

1 ÅéóáãùãƆ

Οι εαβλαίη άόδου οίηβææέ όέδ άεάοιηÝό ιάόάίý όιό FreeBSD έάέ όιό Linux ίόόά ιÝόίέ Þ όñι÷ ùñçιÝñíé ÷ ñÞόόάδ όιό Linux ίά ιόññíýí ãñÞáññά ίά όññιόáññιόόίýι όόέδ ááόέέÝό Ýíñíεάδ όιό FreeBSD. Ðññüέάόάέ áéá ιέά όá÷ ίέέÞ áéόάáñüáÞ όόι FreeBSD, έάέ ááι έά áíáόáñèñýìá όá όð÷ ùí “όέέιόιόέéÝό” áéάοιηÝό ιάόάίý όùι áýí όόόόçιÝόóùι.

Οι εçβçαçι αçοçυ çδçεçΥçοçε Υç÷çοçα Πçς çαçεçοçαçοçΠçοçε οçι FreeBSD. çΑçί çαçαçί Υç÷çαçοçα çαçεçοçαçοçΠçοçε οçι FreeBSD Πç÷çαçεçΥçαçοçα çαçιΠçεçαçοçα çαçοçς çαçεçαçεçαçοçβçα çαçεçαçοçΥçοçαçοçς οçιçο, çδçαçαçεçαçεçΥçαçι çαç çαçεçαçοçΥçοçαçοçα οçι çαçοçΥçεçαçεçι çΑçαçεçαçεçοçοçΠçρçοçαçοçα οçι FreeBSD (http://www.FreeBSD.org/doc/el_GR.ISO8859-7/books/handbook/install.html) çοçοçι çΑçαç÷çαçεçνçβçαçεçι çοçιçο FreeBSD.

2 Êâëýöç: Ääí õðÛñ÷âé Bash;

[illegible][illegible]

3 ĐáêÝôá êáé Ports: ĐñĩôéÝôĩĩôáò ěĩăéóĩéēũ óôĩ FreeBSD

[illegible]

3.1 ĐấêÝôá

Όά θαέΎόά αβίαέ θñĩ-iaóääëüóóéoiΎíáo áóáñĩāΎó, èá ëΎāñāi öĩ áíóβóóíé÷ĩ áéá öĩ FreeBSD öüĩ áñ÷āβüĩ .deb óá óóóóβiaóá Debian/Ubuntu éáé öüĩ áñ÷āβüĩ .rpm óá óóóóβiaóá Red Hat/Fedora. Όά θαέΎόά āāēāēβóóáíóáé ÷ñóóēñíēíβíóáó öcí áíóēβ pkg_add(1). Áéá óánŨāēēāi, ç āēüēĩōèç áíóēβ āāēāēéóóŨ öĩñ **Apache 2.2**:

```
# pkg_add /tmp/apache-2.2.6_2.tbz
```

Ç ÷ ñΠός όçò ðáñáíÝíññíð - ð ãäçããß öçí pkg_add(1) íá éáóááÜóáé áóóñíáóá öñóí öí ðáéÝóí, üóí éáé óéó áíáñðΠóáéó öñí. éáé íá öí ääéáóáóóðóáé:

```
# pkg_add -r apache22
```

```
Fetching ftp://ftp.freebsd.org/pub/FreeBSD/ports/i386/packages-6.2-release/Latest/apache22.tbz... Do
```

```

Fetching ftp://ftp.freebsd.org/pub/FreeBSD/ports/i386/packages-6.2-release/All/expat-2.0.0_1.tbz...
Fetching ftp://ftp.freebsd.org/pub/FreeBSD/ports/i386/packages-6.2-release/All/perl-5.8.8_1.tbz... D
[snip]

```

To run apache www server from startup, add `apache22_enable="YES"` in your `/etc/rc.conf`. Extra options can be found in startup script.

