

# Ç ĩñãŨíùóç ôùí Âêäüóãùí ôĩõ FreeBSD

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

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

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

Άδου οĩ Ũñēñĩ ðāñēāñŨōāē ôçĩ áíôēíāðþðēóç ēāē ĩñãŨíùóç ôçð ñŨāāð áíŨððôĩçð ôĩõ FreeBSD, ũôĩí áöĩñŨ óôçĩ ðñĩāðĩēíāóßā ðĩēĩðēēþĩ āēäüóãùí ôĩõ Êāēôĩõñāēēĩý Óðóðßĩāðĩõ FreeBSD. Âĩçããß ĩā ēāððñŨñāēā ôçĩ ĩāēĩāĩēĩāßā ðĩõ ÷ñçóēĩĩðĩēāßðāē āēā ðēð āðßóçĩāð āēäüóāēð ôĩõ FreeBSD ēāē ðāñēāñŨōāē óā āñāāēāßā ðĩõ āßĩāē āēāēÝóēĩā óā ũôĩõð āĩāēāóŨñĩĩóāē ĩā ðāñŨāĩĩĩ ðāñāĩāðñĩðĩēçĩÝĩāð āēäüóāēð ôĩõ FreeBSD āēā āóùðāñēēß ð āĩðĩñēēß ÷ñßóç ēāē áíŨððôĩç ðñĩũĩĩôũĩ.

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## 1 Âēóāãũāß

Ç áíŨððôĩç ôĩõ FreeBSD āßĩāē ĩēā ðĩēý āĩē÷ðß āēāāēēāóßā. Ôĩ FreeBSD áðĩðāēāßðāē áðũ óðĩāēóōĩñÝð ÷ēēēŨāũĩ āĩēñþðũĩ áðũ ũēĩ ôĩĩ ēũôĩĩ. Ç ñŨāā ôĩõ FreeBSD ðāñŨ÷āē ðñũóāāóç ĩÝóũ āĩþĩðĩĩõ CVS[1] óā ũēĩõð, Ýðóē þóðā ĩā ĩðĩñāß ũðĩēĩð ēÝēāē ĩā āāē ĩçýĩāóā log, āēāōĩñŨð (patches) ðĩõ Ý÷ĩĩĩ óā āēŨōĩñā development branches, ēāē Ũēēā ÷āñāēðçñēóðēēŨ ðĩõ āĩçēĩýĩ ôçĩ áíŨððôĩç, óā ĩðĩßā ðñĩēýððĩĩĩ áðũ ôçĩ ÷ñßóç āĩũð áððóçñĩý óðóðßĩāðĩõ āēā÷āßñēóçð ēþāēēā. Áðũ ðñĩōÝēāóā ēāē ôĩĩ ðēĩ ôçĩāĩôēēũ ðāñŨāĩĩĩā Ýēĩçð āēā Ýĩā ĩāāŨēĩ āñēēĩũ áðũ óāēāĩôĩý÷ĩõð ðñĩāñāĩĩāóēóðÝð áðũ ũēĩ ôĩĩ ēũôĩĩ óôĩ FreeBSD. Âßĩāē ðñĩōāĩŨð, āÝāāēā, ðũð ðĩēý óýĩðñā ēā āß÷ā āßĩāē āĩóāēþð ÷āĩðēēß ç ēāðŨóðāóç āĩ āß÷āĩ ũēĩē, áðũ ũēĩ ôĩĩ ēũôĩĩ, ðñũóāāóç ĩā āñŨøĩĩĩ óôĩĩ ēþāēēā. Âē' áðũũ, ĩũĩĩ

[illegible]

Ίε οα÷γoάoιτε πoιειτs αfΰδoδoιço oιo FreeBSD ααf αoπfιoι εαε θfεγ ÷νuιf αεα oι fαεαεΰñεoια oιo oδoδoπfαoιo αfΰδoδoιço oά fεά Ψεαίoιç ιά θfεuδoçά oιo fά fαBεαε fά ÷ñçóεfιθfεάBoάε αoñΨuδ. Άεά fά εoεαB αoδu oι αBεεçfά, ç αfΰδoδoιç αBfαoάε ααoδu÷νuιf oά αoι θαñΰεεçεά uιfθΰεά. Ί εγñειo ειñuδ αfΰδoδoιço αBfάε ι *HEAD* ð *trunk* oóι CVS repository ιάo, αfυoδuδ εάε uò “FreeBSD-CURRENT”, ð “-CURRENT” αf oófθñBά.

[illegible][illegible]

Ότiά ÷ þð óóÝεññiόάέ áðu ðiðð ÷ ñþóðáð iáð áráoiñÝð ðñiáεçÏðui éáé áéðþóáéð áéá éáéñýñéá ÷ áñáéðçñéóóééÏ, éáðÏ ðç áéÏñéáéá ðið éýéñið ðçð èÏéá Ýéñiðçð. Íé áráoiñÝð ðñiáεçÏðui áéóÏáñiόáé óðçí áÏóç **GNATS**[9] ÝÝóu e-mail, iá ðçí áðáññiáþ send-pr(1), þ ÝÝóu ðið web-interface ðið ðáñÝ ÷ áóáé óðçí áéáýðéðíðç <http://www.FreeBSD.org/send-pr.html>. Áéðuð áðu óéð áéÏoiñáð éþóðáð çéáéðñiñééý ðá÷ ðáññáþið iá èÝiá óá óá÷iééÏ ÷ áñáéðçñéóóééÏ ðið FreeBSD ððÏñ÷áé éáé ç éþóóá FreeBSD Quality Assurance mailing list (<http://lists.FreeBSD.org/mailman/listinfo/freebsd-qa>), ç iðñiá ðáñÝ ÷ áé Ýiá öüñiðì áéá óðæçðþóáéð ó÷áðééÏ iá óéð éáððñÝñáéáð ðçð “iñáÏúóçð ðui áéäüóáñ”.

