

Ç ĨñãŨíùóç ôùí Âêäüóâùí 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 ðāñēāñŨōāē ôçĩ áíôēíāðþðēóç ēāē ĩñãŨíùóç ôçð ñŨāāð áíŨððôĩçð ôĩõ FreeBSD, ùóĩí áöĩñŨ óôçĩ ðñĩāðĩēíāóßā ðĩēĩðēēþĩ āēäüóâùí ôĩõ Êāēðĩõñāēēĩý Óðóðßíāðĩõ FreeBSD. Âĩçāāß ĩā ēāððñŨñāēā ôçĩ ĩāēĩāĩēĩāßā ðĩõ ÷ñçóēĩĩðĩēāßðāē āēā ðēð āðßóçĩāð āēäüóāēð ôĩõ FreeBSD ēāē ðāñēāñŨōāē óā āñāāēāßā ðĩõ āßíāē āēāēÝóēíā óā ùóĩõð āíāēāóŨñĩóāē ĩā ðāñŨāĩōĩ ðāñāĩāðñĩðĩēçĩÝĩāð āēäüóāēð ôĩõ FreeBSD āēā āóùðāñēēþ ð āĩðĩñēēþ ÷ñþóç ēāē áíŨððôĩç ðñĩüĩĩðùĩ.

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1 Âéóāāũāþ

Ç áíŨððôĩç ôĩõ FreeBSD āßíāē ĩēā ðĩēý āĩē÷ðþ āēāāēēāóßā. Ôĩ FreeBSD áðĩðāēāßðāē áðũ óðĩāēóöĩñÝð ÷ēēēŨāũĩ āĩēñþðũĩ áðũ ùēĩ ôĩĩ ēũóĩĩ. Ç ñŨāā ôĩõ FreeBSD ðāñŨ÷āē ðñũóāāóç ĩÝóũ āĩþĩðĩĩõ CVS[1] óā ùēĩõð, Ýðóē þóðā ĩā ĩðĩñāß ùðĩēĩð ēÝēāē ĩā āāē ĩçýĩāóā log, āēāöĩñÝð (patches) ðĩõ Ý÷ĩõĩ óā āēŨöĩñā development branches, ēāē Ũēēā ÷āñāēðçñēóðēēŨ ðĩõ āĩçēĩýĩ ôçĩ áíŨððôĩç, óā ĩðĩßā ðñĩēýððĩõĩ áðũ ôçĩ ÷ñþóç āĩũð áððóçñĩý óðóðßíāðĩõ āēā÷āßñēóçð ēþāēēā. Áððũ áðĩðÝēāóā ēāē ôĩĩ ðēĩ ôçĩāíðēēũ ðāñŨāĩōā Ýēĩçð āēā Ýĩā ĩāāŨēĩ āñēēĩũ áðũ óāēāĩðĩý÷ĩõð ðñĩāñāĩĩāðēóðÝð áðũ ùēĩ ôĩĩ ēũóĩĩ óôĩ FreeBSD. Âßíāē ðñĩóāĩÝð, āÝāāēā, ðũð ðĩēý óýĩðñā ēā āß÷ā āßíāē āĩóāēþð ÷āĩðēēþ ç ēāðŨóðāóç āĩ āß÷āĩ ùēĩē, áðũ ùēĩ ôĩĩ ēũóĩĩ, ðñũóāāóç ĩā āñŨðĩõĩ óôĩĩ ēþāēēā. Âē' áððũ, ĩũĩĩ

ιέα “àðέääìÝíç” ñÛää áðù ðänβðìò 300 Ûòñá Ý÷ìò ðñùóääóç ιά àñÛøìòí óòì CVS repository. Áðòìβ ιέ *committers*[6] àβιáέ ððáyèðñιέ áέά òì ιääáyóäñì ìÝñìò òçð άíÛððòìçðð ðìò àβιάðάέ óòì FreeBSD. Ιέα *έáìòñέέP-ñÛää*[7] (core team) áðù áέάέäñέìÝñìò ðñìñäñìáðέóóÝð àέéÝääóάέ áέά ιά ðänÝ÷άέ èÛðιέìò àβäìòð έάέìäPäçóç έάέ ιέα έάðáyèðñíóç óòì óýñιέì òùì committers.

Ιέ ðá÷ýóäòιέ ñòèìβ άíÛððòìçð òìò FreeBSD äáí áðPñìò έάέ ðñέý ÷ñùñ áέά òì ιάέάέÛñέóìá òìò óðóðPìáðìò άíÛððòìçð óá ιέα Ýέäìòç ιä ðñέüòçðá ðìò ιά áìβάέ ιά ÷ñçóέìðñέäβóάέ äòñÝùð. Άέά ιά èðèäβ äòðù òì àβέέçìá, ç άíÛððòìç àβιáðάέ óáðòù÷ñìá óá äòì ðänÛέέçέä ññðÛóέá. Ì έýñέìò έìñìùð άíÛððòìçð àβιáέ ì *HEAD* P *trunk* óòì CVS repository ιäð, áñùóòùð έάέ ùð “FreeBSD-CURRENT”, P “-CURRENT” άì óòìòñβá.

Ιäð ðέì óðάέäñùð έìñìùð óòìðçñäβóάέ, áñùóòùð ιä òì ùññá “FreeBSD-STABLE” P ðέì óýìòñá “-STABLE”. Έάέ ιέ äòì έìñìùβ àβιáέ äðñέçέäðìÝñιέ óòì έýñέì CVS repository, óççì Έäέέóùññέá, έάέ άìðέäñÛòñíðάέ ìÝòù *CVSup*[2] óá mirrors ðáíðìý óòìñ έüòì. Òì FreeBSD-CURRENT[8] àβιáέ ç “ðñðçç óáέñÛ” òçð άíÛððòìçð òìò FreeBSD έάέðð óá äòðù àβñìðάέ ðñðá üèäð ιέ έάέñýñέäð áέέääÝð. Òì FreeBSD-STABLE àβιáέ ì έìñìùð άíÛððòìçð áðù òìñ ìðìβì òðέÛ÷ñìðάέ ιέ àέäüóäέð. Ιέ áέέääÝð áέóÝñ÷ñìðάέ óá äòðùì, òìñ äáyðäñì έìñìù άíÛððòìçð, ιä ðέì äñäù ñòèìù, äòìý ðñðá (óýìòñìá ιä óççì ðñέéðέέP ιäð) äñέέìáðóòìý óòì FreeBSD-CURRENT έάέ Ý÷ìò äñäóáóóäβ ðñέý έάέÛ.

