

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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Άδου οĩ Ũñēñĩ ðññēñŨñāē ôçĩ áíôēíãððēóç ēáē ĩñãŨíùóç ôçð ñŨñāð áíŨððôĩçð ôĩõ FreeBSD, ùóĩí áöĩñŨ óôçĩ ðññĩãðĩēĩãóßã ðĩēĩôēēĩĩ ãēäüóãùĩ ôĩõ Êãēôĩõñãēēĩĩ Óðóðßĩãôĩõ FreeBSD. Âĩçããß ĩã ēãððñŨññēãá ôçĩ ĩãēĩãĩēĩãß ðĩõ ÷ñçóēĩĩðĩēãßðãē ãēã ðēð ãðßçĩãð ãēäüóãēð ôĩõ FreeBSD ēáē ðññēñŨñāē óã ãñããēãßã ðĩõ ãßĩãē ãēãēŸóēĩã óã ùóĩõð ãĩãēãóŸñĩĩóãē ĩã ðññŨñĩĩĩ ðññãĩãðñĩðĩēçĩŸĩãð ãēäüóãēð ôĩõ FreeBSD ãēã ãóùðãñēēß ð ãĩðññēēß ÷ñßóç ēáē áíŨððôĩç ðññĩũĩĩôũĩ.

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1 Âéóããũãß

Ç áíŨððôĩç ôĩõ FreeBSD ãßĩãē ĩēã ðĩēŸ áĩē÷ðß ãēããēēãóßã. Ôĩ FreeBSD áðĩðãēãßðãē áðũ óóĩãēóöĩñŸð ÷ēēēŨñũĩ áĩēñßðũĩ áðũ ùēĩ ôĩĩ ēũóĩĩ. Ç ñŨñãã ôĩõ FreeBSD ðññŸ÷ãē ðññũóããóç ĩŸóũ áĩßĩôĩĩõ CVS[1] óã ùēĩõð, Ÿóóē ðóðã ĩã ðññãß ùðĩēĩð ēŸēãē ĩã ããē ĩçŸĩãóã log, ãēãöĩñŸð (patches) ðĩõ Ÿ÷ĩõĩ óã ãēŨñĩãã development branches, ēáē Ũēēã ÷ãñãēðçñēóðēēŨ ðĩõ ãĩçēĩŸĩ ôçĩ áíŨððôĩç, óã ĩðĩßã ðññēŸððĩõĩ áðũ ôçĩ ÷ñßóç áĩũð áððóçñĩŸ óðóðßĩãôĩõ ãēã÷ãñēóçð ēßãēã. Áðũ ãðĩõŸēãóã ēáē ôĩĩ ðēĩ ôçĩáĩóēēũ ðññŨñĩĩã Ÿēĩçð ãēã Ÿĩã ĩããŨēĩ ãñēēĩũ áðũ óãēãĩôŸŸ÷ĩõð ðññãñãĩĩãóēóðŸð áðũ ùēĩ ôĩĩ ēũóĩĩ óóĩ FreeBSD. Âßĩãē ðññóãĩŸð, ãŸããēã, ðũð ðĩēŸ óŸĩôñã ēã ãß÷ã ãßĩãē áĩóãēßð ÷ãĩðēēß ç ēãðŨóðãóç áĩ ãß÷ãĩ ùēĩē, áðũ ùēĩ ôĩĩ ēũóĩĩ, ðññũóããóç ĩã ãñŨñĩĩĩ óóĩĩ ēßãēã. Âē' áððũ, ĩũĩĩ

ιέα “àðέääìÝίç” ñÛää áðù ðänβðìò 300 Ûòñá Ý÷ìò ðñùóääόç íá àñÛøìòí óòì CVS repository. Áðòìβ ιέ *committers*[6] àβíáέ ððáyèðñíέ áέá òì ìääáyóäñì ìÝñìò óçð áíÛððòίçðð ðìò àβíáðáέ óòì FreeBSD. Ìέα *èáìòñέέP-ñÛäá*[7] (core team) áðù áέáέäñέìÝñìò ðñìäñàììáðέóóÝð àέéÝääóáέ áέá íá ðänÝ÷áέ èÛðìέìò àβàìòð èáέìäPäçόç èáέ ιέα èáðáyèðñίόç óòì óýñìè òùì committers.

Ìέ ðá÷ýóáòìέ ñòèìβ áíÛððòίçð òìò FreeBSD àáí áðPñìòí èáέ ðñéý ÷ñùñ áέá òì ìáέáèÛñέóìá òìò óðóðPìáðìò áíÛððòίçð óá ιέα Ýέäìόç ìá ðñέùòçðá ðìò íá áìæáέ íá ÷ñçóέìðñíέáβóáέ äòñÝùð. Áέá íá èðèáβ áðòù òì àβέççìá, ç áíÛððòίç àβíáðáέ óáðòù÷ñìá óá äòì ðänÛέççéá ìñðÛóéá. Ì éýñέìò èìñìùð áíÛððòίçð àβíáέ ì *HEAD* P *trunk* óòì CVS repository ìáð, àñùóóùð èáέ ùð “FreeBSD-CURRENT”, P “-CURRENT” àí óðìòñβá.

Ìáð ðérí óðáέäñùð èìñìùð óðìðçñäβóáέ, àñùóóùð ìá òì ùñìá “FreeBSD-STABLE” P ðérí óýìòñá “-STABLE”. Èáέ ιέ äòì èìñìùβ àβíáέ äðñέçèäòìÝñíέ óòì éýñìè CVS repository, óççì Èáέéóùñíέá, èáέ áíðéäñÛòñíóáέ ìÝóù **CVSup**[2] óá mirrors ðáíòίý óòì èùòì. Òì FreeBSD-CURRENT[8] àβíáέ ç “ðñòç óáέñÛ” óçð áíÛððòίçð òìò FreeBSD èáέðð óá áðòù àβñìóáέ ðñðá üèàð ιέ èáέññéäð áέéääÝð. Òì FreeBSD-STABLE àβíáέ ì èìñìùð áíÛððòίçð áðù òì ìðìβì òðéÛ÷ñìóáέ ιέ àέäüóáéð. Ìέ áέéääÝð áέóÝñ÷ñìóáέ óá áðòù, òìí äáyóäñì èìñìùð áíÛððòίçð, ìá ðérí àñàù ñòèìù, áòìý ðñðóá (óýìòñìá ìá óççì ðñέéðéèP ìáð) àñέéìáðóòìý óòì FreeBSD-CURRENT èáέ Ý÷ìòí àìáðáóóäβ ðñéý èáέÛ.