Ἄεά íá áñððçñáððçéññí íé ðéñ ððñðçñçððéññ ÷ ñÞððáð íáð, íá Ἰέáññç ðñð FreeBSD 4.3 áñ÷ßðáñá íá ÷ ñçðéññðññéññíá íá÷÷ñéððñññ ãñññññ ðéáñðáññ. Ἀðññ ðé ãññññ ãñññññññññññ ãññ ðñññ ððéá÷ðáß ç ðáéééÞ Ἰέáññç. ἸáðÛ ðçñ áñáñññññç ðçð Ἰέáññçð, ðññ ðñéñ ðçñáñðééÝð áééááÝð éáé ðñññðéÞáð ð÷áðééÝð íá ðçñ áóðÛéáéá áññññáé ðññ ãñññ ðçð Ἰέáññçð. Ἀéñð ðáð ðçñ áññáðñðçðá áñááÛéñéçðð ðÝðñ CVS, áéðáéÝðéñá patchkits ððéÛ÷ñññáé áéá íá ðñññññ íá áñáááéññðññ ðá ððððÞñðÛ ðñð ðñññ ÷ ñçðéññðññéññ ðéð áéáñðáéð *RELENG\_X\_Y*.

Οι ΌιΠιά 2 ἀϊçάαβ ια εαδδδνΥνάεαδ οα αεΰοινα όδΰέα όçδ αεάαεεαόβαδ θιο ανβρεαόαε θβου αδυ εΰεα Υεαιόç. ιΥ÷νε εαε οα αΠιαόα θιο ιαçαίγι όδçι ιαδααεθόδεόç θιο όδόδΠιαθιο εαε οι ΌιΠιά 3 αϊçάαβ όçι βαέα όç αεάαεεαόβα όçδ ιαδααεθόδεόçδ. Οι ΌιΠια 5 δανεανΰοαε θυδ ιδθινα ια αδαεδαεαβ οι ααόεευ όγόόçια αδυ οηβθιρδ εαε οι ΌιΠια 6 δανεανΰοαε εΰθιεα αδυ οα θηΰαιαόα θιο ιΰεαια αδυ όçι αεάαεεαόβα Υεαιόçδ θιο FreeBSD 4.4. ΌΥειρ, οι ΌιΠια 7 δανιρόεΰαεε εΰθιεαδ αδυ όεδ εαδαεεγίοαεδ θιο εΥειρια ια δΰπναε ç ανΰδόθιç όθι ιΥεειι.

2 Ç Äéääéêáóßá Äçïéïõñãßàò ìéàò êäïóçò

Iε ιΥάδ άάαυάάδ όιθ FreeBSD όόεÜ÷-ññόάε άδñ όñí -STABLE έìññü άíÜδόίόçδ δάñβδθì εÜεά όΥόόάñάέδ ίπíάδ. Ç áέάάέέάάόβá δññάόίέíάόβáδ íέάδ Ýέάίόçδ ίάέέíÜάέ ό÷άαüí 45 ιΥñάδ δñέí όçí άíάíáñüíáíç çñäññçíβá Ýέάίόçδ, üόáí í όδáyέέñíδ άάαυάάüí όιθ FreeBSD όόÝέíάέ Ýíá áñÜñíá όόέδ έβόόáδ όñí δññáññáñάέέόόπí áέá íá όδáíέíβόάέ όόíθδ δññáññáñάέέόόÝδ üόέ Ý÷íθí 15 ιΥñάδ έάέñü íá εÜññíθ üδíέάδ áέέάáÝδ εÝέíθí, δñέí όí δÜάññüά όιθ εβάέέá. ΙΥόά όá

áðòü òĩĩ éáénü, ðĩēēĩß ðñĩāñāĩáðēóóŸò ēŪĩĩōĩ ĩéá óáēñŪ áðü áēēááŸò ðĩō Ÿ ÷ ĩōĩ ĩāßĩáē ðēŸĩĩ āĩüóóŸò ùò “ĩāēáēāñßōĩáóá MFC”. Ī ũñĩō MFC óçĩāßĩáē “Merge From CURRENT” éáē ðāñēāñŪōāē óçĩ áēááēēáóßā ðñĩóāñĩĩāßò òĩō ēßāēēá ĩéáð āĩēēĩáóĩŸĩçò áēēáāßò áðü òĩĩ -CURRENT ðāñēāĩáðēēü ēĩñĩü áĩŪðòōĩçò óòĩĩ óóāēāñü -STABLE ēĩñĩü.

## 2.1 ĩēāā ÷ ĩō ēßāēēá

ŌñēŪĩóá çĩŸñāð ðñēĩ óçĩ áĩāĩāĩüĩāĩç çĩāññĩçĩßā Ÿēāĩōçò, ĩ ēßāēēáð òĩō repository áéóŸñ ÷ āðáē óā ĩéá ðāñßĩāĩ “ēáēóóóŸñçòçò”. ÉáðŪ óç āēŪñēāēá áððßò òçò ðāñēüāĩō, üēāð ĩē áēēááŸò óòĩĩ -STABLE ēĩñĩü ðñŸðāē ĩá Ÿ ÷ ĩōĩ óçĩ Ÿāēñēóç òçò ĨŪāā ĪñāŪtūoçò òuĩ Āēäüoäüĩ <re@FreeBSD.org>. Īē áēēááŸò ðĩō āðēóñŸðĩĩóáē óā áððß òçĩ ðāñßĩāĩ ðĩō áēāñēāß 15 çĩŸñāð āßĩáē:

- Āēĩñēßóāēð āĩüóóßĩ ðñĩāēçĩŪðuĩ.
- Āĩçĩāñßóāēð óóçĩ ðāēĩçñßüóç.
- ĀēēááŸò ó ÷ āðēēŸò ĩā óçĩ áóóŪēāēá.
- ĪēēñŸò áēēááŸò óòĩōð ĩāçāĩŸò ðóóēāðßĩ, üðüð ð ÷ ç ðñĩóēßēç òuĩ IDs ĩŸüĩ óóóēāðßĩ.
- Īðĩēāāßðĩōā Ūēēç áēēáāß ðēóóāŸāē ç ĨŪāā áĩŪðòōĩçò üðē ðñŸðāē ĩá āßĩáē, ĩā òĩ áĩāĩāĩüĩāĩ ðŪĩóā ñßóēĩ.

