

Ἀέαιῦñöùόç Ἀδῖεçêãðôéêπί ἸΎούι ἁέα ×ñÞόç ìå ôῖ FreeBSD

ἰάò óýíôῖῖῖò ἰäçãüò

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Ôῖ FreeBSD ἁβῖάé Ἰά éáôῖ÷ðñùῖḂῖ ἁἰðῖñéêῦ óýἰἁῖῖ ὀῖò FreeBSD Foundation.
ἰé èḂἰἁéò lomega, Zip, éáé Jaz ἁβῖάé ἁβòἁ éáôῖ÷ðñùῖḂῖ ἁἰðῖñéêῦ óýἰἁῖῖἁ Þ ἁἰðῖñéêῦ óýἰἁῖῖἁ ὀçò
lomega Corporation ὀéò ÇῖῖῖḂῖἁò Ðῖῖéòἁβἁò Þ/éáé ὀἁ ῰ῖῖἁò ÷þñḂḂḂ.
ἰé èḂἰἁéò Motif, OSF/1, éáé UNIX ἁβῖάé éáôῖ÷ðñùῖḂῖ ἁἰðῖñéêῦ óýἰἁῖῖἁ éáé ἰé èḂἰἁéò Þ ðñ῰ḂḂḂ IT
DialTone éáé The Open Group ἁβῖάé ἁἰðῖñéêῦ óýἰἁῖῖἁ ὀῖò The Open Group ὀéò ÇῖῖῖḂῖἁò Ðῖῖéòἁβἁò
éáé ὀἁ ῰ῖῖἁò ÷þñḂḂḂ.
ÐῖῖéḂḂḂ ἁðῦ ὀéò èḂἰἁéò Þ ðñ῰ḂḂḂ ἰé ἰðῖβἁò ÷ñçóéῖἰðῖῖḂῖḂḂḂ ἁðῦ ὀῖò éἁὀἁὀéἁὀἁὀḂḂḂ ὀ ὀῖò
ðῦῖçòḂḂḂ ὀῖò ἁéἁ ἰἁ ἁéἁḂḂḂḂḂ ὀἁ ðñῖῖῖḂḂḂ ὀῖò éἁῦñῖḂḂḂḂ ἁἰðῖñéêῦ óýἰἁῖῖἁ. ¼ðῖò ἁὀḂḂḂ
ἁἰὀἁἰβḂḂḂḂ ὀἁ ἁὀḂḂ ὀἁ ἁἁἁἁἁἁ éáé ἁéἁ ῰ḂḂ ἁðῦ ἁὀḂḂḂ ἁἰῦñḂḂḂ Ḃ ἰῖḂḂ Ἀἰ῰ðὀḂḂḂ ὀῖò FreeBSD ῰ḂḂ
ἁβῖάé ðéἁἁἰῖ ἰἁ ἁβῖάé ἁἰðῖñéêῦ óýἰἁῖῖἁ, éἁ ἁἁβḂḂ Ἰἁ ἁðῦ ὀἁ óýἰἁῖῖἁ: “TM” Þ “®”.

Ôῖ ðḂḂῖ ḂἁḂḂḂ ðḂḂḂḂḂḂḂ ḂḂ ἰἁ èῦḂḂḂ ὀἁ ðῖβἁḂḂ (slices), èḂἁḂḂḂḂḂḂḂ (partition) éáé
ῖñḂḂḂḂḂḂḂḂ (format/ἁéἁἰῦñöùόç) ὀῖḂḂḂḂḂ ἁβὀῖḂḂ éáé ðḂḂḂḂḂ ἰḂḂ ḂḂḂḂḂḂḂḂ ἁéἁ ÷ñÞόç ἰἁ ὀἁ
FreeBSD. Ôἁ ðḂḂḂḂḂḂḂḂ ḂḂḂḂḂḂḂ ὀἁ FreeBSD 2.2 ἁῖḂḂ ḂḂḂḂḂ ḂḂḂḂḂḂḂ éáé ὀḂḂḂ ῰ῖῖḂḂḂ
ἁῖḂḂḂḂḂ. Ôἁ ἁἁḂḂḂ ḂḂḂḂḂ ḂḂḂḂḂ ἁῖḂḂḂḂḂ ἁῖḂḂḂḂḂ 4 ὀῖò FreeBSD.

1 ἈéḂḂḂḂḂ éáé ἰñéḂḂḂ

1.1 ἈἁῖḂḂḂ

Ôἁ ἰἁ ðñḂḂḂḂḂḂ ἁβὀῖḂḂ ἰἁ ἁðḂḂ÷βἁ ὀἁ ḂḂ ὀðḂḂ÷ῖ ὀýὀḂḂḂ ἁβῖάé ÷ḂḂḂḂḂḂḂḂḂ ἁḂḂ ḂḂḂḂḂḂ ἁéἁ÷ἁḂḂḂḂḂ
ὀὀὀḂḂḂḂḂ. Ôἁ èῦḂḂḂ, ὀἁ èḂḂḂḂḂḂḂ éáé ç ðñḂḂḂḂḂ ἁβὀῖḂ ἁðḂḂḂḂ éἁἁḂḂḂḂ ᰇñḂḂḂ÷Þ éáé ὀḂḂḂ ὀýἰḂḂḂ ἁἰḂḂḂ.
ἰἁ ðḂḂḂḂ èḂḂḂ ἰðḂḂḂ ἰἁ ḂḂḂḂḂḂḂ ḂḂḂ ῖḂḂḂḂḂ ἁβὀῖ ὀἁ ḂḂḂḂḂḂḂḂḂ. ἈὀḂḂ ὀἁ ḂḂḂḂḂ ḂḂḂḂḂḂ ῰ò
ðñḂḂḂḂḂḂ ἰἁ ἁðῖḂḂḂḂḂ ç ἁéἁἁḂḂḂḂ éáé ἰἁ ἁðḂḂḂ÷ḂḂḂ ἁὀḂ÷βἁḂḂ. ἈὀḂḂ÷βḂ, ἁἁἁḂḂḂḂ ὀðḂḂ÷ḂḂḂḂ
ḂḂḂḂḂḂḂ (èḂḂḂḂ ὀῖò sysinstall), ὀḂḂḂ ᰇñḂḂḂḂḂ ἁῖḂḂḂḂḂ ὀῖò FreeBSD, ḂḂḂḂ ḂḂḂḂḂḂḂ ὀçῖ ἁéἁἁḂḂḂḂḂ.

