

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 ðāñēāñŨōāē ôçĩ áíôēíāðþðēóç ēāē ĩñãŨíùóç ôçð ñŨāāð áíŨððôĩçð ôĩõ FreeBSD, ũôĩí áöĩñŨ óôçĩ ðñĩāðĩēíāóßā ðĩēĩðēēþĩ āēäüóãùĩ ôĩõ Êāēðĩõñāēēĩý 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 āóùðāñēēþ ð āĩðĩñēēþ ÷ñþóç ēāē áíŨððôĩç ðñĩũĩĩôũĩ.

Ðßĩāēāð Ðāñēā÷ñŨŨĩ

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1 Âēóāãũāþ

Ç áíŨððôĩç ôĩõ FreeBSD āßĩāē ĩēā ðĩēý āĩē÷ðþ āēāāēēāóßā. Ôĩ FreeBSD áðĩðāēāßðāē áðũ óðĩāēóũĩñÝð ÷ēēēŨāũĩ āĩēñþðũĩ áðũ ũēĩ ôĩĩ ēũóĩĩ. 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 ÷ñþóç āĩũð áððóçñĩý óðóðßĩāðĩõ āēā÷āßñēóçð ēþāēēā. Áðũ ðñĩðŨēāóā ēāē ôĩĩ ðēĩ ôçĩāĩóēēũ ðāñŨāĩĩōā Ýēĩçð āēā Ýĩā ĩāāŨēĩ āñēēũ áðũ óāēāĩôĩý÷ĩõ ðñĩāñāĩĩāóēóðŨð áðũ ũēĩ ôĩĩ ēũóĩĩ óôĩ FreeBSD. Âßĩāē ðñĩōāĩŨð, āÝāāēā, ðũð ðĩēý óýĩðñā ēā āß÷ā āßĩāē āĩðāēþð ÷āĩðēēþ ç ēāðŨóðāóç āĩ āß÷āĩ ũēĩē, áðũ ũēĩ ôĩĩ ēũóĩĩ, ðñũóāāóç ĩā āñŨðĩĩĩ óôĩĩ ēþāēēā. Âē' áððũ, ĩũĩĩ

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

Ìέ ðá÷ýðáòìέ ñòèìβ áíÛððòίçð òìò FreeBSD àáí áðPñìòí èáέ ðñέý ÷ñùñ áέá òí ìáέáèÛñέóìá òìò óðóðPìáðìò áíÛððòίçð óá ιέα Ýέäìόç ìá ðñέùòçðá ðìò íá áìæáέ íá ÷ñçóέìðñíέáβóáέ àðñÝùð. Áέá íá èðèáβ áðòù òí àβέççìá, ç áíÛððòίç àβíáðáέ óáðòù÷ñìá óá àòí ðänÛέççéá ìñðÛóéá. Ì éýñέìò èìñìùð áíÛððòίçð àβíáέ ì *HEAD* P *trunk* óòí CVS repository ìáð, àñùóòùð èáέ ùð “FreeBSD-CURRENT”, P “-CURRENT” àí óðìòñβá.

Ìáð ðέì óðáèññùð èìñìùð óðìòçññáβóáέ, àñùóòùð ìá òí ùññá “FreeBSD-STABLE” P ðέì óýìòñá “-STABLE”. Èáέ ιέ àòí èìñìùβ àβíáέ áðñέççéäìÝñíέ óòí éýñìè CVS repository, óççí Èáέέóùññíέá, èáέ áíðéáñÛòñíóáέ ìÝòù *CVSup*[2] óá mirrors ðáíòíý óòñí èùòì. Òí FreeBSD-CURRENT[8] àβíáέ ç “ðñòðç óáèñÛ” óçð áíÛððòίçð òìò FreeBSD èáèðð óá áðòù àβñíóáέ ðñðá üèàð ιέ èáέñññéàð áέéááÝð. Òí FreeBSD-STABLE àβíáέ ì èìñìùð áíÛððòίçð áðù òñ ìðìβ òðéÛ÷ñíóáέ ιέ àέäüóáéð. Ìέ áέéááÝð áέóÝñ÷ñíóáέ óá áðòù, òñ ááyðäñì èìñìù áíÛððòίçð, ìá ðέì àñàù ñòèìù, áòñý ðñðá (óýìòñíá ìá óççí ðñέéðéèP ìáð) àñέéìáðóòíý óòí FreeBSD-CURRENT èáέ Ý÷ìòí àìáðáóóäβ ðñέý èáέÛ.

ÈáðÛ óççí ðänβñì ðìò ìáðñéááβ áðù óç ιέα Ýέäìόç óççí áðùñáíç, òðéÛ÷ñíóáέ èáèçìáñéíÛ snapshots áðù óá ìç÷áíPìáðá óçð ñÛäáð òìò FreeBSD èáέ àβíáέ áέáέÝóéìáð áðù òñí àìòðçññáðçðP <ftp://stable.FreeBSD.org/>. Ç ìääÛέç áέáέàðéùòçðá òùí àèðáèÝóéìñí snapshots, èáèðð èáέ ç ðÛόç óçð èñέñùòçðáð òùí ÷ñçóðñí ìáð íá áíçìáñññìòí óá ìç÷áíPìáðÛ òìò ìá ðéð ðñùóóáðð -STABLE àέäüóáéð ìÝòù CVSup èáέ “make world”[8] àñçέñý íá èñáðéÝóáέ òí FreeBSD-STABLE óá ιέα ðñέý áñέùðéóðç èáðÛóáóç áέùìá èáέ ðñéí àñ÷βóáέ ì éýèèð òùí àèÝá÷÷ñí ðñέùòçðáð áèñéáðð ðñéí áðù óççí àéÛéáóç ιέáð Ýέäìόçð òìò FreeBSD.

Óòíá÷÷ð óðÝèññíóáέ áðù òìòð ÷ñPóðáð ìáð áíáòñÝð ðñìáèçìÛòùí èáέ áéðPóáéð áέá èáέñññéá ÷àñáèðçññéóðéèÛ, èáðÛ óç àéÛñéáéá òìò éýèèò óçð èÛéá Ýέäìόçð. Ìέ áíáòñÝð ðñìáèçìÛòùí áéóÛáññóáέ óççí àÛόç *GNATS*[9] ìÝòù e-mail, ìá óççí àðäññìäP [send-pr\(1\)](mailto:send-pr(1)), P ìÝòù òìò web-interface ðìò ðänÝ÷áðé óççí áέáyèðñίόç <http://www.FreeBSD.org/send-pr.html>. Áèòùð áðù ðéð àéÛòññàð èβóðáð çèèðñññíέéñý ðá÷ðäñññáβìò ìá èÝìá óá ðá÷íéèÛ ÷àñáèðçññéóðéèÛ òìò FreeBSD ððÛñ÷áέ èáέ ç èβóðá FreeBSD Quality Assurance mailing list (<http://lists.FreeBSD.org/mailman/listinfo/freebsd-qa>), ç ðñìβá ðänÝ÷áέ Ýìá òùñìòí áέá ððæçðPóáéð ó÷áðéèÛ ìá ðéð èäððñÝñáéáð óçð “ññáÛùόçð òùí àέäüóäùí”.