ĪāðŪ ðēð ðñßóāð 15 ĩŸñāð ēáēðóóŸñçòçò, òðēŪ ÷ ĩāðáē ĩéá āĩēēĩáóóēēß Ÿēāĩōç áēá ĩá ÷ ñçóēĩĩðĩēçēāß óāĩ āĩēēĩß òçò ðāēēēßò Ÿēāĩōçò éáē ĩ ēßāēēáð áéóŸñ ÷ āðáē óā ĩéá ðāñßĩāĩ “ðāāßĩāðĩō”. ðēŸĩĩ āßĩáē ðĩēŸ ðēĩ āŸóēĩēĩ ĩá āßĩĩōĩ ĩŸāð áēēááŸò óòĩ óŸóóçĩā, āēóüð ēē áĩ āēĩñēßĩĩōĩ ēŪðĩēĩ ðĩēŸ óĩāāñü bugß ēŪðĩēĩ ðñüāēçĩā áóóŪēāēáð. ÉáðŪ óç āēŪñēāēá òĩō ðāāßĩāðĩð òĩō ēßāēēá, òĩōēŪ ÷ éóòĩĩ ĩßā āĩēēĩáóóēēß Ÿēāĩōç òðēŪ ÷ ĩāðáē ēŪēā āāāñŪāā, ĩŸ ÷ ñē ĩá āßĩáē Ÿóĩēĩç ç ðāēēēß Ÿēāĩōç. Ōēð çĩŸñāð áēñēāßò ðñēĩ óçĩ ðāēēēß Ÿēāĩōç, ç ĨŪāā ðĩō āßĩáē òðāŸēðĩç áēá ðēð āēäüoäēð āßĩáē óā óòĩā ÷ ð āðēēĩēĩüĩßā ĩā óçĩ ĨŪāā áóóŪēāēáð, óçĩ ĨŪāā óòĩōßñçòçò òçò ðāēĩçñßüóçò, éáē óçĩ ĨŪāā óòĩōßñçòçò òuĩ ports, áēá ĩá āāāāēüēĩŸĩ ðüð üēā óā áðāñāßòçòā ēñĩŪðēá áēá ĩéá ðēßñç Ÿēāĩōç āßĩáē áēáēŸóēĩā.

## 2.2 Ēßóóā ĀēŸā ÷ ĩō òçò Ōāēēēßò ēāĩōçò

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

### 2.2.1 Āçĩēĩōñāßā òĩō ēĩñĩŸ ēāĩōçò

¼ðüð ðāñēāñŪøāĩā óóçĩ áéóáāüāß, ĩē ēĩñĩĩß RELENG\_X\_Y āßĩáē ĩéá ó ÷ āðēēŪ ĩŸā ðñĩóēßēç óóçĩ ĩāēĩāĩēĩāßā òuĩ āēäüoäßĩ ĩāð. Ōĩ ðñßōĩ āßĩā óóçĩ āçĩēĩōñāßā áóòĩŸ òĩō ēĩñĩŸ āßĩáē ĩá āāāāēüēāßòā üðē āĩōēāŸāðā ĩā óçĩ ðāēāðóāßā Ÿēāĩōç òĩō ðçāāßĩð ēßāēēá áðü òĩĩ RELENG\_X ēĩñĩü áðü òuĩ ĩðĩßĩ ēā òðēŪĩāðā òĩ ĩŸĩ ēĩñĩü.

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

Ōĩ áðüĩāĩ āßĩā āßĩáē ĩá āçĩēĩōñāßóāðā ĩéá āðēēŸðā (tag) óòĩ óçĩāßĩ āēēßĩçòçò òĩō ēĩñĩŸ, ðóóā ĩá ĩðĩñāßòā ĩá āāßòā ðēð 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 ĩðĩñāßòā ĩá āçĩēĩōñāßóāðā òĩ ĩŸĩ ēĩñĩü ĩā:

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

**Όζιαΰοζ:** Ίε άόέέΎόαο *RELENG\_\** άβίαέ άάόιαόιΎίαο άέα ÷ *ηΠόζ* άδύ οίόο *CVS-meisters* έάέ όζι *ηΰάά* ούι άέάυόάυι.

Ί ύνιό “*άόέέΎόα*” άβίαέ *ηηιερά* ούο *CVS*. Όζιαβίαέ Ύία ύμνά ούο έάεινβέάέ ιέα όόάέάηειΎιζ Ύέαιόζ ούο έπαέέα όοι ÷ *ηύι*. × *ηζόέιιθιέριόαο* άόέέΎόαο όοι *δζάαβι* έπαέέα *αιζεΰια* υθιέιι οόέΰιαέ όοι *ιΎέει* άέάυόάέο ούο *FreeBSD* ιά *ηνβόέάέ* έάέ ιά ÷ *ηζόέιιθιέρια* άέηέαυο ούι *βάει* έπαέέα ούο ÷ *ηζόέιιθιέριεζέα* άέα όέο *άδβόζιαο* άέάυόάέο όζο *ηΰάά* ούο *FreeBSD*.

## 2.2.2 Άόιΰιιόαο ούι Άηέειυ έαίόζο

Θνέι ιθαέ ζ άόέέΎόά, ιαόάέυοόέόόάβ έάέ άοιέιαόόάβ ζ όάέέέΎ Ύέαιόζ, θηΎθαέ ιά *αβηι* άέέάΎό όάά θάηάέΰου *αν* ÷ *αβ* άέα ιά θάηέΎ ÷ *ι* ούι ούόου άηέειυ Ύέαιόζο άέα ού *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`

Ίε όζιαέυόάέο Ύέαιόζο έάέ όά *αν* ÷ *αβ* ιά όέο άέιηέυόάέο όζο όάέάόόάβάο όόέαιυο θηΎθαέ *άδβόζο* ιά θηιόάηιόόιγί όόζι *ιΎά* Ύέαιόζ (όοι *έιηιυ* όζο Ύέαιόζο) έάέ ιά *άδαιηάάόόιγί* έάόΰέέζέά (όόιόο *άγι* *έιηιγύ* *stable* έάέ *current*):

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

Σ *άόάηι* *sysinstall* θηΎθαέ *άδβόζο* ιά *αιζιανέαβ* ιά ούι ούόου άηέειυ ούι *ports* έάέ ού ÷ *π* ούο *αβόέι* ούο *άδάέόάβόάέ* άέα όζι *Όόέει* ούι *Ports*. ΆόόΎο ιέ *δεζηιόιηβάο* *οδΰ* ÷ *ι* όοι *αν* ÷ *αβ*

`src/release/sysinstall/dist.c`.