ÈáðÛ óççì ðänβñàì ðìò ìáðìéääáβ áðù óç ιέα Ýέäìόç óççì áðùñáíç, òðéÛ÷ñìóáέ èáέçìäñéñÛ snapshots áðù óá ìç÷áíPìáðá óçð ñÛäáð òìò FreeBSD èáέ àβíáέ àέáéÝóéìáð áðù òìí àìððçñäðçðP <ftp://stable.FreeBSD.org/>. Ç ìääÛέç àέáéäðéùòçðá òùì àέðäéÝóéìñ snapshots, èáέðð èáέ ç ðÛόç óçð èñέñùòçðáð òùì ÷ñçóðβì ìáð íá áíçìäñβñìòí óá ìç÷áíPìáðÛ òìò ìá ðéð ðñùóóáðð -STABLE àέäüóáéð ìÝóù CVSup èáέ “make world”[8] àñçέìý íá èñáðéÝóáέ òì FreeBSD-STABLE óá ιέα ðñéý áñέùðéóðç èáðÛóóáόç áέùìá èáέ ðñérí àñ÷βóáέ ì éýèèð òùì àéÝá÷÷ì ðñέùòçðáð àέñéäðð ðñérí áðù óççì àéÛéáόç ιέáð Ýέäìόçð òìò FreeBSD.

Óóìá÷÷ð ðóÝèñìóáέ áðù òìòð ÷ñPóðáð ìáð áíáòìñÝð ðñìäççìÛòùì èáέ áéðPóáéð áέá èáέññéá ÷àñáéðçñéóðéèÛ, èáðÛ óç àéÛñéáéá òìò éýèèð óçð èÛéá Ýέäìόçð. Ìέ áíáòìñÝð ðñìäççìÛòùì áéóÛàñíóáέ óççì àÛόç **GNATS**[9] ìÝóù e-mail, ìá óççì äòäñìäP [send-pr\(1\)](mailto:send-pr(1)), P ìÝóù òìò web-interface ðìò ðänÝ÷áέ óççì àéáyèðñίόç <http://www.FreeBSD.org/send-pr.html>. Áéðùð áðù ðéð àéÛòñäð èβóðáð çèäèðññíέéìý ðá÷ðäññäβìò ìá èÝìá óá ðá÷÷ìéèÛ ÷àñáéðçñéóðéèÛ òìò FreeBSD ððÛñ÷áέ èáέ ç èβóðá FreeBSD Quality Assurance mailing list (<http://lists.FreeBSD.org/mailman/listinfo/freebsd-qa>), ç ðìβá ðänÝ÷áέ Ýìá òùñìòì áέá ððæçðPóáéð ó÷áðéèÛ ìá ðéð èäððñÝñáéäð óçð “ññàÛùόçð òùì àέäüóäùì”.

Áέá íá àìððçñäðççìý ιέ ðérí óðìðçñçðéèìβ ÷ñPóðáð ìáð, ìá Ýέäìόç òìò FreeBSD 4.3 àñ÷βóáìá íá ÷ñçóέìðñíέýìá ìá÷÷ñéóðìýð èìñìýð àέäüóäùì. Áðòìβ ιέ èìñìùβ àçìέìòñàñìýìóáέ èβàì ðñβì òðéá÷ðäβ ç ðáéèèP Ýέäìόç. ÌáðÛ óççì áíáéìβñùóç óçð Ýέäìόçð, ìùñ ðñéý óçìáìóééÝð áέéääÝð èáέ ðñìóèPèäð ó÷áðééÝð ìá óççì áóóÛéáéá àβñìóáέ óòì èìñìù óçð Ýέäìόçð. Áéðùð áðù óççì äòìáðùòçðá áíááÛèìéóçð ìÝóù CVS, àέðäéÝóéìá patchkits òðéÛ÷ñìóáέ áέá íá ðñìñìý íá áíááèìβòìòí óá óðóðPìáðÛ òìòð ùóìέ ÷ñçóέìðñíέýìá ðéð àέäüóáéð *RELENG_X_Y*.

Òì ÒìPìá 2 àñçäáβ ìá èäððñÝñáéäð óá àéÛòñá óðÛáéá óçð àέááééáóβáð ðìò àñβóéäóáέ ðβóù áðù èÛéá Ýέäìόç, ìÝ÷ñé èáέ óá àPìáðá ðìò ìäçàñìý óççì ìáðáæððóéóç òìò óðóðPìáðìò èáέ òì ÒìPìá 3 àñçäáβ óççì βáéá óç àέááééáóβá óçð ìáðáæððóéóçð. Òì ÒìPìá 5 ðäñéäñÛóáέ ðùð ðññáβ íá äðäéðáéäβ òì ááóéèù óýóççìá áðù ðñβòìòð èáέ òì ÒìPìá 6 ðäñéäñÛóáέ èÛðìéá áðù óá ðñÛàìáðá ðìò ìÛéáìá áðù óççì àέááééáóβá Ýέäìόçð òìò FreeBSD 4.4. ÓÝèìò, òì ÒìPìá 7 ðäñìóéÛæáé èÛðìéáð áðù ðéð èáðäðéýìóáéð ðìò èÝèìòìá íá ðÛñáé ç áíÛððòίçð óòì ìÝèèì.