ÔðḂḂḂ÷ḂḂ ἁḂḂ ᰇḂḂḂḂ ᰇñḂḂḂ (modes) ῖñḂḂḂḂḂḂḂḂ:

- **οἰαάοP εἰεοἰοῖαβᾶ (compatibility mode):** Ἀεάλυνθούος οἰο ἁβόεἰο πῶα ιά Y ÷ ἀέ Yἱά ὀβῖαά οἰΠῖαοῖ (slice table) ἐάε ιά ἰδιῖαβ ιά ÷ ñçóεἰἰδιεεᾶβ ὀάνῤεεεᾶ ἀδῦ ῤεᾶ εἰεοἰοῖαεῤ ὁῶοὀΠῖαοᾶ.
- **ἀδιεεἰεοόεεP εἰεοἰοῖαβᾶ (dedicated mode),** ἰἀεῖYδ οἰῖYδ εYᾶαοᾶε ἐάε ἀδεῖβῖαοῖᾶ ἀδιεεἰεοόεεP εἰεοἰοῖαβᾶ: Ἀεάλυνθούος ἀῖο ἁβόεἰο ÷ ῖῖῖὀ ὀβῖαά partitions. Ἀδῦ εῤῖᾶε ὀçἱ ἀεἰεἰεᾶοᾶ ὀç ὀῖῖεᾶοç ἁβόεἰο ἁεἰεῖῖοᾶῖ ἀεῤ Yἱά ιç-FreeBSD εἰεοἰοῖαεῖ οYόὀçἱ ὀεἰᾶῖῖ ιά ιç ἰδιῖαβ ιά ἀε οἱ ἁβόεἰ. Ç Yεοῖαὀç ἀδεῖβῖαοῖᾶ ἀἱὀYῖᾶὀᾶ ὀῖῖ εἰῖᾶὀἱ οἰο ῖὀε οἱ οYόὀçἱ ἰδιῖαβ ιά ιçἱ ἀἱᾶῖῖῖὀᾶ Yἱᾶἱ ἁβόεἰ ῖῖῖὀἰεçἱYἱἱ ἐᾶδ* ἀὀῖῖ οἱ ὀῖῖὀ.

Ὀὀεὀ ὀᾶῖεοῖὀᾶῖὀ ὀᾶῖὀὀὀᾶὀ ὀ ἀδιεεἰεοόεεP εἰεοἰοῖαβᾶ ἁβῖᾶε ι ἀεἰεῖῖοᾶῖὀ ὀῖῖὀὀ ιά ὀçεᾶβ ἐάε ιά ÷ ñçóεἰἰδιεεᾶβ ὀᾶ ὀὀῤ ÷ ῖὀᾶ ὀὀὀΠῖαοᾶ, ἁὀῖῖ Yἱᾶ ὀεἰῖῖᾶεἰὀ ἁβόεἰο ὀἱPεὀ ὀῖῖῖῖᾶὀᾶε ῖῖῖ ἁεἱ οἱ FreeBSD. ὀᾶῖῖὀ ὀἱ ὀ ὀἱᾶὀP εἰεοἰοῖαβᾶ ἀεἰὀᾶεᾶᾶε ιYᾶεὀç ἀεἰεἰεοἰοῖαεῖὀçὀᾶ (interoperability) ιᾶ ἰᾶεἰἱὀεῖYδ ἰᾶἰὀὀὀὀὀὀᾶὀ, ἁβῖᾶε ὀεἱ ὀεYὀὀεç.

ὀYῖᾶ ἀδῦ ὀçἱ ἀδεῖᾶP ὀῖῖὀὀ εἰεοἰοῖαβᾶὀ ὀὀῤ ÷ ῖὀἱ ἁYἱ ιYῖᾶἱε ὀçὀὀὀᾶὀὀ οἰο ἁβόεἰο. Ἰ ὀῖὀὀ ÷ ñçóεἰἰδιεᾶβ οἱ ἰᾶἰᾶεᾶἱ ἰᾶἰὀὀὀὀὀ ὀἱ ὀὀὀΠῖαοὀ /stand/sysinstall. Ἀδῦ οἱ 2.1.7-RELEASE ἐάε ἰὀὀ ὀ sysinstall ἀεἰὀὀᾶβ οἱ ὀὀὀἱ ὀῖῖ ἁβόεἰ ἰὀᾶεᾶP ἀδεὀῖYὀᾶε ὀçἱ ἀὀὀᾶᾶὀ ἀεἰᾶP ὀἱ label (ὀβὀεἰο) ἐάε ὀᾶ ὀἰΠῖαοᾶ (partitions) ὀῖῖ ἁβόεἰ. ἈδεὀYἱ ὀᾶ ἰὀὀὀYὀᾶε ιά ἀδιεεἰεᾶYὀᾶ ὀεὀ ἀεἰᾶYδ ῖῖῖ ὀἱ ὀᾶἰᾶἰᾶYἱἱ ἁβόεἰ ÷ ῖῖὀ ιά ἰὀçῖᾶῤᾶε ὀἱὀ ὀὀῖὀὀὀὀ. Ἰ ἰᾶYὀᾶῖὀ ὀῖῖὀὀ ἁβῖᾶε ιά ἀεὀᾶYὀᾶὀ ἁεῤῖῖᾶ ἰᾶὀῖYδ ιᾶ οἱ ÷ Yῖᾶ ἁὀ ὀçἱ ἰᾶῖὀἱ ἰὀ root. Ἀἱ ἀδεῖYἱὀᾶ ὀçἱ ἀδιεεἰεοόεεP εἰεοἰοῖαβᾶ ÷ ῖᾶεῤᾶὀ ιά ἀεὀᾶYὀᾶὀ ῖῖῖ 2-3 ἰᾶὀῖYδ ἰᾶἱ ιᾶ οἱ sysinstall ὀῖYὀᾶ ἰὀὀYὀᾶὀ εἰᾶῤᾶ ὀᾶᾶὀῤ.

1.2 ἰῖεοἱῖ

Ç ἀεἱ ÷ ἁβῖὀç ἁβόεἰῖ ὀἱ UNIX® Y ÷ ἀε ἰὀᾶε ιYᾶ Yἱἱἱᾶ ὀᾶ ὀὀῤ ÷ ῖὀὀᾶ εYἱᾶὀ. Ὀἱ ὀᾶᾶεῤὀ ἰᾶἱεῖᾶεἱ ἰᾶçᾶᾶ ὀçἱ ἰῖῖᾶᾶ ὀἱ ÷ ñçóεἰἰδιεἱYἱ ὀᾶ ἀὀὀ οἱ ἐᾶἱᾶἱ ἐάε ὀἱ FreeBSD ἰᾶἱἱὀ (ὀῖῖὀᾶἱὀ).