Áōiŷ iēēēçñùēāß ç ðñīāōiēiāóāßá ôçð iŷáð āðßóçìçð Ýēāiōçð, ðñÝðāē íá áíçìāñþóāðā iāñēēŪ āñ÷āßá āēá íá áíçìāñþóāðā òiī ēüōiī āēá ôç iŷá Ýēāiōç òiō 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 Āçìēiōñāßá òuì Āōēēāði ôçð ēāiōçð

¼ðāí ç ðāēēēß Ýēāiōç āßiāē Ýōiēiç, ç ðāñāēŪðū āíōiēß ēā āçìēiōñāþóāē ôçí āðēēÝðā `RELENG_4_8_0_RELEASE`.

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

İē ððāŷēðñē ôçð Ōāēiçñßuôçð ēāē òuì Ports āßiāē āðōiß ðiō ðñÝðāē íá āçìēiōñāþóiōi ðēð āðēēÝðāð `RELEASE_4_8_0` óā ēāðŪēēçēā āŷiōñā ðçāāßiō ēþāēēā.

İāñēēÝð òiñÝð, iðñāß íá ÷ñāēáóðāß íá āßiōi ēŪðñēāð āēēāāÝð ðāēāðōāßá óðēāiß *iāðŪ* ôçí òiðñēÝðçðç òuì āðēēāði. ĀāíēēŪ, āāi āßiāē āŷōēiēi íá āßiāē ēŪðē ōÝōiēi āōiŷ òi CVS āðēōñÝðāē íá iāðāēēiþóāē ēŪðñēið ðēð āðēēÝðāð iā āíōiēÝð ùððð `cvs tag -d tagname filename`. Āßiāē ðñēŷ óçìāíðēēü ùiðð āððÝð iē āēēāāÝð ôçð ðāēāðōāßāð óðēāiþð íá óçìāēüēiŷi iā ðēð óuóðÝð āðēēÝðāð āēá ôçí óðāēāñēiŷiç Ýēāiōç. İē āðßóçìāð āēāuóāēð òiō FreeBSD ðñÝðāē íá āßiāē ðŪiðā āŷēiēi íá āíāðāñā÷ēiŷi. ŌiðēēÝð āēēāāÝð óōi ðāñēāŪēēiī òiō iç÷āíēiŷi òuì āēāuóāuī āāi āðēōñÝðñiðāē.

## 3 İāðāāēþððēóç ôçð ēāiōçð

İē “āēāuóāēð” òiō FreeBSD iðñiŷi íá iāðāāēüððēóðiŷi āðü iðñēiñāþðiðā Ý÷āē Ýiá ó÷āðēēŪ āñþāñi iç÷Ūiçìā ēāē ðñüóāáç óōi repository òiō ðçāāßiō ēþāēēā. (¼ēiē Ý÷iōi āððß ôç āðñāðüðçðā, āōiŷ ðāñÝ÷iōiā ðñüóāáç iŷōü āiþiðñiō CVS! Āāßðā òi Āā÷āēñßāēi òiō FreeBSD āēā ðāñēóóüðāñāð ēāððñÝñāēāð.) Ç iūiç āēāēēß āðāßðççç āßiāē íá ððŪñ÷āē ððñiððñēiç óōiī ððñþiā óāð āēá ôçí óððēāðß `vn(4)`. (Ōðñ `-CURRENT`, āððß ç óððēāðß Ý÷āē āíðēēāðāóāēāß āðü ôçí iŷá óððēāðß āßóēið āāóēōiŷiñ òā iþiç `md(4)`.) Áí ç óððēāðß āāi āßiāē āíōñiāðüñÝiç óōiī ððñþiā óāð, òüðā i ēāðŪēēçēið iāçāuð ēā òiñðñēāß āððñiāðā üðāí āēðāēāððāß ç āíðñēß `vnconfig(8)` ēāðŪ ôç āēŪñēāēā ôçð òŪçðð āðñēiāóāð òiō iŷōiō āēēßiççð. ¼ēā ðā āñāāēāßā ðiō ÷ñāēŪāēñiðāē āēá íá iāðāāēüððßóāðā iēā Ýēāiōç āßiāē āēāēÝðēiā óā iññðß ðçāāßiō ēþāēēā óōiī ēāðŪēēiāi `src/release`. ĀððŪ ðā āñāāēāßā Ý÷iōi ùð óēiðñ íá ðāñÝ÷iōi üðē ÷ñāēŪāēñiðāē āēá íá ðßāēñiðāē iē āēāuóāēð òiō FreeBSD iā Ýiá óññāðß ēāē óðāēāñēiŷiñ òññðñ. İēā ðēþñçð Ýēāiōç iðñāß íá iāðāāēüððēóðāß ÷ñçēiñðñēiþiðāð āððŪ ðā āñāāēāßā iā iēā ēāē iūñi āíðñēß, óðñāñēēāiāññÝiçð ēāē ôçð āçìēiōñāþāð āñuð ISO āñ÷āßiō ēāðŪēēçēi āēá íá ēāāß óā CDROM, iē āēóēÝððāð āēēßiççð, ēāēþð ēāē i ēāðŪēēçēið āāēāðŪóðāçð iŷōü 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 iŷōā óōiī ēāðŪēēiāi `/usr/obj`. İðñāßðā íá ðā āçìēiōñāþóāðā āßðā iā ôçí āíðñēß `make world` þ āðēŪ `make buildworld`. Āēā íá

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 ðíßí ãñßðéáðáé òí CVS repository.
- RELEASETAG - Ç áðééÝðá CVS ðîõ áíðéóðíé÷-áß ðóçí Ýêáîóç òçí ðíßá èÝéäðá íá ìáðááëüðððáððá.

Áí ááí Ý÷-áðá ðáç ðñüóááóç ðá èÛðíéí ðíðéëü CVS repository ìá ðñí èðáééá ðîõ FreeBSD, ðíñáßðá ðÛíðá íá ððéÛíáðð 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 ðíßí ðíñáßðá íá ÷ ñçóéíðíéçéäðá áéá íá áíðéáñÛððá òí CVS repository ðîõ FreeBSD ðóí áéëü óáð ðíðéëü mirror.

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

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

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

Õí Makefile ðîõ ÷ ñçóéíðíéçéäðáé áéá íá ìáðááëüðððáíðáé ìé áêüüóáéð ðíñáß íá ÷ ññéóðáß ðá áñéäðÛ ìá÷-ññéóðÛ ìáðáíý ðîõð áðíáðá.