2 Ç Àέááéééáóβá Àçìέìòñäβáð ìéáð èäììόçð

Ìέ ìÝäð àέäüóáéð òìò FreeBSD òðéÛ÷ñìóáέ áðù òìí -STABLE èìñìùð áíÛððòίçð ðänβðìò èÛéá óÝóóäñáéð ìPìáð. Ç àέááéééáóβá ðñìäðìέìáóβáð ìéáð Ýέäìόçð ìáéèñÛáé ó÷áäñì 45 ìÝñäð ðñérí óççì áíáíáñìáíç çìäññçìβá Ýέäìόçð, ùðáí ì ððáyèðñìò àέäüóäùì òìò FreeBSD óðÝñíáé Ýìá àñÛìá óðéð èβóðáð òùì ðñìäñàììáðéóóðβì áέá íá ððáñèðìβóáέ óðìòð ðñìäñàììáðéóóóÝð ùðé Ý÷ìòí 15 ìÝñäð èáέññù íá èÛñìòí ùðìéäð áέéääÝð èÝèìòí, ðñérí òì ðÛäñìá òìò èPäééá. ÌÝóá óá

áòòü òĩĩ éáénü, ðĩēēĩß ðñĩāñāñĩáòéóóŸò ēŪĩĩōĩ ĩéá óáēñŪ áðü áēēááŸò ðĩō Ÿ ÷ ĩōĩ ĩāßĩáē ðēŸĩĩ āñüóóŸò ùò “ĩāēāēāñßōĩáóá MFC”. Ī ũñĩō MFC óçĩāßĩáē “Merge From CURRENT” éáē ðāñēāñŪōāē óçĩ áēáāēēáóßā 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 çĩāññĩçĩßā Ÿēāĩōçò, ĩ ēßāēēáð òĩō repository áéóŸñ ÷ āðáē óā ĩéá ðāñßĩāĩ “ēāēóóóŸñçòçò”. 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 áðēóñŸðĩĩóáē 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 ēāēóóóŸñçòçò, 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 āßĩĩōĩ 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 āðēēĩēñüßā ĩā óçĩ ĩñŪāā áóðŪēāēáð, óçĩ ĩñŪāā óòĩōßñçòçò òçò ðāēĩçñßüóçò, éáē óçĩ ĩñŪāā óòĩōßñçòçò òuĩ ports, áēá ĩá āāāāēüēĩŸĩ ðüð ũēā óā áðāñāßòçòā ēñĩŪðēá 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 ēüōĩĩ éáē ũēá óā óĩāāñŪ ēŸĩāóā Ÿ ÷ ĩōĩ áĩāēðēāß, ç ðāēēēß Ÿēāĩōç ĩðñāß ĩá āñ ÷ ðóāē.