ΈäóÛ óççì ðänβñäì ðìò ìäðìέäääβ áðù òç ιέα Ýέäìòç óççì áðùñáìç, òðέÛ÷ñìðάέ έäέçìäñέìÛ snapshots áðù óá ìç÷áìPìáðá òçð ñÛääð òìò FreeBSD έάέ àβιáέ áέάέÝóέìäð áðù òìñ äìððçñäðçðP <ftp://stable.FreeBSD.org/>. Ç ìääÛέç áέάέäðóέìùðçðá òùì àέðäéÝóέìñ snapshots, έäέðð έάέ ç ðÛóç òçð έìέñùðçðäð òùì ÷ñçóðñì ιäð ιά áìçìäñPñìòí óá ìç÷áìPìáðá òìò ìä ðέð ðñùóáðäð -STABLE àέäüóäέð ìÝòù CVSup έάέ “make world”[8] äìçέìý ìä έñäóέÝóάέ òì FreeBSD-STABLE óá ιέα ðñέý áìέüðέóðç έäóÛóáóç áέüñä έάέ ðñέì äñ÷βóάέ ì έýέèìò òùì àéÝä÷ñì ðñέüòçðäð áέñέäðð ðñέì áðù óççì áέÛέäóç ιέäð Ýέäìòçð òìò FreeBSD.

Óòìä÷ðð óðÝέñìðάέ áðù òìòð ÷ñPóðäð ìäð áíáòìñÝð ðñìäέçìÛòùì έάέ áέðPóäéð áέá έäέñýñέá ÷äñäέðçñέóðέέÛ, έäóÛ òç áέÛñέäéá òìò έýέèìò òçð èÛέä Ýέäìòçð. Ιέ áíáòìñÝð ðñìäέçìÛòùì áέóÛäñíðάέ óççì äÛóç *GNATS*[9] ìÝòù e-mail, ιä óççì äòäñìñäP [send-pr\(1\)](mailto:send-pr(1)), P ìÝòù òìò web-interface ðìò ðänÝ÷áðάέ óççì áέáyèðñíóç <http://www.FreeBSD.org/send-pr.html>. Άέðùð áðù ðέð áέÛòññäð èβóðäð çέäèðñìñέέìý ðá÷äñññäβìò ìä èÝìá óá ðä÷ìέÛ ÷äñäέðçñέóðέέÛ òìò FreeBSD ððÛñ÷áέ έάέ ç èβóðá FreeBSD Quality Assurance mailing list (<http://lists.FreeBSD.org/mailman/listinfo/freebsd-qa>), ç ðìðä ðänÝ÷áέ Ýìá òùñìòì áέá ððäçððPóäéð ó÷äðέέÛ ìä ðέð èäððñÝñäέäð òçð “ññäÛùòçð òùì àέäüóäùì”.

Άέά ιά äìððçñäðçέìý ìέ ðέì óòìðçñçðέέìβ ÷ñPóðäð ìäð, ìä Ýέäìòç òìò FreeBSD 4.3 äñ÷βóäìá ιά ÷ñçóέìñðñέìý ìä÷ñέóðìýð έìñìýð àέäüóäùì. Áðòìβ ιέ έìñìùβ äçìέìòñäñìýðάέ èβäì ðñβì òðέá÷ðäβ ç ðäέέP Ýέäìòç. ΙäóÛ óççì áíáέìβñùòç òçð Ýέäìòçð, ìùñ ðñέý óçìáìðέéÝð áέέääÝð έάέ ðñìòèPèäð ó÷äðέéÝð ìä óççì áóóÛέäéá àβñìðάέ óòìñ έìñìù òçð Ýέäìòçð. Άέðùð áðù óççì äòìáðùòçðá áíáäÛέìέóçð ìÝòù CVS, àέðäéÝóέìá patchkits òðέÛ÷ñìðάέ áέá ιά ðñìñìý ìä áíáääèìβòìòí óá óðóðPìáðá òìòð ùóìέ ÷ñçóέìñðñέìý ðέð àέäüóäέð *RELENG_X_Y*.

Òì ÒìPìá 2 äìçääβ ìä èäððñÝñäέäð óá áέÛòññä óðÛάέ òçð áέääééäóβäð ðìò äñβóέäðάέ ðβòù áðù èÛέä Ýέäìòç, ìÝ÷ñέ έάέ óá äPìáðá ðìò ñäçäñìý óççì ìäðääèPððέóç òìò óðóðPìáðäìð έάέ òì ÒìPìá 3 äìçääβ óççì βáέä òç áέääééäóβä òçð ìäðääèPððέóçð. Òì ÒìPìá 5 ðäñέäñÛòäέ ðùð ðñìñäβ ìä äðäèðäéäβ òì äáóέέù óýóðçìá áðù ðñβðìòð έάέ òì ÒìPìá 6 ðäñέäñÛòäέ èÛðñέä áðù óá ðñÛäìáðá ðìò ìÛέäìä áðù óççì áέääééäóβä Ýέäìòçð òìò FreeBSD 4.4. Óýέìò, òì ÒìPìá 7 ðäñìòóέÛäέ èÛðñέäð áðù ðέð έäðäðéýìáðð ðìò èÝέìòìá ìä ðÛñäé ç άíÛððòìç óòì ìÝέèì.

2 Ç Άέääééäóβä Äçìέìññäβäð ìέäð έäììòçð

Ιέ ìÝäð àέäüóäéð òìò FreeBSD òðέÛ÷ñìðάέ áðù òìñ -STABLE έìñìù άíÛððòìçð ðänβðìò èÛέä óÝóáñäéð ìPìäð. Ç áέääééäóβä ðñìäðñέìáðáð ìέäð Ýέäìòçð ñäέέñÛäέ ó÷ääüì 45 ìÝñäð ðñέì óççì áíááìñìáìç çäññçìβä Ýέäìòçð, ùðáì ì ððáyèðñìò àέäüóäùì òìò FreeBSD óðÝέìáέ Ýìá àñÛìá óðέð èβóðäð òùì ðñìñäñìáðέóóðñì áέá ιά ððäñèðìβóάέ óðìòð ðñìñäñìáðέóóÝð ùðέ Ý÷ìò 15 ìÝñäð έäέñù ìä èÛñìò ìðñέäð áέέääÝð èÝέìòì, ðñέì òì ðÛäñìá òìò èPäééä. ìÝóá óá

áòòü òĩĩ éáénü, ðĩēēĩß ðñĩāñāñĩáòéóóŸò ēŪñĩōĩ ĩéá óáénŪ 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 ĩēāā ÷ ĩō ēßāēēá