- Äçíéíðñáß áñüð éáéáñíý ðáñéáÛëëíððð ðá íéá ìá÷-ññéóðð éáñáñ÷-ßá éáðáëüüí ìá òçí áíðíðð “make installworld”.
- Áíáñüáß áðü òí CVS ìéáð éáéñýñéáð Ýêáîóçð ðîõ ðçááßíð èðáééá ðîõ ðððððíáððð, òçð ðáèíçñßüóçð éáé òñí ports ìÝðá ðóçí éáñáñ÷-ßá éáðáëüüí ìáðááëðððéóçð òçð Ýêáîóçð.
- Ñðéíðáéð òñí áñ÷-áßíð ðóñí éáðÛëíá /etc éáé /dev ìÝðá ðóí ðáñéáÛëëí chroot.
- ÁéðÝéáóç òçð áíðíðð chroot ìÝðá ðóçí éáñáñ÷-ßá éáðáëüüí ðîõ áðíéíÛððçéá, áéá íá ìçí ðíñáß òí áñüðáñéëü ðáñéáÛëëí íá áðçñáÛðáé òç ìáðááëðððéóçð òçð Ýêáîóçð.
- ÁéðÝéáóç òçð áíðíðð make world ìÝðá ðóí ðáñéáÛëëí chroot.
- Ìáðááëðððéóç òñí áêðáéÝóéíð ðîõ áßíáé ò÷-áðééÛ ìá òí óýóðçíá Kerberos.
- Ìáðááëðððéóç ðîõ ððñðíá GENERIC.
- Äçíéíðñáß áñüð ðáéééíý éáðáëüüíð ðóñí ðíßí èá ìáðááëüðððéóðíý éáé èá áðíèçéáððéíý ìé áêðáéÝóéíð ìñðÝð òñí ðáéééðí ðáéÝðð.
- Ìáðááëðððéóç éáé ááéáðÛððáóç òñí áñááéáßíð ðîõ ÷ ñáéÛáíðáé áéá òçí ðñíáðíéíáðá òçð Ýêáîóçð éáé òç ìáðáðñíðð òçð ðáèíçñßüóçð áðü òñí ðçááßíð èðáééá (SGML) ðá html éáé áñ÷-áßá éáéíÝñð ðîõ èá ðóñíáñýíðí òçí Ýêáîóçð.
- Ìáðáðñíðð éáé ááéáðÛððáóç òçð ðáèíçñßüóçð (áá÷-áéñßáéá ÷ ñðððç, áéóáñüáééÛ éáßíáíá, óçíáéðáéð Ýêáîóçð, èßððáð ððíááðððçðáðð ðéééíý, èèð.)

- ĩāóāāēpôóéóc òuĩ “òõĩðēáõĩŸĩũĩ” (crunched) āēðāēŸóēĩũĩ ðĩō ēā ÷ ñçóēĩĩðĩēçēĩŸĩ óóēð āēóēŸôðāð āāēáðŨóóáócð.
- Āçĩēĩōñābā òuĩ ðāēŸôũĩ ôçð āāēáðŨóóáócð ēāē òuĩ ðāēŸôũĩ ðçāābĩō ēpāēēā.
- Āçĩēĩōñābā òuĩ ĩŸóũĩ āēēbĩçóçð ēāē ôçð āēóēŸôðāð “fixit”.
- Āçĩēĩōñābā ôçð ēāñāñ÷bāð ēáðāēüũĩ āēā ôçĩ āāēáðŨóóáóc ĩŸóũĩ FTP.
- (ðñĩíāēñāôēēŸ) Āçĩēĩōñābā òuĩ ISO āñ÷ābũĩ āēā ĩŸóā CDROM/DVD media.

Āēā ðāñēóóũðāñāð ðēçñĩōĩñbāð ó÷āðēēŸ ĩā ôçĩ āēāēēāóbā āçĩēĩōñābāð ĩēáð Ÿēāĩóçð, āābôā ôçĩ óāēbāā ôāēĩçñbũóçð release(7).

### 3.2 ĩāóāāēpôóéóc òuĩ XFree86

Ōĩ āñāóēēũ ðāñēāŨēēĩ **XFree86** ābĩāē Ÿĩā óçĩāĩóēēũ ēñĩŨðē ēŨēā Ÿēāĩóçð āēā ðĩēēĩŸð ÷ ñpôóāð ðĩō ēŸēĩōĩ òĩ FreeBSD āēā óðāēĩŸð āñāóáð. ðñēĩ ôçĩ Ÿēāĩóç 4.6-RELEASE òĩō FreeBSD, ĩē āðbóçĩāð āēüüóāēð òĩō FreeBSD ÷ ñçóēĩĩðĩēĩŸóāĩ ôçĩ Ÿēāĩóç 3.x òuĩ **XFree86**. Ĩ ðēĩ āŸēĩēĩð ðñũðĩð ĩā ĩāóāāēũðôðóáðā áððŸð óēð āēüüóāēð ābĩāē ĩā ÷ ñçóēĩĩðĩēĩŸóāĩ òĩ ðñũāñāĩā `src/release/scripts/X11/build_x.sh`. Áðũũ òĩ ðñũāñāĩā áðāēðāb ĩā ābĩāē pāç óçĩŸĩā óõĩ óŸóçĩŨ óáð òũũĩ òĩ ðāñēāŨēēĩ XFree86 üũĩ ēāē ç āēpôóā Tcl/Tk. ĩāðŨ ôçĩ ĩāóāāēpôóéóc òuĩ ēáðŨēēçēũĩ X servers, òĩ ðñũāñāĩā ēā ðāēāðŨñāē üēā óā āñ÷ābā óā óðēēĩāŸð āñ÷ābũĩ ðĩō ðāñēĩŸĩāē ĩā āñāē òĩ `sysinstall(8)` ĩŸóā óõĩ ēáðŨēēĩāĩ `XF86336` óõĩ ĩŸóĩ āāēáðŨóóáócð.