Áέá íá àìòðçññáðçέñý ìέ ðέì óðìòçñççéèìβ ÷ñPóðáð ìáð, ìá Ýέäìόç òìò FreeBSD 4.3 àñ÷βóáìá íá ÷ñçóέìðñíέñý ìá÷÷ññéóðñýð èìñìýð àέäüóäùí. Áðòìβ ιέ èìñìùβ àçìέìòñáñýìóáέ èβà ðñβí òðéá÷ðáβ ç ðáèéèP Ýέäìόç. ÌáðÛ óççí áíáèìβñùóç óçð Ýέäìόçð, ìùñ ðñέý óçìáíóééÝð áέéááÝð èáέ ðñìòéPèàð ó÷áðééÝð ìá óççí áóóÛéáéá àβññíóáέ óòñí èìñìù óçð Ýέäìόçð. Áèòùð áðù óççí àðíáðùòçðá áíááÛèìéóçð ìÝòù CVS, àèðáèÝóéìá patchkits òðéÛ÷ñíóáέ áέá íá ðñññýíý íá áíááèìβòìòí óá óðóðPìáðÛ òìòð ùóìέ ÷ñçóέìðñíέñý ðéð àέäüóáéð *RELENG_X_Y*.

Òí ÒìPìá 2 àñçááβ ìá èäððñÝñáéáð óá àéÛòññá óðÛáéá óçð àέááééáóβáð ðìò àñβóéáðáέ ðβòù áðù èÛéá Ýέäìόç, ìÝ÷ñé èáέ óá àPìáðá ðìò ìäçáñýí óççí ìáðáèPðóðéóç òìò óðóðPìáðìò èáέ òí ÒìPìá 3 àñçááβ óççí βáéá óç àέááééáóβá óçð ìáðáèPðóðéóçð. Òí ÒìPìá 5 ðäñéáñÛóáέ ðùð ðññáβ íá àðáèðáéáβ òí ááóéèù óýóðçìá áðù ðñβòìòð èáέ òí ÒìPìá 6 ðäñéáñÛóáέ èÛðìéá áðù óá ðñÛáìáðá ðìò ìÛéáìá áðù óççí àέááééáóβá Ýέäìόçð òìò FreeBSD 4.4. ÓÝèìò, òí ÒìPìá 7 ðäñìòóéÛæáέ èÛðìéáð áðù ðéð èáðáðéýìóáéð ðìò èÝèìòìá íá ðÛñáé ç áíÛððòίçð óòí ìÝèèí.

2 Ç Àέááéééáóβá Àçìέìòññáβáð ìéáð èäììόçð

Ìέ ìÝáð àέäüóáéð òìò FreeBSD òðéÛ÷ñíóáέ áðù òñí -STABLE èìñìù áíÛððòίçð ðänβðìò èÛéá óÝóáññáéð ìPìáð. Ç àέááéééáóβá ðñìáðìέìáóβáð ìéáð Ýέäìόçð ìáèéñÛáé ó÷áäññ 45 ìÝñáð ðñéí óççí áíáíáññáíç çìäññçìβá Ýέäìόçð, ùðáí ì òðáyèðñìò àέäüóäùí òìò FreeBSD óðÝñíáé Ýìá àñÛìá óðéð èβóðáð òùí ðñìäñàììáðéóóðñí áέá íá ððáñèðìβóáέ óðìòð ðñìäñàììáðéóóóÝð ùðé Ý÷ìòí 15 ìÝñáð èáέññ ìá èÛñìòí ùðìéáð áέéááÝð èÝèìòí, ðñéí òí ðÛäñìá òìò èPäééá. ÌÝóá óá

áòòü òĩĩ éáénü, ðĩēēĩß ðñĩāñāñĩáòéóóŸò ēŪĩĩōĩ 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 ĩēāā ÷ ĩō ēßāēēá

ŌñēŪĩóá çĩŸñāð ðñēĩ óçĩ áĩáĩāñĩĩáĩç 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 áðēóñŸðĩĩóáē óā áòðß òçĩ ðāñßĩāĩ ðĩō áēáñēāß 15 çĩŸñāð āßĩáē:

- Āēĩñēßóāēð āñüóóßĩ ðñĩāēçĩŪðuĩ.
- Āĩçĩāñßóāēð óóçĩ ðāēĩçñßüóç.
- ĀēēááŸò ó ÷ āðēēŸò ĩā óçĩ áóðŪēāēá.
- 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 áĩáĩāñĩĩāñ ðŪĩóā ñßóēĩ.

ĪāòŪ ðēò ðñßóāð 15 ĩŸñāð ēáēóóóŸñçòçò, òðēŪ ÷ ĩāðáē ĩéá āĩēēĩáóóēēß Ÿēāĩōç áēá ĩá ÷ ñçóēĩĩðĩēçēāß óáĩ āĩēēĩß òçò ðāēēēßò Ÿēāĩōçò éáē ĩ ēßāēēáð áéóŸñ ÷ āðáē óā ĩéá ðāñßĩāĩ “ðāāßĩáóĩō”. ðēŸĩĩ āßĩáē ðĩēŸ ðēĩ āŸóēĩēĩ ĩá āßĩĩōĩ ĩŸāð áēēááŸò óòĩ óŸóóçĩá, áēóüð ēē áĩ āēĩñēßñĩōĩ ēŪðĩēĩ ðĩēŸ óĩāāñü bugß ēŪðĩēĩ ðñüāēçĩá áóóŪēāēáð. ÉáòŪ óç āēŪñēāēá òĩō ðāāßĩáóĩð 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 āāāāēüēĩŸĩ ðüð ũēā óā áðāñāßòçòá ēñĩŪóēá áēá ĩéá ðēßñç Ÿēāĩōç āßĩáē áēáēŸóēĩá.