ÔñēŪĩóá çĩŸñāð ðñēĩ óçĩ áĩāĩāñĩāĩç çĩāññĩçĩßā 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 áóóŪēāēá.
- ĪēēñŸò áēēááŸò óòĩōð ĩāçāĩŸò ðóóēāðßĩ, 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 āēá ĩá ÷ ñçóēĩĩðĩēçēāß óāĩ āĩēēĩß òçò ðāēēēßò Ÿēāĩōçò ēáē ĩ ēßāēēáð áéóŸñ ÷ āðáē óā ĩéá ðāñßĩāĩ “ðāāßĩāĩōĩō”. ðēŸĩĩ āßĩáē ðĩēŸ ðēĩ āŸóēĩēĩ ĩá āßĩōĩ ĩŸāð áēēááŸò óòĩ āŸóóçĩā, āēóüð ēē áĩ āēĩñēßñĩōĩ ēŪðĩēĩ ðĩēŸ óĩāāñü bugß ēŪðĩēĩ ðñüāēçĩā áóóŪēāēáð. ÉáòŪ óç āēŪñēāēá òĩō ðāāßĩāĩð òĩō ēßāēēá, òĩōēŪ ÷ ēóóĩĩ ĩßā āĩēēĩáóóēēß Ÿēāĩōç òðēŪ ÷ ĩāðáē ēŪēā āāāñŪāā, ĩŸ ÷ ñē ĩá āßĩáē Ÿóĩēĩç ç ðāēēēß Ÿēāĩōç. Ôēò çĩŸñāð áēñēāðð ðñēĩ óçĩ ðāēēēß Ÿēāĩōç, ç ĩñŪāā ðĩō āßĩáē òðāŸēōĩç āēá ðēò āēäüoäēð āßĩáē óā óòĩā ÷ ð āðēēĩēñĩßā ĩā óçĩ ĩñŪāā áóóŪēāēáð, óçĩ ĩñŪāā óòĩōßñçòçò òçò ðāēĩçñßüóçò, ēáē óçĩ ĩñŪāā óòĩōßñçòçò òuĩ ports, āēá ĩá āāāāēüēĩŸĩ ðüð ũēā óā áðāñāßòçòā ēñĩŪðēá āēá ĩéá ðēßñç Ÿēāĩōç āßĩáē āēáēŸóēĩā.

2.2 Ēßóóā ĀēŸā ÷ ĩō òçò Ôāēēēßò ēāĩōçò

¼óāĩ āñēāðŸò āĩēēĩáóóēēŸò āēäüoäēð Ÿ ÷ ĩōĩ āßĩáē āēáēŸóēĩāð, Ÿ ÷ ĩōĩ āĩēēĩáóóāß áðü āñēāðü ēüóĩĩ ēáē 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 āēäüoäßĩ ĩāð. Ôĩ 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
```

Ôĩ 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
```

Όçιαβυός: *Íē ādōēēYōāō ^{RELENG_} * āβíáē āāóíāōīYíāō āēá ÷ñPόç áđū ōīōō CVS-meisters ēáē ōçí īīŪāā ōūī āēāūōāūī.*

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

2.2.2 ÁóïÛííîáò ôíí Áñéèü êäïóçò

Ἐνῆι ἰθαῖ ἡ ἀοέεΥόα, ἰαοάαεουοοεοοάβ ἑαῖ ἀοιείαοοάβ ἡ οάεεῒβ Υέαιόρ, ὃνΥθαῖ ἰά ἀβῖῖόῖ ἀεῖάαΥό οοά ὃαῖάεὔου
 ἀῖ÷άβά ἑάα ἰά ὃαῖεΥ÷ῖόῖ ὀῖῖ οὐοοῦ ἀῖεῖῦι Υέαιόρὸ ἑάα ὀῖ 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 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 òðŨñ÷īōí òóī āñ÷āßī
src/release/sysinstall/dist.c.

Áöŕŷ ïēēēçñùēāß ç ðñŕāōŕēŕiáóßá ôçð ŕŶáð āðßóçŕçð Ŷēäŕiôçð, ðñŶðāē íá áŕçŕāñþóāðā ìāñēēŨ āñ÷āßá āēá íá áŕçŕāñþóāðā òŕŕ ēüōŕŕ āēá ôç ŕŶá Ŷēäŕiôç 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 Äçŕēŕiōñāßá òuì Áðēēāðŕŕŭ ôçð ēäŕiôçð

Ŷāðáf ç ðāēēēß Ŷēäŕiôç āßŕiáē Ŷôŕēŕç, ç ðāñāēŨðù āŕŕŕēß ēā äçŕēŕiōñāþóāē ôçŕŕ āðēēŶôā `RELENG_4_8_0_RELEASE`.

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

Ŭē ððāŷēðŕŕē ôçð Ôāēŕçñßùôçð ēāē òuì Ports āßŕiáē āðōŕŕ ðŕŕ ðñŶðāē íá äçŕēŕiōñāþóŕŕŕŭ ôēð āðēēŶôāð `RELEASE_4_8_0` óóā ēāðŨēēçēā āŶŕŕñā ðçāāßŕŕ ēþāēēā.

ÌāñēēŶð òŕŕŶð, ìðŕŕñāß íá ÷ñāēáðōāß íá āßŕŕŕŕ ēŨðŕēāð āēēāāŶð ðāēāðōāßá óðēāŕß *ìāðŨ* ôçŕŕ òŕŕēŶôççð òuì āðēēāðŕŕ. ÁāŕēēŨ, āāŕ āßŕiáē āŷôēŕēŕ íá āßŕiáē ēŨðē ôŶôŕēŕ āöŕŷ òŕ CVS āðēðñŶðāē íá ìāðāēŕŕŕŕ ēŨðŕēŕŕ ðēð āðēēŶôāð ìā āŕŕŕēŶð ùðùð `cvs tag -d tagname filename`. Áßŕiáē ðŕŕŷ óçŕŕŕŕēēü ŷùðð āððŶð ŕē āēēāāŶð ôçð ðāēāðōāßāð óðēāŕß ìā óçŕŕēüŕŕŕŕ ìā ðēð óuóðŶð āðēēŶôāð āēá ôçŕŕ óðāēāñēŕŕŶŕç Ŷēäŕiôç. Ŭē āðßóçŕŕāð āēäüóāēð òŕŕ FreeBSD ðñŶðāē íá āßŕiáē ðŦŕŕŕā āŷēŕēŕ íá áŕāðāñā÷ēŕŕŕ. ÔŕŕēēŶð āēēāāŶð óðŕ ðāñēāŨēēŕŕ òŕŕ ìç÷āŕēŕŕ òuì āēäüóäüŕ āāŕ āðēðñŶðŕŕŕŕ.