ĩāēēĩpĩóáð ĩā ôçĩ Ÿēāĩóç 4.6-RELEASE òĩō FreeBSD, òĩ `sysinstall(8)` āāēāēéóðŨ ôçĩ Ÿēāĩóç 4.x òuĩ XFree86, óāĩ ēāñĩēēŨ ðāēŸóā. ÁððŨ ĩðĩñāb ĩā ābĩāē ābôā óā ðāēŸóā ðĩō āçĩēĩŸñāçóā òĩ cluster òuĩ ports p ĩðĩēāāðĩðā Ũēēā ðāēŸóā ðĩō Ÿ÷ĩōĩ āçĩēĩōñāçēāb āðũ Ÿĩā ports tree ĩā ôçĩ ēáðŨēēçç āðēēŸóā.

**Óçĩābũóc:** Ābĩāē ðĩēŸ óçĩāĩóēēũ ĩā áðāēñŸóáðā āðũ òĩ āñ÷ābĩ `/etc/make.conf` ĩðĩēāóāpðĩðā òĩðēēŸð ñòēĩbóāēð Ÿ÷āðā ēŨĩāē. Āēā ðāñŨāāēāĩā, āāĩ ābĩāē ēāēp ēāŸā ĩā āēāĩŸĩāðā āēðāēŸóēĩā ðĩō Ÿ÷ĩōĩ ĩāóāāēũðôéóðāb óā ēŨðĩēĩ óðāēāēñēĩŸĩĩ óŸóçĩā ĩā ĩñēóĩŸĩç ôçĩ óēĩp ôçð ĩāóāāēçðpð `CPUTYPE` āēā āāēðēóõĩðĩbçóç òuĩ āēðāēŸóēĩũĩ āēā ēŨðĩēĩ óðāēāēñēĩŸĩĩ āðāĩāñāóðp.

### 3.3 ðñĩāñŨĩĩáðā Ōñbôũĩ (“ports”)

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

Ç āēāāēēāóbā óõĩðpñçóçð ôçð óðēēĩāpð òuĩ ports ābĩāē ēŨðē ðĩō āāĩ ĩðĩñĩŸĩā ĩā ēāēŸøĩðĩā āāp. ĩā ĩā÷ũñēóðũ Ũñēñĩ, ĩā ðbôēĩ Ç ĨñāŨtūóc ēāĩóçð òuĩ ðāēŸôũĩ ĒĩāēóĩēēŸ āðũ Ōñbôĩðð ([./releng-packages/article.html](http://releng-packages/article.html)), ēāēŸðāē áðũ òĩ ēŸĩā.

### 3.4 Āñ÷ābā ISO ôçð ēāĩóçð

ĩāēēĩpĩóáð ĩā ôçĩ Ÿēāĩóç 4.4 òĩō FreeBSD, ç ĨŨāā ĀĩŨðððĩçð òĩō FreeBSD áðĩōŨóēóā ĩā āēāĩŸĩāē ēāē óā ôŸóóāñā ISO āñ÷ābā ðĩō ðñpôā ðĩōēĩŸóāĩ ĩē āðāēñābāð *BSDi/Wind River Systems/FreeBSD Mall* óðēð “āðbóçĩāð” āēāmŸð CDROM ðĩō Ÿēāĩāĩ. ēŨēā Ÿĩā āðũ óā ôŸóóāñā ISO āñ÷ābā ðñŸðāē ĩā 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 êéǎ 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 ǎçìéîññǎçêǎß 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 êǎðÛêîñ disc1 ǎßíǎé ç ðññíóèßê ðîõ êǎðÛêîñ tools, òüí XFree86, êéǎ üóí òî ǎóíǎóüí ðǎñéóóüðǎññí ðǎéÝòüí ìðññíý íǎ ÷ñÝóíóí óóí ǎßóêî. Î êǎðÛêîñ tools ðǎñéÝ÷ǎé ǎñǎǎéǎßǎ ðîõ áðéòñÝðîí óǎ ÷ñßóðǎð Ûêêüí êǎéðîññǎéêñí óðóðçíÛòüí íǎ óðéÛñîí óéð ǎéóéÝððǎð ǎéêßíçóçð. Áðòüð ì ðñðòîð ǎßóêîõ ðñÝðǎé íǎ óðéÛ÷ǎéǎé bootable Ýðóé ðóðǎ íǎ ìðññíý íé ÷ñßóðǎð òüí ìüðÝññüí ððîéíǎéóóðí íǎ áðîðǎýǎíóí òî óðÛǎéí ǎçìéîññǎð òüí ǎéóéǎððí ǎéêßíçóçð.

Áí ìéǎ ǎéǎóññǎðéêß Ýêǎíóç òüí XFree86 éǎ ǎéǎíÝíǎðǎé ìǎ òçí Ýêǎíóç áðòß, ðñÝðǎé íǎ ǎçìǎññèǎß òî ðñüǎñǎìǎ sysinstall(8) ǎéǎ òçí íÝǎ èÝóç êéǎ íé ñǎçǎßǎð ǎǎéǎðÛóóǎóçð. Î ó÷ǎééüð êñǎééǎð ððÛñ÷ǎé óóñí êǎðÛêîñ src/release/sysinstall óóñí -STABLE êññü ð óóñí êǎðÛêîñ src/usr.sbin/sysinstall óóñí -CURRENT êññü. ÓðǎéǎêñéíÝíǎ, òǎ ǎñ÷ǎßǎ dist.c, menus.c, êéǎ config.c éǎ ÷ñǎéǎóðǎß íǎ ǎçìǎññèýí.

### 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 ǎñǎóǎóóíý ðññǎéßíǎóǎ óǎ ìéǎ ǎǎéǎðÛóóǎóç òîõ FreeBSD. Êé áðòüð ì ǎßóêîõ ðñÝðǎé íǎ ǎßíǎé bootable. Êǎ ðñÝðǎé áðßóçð íǎ ðǎñéÝ÷ǎé Ýíǎ óóíðéǎóíÝñí ǎíóßǎñǎóñ òîõ CVS repository óóñí êǎðÛêîñ CVSROOT êéǎ ǎßǎìǎóǎ áðü ǎðññéêÛ ðññǎñÛñǎóǎ óóñí êǎðÛêîñ commerce.