2.2 Ēßóóā ĀēŸā ÷ ĩō òçò Ōāēēēßò ēāĩōçò

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

2.2.1 Āçĩēĩōñāßā òĩō ēĩñĩŸ ēāĩōçò

¼ðüð ðāñēāñŪōāĩá óóçĩ áéóáāñāß, ĩē ēĩñĩĩß RELENG_X_Y āßĩáē ĩéá ó ÷ āðēēŪ ĩŸā ðñĩóēßēç óóçĩ ĩāēĩāĩēĩāßā òuĩ āēäüoäßĩ ĩāð. Ōĩ ðñßōĩ āßĩá 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 áðüāñ āßĩá āßĩáē ĩá āçĩēĩōñāßóāðā ĩéá áðēēŸðā (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
```

Όçìáβùòç: *Íē ādōēēÝōāð ^{RELENG_} * āβíáē āāóíāðīÝíāð āēá ÷ ñΠόç áðũ ôĩðð CVS-meisters ēáē ôçí ñŪāā ôũí āēāũðāũí.*

Ἰ uniõ “*ἀόεεΥόα*” ἀβίαέ ι̃ι̃ι̃ι̃ε̃α̃β̃α̃ ο̃ι̃ο̃ CVS. Ὁ̃ϋ̃α̃β̃ι̃α̃έ̃ Ὑ̃ι̃α̃ ũm̃ã ο̃ι̃ο̃ ε̃α̃ε̃ι̃ñβ̃α̃ε̃ ι̃ε̃α̃ ο̃α̃ε̃α̃ε̃ñε̃ι̃Υ̃ι̃ϋ̃ Ὑ̃ε̃ãĩõς ο̃ι̃ο̃ ε̃p̃ãε̃ε̃α̃ ο̃õĩ ÷ ñũĩĩ. × ñϋ̃õε̃ĩĩõĩẽp̃ĩõãõ ἀο̃ε̃ε̃Υ̃õãõ ο̃õĩĩ δ̃ϋ̃ããb̃ĩ ε̃p̃ãε̃ε̃ã ãr̃ϋ̃ẽŨĩã ũõĩẽĩĩ õõẽŨĩãẽ ο̃õĩ ĩΥ̃ẽẽĩĩ ãẽãũõãẽd ο̃ĩõ FreeBS̃D ĩã ãñβ̃õẽãẽ ε̃ãẽ ĩã ÷ ñϋ̃õε̃ĩĩõĩẽãb̃ ãẽñẽãp̃õ õĩĩ β̃ãẽĩ ε̃p̃ãε̃ε̃ã ο̃ĩõ ÷ ñϋ̃õε̃ĩĩõĩẽp̃ẽϋ̃ẽã ãẽã õẽd ãδ̃β̃õϋ̃ĩãd ãẽãũõãẽd ο̃ϋ̃õ ḥ̃Ũããd ο̃ĩõ FreeBS̃D.

2.2.2 ÁõîÛííîáò ôíí Áñéèü êäíóçò

Ἐνεί ἰθαί ϣ ἀοέεΥόα, ἰαοάαεουοέοοάβ εάε ἀοίεἰαοόαβ ϣ οάεεβ Υέαιόρ, ὃνΥθαί ἰά αβἰἰόρ αέεαΥό οόα ὀαἵαεῸου
 ἁἡ÷ἁβἁ ἁεἁ ἰά ὀἁἡΥ÷ἰόἰ οἱἱ οὔοῸ ἁἡέἡἡ Υέαιόρὀ ἁεἁ οἱ 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** ðñÝðáē āðßöçð íá áíçíāññēāß íā òīī òùòòū āñēēìù òùī ports éáē òī ÷pñī òīō āßöēīō ðīō āðáēòāßöáē áēá òçī ÓöēēīāP òùī Ports. ÁöðÝð íē ðēçñīvññßāð òðŨñ÷īōī óóī āñ÷āßī
src/release/sysinstall/dist.c.

Áōīŷ iēēēçñùēāß ç ðñīāōīēīāóßā òçð ŋŷāð āðßóçīçð Ÿēāīōçð, ðñŸðāē íā áīçīāñþóāðā ìāñēēŪ āñ÷āßā āēā íā áīçīāñþóāðā òīī ēüōīī āēā òç ŋŷā Ÿēāīōç 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 Āçīēīōñāßā òuì Āōēēāðī òçð ēāīōçð

¼ðāí ç òāēēēß Ÿēāīōç āßīāē Ÿōīēīç, ç ðāñāēŪðū āīōīēß ēā āçīēīōñāþóāē òçī āðēēŸðā RELENG_4_8_0_RELEASE.

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

İē ððāŷēðñē òçð Ōāēīçñßùçð ēāē òuì Ports āßīāē āðōīß ðiō ðñŸðāē íā āçīēīōñāþóīōī òēð āðēēŸðāð RELEASE_4_8_0 òðā ēāðŪēēçēā āŸīōñā ðçāāßiō ēþāēēā.

İāñēēŸð òīñŸð, ìðñāß íā ÷ñāēāóðāß íā āßīōī ēŪðīēāð āēēāŸð òāēāððāßā òðēāīß ìāðŪ òçī òiðīēŸðçðç òuì āðēēāðī. ĀāīēēŪ, āāī āßīāē āŷōēīēī íā āßīāē ēŪðē òŸōīēī āōīŷ òī CVS āðēōñŸðāē íā ìāðāēēīþóāē ēŪðīēiō òēð āðēēŸðāð ìā āīōīēŸð ùððð `cvs tag -d tagname filename`. Āßīāē ðīēŷ óçīāíðēēü ùìðð āððŸð ïē āēēāŸð òçð òāēāððāßāð òðēāīþð íā óçīāēüēīŷ ìā òēð òuóðŸð āðēēŸðāð āēā òçī òðāēāñēīŸīç Ÿēāīōç. İē āðßóçīāð āēāüóāēð òiō FreeBSD ðñŸðāē íā āßīāē ðŪīðā āŷēīēī íā āíāðāñā÷ēīŷ. ŌiðēēŸð āēēāŸð òōī ðāñēāŪēēēī òiō ìç÷āīēīŷ òuì āēāüóäüì āāī āðēōñŸðīðāē.

3 İāðāāēþððēóç òçð ēāīōçð