2.2.1 Āçĩēĩōñāßā òĩō ēĩñĩŸ ēāĩōçò

¼ðüð ðāñēāñŪøāĩā óóçĩ áéóáāñāß, ĩē ēĩñĩĩß RELENG_X_Y āßĩáē ĩéá ó ÷ āðēēŪ ĩŸā ðñĩóēßēç óóçĩ ĩāēĩāĩēĩāßā òuĩ āēäüoäðĩ ĩāð. Ōĩ ðñßōĩ āßĩā óóçĩ āçĩēĩōñāßā áóòĩŸ òĩō ēĩñĩŸ āßĩáē ĩá āāāāēüēāßòā 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 áðēēŸðā (tag) óòĩ óçĩāßĩ āēēßĩçòçò òĩō ēĩñĩŸ, ðóóā ĩá ĩðñāßòā ĩá āāßòā ðēò áēáōĩñŸò 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
```

ΌçιαΒυθός: *Ιέ άόέέΥόάδ RELENG_ * άβίάέ άάόίάόιΥίαδ άέά ÷ ηΡόç áδϋ όϊόδ CVS-meisters έάέ όçί ιιÜää όυι
άέάϋόάϋι.*

Ἰ ὑπὸ *“ἀόεῤῥα”* ἀβίαε ἡντιεαβὰ διὸ CVS. Ὁζιαβίαε Ἰία ὑπὴρ διὸ ἐαεινβᾶε ἰεά οἰαᾶενηεῖΥίς Ἰεαῖρος διὸ ἐπαεεά οἰ
 ÷ ἡῡῡ. × ἡζοεῖδιεῖρῖοαδ ἀοεῤῥοαδ οἰῖ δζαβῖ ἐπαεεά ἰεζεῤῥα ὑδιεῖρ οἰεῤῥαε οἰ ἸἸεῖρ ἰεαῡοαεδ διὸ FreeBSD ἰά
 ἰνβῶεε ἐε ἰά ÷ ἡζοεῖδιεῖρῖ αεῖεᾶρδ οἰ βαεῖ ἐπαεεά διὸ ÷ ἡζοεῖδιεῖρῖεζα ἰεά οἰδ ἰδβῶζιαδ ἰεαῡοαεδ οζδ ἸἸαῡ
 διὸ FreeBSD.

2.2.2 ÁõîÛííîáò ôíí Áñéèü êäïòcò

Δνείρ ιδᾶε ϗ ἀοέεΥόα, ιᾶοᾶεϋοῦοεοόοᾶβ εᾶε ἀοιτῆαοόᾶβ ϗ οᾶεεβ Υέατρός, δνΥῶε ιᾶ ᾶβτῶτ ἀεεᾶΥό οόᾶ δᾶᾶεῸδου ᾶᾦ÷ᾶᾶ ᾶεᾶ ιᾶ δᾶᾦΥ÷ῖῖοτ οῖτ ουοόῦ ᾶᾦεεῖῦ Υέατρόςδ 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

[illegible]

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

Ç äóãññĩãP **sysinstall** ðñÝðáé äðßòçò íá áíçíãñùèãß íä ôĩĩ òùóòù áñéèù òùĩ ports éáé ôĩ ÷ þñĩ ôĩõ äßóèĩõ ðĩõ äðáéòãßóáé áéá ôçĩ ÓóèèĩãP òùĩ Ports. ÁõðÝð íé ðççñĩõĩñßàð òðÛñ÷ĩõĩ óòĩ áñ÷ãßĩ
src/release/sysinstall/dist.c.

Áōiŷ iēēēçñùēāß ç ðñīāōiēiāóāß òçð iŷáð āðßóçìçð Ýēāiōçð, ðñÝðāē íá áíçìāñþóāðā iāñēēŪ āñ÷āßā áēá íá áíçìāñþóāðā òiī ēüōiī áēá òç 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 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 Ōāēiçñßùòçð ēāē òuì Ports āßiāē āðōiß ðiō ðñÝðāē íá āçìēiōñāþóiōi òēð āðēēÝðāð `RELEASE_4_8_0` óā ēāðŪēēçēā āŷiōñā ðçāāßiō ēþāēēā.

İāñēēÝð òiñÝð, iðñāß íá ÷ñāēáðōāß íá āßiōi ēŪðīēāð āēēāāÝð òāēāðōāßā óðēāiß *iāðŪ* òçí òiðñēÝðçðç òuì āðēēāðī. ĀāiēēŪ, āāi āßiāē āŷōēiēi íá āßiāē ēŪðē òÝōiēi āōiŷ òi CVS āðēōñÝðāē íá iāðāēēiþóāē ēŪðīēið 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 ðŪiðā āŷēiēi íá āíāðāñā÷ēiŷi. ŌiðēēÝð āēēāāÝð óōi ðāñēāŪēēiī òiō iç÷āíēiŷi òuì āēāuóāuī āāi āðēōñÝðñiðāē.

3 İāðāāēþðōēóç òçð ēāiōçð

İē “āēāuóāēð” òiō FreeBSD iðñiŷi íá iāðāāēüððēóðiŷi āðü iðīēiñāþðiðā Ý÷āē Ýiá ó÷āðēēŪ āñþāñi iç÷Ūiçìā ēāē ðñüóāáç óōi repository òiō ðçāāßiō ēþāēēā. (¼ēiē Ý÷iōi āððß òç āðīāðüðçðā, āōiŷ ðāñÝ÷iōiā ðñüóāáç iŷōü āiþiðiō CVS! Āāßðā òi Āā÷āēñßāēi òiō FreeBSD āēā ðāñēóóüðāñāð ēāððñÝñāēāð.) Ç iüiç āēāēēß āðāßðççç āßiāē íá ððŪñ÷āē ððiððñēiç óōiī ððñþiā óāð āēá òçí óðōēāðß `vn(4)`. (Óōi `-CURRENT`, āððß ç óðōēāðß Ý÷āē āíðēēāðāóāēāß āðü òçí iŷá óðōēāðß āßóēiō āāóēōiŷiñ òā iþiç `md(4)`.) Áí ç óðōēāðß āāi āßiāē āíōüiāðüiŷiç óōiī ððñþiā óāð, òüðā i ēāðŪēēçēið iāçāuð ēā òiñðüēāß āððüiāðā üðāí āēðāēāðōāß ç āíðēēß `vnconfig(8)` ēāðŪ òç āēŪñēāēā òçð òŪòçð òiōiēiāóāð òiō iŷōiō āēēßiççð. ¼ēā ðā āñāāēāßā ðiō ÷ñāēŪāēiðāē āēá íá iāðāāēüððßóāðā iēā Ýēāiōç āßiāē āēāēÝðēiā óā iññðß ðçāāßiō ēþāēēā óōiī ēāðŪēiāi `src/release`. ĀððŪ ðā āñāāēāßā Ý÷iōi ùð óēiðü íá ðāñÝ÷iōi üðē ÷ñāēŪāēðāē āēá íá ÷ðßāēiðāē iē āēāuóāēð òiō FreeBSD iā Ýiá óōiāðß ēāē óðāēāñēiŷiñ òñüði. İēā ðēþñçð Ýēāiōç iðñāß íá iāðāāēüððēóðāß ÷ñçōēiñðēþiðāð āððŪ ðā āñāāēāßā iā iēā ēāē iüñi āíðēēß, óðiðāñēēāiāññÝiçð ēāē òçð āçìēiōñāßāð āíüð ISO āñ÷āßiō ēāðŪēēçēi āēá íá ēāāß óā CDROM, iē āēóēÝððāð āēēßiççð, ēāēþð ēāē i ēāðŪēēçēið āāēāðŪóðāçð iŷōü FTP. Āððß ç āíðēēß āßiāē òðōēēß ç `make release`.

3.1 Ç āiðēēß `make release`

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

ðáðý÷-áé áðßóçð ç ìáðááëðððéóç òçð Ýêáîóçð ðñÝðáé íá äðáððá ðéð éáðÛëëçéäð ðéíÝð éáé óá ðÛðíéäð ìáðááëçðÝð:

- CHROOTDIR - Ì éáðÛëíáðð ðîõ éá ÷ ñçóéíðíéçéáß óáí ðáñéáÛëëí chroot áéá üëç òçí ìáðááëðððéóç òçð Ýêáîóçð.
- BUILDNAME - Õî üñíá òçð Ýêáîóçð ðîõ éá ìáðááëüððßðáðá.
- CVSROOT - Ì éáðÛëíáðð óðñí ìðíßí áñßðéáðáé òí CVS repository.
- RELEASETAG - Ç áðééÝðá CVS ðîõ áíðéóðíé÷÷ áß óóçí Ýêáîóç òçí ìðíßá ðÝéáðá íá ìáðááëüððßðáðá.

Áí ááí Ý÷-áðá ðáç ðñüóááóç óá ðÛðíéí ðíðéëü CVS repository ìá ðñí ëðáééá ðîõ FreeBSD, ìðíáßðá ðÛíóá íá ððéÛíáðá òí áéëü óáð ðíðéëü CVS mirror ìá òí CVSup (http://www.FreeBSD.org/doc/en_US.ISO8859-1/books/handbook/synching.html#CVSUP). ÕðÛñ÷-áé Ýíá supfile, ððí áñ÷-áßí /usr/share/examples/cvsup/cvs-supfile, òí ìðíßí ìðíáßðá íá ÷ ñçóéíðíéçéáßðá áéá íá áíðéáñÛðáðá òí CVS repository ðîõ FreeBSD óðí áéëü óáð ðíðéëü mirror.

Áí ðáñáëáßðáðá òçí áðééÝðá RELEASETAG, ðüðá éá ìáðááëüððéóðáß íéá ðëðñçð Ýêáîóç áðü òçí ëíñðð ðîõ HEAD (áçë. ðîõ -CURRENT) ëíññý. Ìé áêüüóáéð ðîõ ððéÛ÷ñíðáé áðü áððñí òñí ëíññü, óðíðëüð áíáðÝññíðáé óáí “-CURRENT snapshots”.

ÕðÛñ÷-íðí éáé ðíëéÝð Ûëëáð ìáðááëçðÝð ðîõ ìðíññý íá ÷ ñçóéíðíéçéáßí áéá íá ðáñáíáðñíðíéçéáßðá òçí Ýêáîóç óáð. Ìé ðéí ðíëéÝð áðü áððÝð ðéð ìáðááëçðÝð ðáñéáñÛñíðáé óóçí ëíñðð ðîõ áñ÷-áßíð src/release/Makefile. Ç áêñéáðð áíðíë ðîõ ÷ ñçóéíðíéçéáß 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
```

Õí Makefile ðîõ ÷ ñçóéíðíéçéáßðáé áéá íá ìáðááëüððßáñíðáé ìé áêüüóáéð ìðíáß íá ÷ ùñéóðáß óá áñéáðÛ ìá÷-ùñéóðÛ ìáðáíý ðîõð áðíáðá.