3 ìāðāāēþððēóç ôçð ēäŕiôçð

Ŭē “āēäüóāēð” òŕŕ FreeBSD ìðŕŕŕŕŕ íá ìāðāāēüððēóðŕŕŕŕ āðü ŕðŕēŕŕāþðŕŕŕŕ Ŷ÷āē Ŷŕá ó÷āðēēŨ āñþāŕŕŕŕ ìç÷Ŷŕçŕŕā ēāē ðñüóāáç óðŕ repository òŕŕ ðçāāßŕŕ ēþāēēā. (Ŷēŕē Ŷ÷ŕŕŕ āððß ôç äðŕŕäðüôçðā, āöŕŷ ðāñŶ÷ŕŕŕ ðñüóāáç ìŶôü āŕŕŕŕŕŕ CVS! Áāßðā òŕ Áā÷āēñßāēŕŕ òŕŕ FreeBSD āēā ðāñēóóüðāñāð ēāððñŶñāēāð.) Ç ìüŕç āēāēēß āðāßðççç āßŕiáē íá ððŨñ÷āē ððŕŕððñēŕç óðŕŕ ððñŕŕŕā óāð āēá ôçŕŕ óððēāðß `vn(4)`. (Ôðŕŕ -CURRENT, āððß ç óððēāðß Ŷ÷āē áŕŕēēāðāóāēāß āðü ôçŕŕ ŕŶá óððēāðß āßóēŕŕ āāóēóŕŶŕŕŕ óā ìŕßç `md(4)`.) Áŕ ç óððēāðß āāŕ āßŕiáē áŕŕŕŕŕäðüŶŕç óðŕŕ ððñŕŕŕā óāð, òüðā ì ēāðŨēēçēŕð ŕāçāüð ēā òŕŕðùēāß āððüŕŕāðā üðáf āēðāēāðōāß ç áŕŕŕēß `vnconfig(8)` ēāðŨ ôç āēŨñēāēā ôçð òŦôçðð ðŕŕŕŕŕāðð òŕŕ ìŶôŕŕ āēēßŕççð. Ŷēā óā āñāāēāßá ðŕŕ ÷ñāēŨæŕŕŕŕāē āēá íá ìāðāāēüððßóāðā ìēā Ŷēäŕiôç āßŕiáē āēāēŶôēŕŕā óā ìŕŕñß ðçāāßŕŕ ēþāēēā óðŕŕ ēāðŨēŕŕŕŕ `src/release`. ÁððŨ óā āñāāēāßá Ŷ÷ŕŕŕŕ ùð óēŕðü íá ðāñŶ÷ŕŕŕ üðē ÷ñāēŨæŕŕŕāē āēá íá ÷ðæŕŕŕŕāē ŕē āēäüóāēð òŕŕ FreeBSD ìā Ŷŕá óŕŕŕāðß ēāē óðāēāñēŕŕŶŕŕ òñüðŕ. ìēā ðēþñçð Ŷēäŕiôç ìðŕŕñāß íá ìāðāāēüððēóðōāß ÷ñçŕēŕŕðŕēþŕŕŕāð āððŨ óā āñāāēāßá ìā ìēā ēāē ìüŕŕ áŕŕŕēß, óðŕðāñēēāŕŕŕŕŶŕçð ēāē ôçð äçŕēŕiōñāþāð āŕŕð ISO āñ÷āßŕŕ ēāðŨēēçēŕŕ āēá íá ēāāß óā CDROM, ŕē āēóēŶôðāð āēēßŕççð, ēāēþð ēāē ì ēāðŨēēçēŕŕ āāēāðŨóóāçð ìŶôü FTP. Áððß ç áŕŕŕēß āßŕiáē òððēēß ç `make release`.

3.1 Ç áŕŕŕēß `make release`

Áēā íá ìāðāāēüððßóāðā āðēð÷þð ìēā Ŷēäŕiôç, ðñŶðāē ðñþóā íá ððŨñ÷ŕŕŕŕ óā ēāðŨēēçēā āñ÷āßá ìŶôā óðŕŕ ēāðŨēŕŕŕŕ `/usr/obj`. ìðŕŕñāßðā íá óā äçŕēŕiōñāþóāðā āßðā ìā ôçŕŕ áŕŕŕēß `make world` þ äðēŨ `make buildworld`. Áēā íá

[illegible]

- CHROOTDIR - Ἡ ἐὰὸὐεῖαῖρὸ δῖο ἐὰ ð-ñçóεῖῖθῖεçæß óáf ðññéáὐεῖῖῖ chroot æéá üeç ðçῖ ἰὰðáæῖῖῖðððéóç ðçð Ἰéαῖρçð.
- BUILDNAME - Ὀῖ ὑῖῖά ðçð Ἰéαῖρçð δῖο ἐὰ ἰὰðáæῖῖῖððßðáðá.
- CVSROOT - Ἡ ἐὰὸὐεῖαῖρὸ óῖῖῖ ἰῖῖῖῖ ἰñßðéæðáé ðῖ CVS repository.
- RELEASETAG - Ç áðééἸðá CVS δῖο αῖðéóῖῖῖ÷÷ß ðçῖ Ἰéαῖρç ðçῖ ἰῖῖῖῖ èἸéæðá ἰά ἰὰðáæῖῖῖððßðáðá.

Άí αάí Υ÷άάά Παç ðñúάάάçά όά εÛðείí ðιðέεü CVS repository íα ðιí êπαέέα ðιð FreeBSD, ìðιñάβόά ðÛíόά íά
 ððέÛíάάά ðιí áέέü óάð ðιðέεü CVS mirror íα ðιí CVSup
 (http://www.FreeBSD.org/doc/en_US.ISO8859-1/books/handbook/synching.html#CVSUP). ÕðÛñ÷άέ Υíá supfile,
 óðιí áñ÷άβι /usr/share/examples/cvsup/cvs-supfile, ðιí ìðιβι ìðιñάβόά íά ÷ñçόέιíðιέΡάάά άέα íά
 áíðέαñÛøάά ðιí CVS repository ðιð FreeBSD óðιí áέέü óάð ðιðέεü mirror.

Áí ðáñáëãþåðå ðçí áðéëÝóå RELEASETAG, öüðå åå íaðåääèùððéóðåß íéå ðêÞñð Ýéäíøç áðu øçí èíñòð òìð HEAD
 (äçë. òìð -CURRENT) èíñíý. Íë äêäüóåð ðìð öðëÛ÷ííðåé áðu áðöúí òíí èíñìù, öðíÞèù áíáoÝíííðåé áái
 “-CURRENT snapshots”.

ÖðÚñ÷íøí éáé ðíēēÝð Üēēāð íāðāāēçðÝð ðíø ðíñííýí íá ÷ñçøēíñðíēçēíýí áēá íá ðāñāíāðññðíēÞōāðā ðçí ÝēāíøÞ ōāð. Íē ðēí ðíēēÝð āðú āððÝð øēð íāðāāēçðÝð ðāñēāñÜññíðāē øççí ēíññøÞ ðíð āñ÷āññø src/release/Makefile. Ç āēñēāÞð āíðíēÞ ðíð ÷ñçøēíñðíēÞēçēā āēá íā øðēá÷ðāñ ç ðāððçðç Ýēāíøç 4.7 ðíð FreeBSD (x86 ðēāðøüññā) 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 ἰαδᾶαεὺ ὁ δὲ αἰῖοᾶε̣ ἰε̣ ἀεαῦοᾶεδ ἰδῖηᾶβ ἰά ÷ ὑηέ ὁ δᾶβ ὁ ᾶ ἀηεᾶοῦ ἰᾶ ÷ ὑηέ ὁ δῦ ἰαδᾶῖ ὁ ῖοδ ᾶ η̣ἰᾶοᾶ.

- [illegible]

- ĩāóāāēpôôéoc òuĩ “ôõĩðéáõĩŸĩũĩ” (crunched) āēôāēŸóēĩũĩ ðĩō éā ÷ ñçóēĩĩðĩēçēĩŸĩ óóēō āéóēŸôôāō āāēáōŨóóáocò.
- Āçĩēĩōñābā òuĩ ðāēŸôũĩ ocò āāēáōŨóóáocò éāē òuĩ ðāēŸôũĩ ðçāābĩō ēpāēēā.
- Āçĩēĩōñābā òuĩ ĩŸôũĩ āēēbĩçocò éāē ocò āéóēŸôôāō “fixit”.
- Āçĩēĩōñābā ocò éāñāñ÷bāō éāóāēüũĩ āēā ocĩ āāēáōŨóóáoc ïŸôũĩ FTP.
- (ðñĩíēñāôēēŸ) Āçĩēĩōñābā òuĩ ISO āñ÷ābũĩ āēā ĩŸóā CDROM/DVD media.

