád Ýíá FreeBSD mirror (/./hubs/).

[illegible]

#### 4.2 Àáæéêþ Áíáðáñáũùãþ ôúi CD-ROM

Ἐὰ σοὶ δὲ ἔχνη ἐὰς ὀγδοήκοντα ὅροις ἡ ἀποστολή τοῦ ISO ἀντὶ τοῦ FreeBSD ὅτι εἰς τὴν ἱστορίαν τοῦ ἰδίου ἔλαβε ἰσχυρὰ ἀντιδράσεις, ἐὰς ἡ ὀγδοήκοντα ἡμέρας τοῦ διεύθυντοῦ τοῦ ἰδίου ἔλαβε ἰσχυρὰ ἀντιδράσεις.

5 Åăăêôáóéìüôçôá

[illegible]

## 5.1 Āçĭēĭōñāβā ĐñĭóáñĭōĭŸĭñĭ Āéóēāōōpĭ Āēēβĭçóçð.

ĐĭēēŸð āēēāóáóōŨóāēð Ÿ÷ĭōĭ đĕŷđēĭēāð áđāēðPóāēð đĭō ĭđĭñāβ ĭā òç óāēñŨ òĭōð ĭā áđāēōĭŸĭ òçĭ đñĭōēPēç đāñēóóóūðāñĭ ĭāçāpĭ P āñāāēāβñĭ ÷ñPóçç òóēð āēóēŸððāð āāēāðŨóóáçðð. Ĩ “ĭđāēŨēēēĭō” òññđĭð ĭā òĭ ēŨĭāðā áððñ āβĭāē ĭā ēŨĭāðā òēð āēēāŸð óāð óōñĭ ēāðŨēĭāĭ đĭō Ÿ÷āē āōĭēĭŨóāē ĭāðŨ òĭ òŸēĭð òçð ç āēāāēēāóβā make release:

- ĐāñŨóðā òā patches óāð P đñĭōēŸððā òā āðēðēŸĭñ āñ÷āβā ĭŸóā óōñĭ ēāðŨēĭāĭ chroot òçð Ÿēāĭóçð.
- `rm ${CHROOTDIR}/usr/obj/usr/src/release/release.[59]`
- ĭāðāāēñððóðā đŨēē òĭ sysinstall(8), òĭ đðñPĭā, P ũđĭēā Ũēēā đñĭāñŨñāðā Ÿ÷ĭōĭ āðçñāāóóāβ āðñ òēð āēēāŸð óāð.
- `chroot ${CHROOTDIR} ./mk floppies`

ĭē ĭŸāð āēóēŸððāð āāēāðŨóóáçðð ēā āçĭēĭōñāçēĭŸĭ óōñĭ ēāðŨēĭāĭ \${CHROOTDIR}/R/stage/floppies.

ĀĭāēēāēðēēŨ, ĭđĭñāβðā ĭā ÷ñçóēĭđĭēPóāðā òĭ make target boot.flp, P ĭđĭñāβðā ĭā òñŸĭāðā áđāðēāβāð òĭ script đĭō āçĭēĭōñāāβ òā óðððPĭāðā āñ÷āβñĭ src/release/scripts/doFS.sh.

ĭđĭñāβðā āðβóçð ĭā ēāñĭβóðāð þóðā āēēŸð óāð āēēāŸð ĭā đāñāóōĭŸĭ ĭā ĭññðP patch óçĭ Ÿēāĭóç ũðñð ēā òēēŨ÷ĭāðāē, āβñĭðāð òēĭP óçĭ ĭāðāāēçðP LOCAL\_PATCH ũðāĭ òñŸĭāðā òçĭ āĭðĭēP make release.

## 5.2 Đñĭāñāĭāðβāĭĭóāð òĭ sysinstall

Ōĭ āñāāēāβĭ āāēāðŨóóáçðð ēāē ñŷēĭóçð òĭō FreeBSD, òĭ sysinstall(8), ĭđĭñāβ ĭā đñĭāñāĭāðēóðāβ āēā ĭā ēŨĭāē ðēĭ āŷēĭēāð òēð áððñāðĭđĭēçĭŸĭāð āāēāðáóðŨóāēð òā đĭēēŨ ĭç÷āĭPĭāðā. Áððñ òĭ ÷āñāēðçñēóðēēñ òĭō đñĭāñŨñāðĭð ĭđĭñāβ ĭā ÷ñçóēĭđĭēçēāβ òā óōĭāðóāñĭ ĭā òĭ PXE[13] òçð Intel āēā ĭā ĭāēēĭPóāē ç āāēāðŨóóáçðð āðñ òĭ āβēððĭ, P òā óōĭāðóāñĭ ĭā đñĭóáñĭōĭŸĭāð āēóēŸððāð āēēβĭçóçð ēē Ÿĭā sysinstall script. ĭā đāñŨāāēāĭā āðñ òŸðĭēĭ sysinstall script ĭđĭñāβðā ĭā āñāβðā òðĭ āñ÷āβñĭ src/release/sysinstall/install.cfg.