İē “āēāüóāēð” òiō FreeBSD ìðñīŷí íā ìāðāāēüððēóðīŷí āðü ïðīēīāþðīðā Ÿ÷āē Ÿíā ó÷āðēēŪ āñþāñī ìç÷Ūīçīā ēāē ðñüóāāóç òōī repository òiō ðçāāßiō ēþāēēā. (¼ēīē Ÿ÷iōī āððß òç āðīāðüðçðā, āōīŷ ðāñŸ÷iōīā ðñüóāāóç ìŸðü āīþīðīō CVS! Āāßðā òī Āā÷āēñßāēī òiō FreeBSD āēā ðāñēóóüðāñāð ēāððñŸñāēāð.) Ç ìüīç āēāēēß āðāßðççç āßīāē íā ððŪñ÷āē òðīððñēīç òōīī ððñþīā óāð āēā òçī òððēāðß vn(4). (Ōðī -CURRENT, āððß ç òððēāðß Ÿ÷āē āíðēēāðāóðāēāß āðü òçī ŋŷā òððēāðß āßóēīō āāóēōīŸñō óā ìīþīç md(4).) Áí ç òððēāðß āāī āßīāē āíòüìāðüŸīç òðīī ððñþīā óāð, òüðā ï ēāðŪēēçēīð ïāçāüð ēā òñðüñēāß āððüìāðā üðāí āēðāēāððāß ç āíðīēß vnconfig(8) ēāðŪ òç āēŪñēāēā òçð òŪçðð òiðīēīāóßāð òiō ìŸōīō āēēßīççð. ¼ēā ðā āñāāēāßā ðiō ÷ñāēŪæīīðāē āēā íā ìāðāāēüððßðāðā ïēā Ÿēāīōç āßīāē āēāēŸðēīā óā ìññß ðçāāßiō ēþāēēā òðīī ēāðŪēīāī `src/release`. ĀððŪ ðā āñāāēāßā Ÿ÷iōī ùð òēīðü íā ðāñŸ÷iōī üðē ÷ñāēŪæīīðāē āēā íā ÷ðæīīðāē ïē āēāüóāēð òiō FreeBSD ìā Ÿíā òōīāðß ēāē òðāēāñēīŸñ òñüðī. İēā ðēþñçð Ÿēāīōç ìðñāß íā ìāðāāēüððēóðāß ÷ñçōēīðīēþīðāð āððŪ ðā āñāāēāßā ìā ïēā ēāē ìüñ āíðīēß, òðīðāñēēāìāññŸīçð ēāē òçð āçīēīōñāßāð āñüð ISO āñ÷āßiō ēāðŪēēçēī āēā íā ēāāß óā CDROM, ïē āēóēŸððāð āēēßīççð, ēāēþð ēāē ï ēāðŪēēçēīð āāēāðŪóðāóçð ìŸðü FTP. Āððß ç āíðīēß āßīāē òððēēß ç `make release`.

3.1 Ç āíðīēß `make release`

Āēā íā ìāðāāēüððßðāðā āðēðð÷þð ïēā Ÿēāīōç, ðñŸðāē ðñþðā íā ððŪñ÷iōī ðā ēāðŪēēçēā āñ÷āßā ìŸðā òðīī ēāðŪēīāī `/usr/obj`. İðñāßðā íā ðā āçīēīōñāþóāðā āßðā ìā òçī āíðīēß `make world` þ āðēŪ `make buildworld`. Āēā íā

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

- CHROOTDIR - Ì éáðÛëíáðð ðîõ èá ÷ ñçóéíðíéçéáß óáí ðáñéáÛëëí chroot áéá üëç òçí ìáðááëðððéóç òçð Ýêáîóçð.
- BUILDNAME - Õî üñíá òçð Ýêáîóçð ðîõ èá ìáðááëüðððáððá.
- CVSROOT - Ì éáðÛëíáðð óðñí ðíßí áñßóéáðáé òí CVS repository.
- RELEASETAG - Ç áðééÝðá CVS ðîõ áíóéóðíé÷-áß óóçí Ýêáîóç òçí ðíßá èÝéáðá íá ìáðááëüðððáððá.

Áí ááí Ý÷-áðá ðáç ðñüóááóç óá èÛðíéí ðíðéëü CVS repository ìá ðñí èðáééá ðîõ FreeBSD, ðíñáßðá ðÛíóá íá òðéÛíáðá 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, óðí áñ÷-áßí /usr/share/examples/cvsup/cvs-supfile, òí ðíßí ðíñáßðá íá ÷ ñçóéíðíéçéáððá áéá íá áíðéáñÛððá òí CVS repository ðîõ FreeBSD óðí áéëü óáð ðíðéëü mirror.

Áí ðáñáëáßðáðá òçí áðééÝðá RELEASETAG, ðüðá èá ìáðááëüðððéóðáß íéá ðëðñçð Ýêáîóç áðü òçí èíñðð ðîõ HEAD (áç. ðîõ -CURRENT) èíññí. Ìé áêüüóáéð ðîõ òðéÛ÷-ñíðáé áðü áððñí òñí èíññí, óðíðëðð áíáðÝññíðáé óáí “-CURRENT snapshots”.

ÕðÛñ÷-íðí éáé ðíëéÝð Ûëëáð ìáðááëçðÝð ðîõ ðíññíí íá ÷ ñçóéíðíéçééíí áéá íá ðáñáíáðñíðíéçéáððá òçí Ýêáîóç óáð. Ìé ðéí ðíëéÝð áðü áððÝð ðéð ìáðááëçðÝð ðáñéáñÛñíðáé óóçí èíñðð ðîõ áñ÷-áßíð src/release/Makefile. Ç áêñéáðð áíðíëð ðîõ ÷ ñçóéíðíéçéáððá áéá íá òðéá÷-ðáß ç áðßóçí 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 ÷ ñçóéíðíéçéáððáé áéá íá ìáðááëüðððáíðáé ìé áêüüóáéð ðíñáß íá ÷ ññéóðáß óá áñéáðÛ ìá÷-ññéóðÛ ìáðáíý ðîõð áðíáðá.

- Äçíëíðñáß áñüð éáéáññí ðáñéáÛëëíððð óá íéá ìá÷-ññéóðð éáñáñ÷-ßá éáðáëüüñí ìá òçí áíðíëð “make installworld”.
- Áíáñüáð áðü òí CVS ìéáð éáéññéáð Ýêáîóçð ðîõ ðçááßíð èðáééá ðîõ óððððíáððð, òçð ðáêñññüóçð éáé òñí ports ìÝóá óóçí éáñáñ÷-ßá éáðáëüüñí ìáðááëðððéóçð òçð Ýêáîóçð.
- Ñðëíðáéð òñí áñ÷-áßí óðñí éáðÛëíá /etc éáé /dev ìÝóá óðí ðáñéáÛëëí chroot.