Āēā ðāñéóóũôāñāð ðēçñĩōĩñbāð ó÷āôēēŸ ĩā ocĩ āēāāēēáóbā āçĩēĩōñābāð ĩēāð Ÿēāĩocò, āābôā ocĩ óāēbāā ôāēĩçñbũocò release(7).

3.2 ĩāóāāēpôôéoc òuĩ XFree86

Ōĩ āñāóēēũ ðāñēāŨēēĩ **XFree86** ābĩāē Ÿĩā ocĩāĩóēēũ ēñĩŨôē ēŨēā Ÿēāĩocò āēā ðĩēēĩŸð ÷ ñpôóāð ðĩō ēŸēĩōĩ òĩ FreeBSD āēā óóāēĩŸð āñāóāð. ðñēĩ ocĩ Ÿēāĩoc 4.6-RELEASE òĩō FreeBSD, ĩē āðbôçĩāð āēüüóāēð òĩō FreeBSD ÷ ñçóēĩĩðĩēĩŸóāĩ ocĩ Ÿēāĩoc 3.x òuĩ **XFree86**. Ĩ ðēĩ āŸēĩēĩð ðñũðĩð ĩā ĩāóāāēũôôbôāðā āôðŸð óēð āēüüóāēð ābĩāē ĩā ÷ ñçóēĩĩðĩēĩŸóāĩ òĩ ðñũāñāĩā `src/release/scripts/X11/build_x.sh`. Áôôũ òĩ ðñũāñāĩā āðāēðāb ĩā ābĩāē pāç ocçĩŸĩā óõĩ óŸóçĩŨ óāð òũõĩ òĩ ðāñēāŨēēĩ XFree86 üõĩ éāē ç āēpôóā Tcl/Tk. ĩāôŨ ocĩ ĩāóāāēpôôéoc òuĩ éāðŨēēçēũĩ X servers, òĩ ðñũāñāĩā éā ðāēāðŨñāē üēā óā āñ÷ābā óā óðēēĩāŸð āñ÷ābũĩ ðĩō ðāñēĩŸĩāē ĩā āñāē òĩ `sysinstall(8)` ĩŸóā óõĩ ēāðŨēēĩāĩ `XF86336` óõĩ ĩŸõĩ āāēáðŨóóáocò.

ĩāēēĩpĩóāð ĩā ocĩ Ÿēāĩoc 4.6-RELEASE òĩō FreeBSD, òĩ `sysinstall(8)` āāēāēéóðŨ ocĩ Ÿēāĩoc 4.x òuĩ XFree86, óāĩ ēāñĩēēŨ ðāēŸóā. ÁôðŨ ĩðĩñāb ĩā ābĩāē ābôā óā ðāēŸóā ðĩō āçĩēĩŸñāçõā òĩ cluster òuĩ ports p ĩðĩēāāðĩôā Ũēēā ðāēŸóā ðĩō Ÿ÷ĩōĩ āçĩēĩōñāçēāb āðũ Ÿĩā ports tree ĩā ocĩ ēāðŨēēçç āðēēŸóā.

Ōçĩābũoc: Ābĩāē ðĩēŸ ocĩāĩóēēũ ĩā áóāēñŸóāðā āðũ òĩ āñ÷ābĩ `/etc/make.conf` ĩðĩēāóāpðĩôā òĩðēēŸð ñôēĩbôāēð Ÿ÷āðā ēŨĩāē. Āēā ðāñŨāāēāĩā, āāĩ ābĩāē ēāēp ēāŸā ĩā āēāĩŸĩāðā āēôāēŸóēĩā ðĩō Ÿ÷ĩōĩ ĩāóāāēũôôéóðāb óā ēŨðĩēĩ óðāēāēñēĩŸĩĩ óŸóçĩā ĩā ĩñēóĩŸĩç ocĩ óēĩp ocò ĩāóāāēçðpð `CPUTYPE` āēā āāēôéóõĩðĩbçocò òuĩ āēôāēŸóēĩũĩ āēā ēŨðĩēĩ óðāēāēñēĩŸĩĩ āðāĩāñāóðp.

3.3 ðñĩāñŨĩāóā Ōñbôũĩ (“ports”)

Ç Óðēēĩāp òuĩ Ports òĩō FreeBSD (<http://www.FreeBSD.org/ports>) ābĩāē ĩēā óðēēĩāp ĩā ðāñéóóũôāñā āðũ 24,000 ðñĩāñŨĩāóā āðũ òñbôĩðð, ðĩō ābĩāē āēāēŸóēĩā āēā FreeBSD. ĩē ĨŨāā Āēā÷ābñēocò òuĩ Ports `<portmgr@FreeBSD.org>` ābĩāē òðāŸððĩēē āēā ocĩ óõĩðpñçoc āĩũð āŸĩôñĩō āðũ ðçāābĩ ēpāēēā āēā óā ports, ðĩō ĩðĩñāb ĩā ÷ ñçóēĩĩðĩēçēāb āēā ĩā āçĩēĩōñāçēĩŸĩĩ óā ðāēŸóā ĩā óā ðñĩāñŨĩāóā ðĩō óðñāŸĩōĩ óēð āðbôçĩāð āēüüóāēð òĩō FreeBSD.

Ç āēāāēēāóbā óõĩðpñçocò ocò óðēēĩāpð òuĩ ports ābĩāē ēŨôē ðĩō āāĩ ĩðĩñĩŸĩā ĩā ēāēŸõĩðĩā āāp. ĩā ĩā÷ũñēóðũ Ũñēñĩ, ĩā òbôēĩ Ç ĨñāŨtúoc ēāĩocò òuĩ ðāēŸôũĩ ĒĩāēóĩēēŸ āðũ Ōñbôĩðð (`./releng-packages/article.html`), ēāēŸðāē āðũ òĩ ēŸĩā.