### 3.4.3 Áßóêîõ 3 êéǎ 4

Îé ððüéîéðîé ǎðí ǎßóêîõ ðǎñéÝ÷ǎéí áðéðññüéǎðǎ ðǎéÝóǎ êñǎéóíééý ǎéǎ òî FreeBSD. Óǎ ðǎéÝóǎ éǎ ðñÝðǎé íǎ ǎßíǎé ñǎǎñðîéçíÝíǎ, Ýðóé ðóðǎ êÛêǎ ðǎéÝòí íǎ ǎßíǎé óóñí ðǎéí ǎßóêî ìǎ üéǎ óǎ ðǎéÝóǎ áðü óǎ ñðíǎ ǎñǎñðÛóǎé ǎéǎ íǎ ǎǎéǎðóóǎéǎß êéǎ íǎ òñÝíǎé. ðǎñéóóüðǎññð ðêçñîîññßǎð ǎéǎ òçí ǎçìéîññǎß áðòðí òüí ǎßóêüí ǎíǎóÝññíóǎé óóñí Ûñèññ Ç ÎñǎÛîùόç êǎíóçð òüí ðǎéÝòüí Êñǎéóíééý áðü Òñßðîðð (./releng-packages/article.html).

## 4 Áéǎíñß òüí Áêäüüóàùí

### 4.1 ÁîðçñǎðçðÝð FTP

¼ðǎí ç Ýêǎíóç ǎßíǎé Ýóîéíç, Ý÷ǎé ǎñééíǎóóǎß ǎéðǎíðð, êéǎ Ý÷ǎé ðǎéǎðǎñéóóǎß ǎéǎ ǎéǎíñß, ì éýñéîð FTP ǎñðçñǎðçðð ðñÝðǎé íǎ ǎçìǎññèǎß. Îé áðßóçñéé ǎñðçñǎðçðÝð FTP òîõ FreeBSD ǎßíǎé üéîé mirrors ǎñüð éýñéîð ǎñðçñǎðçðð óóñí ñðíßí Ý÷ǎéí ðññóǎǎóç ìüñ Ûêéîé FTP ǎñðçñǎðçðÝð. Áðòüð ì ǎñðçñǎðçðð ǎßíǎé ǎñüóüð ùð ftp-master. ¼ðǎí ç Ýêǎíóç ǎßíǎé Ýóîéíç, ðñÝðǎé íǎ ǎçìǎññèýí óǎ ðǎñǎéÛòü ǎñ÷ǎßǎ óóñí ftp-master:



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

λέα ἀδῆP web οἰαῖβᾶᾶ θῖο θᾶñéY ÷ ᾶé ᾶᾶβêοᾶᾶ οᾶ ᾶéUοῖñῖῖοᾶ οῖαῖοᾶééῖῖYᾶ FTP ᾶᾶοᾶῖῖᾶῖῖοᾶ ᾶῖᾶ οῖᾶ ᾶñY ÷ ῖᾶοᾶ ῖᾶᾶῖοῖ ᾶῖᾶ FreeBSD.

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

Ἰ ἐὰν Ὑπεράνω ἀδῶ ὅτι ἰδίῳ ἰδιῳγῇ ἰὰ ἀβήτοι ἀαεάοάοόῦοάοό ἰΥόυ FTP, ὑδῶ ὅτι Ὑ ÷ αε ὀηῖαοῖεῖ Ὑοάε ς ἀίοῖεP 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 óõïâîëëêÐ óõïôùîâõóç ãéá ôîí êáôÛëîäí .../.../.../tools.

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

```

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

```

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

Ôá áñ÷åßá ISO.

Ἄεά ḁāñēōōūōāñāð ðēçñīrōīñßāo ó÷āđéēŬ īā ôçī īñāŬīùôç ôūī mirror æááññðò FTP ôīō FreeBSD, ḁāñáæäëþ äåßôå ôī Ũñēñī ÖðēŬ÷ñīřôād Ýíá FreeBSD mirror (/./hubs/).

Ιδιόηα ία δ'Υηάε αηέαοΎο ηηαο αδύ οςί οόέαηδ θιρ έα αίςηάηηέαβ ι ftp-master ιΎ÷ηέ ία αίςηάηηέηςι οόςί δεάέιθςόβα οίρδ οά θηηοίρ αδεδΎαίρ FTP mirror ια οςί ρΎα Ύέαίρς. ΆδεάΥέεαοάε ιέ οδ'αγέοηίε Ύέαίρςδ ία οοίάψηςέηςι ια οςί ϑέαέοηίίέηδ έβοόά ούι mirror sites οίρ FreeBSD (<http://lists.FreeBSD.org/mailman/listinfo/freebsd-hubs>) θηέί αίάέίέηςοίρ οςί αάίέηδ αέαάοέιυδςόά οςδ ρΎαδ Ύέαίρςδ οοίρδ αίρδςηάοςδΎο FTP.

## 4.2 Àíáðáñáñùã òùí CD-ROM

[illegible]

5 Åđăêôáóéìüôçôá

[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 āāēāðŨóóāçðð. Ĩ “ĭđāēŨēēēĭō” òññđĭð ĭā òĭ ēŨĭāðā áðòñ 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 āđēðēŸĭñ āñ÷āβā ĭŸóā óōñĭ ēāðŨēĭāĭ chroot òçð Ÿēāĭóçð.
- `rm ${CHROOTDIR}/usr/obj/usr/src/release/release.[59]`
- ĭāðāāēñððóðā đŨēē òĭ sysinstall(8), òĭ đññPĭā, P ũđĭēā Ũēēā đññāñŨñāðā Ÿ÷ĭōĭ āđçñāāóóāβ āðñ òēð āēēāŸð óāð.
- `chroot ${CHROOTDIR} ./mk floppies`

ĭē ĭŸāð āēóēŸððāð āāēāðŨóóāçðð 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 óðóðPĭāðā āñ÷āβñĭ src/release/scripts/doFS.sh.

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

## 5.2 Đñĭāñāĭāðōβāēĭĭóāð òĭ sysinstall

Ōĭ āñāāēāβĭ āāēāðŨóóāçðð ēāē ñŷēĭóçð òĭō FreeBSD, òĭ sysinstall(8), ĭđĭñāβ ĭā đñĭāñāĭāðēóðāβ āēā ĭā ēŨĭāē ðēĭ āŷēĭēāð òēð áðññāðĭđĭēçĭŸĭāð āāēāðáóðŨóāēð òā đĭēēŨ ĭç÷āĭPĭāðā. Áðññ òĭ ÷āñāēðçñēóðēēñ òĭō đññāñŨñāðĭð ĭđĭñāβ ĭā ÷ñçóēĭđĭēçēāβ òā óōĭāðóāñĭ ĭā òĭ PXE[13] òçð Intel āēā ĭā ĭāēēĭPóāē ç āāēāðŨóóāçð āðñ òĭ āβēðōĭ, P òā óōĭāðóāñĭ ĭā đñĭóáñĭōĭŸĭāð āēóēŸððāð āēēβĭçóçð ēē Ÿĭā sysinstall script. ĭā đāñŨāāēāĭā āðñ òŸōĭēĭ sysinstall script ĭđĭñāβðā ĭā āñāβðā òðĭ āñ÷āβĭ src/release/sysinstall/install.cfg.