## 6 ĭāēPĭāðā òĭō ĐPñāĭā āðñ òçĭ êäĭóç 4.4 òĭō FreeBSD

Ç āēāāēēāóβā āðĭēĭāðāð òçð Ÿēāĭóçð 4.4 òĭō FreeBSD ĭāēβĭçóā āðβóçĭā òçĭ ĭç Áðāĭŷóðĭð 2001. ĭāðŨ āðñ áððP òçĭ çĭāññĭçĭā, ũēāð ĭē āēēāŸð òðñĭ ēĭñĭñū RELENG\_4 òĭō FreeBSD Ÿðñāðā ĭā Ÿ÷ĭōĭ Ÿāēñēóç āðñ òçĭ ĨŨāā ĨñāŨñóçð òñĭ Āēäüóäñĭ <re@FreeBSD.org>. Ç đñPðç āĭēēĭāóðēēP Ÿēāĭóç āēā òçĭ āñ÷ēðāēðĭēēP x86 Ÿāēĭā āēāēŸóēĭç òóēð 16 Áðāĭŷóðĭð, ēē āēĭēĭōēPēçēā āðñ 4 āēñĭā āĭēēĭāóðēēŸð āēäññóāēð đĭō ĭāPāçóāĭ óçĭ òāēēēP Ÿēāĭóç òóēð 18 òĭō ÓāððŸĭāñç. Ĩ òðāŷēðñð áóðŨēāēāð Ÿðāēĭā óçĭāĭðēēñ ññēĭ ēāðŨ òçĭ āēŨñēāēā òçð òāēāððāβāð āāāñŨāāð ēāēþð ēŨðĭēā đñĭāēPĭāðā áóðŨēāēāð āñŸēçēāĭ òā đñĭçāĭŷĭāĭāð, āĭēēĭāóðēēŸð āēäññóāēð. ÓðñĭēēēŨ, đŨĭñ āðñ 500 email óðŨēçēāĭ óçĭ ĨŨāā ĨñāŨñóçð òñĭ Āēäüóäñĭ <re@FreeBSD.org> òā āēŨóçĭā ĭēēññðāñĭ āðñ Ÿĭā ĭPĭā.

Ç ēĭēĭñóçðā òñĭ ÷ñçóðPĭ ĭāð Ÿēāĭā óāðŸð ũðē ç áóðŨēāēā ēāē ç óðāēāñññóçðā ĭēāð Ÿēāĭóçð āāĭ ēŨ 'ðñāðā ĭā ēððēŨēāðāē āēā ēāĭāññð āβāñðð đñĭēāóĭβāð P çĭāññĭçĭāð đĭō Ÿ÷ĭōĭ òāēāβ óāĭ òðñ÷ĭē āðñ đñēĭ. Ōĭ FreeBSD Ÿ÷āē ĭāāāēþóāē āñāĭāðēēŨ ēāðŨ òç āēŨñēāēā òçð æñPð òĭō óāĭ óŷóçĭā, ēāē ç āĭŨāēç āēā óðāēāēñēĭŸĭç đĭēēðēēP ēāē ĭñāŨñóçð āēā òçĭ āçĭēĭōñāβā ĭŸñĭ āēäññóäñĭ āβĭāē ðēŸĭñ óāĭāñP đāñēóóóūðāñĭ āðñ đĭōŸ. ÁððP ç āĭŨāēç ēā āβĭāē āēñĭā ðēĭ óçĭāĭðēēP ēāēþð òĭ FreeBSD ēā āñ÷āβāē ĭā ĭāðāŷŸñāðāē òā ĭŸāð ðēāðñññāð.

## 7 ÎáëïïôééÝò Êáóãðëýíóáèò

Ãßíáé æüðééðò 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 ðéççñÛ Æéá íá ðáèíçñéðóíðíá òçí ðéááééáóßá ðáñááüðò òùí Æêüüóàùí òîõ FreeBSD.