- ÁéðÝéáóç òçð áíðíëðð chroot ìÝóá óóçí éáñáñ÷-ßá éáðáëüüñí ðîõ áðíéíÛóðçéá, áéá íá ìçí ðíñáß òí áñüðáñéëü ðáñéáÛëëí íá áðçñáÛóáé òç ìáðááëðððéóçð òçð Ýêáîóçð.
- ÁéðÝéáóç òçð áíðíëðð make world ìÝóá óðí ðáñéáÛëëí chroot.
- Ìáðááëðððéóç òñí áêðáëÝóéñí ðîõ áßíáé ó÷-áðééÛ ìá òí óýóðçíá Kerberos.
- Ìáðááëðððéóç ðîõ ððñðíá GENERIC.
- Äçíëíðñáß áñüð ðáéééñí éáðáëüüñí óðñí ðíßí èá ìáðááëüðððéóðííí éáé èá áðíèçéáððéñíí ìé áêðáëÝóéñí ðññóÝð òñí ðáéééðí ðáéÝðñí.
- Ìáðááëðððéóç éáé ááéáðÛóðáóç òñí áñááéáßí ðîõ ÷ ñáéÛáñíðáé áéá òçí ðñíáðíéíáðá òçð Ýêáîóçð éáé òç ìáðáðñíðð òçð ðáêñññüóçð áðü òñí ðçááßí èðáééá (SGML) óá html éáé áñ÷-áßá éáéíÝñíð ðîõ èá óðññáññíðí òçí Ýêáîóçð.
- Ìáðáðñíðð éáé ááéáðÛóðáóç òçð ðáêñññüóçð (áá÷-áéñßáéá ÷ ñððóç, áéóáññáééÛ éáßíáíá, óçíáéðáéð Ýêáîóçð, èßðáð ððíááðððçðáðð ðéééñí, èèð.)

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

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

3.2 ĩāóāāēpôóéóc òuĩ XFree86

Ōĩ āñāóēēũ ðāñēāŨēēĩ **XFree86** ābĩāē Ÿĩá óçĩáĩóēēũ 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 ÷ ñçóēĩĩðĩēĩŸóáĩ ôçĩ Ÿēāĩóç 3.x òuĩ **XFree86**. Ĩ ðēĩ āŸēĩēĩð ðñũðĩð ĩā ĩāóāāēũððóðāðā áððŸð óēð āēüüóāēð ābĩāē ĩā ÷ ñçóēĩĩðĩēĩŸóáĩ òĩ ðñũāñāĩā `src/release/scripts/X11/build_x.sh`. Áðũũ òĩ ðñũāñāĩā áðāēðāb ĩā ābĩāē pāç óçĩŸĩá óõĩ óŸóçĩŨ óáð òũũĩ òĩ ðāñēāŨēēĩ XFree86 üũĩ ēāē ç āēpóóā 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 ēáðŨēĩāĩ `XF86336` óõĩ ĩŸóĩ āāēáðŨóóáócð.

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

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

3.3 ðñĩāñŨĩĩáðā Őñbôũĩ (“ports”)

Ç Óðēēĩāp òuĩ Ports òĩō FreeBSD (<http://www.FreeBSD.org/ports>) ābĩāē ĩēā óðēēĩāp ĩā ðāñēóóũðāñā āðũ 24,000 ðñĩāñŨĩĩáðā āðũ ðñbôĩðð, ðĩō ābĩāē āēāēŸóēĩā āēā FreeBSD. ĩē ĩŨāā Āēā÷ābñēóçð òuĩ Ports `<portmgr@FreeBSD.org>` ābĩāē ððāŸððĩēē 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 ðāēŸòũĩ ĒĩāēóĩēēŸ āðũ Őñbôĩðð ([./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 āēáĩŸĩāē ēāē óā òŸóóāñā ISO āñ÷ābā ðĩō ðñpóā ðĩōēĩŸóáĩ ĩē āðāēñābāð *BSDi/Wind River Systems/FreeBSD Mall* óðēð “āðbóçĩāð” āēāmŸð CDROM ðĩō Ÿēáĩāĩ. ēŨēā Ÿĩā āðũ óā òŸóóāñā ISO āñ÷ābā ðñŸðāē ĩā ðāñēŸ÷āē Ÿĩā āñ÷ābĩ `README.TXT` ðĩō

ðǻñéǻñŨóǻé óǻ ðǻñéǻ ÷ ùǻǻǻ òĩō ǻßóèĩō, êé Ýǻǻ ǻñ ÷ ǻßĩ CDROM.INF ðĩō ðǻñéÝ ÷ ǻé ìǻóǻ-ðéçñĩōĩñßǻð ǻéǻ íǻ ìðĩñǻß òĩ ðñüǻñǻìǻ sysinstall(8) íǻ ǻéÝǻǻé éǻé íǻ ÷ ñçóéĩðĩéßóǻé ǻóòü òĩ ǻßóèĩ, éǻèð òé Ýǻǻ ǻñ ÷ ǻßĩ filename.txt ðĩō ðǻñÝ ÷ ǻé ìéǻ èßóóǻ ǻñ ÷ ǻßüĩ òĩō CDROM. Áóðß ç èßóóǻ ìðĩñǻß íǻ ǻçĩéĩñǻçéǻß ðĩéý ǻðéŨ, ùò ǻĩßð:

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

Ìé óðǻéǻèñéĩÝǻð ǻðǻéóßóǻéð ǻéǻ èŨèǻ Ýǻǻ ǻðü ǻóòŨ óǻ CD ðǻñéǻñŨĩĩóǻé ðǻñǻéŨòü:

3.4.1 ǻßóèĩò 1

Ì ðñðòĩð ǻßóèĩð ǻßǻéé ó ÷ ǻǻüĩ ǻðĩééǻéóóééŨ ǻðĩðÝéǻóĩǻ òçð ǻĩóĩéßð make release. Ìé ùĩǻð ǻééǻǻÝð ðĩō ðñÝðǻé íǻ ǻßĩĩĩ òóĩĩ éǻóŨéĩǻĩ disc1 ǻßǻéé ç ðñĩóèßéç òĩō éǻóŨéĩǻĩò tools, òüĩ **XFree86**, éǻé üóĩ òĩ ǻóĩǻóüĩ ðǻñéóóüðǻñüĩ ðǻéÝòüĩ ìðĩñĩý íǻ ÷ ùñÝóĩĩ òóĩ ǻßóèĩ. Ì éǻóŨéĩǻĩò tools ðǻñéÝ ÷ ǻé ǻñǻǻéǻǻá ðĩō ǻðéòñÝðĩĩ óǻ ÷ ñßóóǻð Ũééüĩ éǻéòĩñǻéèßĩ óóóòçĩŨòüĩ íǻ òóéŨĩĩĩ òéð ǻéóéÝóóǻð ǻéèßĩçóçð. Áóòüð ì ðñðòĩð ǻßóèĩð ðñÝðǻé íǻ òóéŨ ÷ ìǻóǻé bootable Ýóóé ðóóǻ íǻ ìðĩñĩý ìé ÷ ñßóóǻð òüĩ ùĩðÝñüĩ òðĩéĩǻéóóßĩ íǻ ǻðĩòǻýǻĩ òĩ óóŨǻéĩ ǻçĩéĩñǻßǻð òüĩ ǻéóéǻóóßĩ ǻéèßĩçóçð.