## 6 ĭāēPĭāðā òĭō ĐPñāĭā āðñ òçĭ ēēāĭóç 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 ēĭññĭ RELENG\_4 òĭō FreeBSD Ÿđñāðā ĭā Ÿ÷ĭōĭ Ÿāēñēóç āðñ òçĭ ĨŨāā ĨñāŨñóçð òñĭ Āēäüóäñĭ <re@FreeBSD.org>. Ç đñþðç āĭēēĭāóðēēP Ÿēāĭóç āēā òçĭ āñ÷ēðāēðĭēēP x86 Ÿāēĭā āēāēŸóēĭç òóēð 16 Áðāĭŷóðĭð, ēē āēĭēĭōēPēçēā āðñ 4 āēñĭā āĭēēĭāóðēēŸð āēäññāēð đĭō ĭāþāçóāĭ óçĭ òāēēēP Ÿēāĭóç òóēð 18 òĭō ÓāððŸĭāñç. Ĩ òðāŷēðññð áóðŨēāēāð Ÿðāēĭā óçĭāĭðēēñ ññēĭ ēāðŨ òçĭ āēŨñēāēā òçð òāēāððāβāð āāāñŨāāð ēāēþð ēŨðĭēā đñĭāēPĭāðā áóðŨēāēāð āñŸēçēāĭ òā đñĭçāĭŷĭāĭāð, āĭēēĭāóðēēŸð āēäññāēð. ÓññēēēŨ, đŨĭñ āðñ 500 email óðŨēēçēāĭ óçĭ ĨŨāā ĨñāŨñóçð òñĭ Āēäüóäñĭ <re@FreeBSD.org> òā āēŨóçĭā ĭēēññðāñĭ āðñ Ÿĭā ĭPĭā.

Ç ēĭēĭñðçðā òñĭ ÷ñçóðþĭ ĭāð Ÿēāĭā óāðŸð ũðē ç áóðŨēāēā ēāē ç óðāēāñññðçðā ĭēāð Ÿēāĭóçð āāĭ ēŨ 'ðñāðā ĭā ēðóēŨēāðāē āēā ēāĭāññð āβāñð ðñĭēāóĭβāð 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 āēäññāñĭ 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 ìäëëïíôéêÝò Êáôãõèýíóãéò

[illegible]

- [illegible]

8 Å ÷ á ñ é ó ô ß à ò

Εὰ Πεᾶέα ἰά ἀο÷ἀνεόδΠού οἱ Jordan Hubbard, θῖο ἱτὸ Ὡαυόᾶ ὀγῖ ἀδεᾶένΒᾶ ἰά δῦNνὺ εὔΘιεᾶ αῶθ ὀγῖ ἀδεῃγῖ ὀδò Ὡεᾶιτόçð 4.4 οἱθ FreeBSD, ἐᾶεðð ἐᾶέ ᾶέᾶ ὑεç ὀγῖ ᾶιρεᾶεὔ θῖο Ὡ÷ᾶέ εὔἰᾶé ᾶᾶþ ἐᾶέ ÷nυῖᾶᾶ ᾶέᾶ ἰά ᾶβῐᾶᾶ ὁῖ FreeBSD ᾶὄου θῖο ᾶβῐᾶᾶ ὀΠῐᾶᾶ. Ὤὄὄεὔ, ç Ὡεᾶιτόç ᾶᾶῖ ἐᾶ Πὄᾶῖ θῖο Ὡ ᾶὅῖᾶὀυῖ ἰᾶ ῖεῖῖεçñυᾶᾶ ÷ññðð ὑεç ὀγῖ ὀ÷ᾶὄéÞ ἰᾶ ὀγῖ Ὡεᾶιτόç ᾶιρεᾶεὔ θῖο Ὡεᾶῖᾶ ἰé 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> ἐᾶέ ὑεῖῖᾶ ἰé ὀδῡῖεῖᾶῖᾶ θῖο ᾶὂ÷ῖεῖγῖᾶᾶ ἰᾶ ὀγῖ ᾶῖὔᯚðὀῖç ὁἱθ FreeBSD. ÈὔÈὔ ᾶðΒὀçð ἰᾶ ἀο÷ἀνεόδΠού ὁἱθ Rodney Grimes <rgrimes@FreeBSD.org>, Poul-Henning Kamp <phk@FreeBSD.org>, ἐᾶέ ὑεῖῖὀð ὁἱθὀ Ὡεῖῖὀð θῖο ᾶᾶᾶὔᯚὀçᾶῖ ᾶέᾶ ἰᾶ ὀὄéὔἱῖὀ ὀᾶ ᾶᾶᾶéᾶᾶ ᾶέᾶ ὀὄὀ ᾶéᾶὔᯚᾶὄ ὀὄὄὀ ðñþὀᾶð ἰὔᾶð ὀçð ᾶçῖeῖῖᯚᾶᾶð ὁἱθ FreeBSD. Ἀὄου ὁῖ Ὡñᾶῖ Ὡ÷ᾶé ᾶçᾶᾶὀᾶὀᾶᾶ ᾶὗ ᾶᾶβῐᾶῖᾶ ὀ÷ᾶὄéὔ ἰᾶ ὀγῖ ἱᾶᾶὔỠὀç ὀὔῖ ᾶéᾶὔᯚᾶῖ ᾶὗ ὁῖ CSRG[14], ὀγῖ ḥὔᾶᾶ ὁἱθ NetBSD[11], ἐᾶέ ὀγῖ ðᾶὔᯚᯚᯚ ᾶέᾶ ἰéᾶ ᾶéᾶᾶéᾶᯚᯚᾶ ἱᾶᾶὔỠὀçð ὀὔῖ ᾶéᾶὔᯚᾶῖ ὁἱθ 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>
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