- **οἰᾶᾶὀP εἰεοἰοῖαβᾶ (compatibility mode):** ç ἀεάλυνθούος οἰο ἁβόεἰο πῶα ιά Y ÷ ἀέ Yἱᾶ ὀβῖᾶά οἰΠῖαοῖ (slice table) ἐάε ιά ἰδιῖαβ ιά ÷ ñçóεἰἰδιεεᾶβ ὀάνῤεεεᾶ ιᾶ ῤεᾶ εἰεοἰοῖαεῤ ὁῶοὀΠῖαοᾶ. Ἀἱὀᾶὀ ὀç ὀδιεεἰεοόεεP εἰεοἰοῖαβᾶ.
- **(ἀδεῖβῖαοῖᾶ) ἀδιεεἰεοόεεP εἰεοἰοῖαβᾶ:** ç ἀεάλυνθούος οἰο ἁβόεἰο ἐᾶὀ ὀYὀἱἱῖ ὀῖῖὀὀ πῶα ιά ιçἱ ὀᾶῖY ÷ ἀέ ὀβῖᾶά ὀçἱὀὀῖ (slice table). Ἀβῖᾶε ὀεἱ ἁYῖῖç ἀεἰᾶεἰᾶὀ ἁεῤ ι ἁβόεἰο ἰδιῖαβ ιά ιç ἰὀᾶᾶ ὀᾶ ιç-FreeBSD εἰεοἰοῖαεῤ ὁῶοὀΠῖαοᾶ. Ἀἱὀᾶὀ ὀç ὀἱᾶὀP εἰεοἰοῖαβᾶ.
- **ἁβόεἰο:** Ἰε ὀεεçῖῖᾶ ἁβόἱἱ, ὀᾶ CDROM, ἱε ἰᾶἰçὀἱ-ἰὀὀεYδ ὀὀὀᾶὀYδ ἐάε ὀᾶ ὀᾶἰῖῖἱᾶἱ ιYὀᾶ Zip®/Jaz® ἁβῖᾶε ἰᾶῖὀYδ ἀδῦ ὀεὀ ὀὀὀᾶὀYδ ἰᾶἰὀὀ ὀδιεPᾶὀὀç ἰᾶῖὀYἱὀ ὀἱ ÷ ñçóεἰἰδιεἱYὀᾶ ὀἰᾶᾶ. Ç ἰᾶὀὀP ἰᾶ ÷ P εἰεοἰοῖαβᾶ ἰὀὀἱ ὀῖῖ ιYὀῖ ὀδιεPᾶὀὀç Yἱᾶ P ὀᾶῖὀὀὀᾶῖ ἁβόἱἱ ἱε ἰὀἱἱἱ ὀᾶῖὀὀYὀἱὀᾶ ἀδῦ Yἱᾶ ῖὀYῖ, ἰᾶἱ ἱεᾶ ἐᾶὀᾶP ἐἱᾶὀᾶ ὀᾶ Yἱᾶ ῖῖὀὀὀὀ ὀῤῖὀ ὀçἱ ἁεὀἱᾶ ὀἱ ἁβόεἰο ἐάε ἀεἰᾶῤᾶε ἀδῦ οἱ ἁβόεἰ P ἰᾶὀὀᾶ ἰᾶῖὀYἱ ὀᾶ ἀὀὀῖ. Ὀἱ ἰᾶὀὀἱ ἁβῖᾶὀε ιᾶ ἰᾶὀᾶἱP εῤὀἱὀ ὀὀὀἱY ÷ ἰᾶὀὀçῖὀὀὀὀ ὀἱ ἁβόεἰο (ἰᾶἰçὀὀὀP ῖῖP, ἰᾶἰὀὀὀὀὀὀçὀᾶ, εὀὀ.) ἰᾶἱ οἱ ἁεῤᾶὀἱ ἁβῖᾶὀε ιᾶ “ἰᾶἱ-ἰᾶὀç” ἀεἰᾶἱ ὀçἱ ἱᾶἱ ὀὀὀὀP ἐᾶῖὀçὀᾶ ὀἱ ἁβόεἰο.
- **ὀἰΠῖᾶ (slice):** Ἰᾶ ὀἱᾶἰᾶῖᾶὀç ἰᾶὀ ἁβόεἰο. ὈYἱὀῖᾶ ιᾶ ὀᾶ ὀῖὀὀὀᾶ ὀῖῖ PC ἰὀῖῖἱἱ ἰᾶ ὀὀῤ ÷ ῖὀἱ ιY ÷ ῖὀ 4 ὀἰΠῖᾶὀ ὀᾶ Yἱᾶἱ ἁβόεἰ. Ὀᾶ ὀἰΠῖᾶὀ ὀἱὀᾶἱYὀᾶ ἁὀ ὀἱᾶ ÷ ῖᾶῖὀ ὀῖᾶὀ (sectors). Ὀὀῤ ÷ ἁέ Yἱᾶ “ὀβῖᾶἰὀ ὀçἱὀὀῖ” (slice table) ὀἱ ὀᾶῖY ÷ ἁέ ὀçῖῖὀῖᾶ ἁεἱ ὀᾶ ὀἰΠῖᾶὀ ἐάε ÷ ñçóεἰἰδιεᾶὀᾶ ἀδῦ οἱ BIOS ἁεἱ ιᾶ ἰᾶᾶ ἀδῦ ὀYἱ ἰδιῖαβ ιᾶ ἰᾶἰὀὀᾶ ὀἱ οYὀὀçἱ. Ἰ ὀβῖᾶἰὀ ὀçἱὀὀῖ εYᾶᾶὀε ἐάε “ὀβῖᾶἰὀ ἰῖᾶὀὀP” (partition table) ὀᾶ ἰῖῖᾶᾶ DOS ὀἱ ὀὀὀ ÷ ἰᾶὀᾶ ἁὀ οἱ ὀῖῖᾶῖᾶἱ fdisk.
- **ἰῖἱὀὀ (partition):** Ἰᾶ ὀἱᾶἰᾶῖᾶὀç ἰᾶὀ ὀἰΠῖᾶὀ. ὈἱPεὀ ÷ ñçóεἰἰδιεᾶὀᾶ ἁεἱ ἰᾶὀῖῖὀ ὀὀὀ ὀἱᾶἰᾶἰYὀᾶὀ ὀῖῖ ὀçἱὀὀῖ (slices) ὀἱ ἁβόεἰο ὀἱ FreeBSD. ἰῤᾶ ὀYὀὀçἱ ἰᾶ ÷ ἰᾶῖὀ (filesystem) P ἰᾶὀᾶῖᾶYὀὀᾶ ἰᾶὀὀ (swap area) ὀἱῖ ἁβόεἰ ἰᾶὀὀᾶὀ ὀᾶ Yἱᾶ ἰῖὀὀ. Ὀᾶ ἰῖὀὀᾶ ὀὀὀ ÷ ῖὀὀᾶ ιᾶ οἱ ἰᾶᾶἰᾶἱ disklabel.
- **ὀῖYᾶὀ (sector):** Ç ἱεῖῖὀᾶῖ ὀἱᾶἰᾶῖᾶὀç ἰᾶὀ ἁβόεἰο. ὈἱPεὀ Y ÷ ἁέ ιYᾶᾶἱὀ 512 bytes.