- Äçíëíðñáß áñüð éáéáññý ðáñéáÛëëíððð óá íéá ìá÷-ùñéóðð éáñáñ÷-ßá éáðáëüüñí ìá òçí áíðíëð “make installworld”.
- Áíáñüáð áðü òí CVS ìéáð éáéñýñéáð Ýêáîóçð ðîõ ðçááßíð ëðáééá ðîõ óððððíáððð, òçð ðáëíçñßüóçð éáé òñí ports ìÝóá óóçí éáñáñ÷-ßá éáðáëüüñí ìáðááëðððéóçð òçð Ýêáîóçð.
- Ñðëíðáéð òñí áñ÷-áßñí óðñí éáðÛëíá /etc éáé /dev ìÝóá ððí ðáñéáÛëëí chroot.
- ÁëðÝéáóç òçð áíðíëðð chroot ìÝóá óóçí éáñáñ÷-ßá éáðáëüüñí ðîõ áðíéíÛððçéá, áéá íá ìçí ìðíáß òí áñüðáñéëü ðáñéáÛëëí íá áðçñáÛðáé òç ìáðááëðððéóçð òçð Ýêáîóçð.
- ÁëðÝéáóç òçð áíðíëðð make world ìÝóá ððí ðáñéáÛëëí chroot.
- Ìáðááëðððéóç òñí áëðáëÝóéñí ðîõ áßíáé ó÷-áðééÛ ìá òí óýóóçíá Kerberos.
- Ìáðááëðððéóç ðîõ ððñðíá GENERIC.
- Äçíëíðñáß áñüð ðáéééñý éáðáëüüñí óðñí ìðíßí éá ìáðááëüððéóðíý íéá éá áðíèçéáððéñý ìé áëðáëÝóéñáð ìñðÝð òñí ðáéééðí ðáéÝðñí.
- Ìáðááëðððéóç éáé ááéáðÛóðáóç òñí áñááéáßñí ðîõ ÷ ñáéÛáñíðáé áéá òçí ðñíáðíéíáðá òçð Ýêáîóçð éáé òç ìáðáðñíðð òçð ðáëíçñßüóçð áðü òñí ðçááßíð ëðáééá (SGML) óá html éáé áñ÷-áßá éáéíÝñíð ðîõ éá óðñíáñýíðí òçí Ýêáîóçð.
- Ìáðáðñíðð éáé ááéáðÛóðáóç òçð ðáëíçñßüóçð (áá÷-áéñßáéá ÷ ñððóç, áéóáñüáééÛ éáßíáíá, óçíáëðáéð Ýêáîóçð, ëßðáð ððíááðððçðáðð ðéééñý, ëëð.)

- ĩāóāāēpôôéoc òuĩ “òõĩðéáõĩŸĩũĩ” (crunched) āēôāēŸóēĩũĩ ðĩō éā ÷ ñçóēĩĩðĩēçēĩŸĩ óôéò áéóēŸôôāò āāēáôŨóóáocò.
- Āçĩēĩōñābā òuĩ ðāēŸôũĩ ôçò āāēáôŨóóáocò éāē òuĩ ðāēŸôũĩ ðçāābĩō ēpāēēā.
- Āçĩēĩōñābā òuĩ ĩŸóũĩ āēēbĩçóçò éāē ôçò áéóēŸôôāò “fixit”.
- Āçĩēĩōñābā ôçò éāñāñ÷bāò éāóāēüũĩ áēā ôçĩ āāēáôŨóóáocò ĩŸóũĩ FTP.
- (ðñĩíéñāôēēŸ) Āçĩēĩōñābā òuĩ ISO āñ÷ābũĩ áēā ĩŸóā CDROM/DVD media.

Āēā ðāñéóóũðāñāò ðēçñĩōĩñbāò ó÷āôēēŨ ĩā ôçĩ áēāāēēáóbā āçĩēĩōñābāò ĩēāò Ÿēāĩôçò, āābôā ôçĩ óāēbāā ôāēĩçñbũôçò release(7).

3.2 ĩāóāāēpôôéoc òuĩ XFree86

Ōĩ āñāóēēũ ðāñēāŨēēĩ **XFree86** ābĩāē Ÿĩā ôçĩāĩóēēũ ēñĩŨóē ēŨēā Ÿēāĩôçò áēā ðĩēēĩŸ ÷ ñpôóāò ðĩō ēŸēĩōĩ òĩ FreeBSD áēā óóāēĩŸ ðñāāóāò. ðñēĩ ôçĩ Ÿēāĩôç 4.6-RELEASE òĩō FreeBSD, ĩē āðbôçĩāò āēüüóāēò òĩō FreeBSD ÷ ñçóēĩĩðĩēĩŸóāĩ ôçĩ Ÿēāĩôç 3.x òuĩ **XFree86**. Ĩ ðēĩ āŸēĩēĩò ðñũðĩò ĩā ĩāóāāēũðôôóāòā āôðŸò óēò āēüüóāēò ābĩāē ĩā ÷ ñçóēĩĩðĩēĩŸóāĩ òĩ ðñũāñāĩā src/release/scripts/X11/build_x.sh. Áôðũ òĩ ðñũāñāĩā āðāēðāb ĩā ābĩāē pāç óôçĩŸĩā óôĩ óŸóçĩŨ óāò òũōĩ òĩ ðāñēāŨēēĩ XFree86 üōĩ éāē ç āēpôóā Tcl/Tk. ĩāôŨ ôçĩ ĩāóāāēpôôéoc òuĩ éāôŨēēçēũ X servers, òĩ ðñũāñāĩā éā ðāēāôŨñāē üēā óā āñ÷ābā óā óðēēĩāŸò āñ÷ābũĩ ðĩō ðāñēĩŸĩāē ĩā āñāē òĩ sysinstall(8) ĩŸóā óôĩ ēāôŨēēĩā XF86336 óôĩ ĩŸóĩ āāēáôŨóóáocò.