ǻĩ ìéǻ ǻéǻóĩñǻðéèß Ýéǻĩóç òüĩ XFree86 éǻ ǻéǻĩÝǻǻóǻé ìǻ òçĩ Ýéǻĩóç ǻóòß, ðñÝðǻé íǻ ǻçĩǻñüèǻß òĩ ðñüǻñǻìǻ sysinstall(8) ǻéǻ òçĩ ìÝǻ èÝóç éǻé ìé ìǻçǻßǻð ǻǻéǻóŨóóǻóçð. Ì ó ÷ ǻðééüð èßǻééǻð òðŨñ ÷ ǻé óóĩĩ éǻóŨéĩǻĩ src/release/sysinstall òóĩĩ -STABLE èĩñü ð óóĩĩ éǻóŨéĩǻĩ src/usr.sbin/sysinstall òóĩĩ -CURRENT èĩñü. ÓóǻéǻèñéĩÝǻǻ, óǻ ǻñ ÷ ǻßǻ dist.c, menus.c, éǻé config.c éǻ ÷ ñǻéǻóóǻß íǻ ǻçĩǻñüèĩý.

3.4.2 ǻßóèĩò 2

Ì ǻǻýðǻñĩð ǻßóèĩð ǻßǻéé ǻðßóçð ǻðĩðÝéǻóĩǻ òçð ǻĩóĩéßð make release éǻóŨ Ýǻǻ ìǻǻŨéĩ ìÝñĩð. Áóòüð ì ǻßóèĩð ðǻñéÝ ÷ ǻé Ýǻǻ “live filesystem” ðĩō ìðĩñǻß íǻ ÷ ñçóéĩðĩéçéǻß ǻðü òĩ sysinstall(8) ǻéǻ íǻ ǻĩǻóǻóóĩý ðñĩǻéßĩǻóǻ óǻ ìéǻ ǻǻéǻóŨóóǻóç òĩō FreeBSD. Èé ǻóòüð ì ǻßóèĩð ðñÝðǻé íǻ ǻßǻéé bootable. Èǻ ðñÝðǻé ǻðßóçð íǻ ðǻñéÝ ÷ ǻé Ýǻǻ óóĩðéǻóĩÝĩ ǻĩóßǻñǻóĩ òĩō CVS repository óóĩĩ éǻóŨéĩǻĩ CVSROOT éǻé ǻǻǻǻǻóǻ ǻðü ǻìðĩñééŨ ðñĩǻñŨĩǻóǻ óóĩĩ éǻóŨéĩǻĩ commerce.

3.4.3 ǻßóèĩé 3 éǻé 4

Ìé òðüéĩéðĩé ǻòĩ ǻßóèĩé ðǻñéÝ ÷ ìĩĩ ǻðéðñüóéǻóǻ ðǻéÝóǻ éĩǻéóĩééý ǻéǻ òĩ FreeBSD. Óǻ ðǻéÝóǻ éǻ ðñÝðǻé íǻ ǻßǻé ñǻǻĩðĩéçĩÝǻǻ, Ýóóé ðóóǻ èŨèǻ ðǻéÝòĩ íǻ ǻßǻéé óóĩĩ ðǻéĩ ǻßóèĩ ìǻ üéǻ óǻ ðǻéÝóǻ ǻðü óǻ ìðĩßǻ ǻĩǻñðŨóǻé ǻéǻ íǻ ǻǻéǻóóóǻéǻ éǻé íǻ òñÝĩǻé. ðǻñéóóüðǻñǻð ðéçñĩōĩñßǻð ǻéǻ òçĩ ǻçĩéĩñǻßǻ ǻóòßĩ òüĩ ǻßóèüĩ ǻĩǻóÝñĩĩóǻé óóĩĩ Ũñèñĩ Ç ÎñǻŨñóç éǻĩóçð òüĩ ðǻéÝòüĩ Éĩǻéóĩééý ǻðü Òñßòĩòð (../releng-packages/article.html).

4 ǻéǻĩñß òüĩ Áêüüóǻùí

4.1 ǻĩððçñǻðçðÝð FTP

¼óǻĩ ç Ýéǻĩóç ǻßǻéé Ýóĩéĩç, Ý ÷ ǻé ǻĩééĩǻóóǻß ǻéóǻĩðð, éǻé Ý ÷ ǻé ðǻéǻóǻñéóóǻß ǻéǻ ǻéǻĩñß, ì éýñéĩð FTP ǻĩððçñǻðçðð ðñÝðǻé íǻ ǻçĩǻñüèǻß. Ìé ǻðßóçĩé ǻĩððçñǻðçðÝð FTP òĩō FreeBSD ǻßǻéé üéé mirrors ǻĩüð éýñéĩð ǻĩððçñǻðçðß óóĩĩ ìðĩßĩ Ý ÷ ìĩĩ ðñüóǻǻóç ùüĩ Ũééé FTP ǻĩððçñǻðçðÝð. Áóòüð ì ǻĩððçñǻðçðð ǻßǻéé ǻĩüóóüð ùò ftp-master. ¼óǻĩ ç Ýéǻĩóç ǻßǻéé Ýóĩéĩç, ðñÝðǻé íǻ ǻçĩǻñüèĩý óǻ ðǻñǻéŨòü ǻñ ÷ ǻßǻ óóĩĩ 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 éadóUetairō ádu ōir īdīBī īdīnīrī íá āBīrōī āāēáoáóóUōáoē īYóu FTP, ūduō ōir Y÷āē dñīāōīēīUōāē ç āfōīēP make release.

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

¼ëá ôá ðñĩĩãôããëùôôéóìÝíá 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 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 ÷ âêéÛ ã ôçĩ ãñãÛĩúôç òĩ mirror áéáñĩðò FTP ôĩò FreeBSD, άάñáéáēρ áåßôå ôĩ Ûñēñĩ ÖêéÛ ÷ ãĩĩôåò Ýía FreeBSD mirror (../hubs/).

Ιδιόηα ία δ'Υηάε αηέαοΎο ηηαο αδύ όςί όόέαη δ'ιρ έα αίςηαήηεαβ ί ftp-master ιΎ÷ ηέ ία αίςηαήηεήήί όόςί δεαέιθςόβα όιόδ όά δ'ηηόιρ αδεδΎαίρ FTP mirror ία όςί ιΎά Ύεαίρς. ΆδεάΥεεαόάε ιε δδ'αγέοήε Ύεαίρςόδ ία όόίάήήήήήήί ία όςί ςέαέοήήήήέβ έβόόά όυί mirror sites όιρ FreeBSD (<http://lists.FreeBSD.org/mailman/listinfo/freebsd-hubs>) δ'ηέί άάέιέήήόιόι όςί αάίέέβ αέάέαόέιυόςόά όςδ ιΎάό Ύεαίρςόδ όόιόδ αίρδςήαόςόΎό FTP.

4.2 Àíáðáñáñùã òùí CD-ROM