1.3 ÓçἰᾱḂᾱ ðῖö ðñÝðᾱέ ἰᾱ ðñῖóÝἰᾱöᾱ éᾱé ðᾱᾱḂᾱö

Ἀþóᾱ ἰᾱᾱÜεç ðñῖóῖ÷þ öçç ᾱέᾱᾱέᾱᾱᾱ, ᾱῖ ᾱᾱῖ εÜᾱᾱᾱ ᾱᾱ ἰÝᾱᾱ ᾱᾱᾱ éᾱé ᾱḂἰᾱé εÜεῖö ἰðῖñᾱḂ ἰᾱ éᾱᾱᾱᾱᾱñÝᾱᾱᾱ ᾱᾱ Ḃᾱñéᾱ÷ῖᾱῖᾱ Üεεῖῖ ᾱḂᾱᾱῖ öῖö ööóðῖᾱᾱᾱ.

ðñῖóÝἰᾱ öé εÜἰᾱᾱ. ἈḂἰᾱé ðῖεý ᾱýεῖῖ ἰᾱ éᾱᾱᾱᾱᾱñÝᾱᾱᾱ εÜεῖö ᾱḂᾱῖ ᾱῖöεᾱýῖᾱᾱ ἰᾱ ᾱöðÝð öéð ᾱῖᾱῖÝð. Ἀῖ Ý÷ᾱᾱ ᾱῖöéᾱῖḂᾱᾱ ᾱéÝᾱᾱᾱ ᾱᾱ ἰçῖýἰᾱᾱᾱ öῖö ðñῖḂῖᾱ éᾱöÜ öç ᾱέᾱᾱέᾱᾱᾱ ᾱéḂῖççöçð ᾱéᾱ ἰᾱ ᾱñᾱḂᾱ öç öüöóþ öðöéᾱðþ ᾱḂᾱῖö.

ÖðöééÜ ᾱᾱῖ Ý÷ῖᾱᾱ éᾱἰḂᾱ ᾱöéýῖç ᾱéᾱ æçῖéÝð ðῖö ἰðῖñᾱḂ ἰᾱ ðñῖεççεῖýῖ. Ç ᾱöéýῖç ᾱḂἰᾱé ᾱééþ ᾱᾱᾱ!

1.4 Zip, Jazz, éᾱé Üεéᾱ ᾱöᾱéñῖῖἰᾱῖᾱ ἰÝᾱᾱ

Ἰé ᾱöᾱéñῖῖᾱñῖ ᾱḂᾱῖé ἰðῖñῖýῖ ἰᾱ ᾱéᾱῖñöüεῖýῖ ᾱῖ éᾱñῖéῖḂ ᾱḂᾱῖé. Öῖ öçῖᾱῖöééü ᾱḂἰᾱé ἰᾱ ᾱḂἰᾱé öῖᾱᾱἰÝñö ἰ ῖᾱçᾱüð öῖö ᾱḂᾱῖö éᾱöÜ öçῖ ᾱéḂῖççöç öῖö ööóðῖᾱᾱᾱ éᾱé ἰᾱ ᾱéöéÝᾱᾱ ἰÝᾱᾱ þóᾱᾱ ἰᾱ ἰðῖñÝᾱé ἰ ðñῖḂῖᾱð ἰᾱ ᾱᾱḂ öüöóÜ öçῖ ᾱᾱῖᾱöñḂᾱ öῖö ᾱḂᾱῖö. ἘῖéöÜἰᾱᾱ öé εÝᾱé ç ᾱῖᾱῖþþ dmesg ᾱéᾱ ἰᾱ ᾱᾱḂᾱ ᾱῖ ç öðöéᾱðþ ᾱḂἰᾱé ööçῖ εḂᾱᾱ. Ἀéᾱ ḂᾱñÜᾱᾱéᾱῖ ᾱῖ ἰ ðñῖḂῖᾱð ᾱñÜᾱᾱé:

Can't get the size

öüᾱᾱ ᾱᾱῖ öðÜñ÷ᾱé ᾱéöéÝᾱᾱ öῖῖῖ ῖᾱçᾱü. Ἀῖ ᾱḂἰᾱé ᾱöðü éᾱ ðñÝðᾱé ἰᾱ ᾱðῖᾱᾱééῖþᾱᾱᾱ öῖ ἰç÷Üῖçῖᾱ ðñéῖ ᾱῖéῖÜᾱᾱᾱ ἰᾱ ᾱéᾱῖñöþᾱᾱ öçῖ ᾱéöéÝᾱᾱ.

2 Ἀéᾱῖñöþῖῖᾱᾱᾱ ᾱḂᾱῖöðᾱ ᾱéᾱ ᾱðῖéᾱᾱéöóöééþᾱ éᾱéöῖöñᾱḂᾱ

2.1 Ἀéöᾱᾱüᾱþ

Ἀöðþ ç ðᾱñÜᾱñᾱᾱᾱ ḂᾱñéᾱñÜᾱᾱé ðþð ἰᾱ ööéÜἰᾱᾱᾱ ᾱḂᾱῖöðᾱ ἰüñῖ ᾱéᾱ öῖ FreeBSD. ἘöῖççᾱḂᾱᾱ ῖöé ἰé ᾱḂᾱῖé ᾱðῖéᾱᾱéöééþð éᾱéöῖöñᾱḂᾱð ᾱᾱῖ ἰðῖñῖýῖ ἰᾱ ᾱéᾱᾱᾱöῖýῖ ᾱðü Üεéᾱ éᾱéöῖöñᾱᾱéÜ, ῖýᾱᾱ ἰᾱ εÜñῖῖ boot.