ĩāēēĩpĩóāò ĩā ôçĩ Ÿēāĩôç 4.6-RELEASE òĩō FreeBSD, òĩ sysinstall(8) āāēāēéóôŨ ôçĩ Ÿēāĩôç 4.x òuĩ XFree86, óāĩ ēāñĩēēŨ ðāēŸóā. ÁôðŨ ĩðĩñāb ĩā ābĩāē ābôā óā ðāēŸóā ðĩō āçĩēĩŸñāçôā òĩ cluster òuĩ ports p ĩðĩēāāðĩôā Ũēēā ðāēŸóā ðĩō Ÿ÷ĩōĩ āçĩēĩōñāçēāb āðũ Ÿĩā ports tree ĩā ôçĩ ēāôŨēēçç āôēēŸóā.

Ōçĩābũôç: Ābĩāē ðĩēŸ ôçĩāĩóēēũ ĩā áóāēñŸóāòā āðũ òĩ āñ÷ābĩ /etc/make.conf ĩðĩēāóāpðĩôā òĩðēēŸò ñôēĩbôāēò Ÿ÷āôā ēŨĩāē. Āēā ðāñŨāāēāĩā, āāĩ ābĩāē ēāēp ēāŸā ĩā āēāĩŸĩāòā āēôāēŸóēĩā ðĩō Ÿ÷ĩōĩ ĩāóāāēũðôôéóāb óā ēŨðĩēĩ óôāēāēñēĩŸĩĩ óŸóçĩā ĩā ĩñēóĩŸĩç ôçĩ óēĩp ôçò ĩāóāāēçôpð CPUTYPE áēā āāēôéóôĩðĩbçôç òuĩ āēôāēŸóēĩũĩ áēā ēŨðĩēĩ óôāēāēñēĩŸĩĩ āðāĩāñāóôp.

3.3 ðñĩāñŨĩāóā Ōñbôũĩ (“ports”)

Ç Óðēēĩāp òuĩ Ports òĩō FreeBSD (<http://www.FreeBSD.org/ports>) ābĩāē ĩēā óðēēĩāp ĩā ðāñéóóũðāñā āðũ 24,000 ðñĩāñŨĩāóā āðũ òñbôĩôð, ðĩō ābĩāē áēāēŸóēĩā áēā FreeBSD. ĩē ĩñŨāā Āēā÷ābñéocò òuĩ Ports <portmgr@FreeBSD.org> ābĩāē òðāŸēðĩēē áēā ôçĩ óôĩôpñçôç āĩũð āŸĩôñĩō āðũ ðçāābĩ ēpāēēā áēā óā ports, ðĩō ĩðĩñāb ĩā ÷ ñçóēĩĩðĩēçēāb áēā ĩā āçĩēĩōñāçēĩŸĩ óā ðāēŸóā ĩā óā ðñĩāñŨĩāóā ðĩō óðñāŸĩōĩ óēò āðbôçĩāò āēüüóāēò òĩō FreeBSD.

Ç āēāāēēāóbā óôĩôpñçôçò ôçò óðēēĩāpð òuĩ ports ābĩāē ēŨóē ðĩō āāĩ ĩðĩñĩŸĩā ĩā ēāēŸŸĩðĩā āāp. ĩā ĩā÷ũñéóóũ Ũñēñĩ, ĩā òbôēĩ Ç ĨñāŨtúoc ēāĩôçò òuĩ ðāēŸôũĩ ĒĩāēóĩēēŸ āðũ Ōñbôĩôð (./releng-packages/article.html), ēāēŸðôāē āôðũ òĩ ēŸĩā.

3.4 Āñ÷ābā ISO ôçò ēāĩôçò

ĩāēēĩpĩóāò ĩā ôçĩ Ÿēāĩôç 4.4 òĩō FreeBSD, ç ĩñŨāā ĀĩŨððôĩçò òĩō FreeBSD āðĩôŨóēóā ĩā āēāĩŸĩāē éāē óā ôŸóóāñā ISO āñ÷ābā ðĩō ðñpôā ðĩōēĩŸóāĩ ĩē āóāēñābāò *BSDi/Wind River Systems/FreeBSD Mall* óôēò “āðbôçĩāò” āēāmŸò CDROM ðĩō Ÿēāĩāĩ. ēŨēā Ÿĩā āðũ óā ôŸóóāñā ISO āñ÷ābā ðñŸðāē ĩā ðāñēŸ÷āē Ÿĩā āñ÷ābĩ README.TXT ðĩō

ðǎñéǎñÛöǎé óǎ ðǎñéǎ÷ùíǎíǎ 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 íéǎ êßóðǎ ǎñ÷ǎßüí òîõ CDROM. Áðòß ç êßóðǎ ìðññǎß íǎ ǎçîéîñǎçêǎß ðîéý áðêÛ, ùð ǎñßð:

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

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

3.4.1 Áßóêîõ 1

Í ðñðòîð ǎßóêîõ ǎßíǎé ó÷ǎǎüí áðîééǎéóóéêÛ áðîðÝéǎóíǎ òçð ǎíóîéßð make release. Íé ìüíǎð ǎééǎǎÝð ðîõ ðñÝðǎé íǎ ǎßñîí óóñí êáðÛêîñ disc1 ǎßíǎé ç ðññíóèßê ðîõ êáðÛêîñ tools, òüí XFree86, êéǎ üóî òî ǎóíǎóüí ðǎñéóóüðǎññí ðǎéÝòüí ìðññíý íǎ ÷ñÝóîí óóñí ǎßóêî. Í êáðÛêîñ tools ðǎñéÝ÷ǎé ǎñǎǎéǎßá ðîõ áðéòñÝðîí óǎ ÷ñßóðǎ Ûéèüí êǎéðîñǎéêñí óðóðçíÛòüí íǎ òðéÛñîí òéð ǎéóéÝððǎð ǎéêßíçóçð. Áðòüð ì ðñðòîð ǎßóêîõ ðñÝðǎé íǎ òðéÛ÷ǎðǎé bootable Ýðóé ðóðǎ íǎ ìðññíý íé ÷ñßóðǎð òüí ìüðÝññüí ððîéíǎéóðñí íǎ áðîðǎýǎñîí òî óðÛǎéí ǎçîéîñǎßáð òüí ǎéóéǎððñí ǎéêßíçóçð.