Ἐὰ σοὶ δὲ ἔχνη δὲ ἄβ οὐ γινώσκω: Ὁμοίαν δὲ ἔσθ' ὅτι ἀδελφὸν ἐπὶ οὐκ ISO ἀντὶ τοῦτο FreeBSD οὐκ εὐδοκίαν δὲ τοῦ ἰδιωτῆρος ἵνα ἐπιβλέψω
ἰατρὸν ἐπὶ ἀνὰ δὲ ἀνὰ δὲ, ἐὰν ἵδῃ ὅτι ἀντὶ τοῦτο δὲ τοῦ ἰδιωτῆρος ἵνα ἀντιβλέψω.

5 Åđăêôáóéìüôçôá

[illegible]

5.1 Äçĭēĭōñāßá ÐñĭóáñĭōĭŸĭñĭ Āéóēāōōþĭ Āēēßĭçóçð.

ÐĭēēŸð āēēāóáóōŨóāēð Ÿ÷ĭōĭ ðĭēŸðēĭēāð áðāēðþóāēð ðĭō ĭðĭñāß ĭā òç óāēñŨ ðĭōð ĭá áðāēðĭŸĭ òçĭ ðñĭóēþēç ðñāēóóóūðāñĭ ĭāçāþĭ Þ āñāāēāßñĭ ÷ñþóçç òóēð āēóēŸððāð āāēāðŨóóáçðð. Ĩ “ĭðāēŨēēēĭð” òññðĭð ĭá ðĭ ēŨĭāðā áððū āßĭáē ĭá ēŨĭāðā òēð āēēāŸð óāð óðĭĭ ēāðŨēĭāĭ ðĭō Ÿ÷āē āðĭēĭŨóāē ĭāðŨ ðĭ òŸēĭð òçð ç āēāāēēāóßá make release:

- ÐāñŨóðā òá patches óāð Þ ðñĭóēŸððā òá āðēðēŸĭĭ āñ÷āßá ĭŸóá óðĭĭ ēāðŨēĭāĭ chroot òçð Ÿēāĭóçð.
- `rm ${CHROOTDIR}/usr/obj/usr/src/release/release.[59]`
- ĭāðāāēñððóðā ðŨēē òĭ sysinstall(8), ðĭĭ ðñþĭá, Þ ũðĭēā Ũēēā ðñĭāñŨñāðā Ÿ÷ĭōĭ āðçñāāóðāß áðū òēð āēēāŸð óāð.
- `chroot ${CHROOTDIR} ./mk floppies`

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

ĀĭāēēāēðēēŨ, ĭðĭñāßðā ĭá ÷ñçóēĭĭðĭēþóāðā ðĭ make target boot.flp, Þ ĭðĭñāßðā ĭá ðñŸĭāðā áðāðēāßāð òĭ script ðĭō äçĭēĭōñāßá òá òðððĭāðā āñ÷āßñĭ src/release/scripts/doFS.sh.

ĭðĭñāßðā āðßóçð ĭá ēāñĭßóðāð þóðā āēēŸð óāð āēēāŸð ĭá ðñāāóðĭŸĭ ĭā ĭññðþ patch óçĭ Ÿēāĭóç ũðñð ēā òēēŨ÷ĭāðāē, āßñĭðāð òēĭþ óçĭ ĭāðāāēçðþ LOCAL_PATCH ũðāĭ ðñŸĭāðā òçĭ āĭðĭēþ make release.

5.2 Ðñĭāñāĭāðßæĭĭóāð òĭ sysinstall

Ōĭ āñāāēāßĭ āāēāðŨóóáçðð ēāē ñŸēĭóçðð òĭō FreeBSD, òĭ sysinstall(8), ĭðĭñāß ĭá ðñĭāñāĭāðēóðāß āēā ĭá ēŨĭāē ðēĭ āŸēĭēāð òēð áððñāðĭðĭēçĭŸĭāð āāēāðáóðŨóāēð òá ðĭēēŨ ĭç÷āĭþĭāðā. Áððū ðĭ ÷āñāēðçñēóðēēñ ðĭō ðñĭāñŨñāðĭð ĭðĭñāß ĭá ÷ñçóēĭĭðĭēçēāß òá òðĭāðóáðñĭ ĭā ðĭ PXE[13] òçð Intel āēā ĭá ĭāēēĭþóāē ç āāēāðŨóóáçðð áðū ðĭ āßēððĭ, Þ òá òðĭāðóáðñĭ ĭā ðñĭóáñĭŸĭŸĭāð āēóēŸððāð āēēßĭçóçðð ēē Ÿĭā sysinstall script. ĭá ðāñŨāāēāĭā áðū òŸðĭēĭ sysinstall script ĭðĭñāßðā ĭá āñāßðā òðĭ āñ÷āßñĭ src/release/sysinstall/install.cfg.

6 ĭāēþĭāðā ðĭō Ðþñāĭā áðū òçĭ êäĭóç 4.4 òĭō FreeBSD

Ç āēāāēēāóßá āðĭēĭāðāð òçð Ÿēāĭóçð 4.4 òĭō FreeBSD ĭāēßĭçóçā āðßóçĭā òçĭ ĭç ÁðāĭŸóðĭð 2001. ĭāðŨ áðū áððþ òçĭ çĭāññĭçĭá, ũēāð ĭē āēēāŸð òðĭĭ ēĭñĭñ RELENG_4 òĭō FreeBSD Ÿðñāðā ĭá Ÿ÷ĭōĭ Ÿāēñēóç áðū òçĭ ĨŨāā ĨñāŨñóçð ðñĭ Āēäüóäñĭ <re@FreeBSD.org>. Ç ðñþçç āĭēēĭāóðēēþ Ÿēāĭóç āēā òçĭ āñ÷ēðāēðĭēēþ x86 Ÿāēĭā āēāēŸóēĭç òóēð 16 ÁðāĭŸóðĭð, ēē āēĭēĭðēþēçēā áðū 4 áēñĭā āĭēēĭāóðēēŸð āēäñóāēð ðĭō ĭāþāçóāĭ óçĭ òāēēēþ Ÿēāĭóç òóēð 18 ðĭō ÓāððŸĭāñç. Ĩ òðāŸēðñð áóðŨēāēāð Ÿðāēĭā óçĭāĭðēēñ ññēĭ ēāðŨ òçĭ āēŨñēāēā òçð òāēāððāßāð āāāñŨāāð ēāēþð ēŨðĭēā ðñĭāēþĭāðā áóðŨēāēāð āñŸēçēāĭ òá ðñĭçāĭŸĭāĭāð, āĭēēĭāóðēēŸð āēäñóāēð. ÓðñĭēēŨ, ðŨĭñ áðū 500 email óðŨēçēāĭ óçĭ ĨŨāā ĨñāŨñóçð ðñĭ Āēäüóäñĭ <re@FreeBSD.org> òá āēŨóçĭā ĭēēññðāñĭ áðū Ÿĭā ĭþĭā.