2.2 ðþð ἰᾱ ööéÜἰᾱᾱᾱ ᾱḂᾱῖöðᾱ ᾱðῖéᾱᾱéöóöééþð éᾱéöῖöñᾱḂᾱð ἰᾱ öῖ Sysinstall

To /stand/sysinstall, öῖ ðñüᾱñᾱῖᾱ ᾱᾱéᾱöÜöóᾱöçð öῖö ööóðῖᾱᾱᾱ, Ý÷ᾱé ᾱðᾱéöᾱᾱḂ öóéð öᾱéᾱöðᾱḂᾱð öῖö ᾱéᾱüᾱᾱéð þóᾱᾱ ἰᾱ ᾱðῖῖðῖᾱḂ öçῖ ᾱéᾱᾱéᾱᾱᾱ ÷ññéöῖý öüῖ ᾱḂᾱῖῖ éᾱé ἰᾱ ᾱðᾱéöᾱḂ éᾱᾱüðᾱñç ðñῖöðÜᾱᾱéᾱ. Öᾱ ðñῖᾱñÜἰᾱᾱᾱ fdisk éᾱé disklabel ðῖö öðÜñ÷ῖῖ öῖῖ sysinstall ᾱḂἰᾱé ᾱñᾱöééý ḂᾱñéᾱÜεῖῖðᾱð (GUI - Graphical User Interface) éᾱé ἰᾱéþῖῖῖ öῖ ἰðÝñᾱᾱῖ öῖö εῖᾱḂἰᾱᾱᾱ öüῖ ᾱḂᾱῖῖ. ἈḂἰᾱé ðñῖῖᾱῖþð ἰ ᾱöεῖῖüðᾱñῖð öñüðῖð ἰᾱ éüᾱᾱᾱ ᾱḂᾱῖöðᾱ ᾱðü öçῖ Ýéᾱῖöç 2.1.7 éᾱé ἰᾱöÜ öῖö FreeBSD.

1. Ἰᾱᾱῖῖþᾱᾱ öῖ sysinstall þð root ᾱñÜῖῖῖᾱð

```
# /stand/sysinstall
```

öççῖ ᾱñᾱῖþ ᾱῖᾱῖþῖ.

2. ἈðééÝἰᾱ Index.
3. ἈðééÝἰᾱ Partition.
4. ἈðééÝἰᾱ öῖ ᾱḂᾱῖ öῖö εÝéᾱᾱ ἰᾱ ᾱᾱéᾱᾱöðþᾱᾱ ÷ñçöéῖῖðῖῖᾱð öᾱ ᾱᾱéÜᾱᾱ éᾱé ἰᾱöÜ **SPACE**.

5. Ἀί εά ÷ ñçóéíðìéþóáðå üëí òí äßóëí ἁέά òí FreeBSD, ἄðéëÝíðå Ἀ.
6. Ἰüëéð óáð ñòðþóáé áí üíòüð èÝéåðå íá òí èÛíåðå áððü (Do you still want to do this) ἄðáíðþóðå Yes.
7. ἈðéëÝíðå Write.
8. Ἐά óáð äåÛéåé íéá ðñíäéäíðìþçóç ó÷äðéëÛ íå ôçí äåññåðþ óå ððÛñ÷ííóá óðóðþíáðå ἄðáíðþóðå Yes.
9. Ἰüëéð óáð ñòðþóáé áí èÝéåðå íá äåéåðóððóáðå Ὑíá boot loader, ἄðéëÝíðå None ἁέά íá ἄðüýååðå ïðíéåäþðíðå äéëäåþ óòí Master Boot Record. Ç äåéåðÛóðáóç áñüð boot loader ÷ ñåÛæåðåé üüí óå éåéñýñéåð äåéåðóððóáðéð òí FreeBSD þ áí ó÷äðéÛæåðå íá òíðñéåðþóáðå òí äßóëí óå èÛðíéí Ûëëí íç÷Ûíçá.
10. Ðáðþóðå **ENTER** óòí áíçíåñüðéëü ïþííá ðñ èÝåé “Wrote FDISK partition information out successfully”.
11. ἈðéëÝíðå Quit ἁέά íá äåäßðå ἄðü òí FDISK Editor éåé ïåðÛ **ESCAPE** ἁέά íá ἄðéóðñÝðåðå óòí Index menu.
12. ἈðéëÝíðå Label ἄðü òí Index menu.
13. ἸñÛóðå òí äßóëí óáð üðüð èÝéåðå (äåþ ïñßæåðå óå partitions). Ἀí èÝéåðå üüí Ὑíá partition ðáðþóðå òí c ἁέά íá äçíéíðñåðóáðå òí partition. ἸåðÛ ἄðèð äå÷äßðå ðéð ðñíäðéëñÝð ἁέά óå ðñíéåéñéóí Ὑíá size, partition type Filesystem, éåé mountpoint (òí ïðííí äåí ÷ ñçóéíðìéþåðå).
14. Ðáðþóðå w üüéð ðåäéþóáðå éåé ἄðéëðñþóðå ðéð äéëäåÝð ἁέά íá óñíá÷ßóðå. Òí filesystem èå ðåñåóðåß áððüíáðå ἄðü ôçí áíðñéþ newfs äéðüð áí ἄðéëÝíðå òí áíðßèåðí. (Ἀí äÛæåðå éåéñýññéí partition óáð óðíöÝññé íá òí èÛíåðå!). Ἐά óáð äþóåé òí èÛëð:

```
Error mounting /mnt/dev/ad2s1e on /mnt/blah : No such file or directory
```

Ἀññþóðå òí.

15. Ðáðþóðå óñíá÷ñíáí òí **ESCAPE** ἁέά íá äåäßðå.

2.3 Ðüð íá ððéÛíåðå äßóëíðð ἄðñéåäéóðéèþð èåéðíðñåßåð ïÝóå ἄðü ôçí äñåíð áíðñéþí

ἈéðåéÝóðå ðéð ðåñåéÛðü áíðñéÝð áíðééåéóðþíóðå òí ad2 íå òí üññá ôçð óðóéåððð òíð äßóëíð (åñÛððå dmesg íá äéÝññåðå áí äßíáé òüóðü).

```
# dd if=/dev/zero of=/dev/ad2 count=2
# disklabel /dev/ad2 | disklabel -B -R -r ad2 /dev/stdin
ἘÝëíðå üüí Ὑíá partition, ïðüðå ïðñíýíå íá ÷ ñçóéíðìéþóííå òí èññÛðé 'c':
# newfs /dev/ad2c
```

Ἀí ÷ ñåÛæåðåé íá äéëÛíåðå òí disklabel ἁέά íá ÷ ñçóéíðìéþóáðå ðñéåäðÛ partitions (ἁέά ðåñÛäåéåíå áí èÝéåðå swap) ðüðå èÛíåð:

```
# dd if=/dev/zero of=/dev/ad2 count=2
# disklabel /dev/ad2 > /tmp/label
Ἀñßíðå òí disklabel ἁέά íá ðñíðéÝóðåðå partitions:
# vi /tmp/label
# disklabel -B -R -r ad2 /tmp/label
äéðåéÝóðå ôçí áíðñéþ newfs óðå partitions üðüð ðñÝðåé
```

Ἰ äßóëíð óáð äßíáé Ὑðíéñðð ðñðð ÷ ñþóç.