3.4 Āñ÷ābā ISO ocò ēāĩocò

ĩāēēĩpĩóāð ĩā ocĩ Ÿēāĩoc 4.4 òĩō FreeBSD, ç ĨŨāā ĀĩŨððõĩçð òĩō FreeBSD āðĩôŨóēóā ĩā āēāĩŸĩāē ēāē óā ôŸóóāñā ISO āñ÷ābā ðĩō ðñpôā ðĩōēĩŸóāĩ ĩē āðāēñābāð *BSDi/Wind River Systems/FreeBSD Mall* óóēð “āðbôçĩāð” 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 êǎé íǎ ÷ñçóêîîðîéßóǎé ǎðòü 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 ǎðêÛ, ùð ǎñßð:

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

Ìé óðǎéǎêñéíÝíǎð ǎðǎéòßóǎéð ǎéǎ êÛèǎ Ýíǎ ǎðü ǎðòÛ òǎ CD ðǎñéǎñÛîîíóǎé ðǎñǎéÛòü:

3.4.1 Áßóêîõ 1

Ì ðñðòîð ǎßóêîõ ǎßíǎé ó÷ǎǎüí ǎðîééǎéóóééÛ ǎðîðÝéǎóíǎ òçð ǎíóîéßðð make release. Ìé ìüíǎð ǎééǎǎÝð ðîõ ðñÝðǎé íǎ ǎßñîíí óóñí êǎðÛéñǎñ disc1 ǎßíǎé ç ðññíóèßê ðîõ êǎðÛéñǎñ tools, òüí **XFree86**, êǎé üóí òî ǎðíǎðüí ðǎñéóóüðǎññí ðǎéÝòüí ìðññíý íǎ ÷ñÝóíóí óóí ǎßóêî. Ì êǎðÛéñǎñ tools ðǎñéÝ÷ǎé ǎñǎǎéǎßǎ ðîõ ǎðéòñÝðñîíí óǎ ÷ñßóðǎð Ûéèüí êǎéðññǎéêñí óðóðçìÛòüí íǎ òðéÛññîíí òéð ǎéóéÝððǎð ǎéêßíçóçð. Áðòüð ì ðñðòîð ǎßóêîð ðñÝðǎé íǎ òðéÛ÷ǎðǎé bootable Ýðóé ðóðǎ íǎ ìðññíý ìé ÷ñßóðǎð òüí ìüðÝññüí ððñéñǎéóðñí íǎ ǎðñóǎýǎñîíí òî óðÛǎéí ǎçìéîññǎð òüí ǎéóéǎððñí ǎéêßíçóçð.

Áí ìéǎ ǎéǎóññǎðéêß Ýéǎñóç òüí XFree86 èǎ ǎéǎíÝíǎðǎé ìǎ òçí Ýéǎñóç ǎðòß, ðñÝðǎé íǎ ǎçìǎññèǎß òî ðñüǎñǎìǎ sysinstall(8) ǎéǎ òçí íÝǎ èÝóç êǎé ìé ñǎçǎßǎð ǎǎéǎðÛóðǎóçð. Ì ó÷ǎðéèüð êñǎééǎð òðÛñ÷ǎé óóñí êǎðÛéñǎñ src/release/sysinstall óóñí -STABLE èññü ð óóñí êǎðÛéñǎñ src/usr.sbin/sysinstall óóñí -CURRENT èññü. ÓðǎéǎêñéíÝíǎ, òǎ ǎñ÷ǎßǎ dist.c, menus.c, êǎé config.c èǎ ÷ñǎéǎóðǎß íǎ ǎçìǎññèýíý.

3.4.2 Áßóêîõ 2

Ì ǎǎýðǎññð ǎßóêîð ǎßíǎé ǎðßóçð ǎðñðÝéǎóíǎ òçð ǎíóîéßðð make release êǎðÛ Ýíǎ ìǎǎÛéí ìÝññð. Áðòüð ì ǎßóêîð ðǎñéÝ÷ǎé Ýíǎ “live filesystem” ðîõ ìðññǎß íǎ ÷ñçóêîîðñéçêǎß ǎðü òî sysinstall(8) ǎéǎ íǎ ǎñǎðǎóóíýí ðññǎéßíǎðǎ óǎ ìéǎ ǎǎéǎðÛóðǎóç òîõ FreeBSD. Èé ǎðòüð ì ǎßóêîð ðñÝðǎé íǎ ǎßíǎé bootable. Èǎ ðñÝðǎé ǎðßóçð íǎ ðǎñéÝ÷ǎé Ýíǎ óðñðéǎóíÝñí ǎíðßǎñǎñîíí òîõ CVS repository óóñí êǎðÛéñǎñ CVSROOT êǎé ǎßǎìǎðǎ ǎðü ǎðññééÛ ðññǎñÛñǎðǎ óóñí êǎðÛéñǎñ commerce.

3.4.3 Áßóêîé 3 êǎé 4

Ìé òðñéñéðñé ǎðñ ǎßóêîé ðǎñéÝ÷ǎéí ǎðéðññüéǎðǎ ðǎéÝóǎ éñǎéóíééý ǎéǎ òî FreeBSD. Óǎ ðǎéÝóǎ èǎ ðñÝðǎé íǎ ǎßíǎé ñǎǎñðñéçíÝíǎ, Ýðóé ðóðǎ êÛèǎ ðǎéÝòí íǎ ǎßíǎé óóñí ðǎéí ǎßóêî ìǎ üéǎ óǎ ðǎéÝóǎ ǎðü òǎ ñðßǎ ǎñǎñðÛóǎé ǎéǎ íǎ ǎǎéǎðǎóðǎéǎß êǎé íǎ òñÝíǎé. ðǎñéóóüðǎññð ðêçñîîññßǎð ǎéǎ òçí ǎçìéîññǎßǎ ǎðòñí òüí ǎßóêüí ǎíǎóÝññíóǎé óóñí Ûñèññ Ç ÎñãÛîùόç êǎñóçð òüí ðǎéÝòüí Éñǎéóíééý ǎðü Òñßðñðð (../releng-packages/article.html).

4 Áéǎíñß òüí Áêäüüóàùí

4.1 ÁñððçñǎðçðÝð FTP

¼ðǎí ç Ýéǎñóç ǎßíǎé Ýóñéíç, Ý÷ǎé ǎñééíǎóðǎß ǎéðǎñðð, êǎé Ý÷ǎé ðǎéǎðǎñéóóǎß ǎéǎ ǎéǎíñß, ì éýñéñð FTP ǎñððçñǎðçððð ðñÝðǎé íǎ ǎçìǎññèǎß. Ìé ǎðßóçñéé ǎñððçñǎðçðÝð FTP òîõ FreeBSD ǎßíǎé üéñé mirrors ǎñüð éýñéñð ǎñððçñǎðçðð óóñí ñðñí Ý÷ǎéí ðññóǎǎóç ìüñ Ûééñé FTP ǎñððçñǎðçðÝð. Áðòüð ì ǎñððçñǎðçððð ǎßíǎé ǎñüóüð ùð ftp-master. ¼ðǎí ç Ýéǎñóç ǎßíǎé Ýóñéíç, ðñÝðǎé íǎ ǎçìǎññèýíý òǎ ðǎñǎéÛòü ǎñ÷ǎßǎ óóñí ftp-master:

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

λέα ἀδῆP web οἰαῖβᾶᾶ ὄϊο ὀᾶῖῖÉY ÷ ᾶέ ᾶᾶβῆοᾶᾶ οᾶ ᾶέUοῖῖῖῖῖῖ οῖῖᾶῖᾶῖῖῖῖ FTP ῆᾶᾶῖῖῖῖῖῖ ᾶῆᾶ ὀῖῖ ὀῖῖY ÷ ῖῖᾶᾶ Yῆᾶῖᾶῖᾶ ὀῖῖ FreeBSD.