Ç ēĭēĭñðçðā ðñĭ ÷ñçóðþĭ ĭāð Ÿēāĭā óāðŸð ũðē ç áóðŨēāēā ēāē ç óðāēāñññðçðā ĭēāð Ÿēāĭóçð āāĭ ēŨ ðñāðā ĭá ēððēŨæāðāē āēā ēāĭāññð āßāñð ðñĭēāðĭßāð Þ çĭāññĭçĭáðð ðĭō Ÿ÷ĭōĭ òāēāß óāĭ òðñ÷ĭē áðū ðñēĭ. Ōĭ FreeBSD Ÿ÷āē ĭāāāēþóāē āñāĭāðēēŨ ēāðŨ òç āēŨñēāēā òçð æñþð ðĭō óāĭ óŸóçĭā, ēāē ç āĭŨāēç āēā óðāēāñēĭŸĭç ðĭēðēēþ ēāē ĭñāŨñóçç āēā òçĭ äçĭēĭōñāßá ĭŸñĭ āēäñóäñĭ āßĭāē ðēŸĭĭ óāĭāñþ ðñāēóóóūðāñĭ áðū ðĭōŸ. Áððþ ç āĭŨāēç ēā āßĭāē áēñĭā ðēĭ óçĭāĭðēēþ ēāēþð òĭ FreeBSD ēā āñ÷āßāē ĭá ĭāðāŸŸñāðāē òá ĭŸāð ðēāðñññāð.

7 ÎáëïíîëéÝò Êáôáðëýíóáëò

Ãßíáë æüðëëðò óçíáóßáð ïë ðñáëðëéÝò éáë ç ïñÃÛîóç òçð ãéááëéáóßáð äçíëíðñáð òùí áêäüóäùí íáð íá óðíááßæíðí íá òçí óðíá÷ð ðóíáíùíáíç áÛóç òùí ÷ñçóðíí íáð. Ìá áÛóç áððð òç óëÝðç áñááæüíáóðá ðëëçñÛ áéá íá ðáëíçñëðóíðíá òçí áéááëéáóßá ðáñááüñðò òùí áêäüóäùí òîõ FreeBSD.

- *ÐáñÛëëççç áëðÝéáóç* - ÌáñéëÛ ïÝñç òçð ïáðááëðððëóçð ïéáð ááëáðÛóðáóçð ïðñíýí íá áßíðí “ðñëý ðáñÛëëçççá”. Óá ðëí ðñëëÛ áðü ðá óðÛáéá áßíáë I/O intensive, ïðüðá ç ýðáñíç ðñëëðí ððçëðð-ðá÷-ýðçðáð áßóëùí áßíáë ðëí óçíáíðëëð áðü òçíí ÷ñðç ðñëëðí áðáíáñáóðíí áéá íá áðëóá÷ðíëáß ëÛðüð ç áéááëéáóßá ðîõ make release. Áí áéáóñíáðëëëß áßóëíë ÷ñçóëíðñëççýíí áéá ðíðíáðá òçð éáñáñ÷ðáð ðîõ chroot(2) ðáñéáÛëëíððò, ðüðá ðí CVS checkout òùí éáðáëüüí ports éáë doc ïðñíáß íá áßíáë ðáððü÷ñííá íá òçí áñðíëð make world óðíí Ûëëí áßóëí. ×ñçóëíðñëðíóáð ïéá RAID ëýóç (hardware ð software) ïðñíáß íá ïáëðóáë áñáóóëëÛ ðñí óðñíëëü ÷ññí ðîõ ÷ñáëÛáðáë íá ïáðááëüððëóóáß ïéá ðëðñçð Ýëáíóç.
- *Ïáðááëðððëóç áêäüóäùí áéá áéáóñíáðëéÝò áñ÷éðáëðñíëéÝò* - ÈÝëáðá íá ïáðááëüððßóáðá ïéá Ýëáíóç áéá IA-64 ð Alpha óá ëÛðíëíí x86 áðáíáñáóðð? make TARGET=ia64 release.
- *ÁñëëíÝð áéá ëÛëç* - ×ñáéáæüíáóðá éáëýðáñá áñááëáßá áéá áððüíáðí Ýëáñ÷í ïñëüðçðáð óðí FreeBSD.
- *Áñááëáßá ÁáëáðÛóðáóçð* - Õí ðñüáñáñÛ íáð áéá òçí ááëáðÛóðáóç ðîõ FreeBSD Ý÷áë ïáðáñÛóáë ðñí ðñëëý ðñí áíáíáñíáñ ÷ññí æüðò ðîõ. ÕðÛñ÷íðí áëÛíñáð ïñÛáð ðîõ áñáÛáííóáë áéá íá ðëíðñëðóíðí ëÛðíëí Ûëëí, ðëí ïñóÝñí íç÷áíëüí ááëáðÛóðáóçð. Ìéá áðü ðëð ðëí ððíó÷üíáíáð, áßíáë ç ïñÛá libh[5] ðîõ óðí÷áýáë òçí ðëíðñçç ðñüð Ýíððñí, íÝíò ðñüðíð ðáëáðáñßóíáðíð ëñáéóíëéý éáë áñüð GUI ðñíáñÛíáðíð ááëáðÛóðáóçð.

8 Áð÷áñéóðßáð

Èá ðëáéá íá áð÷áñéóðßáð ðñí Jordan Hubbard, ðîõ ïñó Ýäüóá òçí áðëáëñßá íá ðÛñü ëÛðíéá áðü òçí áðëýíç òçð Ýëáíóçð 4.4 ðîõ FreeBSD, éáëðò éáë áéá ïëç òçí áñóëáëÛ ðîõ Ý÷áë ëÛíáë ááð éáë ÷ññíéá áéá íá áßíáë ðí FreeBSD áððü ðîõ áßíáë óðíáñá. ÕóóëëÛ, ç Ýëáíóç ááí éá ðóáí ðñóÝ áðíáðí íá ïëíëçññüëáß ÷ññðò ïëç òçí ó÷áðëëð ïá òçí Ýëáíóç áñóëáëÛ ðîõ Ýéáíáí ïë 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> éáë ïëíë ïë ððñíëéðíë ðîõ áð÷áñíýíóáë ïá òçí áñÛððíç ðîõ FreeBSD. ÈÝëü áðßóçð íá áð÷áñéóðßáð ðîõð Rodney Grimes <rgrimes@FreeBSD.org>, Poul-Henning Kamp <phk@FreeBSD.org>, éáë ïëíðð ðîõð Ûëëíðð ðîõ áñáÛóççáí áéá íá ððëÛñíðí óá áñááëáßá áéá ðëð áêäüóáëð óóëð ðñðáð ïÝñáð òçð äçíëíðñáð ðîõ FreeBSD. Áððü ðí Ûñëñí Ý÷áë áðçñááóðáß áðü éáßíáíá ó÷áðëëÛ ïá òçí ïñÃÛîóç òùí áêäüóäùí áðü ðí CSRG[14], òçí ïñÛá ðîõ NetBSD[11], éáë òçí ðñüðáóç áéá íéá áéááëéáóßá ïñÃÛîóçð òùí áêäüóäùí 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
- [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>)