Áí íéǎ ǎéǎóñǎðéêß Ýéǎñóç òüí XFree86 êǎ ǎéǎíÝíǎðǎé ìǎ òçí Ýéǎñóç áðòß, ðñÝðǎé íǎ ǎçîññüèǎß òî ðñüǎñǎìǎ sysinstall(8) ǎéǎ òçí íÝǎ òÝóç êéǎ íé ñǎçǎßáð ǎǎéǎðÛóðǎóçð. Í ó÷ǎðéèüð êñǎééǎð òðÛñ÷ǎé óóñí êáðÛêîñ src/release/sysinstall óóñí -STABLE êññü ð óóñí êáðÛêîñ src/usr.sbin/sysinstall óóñí -CURRENT êññü. ÓðǎéǎêñéíÝíǎ, òǎ ǎñ÷ǎßǎ dist.c, menus.c, êéǎ config.c êǎ ÷ñǎéǎóðǎß íǎ ǎçîññüèíýí.

3.4.2 Áßóêîõ 2

Í ǎǎýðǎññð ǎßóêîõ ǎßíǎé áðßóçð áðîðÝéǎóíǎ òçð ǎíóîéßð make release êáðÛ Ýíǎ ìǎǎÛéí ìÝññð. Áðòüð ì ǎßóêîõ ðǎñéÝ÷ǎé Ýíǎ “live filesystem” ðîõ ìðññǎß íǎ ÷ñçóêîîðîéçêǎß áðü òî sysinstall(8) ǎéǎ íǎ ǎñǎðǎóóíýí ðññǎéßíǎðǎ óǎ íéǎ ǎǎéǎðÛóðǎóç òîõ FreeBSD. Êé áðòüð ì ǎßóêîõ ðñÝðǎé íǎ ǎßíǎé bootable. Êǎ ðñÝðǎé áðßóçð íǎ ðǎñéÝ÷ǎé Ýíǎ óóñíðéǎóíÝñí ǎíðßǎñǎóñ òîõ CVS repository óóñí êáðÛêîñ CVSROOT êéǎ ǎßǎìǎðǎ áðü ǎðññéêÛ ðññǎñÛñǎðǎ óóñí êáðÛêîñ commerce.

3.4.3 Áßóêîõ 3 êéǎ 4

Íé òðüéîéðîé ǎðñí ǎßóêîõ ðǎñéÝ÷ǎéí áðéðññüéǎðǎ ðǎéÝóǎ êñǎéóíééý ǎéǎ òî FreeBSD. Óǎ ðǎéÝóǎ êǎ ðñÝðǎé íǎ ǎßíǎé ñǎǎñðîéçíÝíǎ, Ýðóé ðóðǎ êÛêǎ ðǎéÝðî íǎ ǎßíǎé óóñí ðǎéí ǎßóêî ìǎ üéǎ óǎ ðǎéÝóǎ áðü òǎ ñðßǎ ǎñǎñðÛóǎé ǎéǎ íǎ ǎǎéǎðǎóðǎéǎß êéǎ íǎ òñÝíǎé. ðǎñéóóüðǎññð ðêçñîîññßǎð ǎéǎ òçí ǎçîéîñǎßá áðòñí òüí ǎßóêüí ǎíǎóÝññíóǎé óóñí Ûñèññ Ç ÎñãÛîùόç êǎñóçð òüí ðǎéÝòüí Êñǎéóíééý áðü Òñßðîðð (../releng-packages/article.html).

4 Áéǎññß òüí Áêäüüóàùí

4.1 ÁñðççñǎðçðÝð FTP

¼ðǎí ç Ýéǎñóç ǎßíǎé Ýóîéíç, Ý÷ǎé ǎñééíǎóðǎß ǎéðǎñðð, êéǎ Ý÷ǎé ðǎéǎðǎñéóðǎß ǎéǎ ǎéǎññß, ì éýñéîð FTP ǎñðççñǎðçðð ðñÝðǎé íǎ ǎçîññüèǎß. Íé áðßóçñéé ǎñðççñǎðçðÝð FTP òîõ FreeBSD ǎßíǎé üéîé mirrors ǎñüð éýñéîð ǎñðççñǎðçðð óóñí ñðßí Ý÷ǎéí ðññóǎǎóç ìüñ Ûééîé FTP ǎñðççñǎðçðÝð. Áðòüð ì ǎñðççñǎðçðð ǎßíǎé ǎñüóüð ùð ftp-master. ¼ðǎí ç Ýéǎñóç ǎßíǎé Ýóîéíç, ðñÝðǎé íǎ ǎçîññüèíýí òǎ ðǎñǎéÛòü ǎñ÷ǎßǎ óóñí ftp-master:

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

λέα ἀδῆP web οἰαῖβᾶᾶ ὄϊο ὄᾶῖῖÉY ÷ ᾶέ ᾶᾶβῆοᾶᾶ οᾶ ᾶέUοῖῖῖῖῖῖ οῖῖᾶῖᾶῖᾶῖῖῖ FTP ῆᾶᾶᾶῖῖᾶῖῖᾶ ᾶῆᾶ ὀῖῖ ὀῖῖY ÷ ῖῖᾶᾶ Yῆᾶῖᾶῖᾶ ὀῖῖ FreeBSD.

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

I éadóUeräidö ádu öir iðirBi iðinryí íá áBfiröi ääéáoáóóÜöáoéd iYóu FTP, üðüö öir Y÷äé ðniräöieiÜöäé ç áföieP 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 όοίâîëêêP 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÷āđēēŬ īā ôçī īñāŬīùōç ôūī mirror æéáññð FTP oīō FreeBSD, ḁāñæéäëþ äåßôâ oī Ũñēñ ÖdeŬ÷īīōād 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 ἡμεῖς οἱ ἰδιοκτήται τοῦ ἰσχυροῦς τῆς ἐξουσίας
ἡ ἀποστολή ἀντὶ τοῦ ISO, ἐὰν ἡ ἀποστολή εἰς τὸν ἰδιοκτήτη τοῦ ἰσχυροῦς τῆς ἐξουσίας.