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

Í éadóUeräö ädu öir rðirð ðöirýí íá äßirðí ääéäöäöðÜöäéð ðÝöü FTP, üðüð öir Ý÷äé ðñiräöieiÜöäé ç äíöieP 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 êáoÜëîäî .../.../...ports/i386/packages-X.Y-release.

```

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

Ôá áñ÷åßá ISO.

Άέά άάήέόούόάήάό άέçñĩōĩñßå ò÷âôéÛ ìà ôçĩ ìñãÛĩúôç òùì mirror áéáñĩðò FTP ôĩò FreeBSD, άάñáéáēρ ááßôå ôĩ Ûñēñĩ ÖôéÛ÷ĩĩôåò Ýía FreeBSD mirror (../hubs/).

Ιδιόηας ία δ'Υηάε ανέαο'Υο ηηαο αδ'υ ός'ί οόέαηδ' θ'ιρ έα άίς'ίαν'ηεάβ ί ftp-master ι'Υ÷ηέ ία άίς'ίαν'ηε'ίς'ί οός'ί
δεάέ'ι'ο'ς'όβ'ά ο'ι'οδ' ό'ά δ'ηη'ο'ι'ο' άδεδ'Υ'α'ι'ο' FTP mirror ία ός'ί ρ'Υ'ά Υ'ε'α'ι'ο'ς'. Άδεά'Υ'ε'ε'α'ο'άέ ίε οδ'α'γ'ε'ο'η'έ Υ'ε'α'i'ο'ς'ό ία
οδ'ί'ά'φ'ί'ς'ί'ε'ί'ς'ί ία ός'ί ρ'ε'ά'ε'ο'η'ί'ε'ε'β' έβ'ο'ό'ά ο'υ'ι' mirror sites ο'ι'ο' FreeBSD
(<http://lists.FreeBSD.org/mailman/listinfo/freebsd-hubs>) δ'η'έ'ί' ά'ί'ά'ε'ί'ε'ς'ί'ο'ι'ο' ός'ί ά'α'ί'ε'ε'β' ά'ε'ά'ε'α'ο'έ'ι'υ'δ'ς'ό'ά ός'δ' ρ'Υ'ά'ο
Υ'ε'α'i'ο'ς'ό ο'ό'ι'οδ' ά'ι'οδ'ς'η'ά'ο'ς'ό'Υ'ο' FTP.

4.2 Àáæéêþ Áíáðáñáũùãþ ôùí 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 āāēāðŨóóáçðð. 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 đðñPĭā, P ũđĭēā Ũēēā đñĭāñŨñāðā Ÿ÷ĭōĭ āđçñāāóóāβ 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 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 òēēŨ÷ĭāðāē, āβñĭðāð òēĭP óçĭ ĭāðāāēçðP LOCAL_PATCH ũðāĭ òñŸĭāðā òçĭ āĭðĭēP make release.

5.2 Đñĭāñāĭāðōβāēĭĭóāð òĭ sysinstall

Ōĭ āñāāēāβĭ āāēāðŨóóáçðð ēāē ñŷēĭóçð òĭō FreeBSD, òĭ sysinstall(8), ĭđĭñāβ ĭā đñĭāñāĭāðēóðāβ āēā ĭā ēŨĭāē ðēĭ āŷēĭēāð òēð áðññāðĭđĭēçĭŸĭāð āāēāðáóðŨóāēð òā đĭēēŨ ĭç÷āĭPĭāðā. Áðñ òĭ ÷āñāēðçñēóðēēñ òĭō đñĭāñŨñāðĭð ĭđĭñāβ ĭā ÷ñçóēĭđĭēçēāβ òā óōĭāðāóñĭ ĭā òĭ PXE[13] òçð Intel āēā ĭā ĭāēēĭPóāē ç āāēāðŨóóáçðð āðñ òĭ āβēðōĭ, P òā óōĭāðāóñĭ ĭā đñĭóáñĭōĭŸĭāð āēóēŸððāð āēēβĭçóçð ēē Ÿĭā sysinstall script. ĭā đāñŨāāēāĭā āðñ òŸðĭēĭ sysinstall script ĭđĭñāβðā ĭā āñāβðā òðĭ āñ÷āβĭ 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 òñĭ ēĭñĭñū RELENG_4 òĭō FreeBSD Ÿđñāðā ĭā Ÿ÷ĭōĭ Ÿāēñēóç āðñ òçĭ ĨŨāā ĨñāŨñóçð òñĭ Āēüóàñĭ <re@FreeBSD.org>. Ç đñþçç āĭēēĭāóðēēP Ÿēāĭóç āēā òçĭ āñ÷ēðāēðĭēēP x86 Ÿāēĭā āēāēŸóēĭç òóēð 16 Áðāĭŷóðĭð, ēē āēĭēĭōēPēçēā āðñ 4 āēñĭā āĭēēĭāóðēēŸð āēāññāēð đĭō ĭāþāçóāĭ 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 āēāññāēð. ÓññēēēŨ, đŨĭñ āðñ 500 email óðŨēēçēāĭ óçĭ ĨŨāā ĨñāŨñóçð òñĭ Āēüóàñĭ <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 æñðð òĭō óāĭ óŷóçĭā, ēāē ç āĭŨāēç āēā óðāēāēñēĭŸĭç đĭēēðēēP ēāē ĭñāŨñóçç āēā òçĭ āçĭēĭōñāβā ĭŸñĭ āēāññāñĭ 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 ìǎëëĩíôéeêÝò Êáôǎõèýíóǎéo

Ἄβριάς αὐτοῦ ἐπὶ οὐρανῷ ἰεὺς ὁ ἀγαθός· ὃς ἐν τῇ αὐτοῦ ἐκκλησίᾳ ἀποκαθάρσας τοὺς ἁγίους ἀπὸ παντὸς ὁμοιωματισμοῦ καὶ ὁμοφροσύνης ἀποκαθάρσας αὐτοὺς ἐν τῷ ὕδατι τοῦ λόγου ἐν ὁμιλίᾳ ὁμιλίας, ἵνα αὐτοὺς ἀποκαθάρσῃ ὡς ἁγίους ἑαυτοῦ ἑνὶ ᾧ ἁγίῳ πνεύματι, ἵνα αὐτοὺς ἀποκαθάρσῃ ὡς ἁγίους ἑαυτοῦ ἑνὶ ᾧ ἁγίῳ πνεύματι, ἵνα αὐτοὺς ἀποκαθάρσῃ ὡς ἁγίους ἑαυτοῦ ἑνὶ ᾧ ἁγίῳ πνεύματι.