3 Ἀεάιιñöþííîáò ἁβóêîðð ἁέά óîîááðþ ἑἁέôîññḗḄḗ

3.1 Ἀέóáḗḗḗþ

Ç ἁñḗñþ ἁíðíêþí ἁβίḗé íáí í ἁðéíεḡðḗñîð ðñḡðîð ἁέḗ íḗ ððéŸíḗðḗ ἁβóêîðð ἁðíêéḗéóðééþð ἑḗéðîññḗḄḗð ἁééŸ ἁβίḗé ἑḗé í ἁððéíεḡðḗñîð ἁέḗ íḗ ððéŸíḗðḗ óîîááðíýð ἁβóêîðð. Õí fdisk ἁðḡ ὅçí ἁñḗñþ ἁíðíêþí èŸéḗ ḗñéóóúðḗñḗð ἁíþóḗéð íḗççíḗðéêþí ἑḗé ḗíêéŸð ἁíþóḗéð ó÷ḗðééŸ íḗ ὅíí ḗβίḗéḗ êñíḗðéþí, èŸðé ḗîð ḗñîóḗíþð ḗḗí ÷ñḗéŸḗḗðḗé íḗ íŸéḗðḗ. Ἀέ ἁððḡ ÷ñçóéíîðíéþðḗð òí sysinstall ἁέḗ íḗ ððéŸíḗðḗ óîîááðíýð ἁβóêîðð ἁéíêîðêþíðḗð ðéð íḗçḗḄḗð ḗḗñḗéŸð.

3.2 Ðþò íḗ ððéŸíḗðḗ ἁβóêîðð óîîááðþð ἑḗéôîññḗḄḗð íḗ òí Sysinstall

1. Ἰḗéêíþðḗð òí sysinstall þð root ḗñŸîñíóḗð

```
# /stand/sysinstall
```

óðçí ḗñḗñþ ἁíðíêþí.

2. ἈðééŸíðḗ Index.
3. ἈðééŸíðḗ Partition.
4. ἈðééŸíðḗ òí ἁβóêîðð èŸéḗðḗ íḗ ḗḗéḗðḗððḗðḗð ÷ñçóéíîðíéþíðḗð ðḗ ḗḗéŸéḗ ἑḗé íḗðŸ **SPACE**.
5. Ἀí éḗ ÷ñçóéíîðíéþðḗð ḡéí òíí ἁβóêîð ἁέḗ òí FreeBSD, ἁðééŸíðḗ A.
6. ¼ðḗí óḗð æçðçèḗḄ:

Do you want to do this with a true partition entry so as to remain
cooperative with any future possible operating systems on the
drive(s) ?

(ÈŸéḗðḗ íḗ òí èŸíḗðḗ ἁððḡ íḗ ḗñḗḗḗðééŸ èñîŸðéḗ ἁέḗ íḗ ḗḗñḗḗḗḗé óîîááðḡð íḗ Ÿééḗ ἑḗéðîññḗḗéŸ
óðððíḗðḗ?) Ἀðḗíðþðḗ Yes.

7. ἈðééŸíðḗ Write.
8. ¼ðḗí óḗð æçðçèḗḄ íḗ ḗḗéḗðḗððḗðḗð òíí boot manager, ἁðééŸíðḗ None íḗ òí **SPACE** ἑḗé íḗðŸ **ENTER** ἁέḗ OK.
9. Quit (ḗḗḗḄðḗ) ἁðḡ òí FDISK Editor.
10. Èḗ óḗð ñððþḗḗ èŸðé ó÷ḗðééŸ íḗ òíí boot manager ḗŸéé, ἁðééŸíðḗ None íḗíŸ.
11. ἈðééŸíðḗ Label ἁðí òí Index menu.
12. ἸñîŸðḗ òí ἁβóêîð ḡððð èŸéḗðḗ (ḗḗþ éḗ ññþðḗðḗ ðḗ partitions). Ἀí èŸéḗðḗ íḡñí Ÿíḗ partition ἁðêþð ḗḗ÷èḗðḗð ðéð ḗñíḗðééíḗŸð ἁέḗ ðḗ ḗñíḗééíñéóíŸíḗ size, partition type filesystem, ἑḗé mountpoint (òí íðíβí ḗḗí ÷ñçóéíîðíéḗḄḗḗé).
13. Õí filesystem éḗ ḗḗñḗðḗḗ ἁððḡḗḗḗ ἁðḡ ὅçí ἁíðíêþí newfs ḗéðḡð ḗí ἁðééŸíðḗ òí ḗíðêḗðí. Ἀí ḗŸḗḗḗ éḗéñýñḗéí partition óḗð óðîŸŸñḗé íḗ òí èŸíḗðḗ! Èḗ óḗð ḗþḗḗ òí èŸèðð:

```
Error mounting /mnt/dev/ad2s1e on /mnt/blah : No such file or directory
```

Ἀññþðḗð òí.

14. Ðḗðþðḗð óðíḗ÷ḡḗḗ òí **ESCAPE** ἁέḗ íḗ ḗḗḗḄðḗ.

Ἰ ἁβóêῖð óáð ἁβῖᾶέ Ὡῖêῖð ðñῖð ÷ñῖóç.

4 ¶ēēàò ēāéôῖñᾶḂàò ἰᾶ ôῖðò ἁβóêῖðò

4.1 ḂñῖóèÝôῖῖòáò swap.

Ἐᾶêῖð Ὡῖᾶ óóòçῖᾶ ἁðᾶêðᾶḂῖᾶóᾶέ, ç ἁῖṲᾶêç ἁέᾶ ἰᾶᾶᾶýôᾶñῖ swap ἁḂῖᾶóᾶέ ἡῖῖ ἕᾶέ ðéῖ ἁðéóᾶéðéêῖῖ. Ḃᾶñῖῖῖ ðῖð òῖ ἰᾶ ḂñῖóðᾶêᾶḂ swap óᾶ Ὡῖᾶῖ ððṲñ ÷ῖῖóᾶ ἁβóêῖῖ ἁβῖᾶέ ðññᾶñṲ ἁýóêῖῖῖ, Ὡῖᾶð ἕᾶéῖῖñᾶéῖð ἁβóêῖð ἰðῖñᾶḂ ἰᾶ ἱñòῖðῖéçᾶḂ Ὡóóé ῖóðᾶ ἰᾶ ðᾶñéÝ ÷ᾶé òῖ ἁðéðêῖÝῖ swap ðῖð óáð ēᾶḂðᾶé.