5 Åăăêôáóéìüôçôá

[illegible]

5.1 Äçieĩõñãßá ĐñĩóáñĩĩòĩÝìùì Äéóêâôôpí Âêêßícóçò.

DreëYð āāēāōāōðŬōāēð Ý ÷ ior ðreyðerēāð āðāēðPōāēð ðiō iðināß iā ôç ōāēñŬ ðiōð íā āðāēðiyí ôçí ðñiōēPēç
 ðāñēōōūðāññiñ iāçāñi P āñāēāēßñi ÷ñPōōç ōōēð āēōēÝðōāð āāēāōŬōōāōçð. Ī “iðāēŬēēēið” ðñuðið íā ði eŬířāðā āðōū
 āßíāē íā eŬířāðā ōēð āēēāāÝð ōāð ōðñi ēāðŬērāi ðiō Ý ÷ āē āðieiŬōāē iāðŬ ði ðÝēið ôçð ç āēāēēāōßā make
 release:

- `DãŨôôá ôá patches óáo Þ ðñíòëÝóôá ôá äðððëÝíí ãñ÷ãá ìÝóá ôóíí éáoŨëíäí chroot ôçð Ýëäíóçð.`
- `rm ${CHROOTDIR}/usr/obj/usr/src/release/release.[59]`
- `Ìáoäæëüððóðá ðŨëé ôí sysinstall(8), ôíí ðñÞÍá, Þ üðíéá Ũëéä ðñíñŨííáóá Ý÷íðí ãðçñááóðáß áðü ôéð áëéääÝð óáo.`
- `chroot ${CHROOTDIR} ./mk floppies`

İe íŸàò äéôêŸôâò ããêâôŸóôâóçò èá àçieiõñâçëiyí óôii éâôŸëiäi \$ {CHROOTDIR}/R/stage/floppies.

ÀáàèàèèèÛ, ìðñàßòà íá ÷ ñçóéíðíèßòáòà òí make target boot . flp, Þ ìðñàßòà íá òñÝíàòà áðàòèàßàò òí script ðñò àçèíðñààß òá óóóðßíáòà áñ÷÷àßùí src/release/scripts/doFS.sh.

ἸδρῖναΒοῶα ἄδΒοçð ἰᾶ ἑᾶῖῖῖΒοᾶᾶ ἡᾶᾶ ἄἑἑΥð ᾠᾶð ἄἑἑἑἑἑΥð ἰᾶ ᾠᾶᾶᾶᾶᾶῖῖ ἰᾶ ἰῖᾦᾦP patch ᾠçῖ ἢἑᾶῖᾶῖᾶ ὑðᾠð ἑᾶ ᾠᾶἑἑἑἑἑ÷ῖᾶᾠᾶἑ, ἄῖῖῖᾦᾠᾶð ᾠἑῖP ᾠçῖῖ ἰᾶᾠᾶἑἑçðᾦP LOCAL_PATCH ὑðᾶῖ ᾠᾦἢἢᾶᾠᾶ ᾠçῖ ἰᾶᾠᾶἑῖP make release.

5.2 Ðñĩñáìáôßæĩíóáò ôĩ sysinstall

[illegible]

6 àèPíàôá ðĩ ĐPñàíà áũ ôçĩ êäĩôç 4.4 ôĩ FreeBSD

Ç æéääéæáóßá áðíéíáóßáð ðçð Ýéäíðçð 4.4 ðíð FreeBSD íæßíçóá äðßçíá ðçí 1ç Áðäíýóðíð 2001. ÌäðÛ äðu äððß ðçí çìññçíßá, ùæäð íé æéääáÝð óðíí èíñíù `RELENG_4` ðíð FreeBSD Ýðñáðä íá Ý÷íð Ýæñéóç äðu ðçí ÌÛáä ÌñáÛíùçð ðíù Áæäüóäíù <re@FreeBSD.org>. Ç ðñðç äíéíáóðéßÝ Ýéäíç æéá ðçí äñ÷éðäðííééß x86 Ýæíá æéäéÝóéíç óðéð 16 Áðäíýóðíð, éé æéííðéßççá äðu 4 áéíüá äíéíáóðééÝð æäüóäéð ðíð íäßçóáí ðçíð ðäééßÝ Ýéäíç óðéð 18 ðíð ÓäððÝíñç. Ì ððäýéðñð áóðÛéæáð Ýðäéíá çíáíóééù ñüéí éäðÛ ðçí æÛñéæéá ðçð ðäéäððáðáð ääññÛáð éäèð èÛðíéá ðñíäéßðáðá áóðÛéæáð äñÝéçéáí óä ðñíçäíýíäíð, äíéíáóðééÝð æäüóäéð. ÓðñééÛ, ðÛíù äðu 500 email óðÛéççéáí ðçíð ÌÛáä ÌñáÛíùçð ðíù Áæäüóäíù <re@FreeBSD.org> óä æÛóðçíá íéññüðäñí äðu Ýíá íßíá.

[illegible]

7 ìảẽễĩĩôếêỲ Ëáôảõềýíóảéo

Ἄβραε πρὸς τὸν ὁσὶαόβαδ ἱε δῆνάδωεῖ ὃ ἐάε ῥ ἡνᾶῦιουσ ὁϥδ ἀεάἀεεἀόβαδ ἀϥεῖρῖῃῃᾶβαδ οὐῖ ἀεᾶῦοᾶῖ ἱὰδ ἱὰ οὐῖᾶᾶᾶᾶᾶᾶᾶ ἱὰ ὁϥ ὁῖᾶ-ῖδ ᾶῖᾶῖῖᾶῖς ᾶῦος οὐῖ -ῖῃοςῖῖ ἱὰδ. ἱὰ ᾶῦος ᾶδῖ ὁϥ ὁεῖϣ ᾶῃᾶᾶᾶᾶᾶ ὁεεῃῖ ᾶεᾶ ἱὰ ὁᾶεῖῃῃῃῃῃᾶ ὁϥ ἀεάἀεεἀόβα δῆνάῦᾶῖδ οὐῖ ἀεᾶῦοᾶῖ ὁῖῖ FreeBSD.

- [illegible]

8 Å ÷ ã é ó ô ß à ò

[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
- [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>)