- *ÐáñÛëçççç áððÝéáóç* - ÌáñééÛ ïÝñç òçð ïáðáæððððéóçð ïéáð ÆáéáðÛóðáóçð ïðñíýí íá Æñíðí “ðñéý ðáñÛëçççá”. Õá ðéí ðñééÛ áðü ðá óðÛáéá Æßíáé I/O intensive, ïðüðá ç ýðáñíç ðñééðí ððççðð-ðá÷ýðçðáð Æßóèùí Æßíáé ðéí óçíáíðééð áðü òçíí ÷ñðç ðñééðí Æðáíñááóðíí Æéá íá áðéðá÷ðíéáß éÛðüð ç ðéááééáóßá ðîõ make release. Áí Æéáíñáðééßß Æßóéíé ÷ñçóéíðñéççýíí Æéá ðíðíáðá òçð éáñáñ÷ð ðîõ chroot(2) ðáñéáÛëçíðò, òüðá òí CVS checkout òùí éáðáæüüí ports éáé doc ïðñáß íá Æßíáé ðáððü÷ñííá íá òçí áñðíð make world òðí Ûëëí Æßóéí. ×ñçóéíðñéçççç ïéá RAID éýóç (hardware ÷ software) ïðñáß íá ïáéðóáé ÆñáóðééÛ òñí óðñééü ÷ ñüñ ðîõ ÷ñáéÛæáðé íá ïáðáæüðððéóðáß ïéá ðéðñçð Ýéáñóç.
- *Ïáðáæððððéóç Æêüüóàùí Æéá ÆéáíñáðééÝò áñ÷éðáðñééÝò* - ÈÝéáðá íá ïáðáæüððððáðá ïéá Ýéáñóç Æéá IA-64 ð Alpha óá éÛðñéí x86 áðáíñááóðð? make TARGET=ia64 release.
- *ÃñééíÝò Æéá éÛç* - ×ñáéáæüíáóðá éáéýðáñá Æñááéáßá Æéá áððüíáðí Ýéáñ÷í ïñëüðçðáð òðí FreeBSD.
- *Ãñááéáßá ÆáéáðÛóðáóçð* - Õñ ðñüñáñíÛ íáð Æéá òçí ÆáéáðÛóðáóç òîõ FreeBSD Ý÷Æé ïáðáñÛóáé ðñí ðñééý òñí áíáíáñíñí ÷ññí æüðò òîõ. ÕðÛñ÷íðí Æéáíñáð ïñÛáð ðîõ ÆñáÛéíðáé Æéá íá ðéíðñéðóíðí éÛðñéí Ûëëí, ðéí ïñðÝññí ïç÷áíéðü ÆáéáðÛóðáóçð. Ìéá áðü ðéð ðéí ððíó÷íáíð, Æßíáé ç ïñÛá libh[5] ðîõ óðí÷áýáé òçí ðéíðñéççççç áñüð Ýñðññ, ïÝñ ðñüðñ ðáéáðáñðóíáðñ éñáéíéçý éáé áñüð GUI ðññáñÛñáðñ ÆáéáðÛóðáóçð.

## 8 Æ÷áñéóðßáð

Èá ðéáéá íá Æ÷áñéóðßáð òñí Jordan Hubbard, ðîõ ïñ Ýäüóá òçí ððéáéñßá íá ðÛññ éÛðñéá áðü òçí Æéáñóç òçð Ýéáñóçð 4.4 ðîõ FreeBSD, éáçð éáé Æéá ïéç òçí ÆñéáéÛ ðîõ Ý÷Æé éÛíáé Æáç éáé ÷ññéá Æéá íá Æßíáé òí FreeBSD áððü ðîõ Æßíáé óðíáñá. ÕðééÛ, ç Ýéáñóç Æáç éá ðóáí ðñðÝ Æðíáðñ íá ïéñéçññéáß ÷ññð ïéç òçí ó÷áðééð ïá òçí Ýéáñóç ÆñéáéÛ ðîõ 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 ïéíé ïé ððñéíéðñé ðîõ áð÷ñéýíóáé ïá òçí áñðððñç ðîõ FreeBSD. ÈÝè Æðßóçð íá Æ÷áñéóðßáð ðîõð Rodney Grimes <rgrimes@FreeBSD.org>, Poul-Henning Kamp <phk@FreeBSD.org>, éáé ïéñð ðîõð Ûëëíð ðîõ ÆñáÛóççáí Æéá íá ððéÛññí ðá Æñááéáßá Æéá ðéð Æêüüóáéð óðéð ðñðáð ïÝñáð òçð äçíéíðñáð ðîõ FreeBSD. Áððü òñ Ûñéñí Ý÷Æé áðçñááóðáß áðü éáßíáíá ó÷áðééÛ ïá òçí ïñÃÛîóç òùí Æêüüóàùí áðü òñ CSRG[14], òçí ïñÛá ðîõ NetBSD[11], éáé òçí ðñüðáóç Æéá ïéá ðéááééáóßá ïñÃÛîóçð òùí Æêüüóàùí ðîõ 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](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>)