Ἄέᾶ ἰᾶ ḂñῖóèÝôᾶðᾶ swap ἕᾶêῖð ἁṲᾶᾶðᾶ Ὡῖᾶ ἁβóêῖῖ óòῖ óóòçῖᾶ:

1. Ἐᾶêῖð ēῖᾶᾶðᾶ òῖ ἁβóêῖῖ (partitioning) ἁēῖṲῖðᾶ òῖ disklabel ἕᾶέ ἱñḂóðᾶ ÷ῖñῖ ἁέᾶ swap óòῖ ēñῖṲóé (partition) ‘b’ ἕᾶέ ἁṲῖðᾶ òῖῖ ððῖῖῖῖðῖ ÷ῖñῖ óᾶ ēṲðῖῖῖ Ṳῖῖῖ ēñῖṲóé, Ḃ.÷. óòῖ ‘a’ ῖ óòῖ ‘e’. Ὀῖ ἰÝᾶᾶèð ðῖð ἁḂῖᾶðᾶ ἁβῖᾶέ óᾶ blocks òῖῖ 512 bytes.
2. Ṳóᾶῖ ēṲῖᾶðᾶ newfs óòῖῖ ἁβóêῖῖ, Ἰçῖ òῖ ēṲῖᾶðᾶ óòῖ ēñῖṲóé ‘c’. ἈῖðḂᾶðᾶ, ēṲῖᾶðᾶ òῖ ἰῖῖῖ óòῖ ēñῖṲóé ðῖð ἁᾶῖ ἁβῖᾶέ swap.
3. ḂñῖóèÝôᾶ óòῖ /etc/fstab òῖ ḂᾶñᾶēṲòῖ:

```
/dev/ad0b                none                swap                sw 0 0
```

ἈēῖṲῖðᾶ òῖ /dev/ad0b óòῖ ῖñῖᾶ òçð ἕᾶéῖῖñᾶéᾶð óáð óðóéᾶðḂð.

4. Ἄέᾶ ἰᾶ ἁῖᾶñᾶῖðῖéῖῖóᾶðᾶ Ṳῖᾶóᾶ òῖ ἰÝῖ swap ÷ñçóéῖῖðῖéῖῖóᾶðᾶ òçῖ ἁῖðῖῖῖ swapon

```
# swapon /dev/da0b
swapon:  added /dev/da0b as swap space
```

4.2 ἈῖóéᾶñṲòῖῖòáò óᾶ ðᾶñéᾶ ÷ῖῖᾶῖᾶ ἁβóêῖῖ

Ἀðῖ òῖῖ: Renaud Waldura (<renaud@softway.com>)

Ἄέᾶ ἰᾶ ἰᾶðᾶééῖῖῖóᾶðᾶ ἁñ ÷ᾶḂᾶ ἁðῖ òῖῖ ἁñ ÷éêῖ óáð ἁβóêῖῖ óᾶ Ὡῖᾶῖ ἕᾶéῖῖñᾶéῖῖ, ēṲῖᾶðᾶ:

```
# mount /dev/ad2 /mnt
# pax -r -w -p e /usr/home /mnt
# umount /mnt
# rm -rf /usr/home/*
# mount /dev/ad2 /usr/home
```

4.3 Ὀἑῒḡἱḡᾶ ᾗἱἱÝἱἱḡḡ ᾗḖḡἱḡḡ ἱᾶ òἱ CCD

Ἀḡἱ òἱ: Stan Brown (<stanb@awod.com>)

ἱᾶ òἱ Concatenated Disk Driver, Ḗ ᾗḡḡḡḖḖ CCD, ἱḡἱᾗḡḡᾶ ἱᾶ Ý ÷ ᾗḡᾶ ḡἱḡἱḡḡ ḡἱḡἱḡḡ ᾗḖḡἱḡḡ ᾗḡḡ ἱᾶ ḡḡἱḡᾗḡḡÝἱἱḡᾶἑ ḡḡ Ḣἱᾶ. Ç ᾗḡᾗḡḡᾶḖᾶ ἑÝᾗḡᾶἑ ḡḡᾶ ÷ Ḗἱᾶḡḡ (striping). ἱᾶ òçἱ ᾗḡḡḡḡḡḡḡ Ḣ ÷ ᾗḡᾶ ἑᾗḡḡᾗᾗ ᾗḡἱḡᾗÝḡἱᾶḡ ḡḡçἱ ḡᾶ ÷ ḡḡḡᾶ ᾗḡᾗḡḖ ἱḡἱḡḡᾶἑ ἱἑἱḢᾗἱḡᾶἑ ἱἑ ᾗᾗᾗᾗᾶḢ ἑᾗἑ ἱἑ ᾗᾗᾗḖḖḡᾶḡ ḡḡἱḡḡ ᾗḖḡἱḡḡ. ἈἑᾗᾗḢḡᾶ ḡḡḡ manual pages ccd(4) ἑᾗἑ ccdconfig(8) Ḗ ḡçἱ ᾗḡ ÷ ἑḡḖ ḡᾗḖḖᾶ ḡἱḡ CCD (<http://stampede.cs.berkeley.edu/ccd/>) ᾗἑᾶ ḡᾗḡḡḡḡḡᾗᾗᾗ ἑᾗḡḡḢÝᾗἑᾗḡ.

Ἀἑᾶ ἱᾶ ḡḢÝἱᾶḡᾶ CCD ḡḡÝἱ ᾗᾗ ÷ ḡᾗḡḢᾗᾶḡᾶ ᾗἑᾗḡḡ ḡḡḢḖἱᾶ. ἱᾶ òçἱ ᾗḡἱḡḖ ccdconfig, ḡἱḡḖḖᾶἑ ḡἱ ἑᾗḡḡḡḡḡḡ KLD ᾗḡḡἱᾶḡᾶ ᾗἱ ἱ ḡḡḢḖᾶḡ ᾗᾗ Ḣ ÷ ᾗἑ Ḗᾗç ḡḡἱḡḡḢἑἱç ᾗἑᾶ CCD.