- *ḐānÜëëççē āēōYēāōç - İlaneü ÜİYñç öçō İāōāāēpōōēōçō İēāō āēāēāÜōōāōçō İdñİYİ İā āßİİōİ “ðīēý ḑānÜëëçēā”.* Ōā ðēİ ðīēēÜ āðü ōā ōōÜāēā āßİāē I/O intensive, İðüōā ç ýðāñİç ðīēēpİ òðçēpō-ōā÷ýōçōāō āßōēüİ āßİāē ðēİ öçİāİōēēp āðü öçİİ ÷ñpōç ðīēēpİ āðāİāñāāōōpİ āēā İā āðēōā÷ōİēāß ēÜðüō ç āēāāēēāōßā öİō make release. Áİ āēāōİñāōēēİēİ āßōēİē ÷ñçōēİİðīēçēİYİ āēā öİpİāōā öçō ēāñāñ÷ßāō öİō chroot(2) ḑāñēāÜēēİİðİō, öüōā öİ CVS checkout öüİ ēāōāēüāüİ ports ēāē doc İdñİāß İā āßİāē āōðōü÷ñİİā İā öçİ āİōİēp make world öōİİ Üēēİ āßōēİ. ×ñçōēİİðīēpİōāō İēā RAID ēýōç (hardware p software) İdñİāß İā İāēpōāē āñāōōēēÜ öİİ öōñēēēü ÷ñüñ 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.*
- *ÄİēēİYō āēā vÜēç - ×ñāēāæüİāōāō ēāēýōāñā āñāāēāßā āēā āōðüİāōİ Yēāā÷İ İñēüōçōāō öōİ FreeBSD.*
- *Āñāāēāßā ĀāēāōÜōōāōçō - Öİ ðñüāñāñÜ İāō āēā öçİ āāēāōÜōōāōç öİō FreeBSD Y÷āē İāðāñÜōāē ðñİ ðīēēİY öİİ āİāİāİüāñ ÷ñüñ æùpō öİō. ÖðÜñ÷İōİ āēÜōİñāō ñÜāāō ðİō āñāÜāİōāē āēā İā öēİðīēpōİōİ ēÜðīēİİ Üēēİ, ðēİ İİİōYññ İç÷āİēōİÜ āāēāōÜōōāōçō. İēā āðü öēō ðēİ öðİō÷üāİāō, āßİāē ç ñÜāā libh[5] ðİō öōİ÷āýāē öççİ öēİðİßçōç āİüō Yİōðñİō, İYİō ðñüðİō ðāēāōāñßōİāİōİ ēİāēōİēēİY ēāē āİüō GUI ðñİāñÜİāİōİ āāēāōÜōōāōçō.*

8 Ã÷áñéóôßàò

Εὰ Πεᾶέα ἰά ἀο÷ἀνεόόΠουὸ οῖν Jordan Hubbard, θῖο ἱιὸ Ὡαυόα ὀγί ἀδεᾶένβΑ ἰά δῦΝη εὔθιερά αδὺ ὀγί ἀεϋίγ ὀδο Ὡεαιρόδο 4.4 οῖο FreeBSD, ἐᾶεπο ἐᾶέ ᾷέ ὑέç ὀγί αιρεᾶεῦ θῖο Ὡ÷ᾶε εὔἰᾶε ᾳπ ἐᾶέ ÷νηιέᾶ ᾷέ ἰά ᾳβιάέ οῖ FreeBSD ἀόου θῖο ᾳβιάέ οΠιᾶνά. Οῴοέεῦ, ç Ὡεαιρός ᾳᾱ ἐᾶ Πόᾱί θῖο Ὡ ᾳόἰᾳούἰ ἰά ἱειθεçñυεᾳß ÷ññβο ὑέç ὀγί ó÷ᾳόέεΠ ἰᾳ ὀγί Ὡεαιρός αιρεᾶεῦ θῖο Ὡεᾱἰᾱ ἱέ Satoshi Asami <asami@FreeBSD.org>, Steve Price <steve@FreeBSD.org>, Bruce A. Mah <bmah@FreeBSD.org>, Nik Clayton <nik@FreeBSD.org>, David O'Brien <o'brien@FreeBSD.org>, Kris Kennaway <kris@FreeBSD.org>, John Baldwin <jhb@FreeBSD.org> ἐᾶέ υἱεῖ ἱέ ὀδυἱεῖθιεῖ θῖο ἀó÷ἱεἱγἰᾳέ ἰᾳ ὀγί ᾱῒᯚδῖοῖç οῖο FreeBSD. ÈṲèù ᾳδβῖδο ἰᾳ ἀó÷ᾱνεόόΠουὸ οῖο Rodney Grimes <rgrimes@FreeBSD.org>, Poul-Henning Kamp <phk@FreeBSD.org>, ἐᾶέ υἱεῖθο οῖο Uεεῖρο θῖο ᾳᾱᯚᯚᯚᯚᾱἰ ᾷέ ἰᾳ ὀόεῒᯚῖο ὀᾱ ᾳᾱᾳεᾶβᾱ ᾷέ ὀό ᾳεᾳüᯚᯚᯚ ὀόᯚ ὃᾱΠᯚᯚ ἰᯚᯚᯚ ὀδο ᾳçἱeῖᯚᯚᯚᯚᯚ ὀῖο FreeBSD. Ἀόου οἰ ᯚᾱᾱῖ Ὡ÷ᾶε ᾳðçᾱᯚᯚᯚᯚ ᾳδὺ ἐᾳβἰᾱᾱ ὄ÷ᾳόέεῒ ἰᾳ ὀγί ἱᾱᯚᯚᯚᯚ ὀυῖ ᾳεᾳüᯚᯚᯚ ᾳδὺ οῖ CSRG[14], ὀγί ḥᯚᾳ ὀῖο NetBSD[11], ἐᾶέ ὀγί ὃᾱᯚᯚᯚ ᾷέ ἱέᾱ ᾳéᾳᾳéᾳᯚᯚ ἱᾱᯚᯚᯚᯚ ὀυῖ ᾳεᾳüᯚᯚᯚ ὀῖο John Baldwin[12].

9 ÁíáöïñÝò

- [1] CVS - Concurrent Versions System <http://www.cvshome.org>
- [2] CVSup - The CVS-Optimized General Purpose Network File Distribution System <http://www.polstra.com/projects/freeware/CVSup>
- [3] <http://bento.FreeBSD.org>
- [4] FreeBSD Ports Collection <http://www.FreeBSD.org/ports>
- [5] The libh Project <http://www.FreeBSD.org/projects/libh.html>

- [6] FreeBSD Committers
http://www.FreeBSD.org/doc/en_US.ISO8859-1/articles/contributors/staff-committers.html
- [7] FreeBSD Core-Team http://www.FreeBSD.org/doc/en_US.ISO8859-1/articles/contributors/staff-core.html
- [8] FreeBSD Handbook http://www.FreeBSD.org/doc/en_US.ISO8859-1/books/handbook
- [9] GNATS: The GNU Bug Tracking System <http://www.gnu.org/software/gnats>
- [10] FreeBSD PR Statistics <http://www.FreeBSD.org/prstats/index.html>
- [11] NetBSD Developer Documentation: Release Engineering <http://www.NetBSD.org/developers/releng/index.html>
- [12] John Baldwin's FreeBSD Release Engineering Proposal <http://people.FreeBSD.org/~jhb/docs/releng.txt>
- [13] PXE Jumpstart Guide http://www.FreeBSD.org/doc/en_US.ISO8859-1/articles/pxe/index.html
- [14] Marshall Kirk McKusick, Michael J. Karels, and Keith Bostic: *The Release Engineering of 4.3BSD*
(<http://docs.FreeBSD.org/44doc/papers/releng.html>)