Ὀᾶ CCD ḡḡḡḢ ÷ ἱἱḡᾶἑ ḡᾶ partitions ḡýḡἱḡ 4.2BSD. Ἀἱ ἑÝἑᾗᾶ ἱᾶ ÷ ḡḡḡἱḡḡḡḡḡᾶ ḡἱḡ ḡἱḡ ᾗḖḡἱ ἑᾗἑ ḡḢḡḡ ḡḢÝḡᾗἑ ἱᾶ ḡḡḡḢᾶḡ Ḣἱᾶ ἱÝἱ partition. Ἀἑᾶ ḡᾗḢḖᾗἑᾗᾗᾗ, ç ᾗḡἱḡḖ **disklabel -e** ἱḡἱᾗḡ ἱᾶ ᾗᾗḖἱἑ:

```
#          size      offset      fstype      [fsize bsize bps/cpg]
c: 60074784          0      unused          0          0          0 # (Cyl.      0 - 59597)
```

Ἀᾗἱ ἱḡἱᾗḡḡᾶ ἱᾶ ÷ ḡḡḡἱḡḡḡḡḡᾶ ḡἱ partition *c* ᾗἑᾶ CCD, ᾗḡḡἱἱ ᾗḖἱἑ ḡýḡἱḡ *unused*. ἈἱḡḖᾗᾶᾶ ᾗçἱḡḡᾗḡᾶ Ḣḡᾶ ἱÝἱ partition ᾗḡḡᾗḖḖ Ḗᾗḡἱ ἱᾗᾗÝḡḡḡ ᾗḡḡ ḡýḡἱḡ 4.2BSD:

```
#          size      offset      fstype      [fsize bsize bps/cpg]
c: 60074784          0      unused          0          0          0 # (Cyl.      0 - 59597)
e: 60074784          0      4.2BSD          0          0          0 # (Cyl.      0 - 59597)
```

Ἀἑᾶ ἱᾶ ᾗçἱḡḡᾗḡᾶ Ḣḡᾶ ἱÝἱ CCD, ᾗḡḡᾗḡḡᾶ ḡḡḡ ḡᾗᾗᾗḢḡḡ ᾗḡἱḡḢḡḡ. ḡᾗḡᾗᾗḢḡḡḡḡ ḡḖḡ ἱᾶ ḡḢἱḡḡÝḡᾶḡ ḡᾗᾗḖḡ ᾗḖḡἱḡḡ. ἈḡḡḖḡ ᾗḡḡḢᾶ ḡḡḡ ḡḡḡᾗḡḢḡ ḡḡἱḡ ÷ ḡᾗḡḢᾗᾶἑ. ḡḡḡḡᾗḡᾶ ḡḡἑ ἱἑ ᾗḖḡἱἑ ḡḢÝḡᾗἑ ἱᾶ ᾗḖἱἑ ḡἱḡἱἑ.

```
# cd /dev ; sh MAKEDEV ccd0

# disklabel -r -w da0 auto
# disklabel -r -w da1 auto
# disklabel -r -w da2 auto

# disklabel -e da0
ḡḢἱḡḡÝḡᾶ ḡἱ partition e ḡýḡἱḡ 4.2BSD
# disklabel -e da1
ḡḢἱḡḡÝḡᾶ ḡἱ partition e ḡýḡἱḡ 4.2BSD
# disklabel -e da2
ḡḢἱḡḡÝḡᾶ ḡἱ partition e ḡýḡἱḡ 4.2BSD

# ccdconfig ccd0 273 0 /dev/da0e /dev/dale /dev/da2e

# newfs /dev/ccd0c
```

Ç ḡḡḖḖ 273 ᾗḖἱἑ ḡἱ ἱÝᾗᾗḡḡ ḡἱḡ stripe. ἈḖἱἑ ἱ ᾗḡḡḡḡḡ ḡἱḡ sectors (512 bytes ἱ ἑᾗἑÝἱᾶ) ḡᾶ ἑḢḡᾶ block ᾗᾗᾗᾗÝἱἱ ḡἱḡ CCD. ἑᾶ ḡḢÝḡᾗἑ ἱᾶ ᾗḖἱἑ ḡἱḡḡḢ ÷ ἑḡḡἱἱ 128 kB, ἑᾗἑ ᾗᾗ ḡḢÝḡᾗἑ ἱᾶ ᾗḖἱἑ ᾗýἱᾗç ḡἱḡ 2.

ὈḖᾗᾶ ἱḡἱᾗḡḡᾶ ἱᾶ ἑḢἱᾶḡᾶ mount ἑᾗἑ ἱᾶ ÷ ḡḡḡἱḡḡḡḡḡᾶ ḡἱ CCD ḡᾗḡ ἱÝḡḡ ḡçḡ ḡḡḡᾗḡḖḖ /dev/ccd0c.

ἱᾶ ḡḡḡ ᾗḡἱᾶḡᾶ ἑᾗἑ ᾗḡÝἑἑḡἱ ᾗἱᾗἑᾗḡḡḡ ḡἱḡ CCD ᾗḖἱἑ ḡἱ Vinum. ḡᾗḡḡḡḡḡᾗᾗᾗ ḡḡçḡḡἱḡḢᾗḡ ḡḡἱ Vinum Project home page (<http://www.vinumvm.org/>).

5 Ἀð÷ἁñéóôþàò

Ì óðḃḃḃḃḃÝḃò èḃ þèḃḃ ḃḃ ḃð÷ḃñéóðþḃḃé ôìòð ðḃḃḃḃḃḃḃ ḃḃḃ ḃçí óðìḃḃóöìñḃḃ ḃìòð óḃ ḃððþ ḃçí ḃñḃḃóþḃ ḃìòð:

- Darryl Okahata (<darrylo@hpnmhjw.sr.hp.com>) ḃḃḃ ḃḃð ḃðḃÝò ìḃçḃḃḃð ḃḃḃḃḃḃḃḃḃḃḃḃ ḃḃḃḃ ḃḃḃḃḃḃ ḃḃ ḃðìḃḃḃḃḃḃḃ ḃñḃḃḃ ḃḃḃḃḃḃḃḃḃḃḃḃ, ḃḃð ìðìḃḃḃ ḃḃ÷ḃ ðìḃḃÝð ḃìñÝð ÷ñçóḃḃḃḃḃḃḃḃ ḃḃçí FreeBSD-questions.
- Jordan K. Hubbard <jkh@FreeBSD.org> ðìḃ ḃḃḃḃ ḃì sysinstall ÷ñþḃḃḃ ḃḃḃ ḃÝḃḃḃḃ ḃḃḃḃḃ ḃḃḃḃḃḃḃḃ.
- John Fieber (<jfieber@indiana.edu>) ðìḃ ḃḃḃḃḃ ḃḃð ðḃçñḃḃḃḃḃḃḃ ḃḃḃ ḃḃ ḃḃḃḃḃḃḃḃḃḃḃ ḃḃḃ ḃì DocBook DTD ðḃḃḃ ḃḃḃ ḃḃḃḃ ḃḃḃḃ ḃì ḃḃḃḃḃ ḃḃḃḃḃḃḃḃ.
- Greg Lehey <grog@FreeBSD.org> ðìḃ ḃḃḃḃḃ ḃçí ḃḃḃḃḃḃḃ ḃḃḃ, ḃḃḃ÷ñìḃḃḃ ḃḃḃ ḃḃḃḃḃḃḃḃḃḃ, ḃḃḃ ḃḃḃ ḃçí ḃðìḃḃḃḃḃḃḃ ḃìḃ ḃḃ ḃḃḃḃḃḃ ḃÝḃḃḃḃ.