[illegible]

Ιδιαιτέρως, η έρευνα έδειξε ότι η χρήση του FreeBSD είναι πολύ πιο εύκολη από ό,τι πιστευόταν. Η έρευνα έδειξε ότι η χρήση του FreeBSD είναι πολύ πιο εύκολη από ό,τι πιστευόταν. Η έρευνα έδειξε ότι η χρήση του FreeBSD είναι πολύ πιο εύκολη από ό,τι πιστευόταν.

Άέά θάνέοούοάναό δεçññoinßão ó÷âôééÛ ìà óá ðáéÝóá, ðánaéæëÿiá æéääÛóóâ ôçí áíuôçóá 4.4 óôì Åã÷æñßæéí ôið
FreeBSD: ×ñçóëiððëþiόάó ôi Óýóôçiá Packages
(http://www.FreeBSD.org/doc/el_GR.ISO8859-7/books/handbook/packages-using.html).

3.2 Ports

Ç ääyðãñç ÿÿëäüð äëä öçí ääëäüÜððäöç äðãñíäíí öðí FreeBSD äßíäé ç Óðëëëäíß ðüí Ports. Ç Óðëëëäíß ðüí Ports äßíäé Ýíä ðëäßöëí ëäëðíðñäëíí ðíð äðíðäëäßðäë äðü Makefiles ëäë äñ÷äß äëäöíííí (patches) ðä íðíßä Ý÷íðí äçíëíðñäëäß äëäëëÜ, þððä íä äßíäé äíðíðß ç ääëäüÜððäöç äëÜíðíüí äðãñíäíí öðí FreeBSD äðü ðíí ðçääßí ëþäëëä ðíðð. ¼ðäí ääëäëëððÜðä Ýíä port, ðí öýððçíä ëä ëäðääÜðäë ðíí ðçääßí ëþäëëä, ëä äðãñíüðäë üëðð ðëð äðäëðýíýäíäð äëëääÝð ÷ñçöíðíðíëíðäð ðä patches, ëä íäðääëüðððäë ðíí ëþäëëä, ëäë öÝëíð ëä ääëäðäðððäë öçí äðãñíäíß. Èä äëëíðððäë öçí ßäëä äëääëäëäðä ëäë äëä íðíëäððíðä ðð÷íí äíäñðíäíä ðñíäñÜíäðä.

[illegible]

Ç ääëäóÜóóäóç áñùò port äßíäë ääíëëÜ öüöí äðëP uóí öí íá áéóYëëäòä öüíí ëäòÜëíäí öüö ëäë íá íäëëíPóäòä öçí äëäëëëäóßá íäòääëpòöëöçò. Öüí äëüëíöëí ðánÜääëíä äßíäòäë ääëäóÜóóäóç öüö **Apache 2.2** äðü öçí ÖöëëíäP öüí Ports:

```
# cd /usr/ports/www/apache22
# make install clean
```

```

já óçíáíóééü ðeäñíÝéôçíá ôçð ÷ ñÞóçð ports óççí ääeäðÜóóáóç ëíäeóíeéíý äßíáé ç éeáíüôçóá ðñíóáñííäÞð òüí äðeéäíäí
ääeäðÜóóáóçð. Áeá ðáñÜääeäíä, üóáí ääeäeéóóðÜðä öíí Apache 2.2 áðü óá ports ðíñíäßòä íá íáññäíðíeÞóäòä ôççí
äðeéäíäÞ mod_ldap èÝöñíóáð äðëÞð öéíÞ óçç íäðääeçðÞ WITH_LDAP öíö make(1):

```

```
# cd /usr/ports/www/apache22
# make WITH_LDAP="YES" install clean
```

ΆεάáŨóôâ ôçí áíuôçôá 4.5 ôïô Åã÷:áέnéáβiô ôïô FreeBSD, ×ñçóέiüiôíεpióáô ôçí Ports Collection (http://www.FreeBSD.org/doc/el_GR.ISO8859-7/books/handbook/ports-using.html), áέá ðãñέóóüôãñãô ðέçñiüiñβãô ó÷:áoέéŨ iã ôç ÓôέēiãP ôuί Ports.

3.3 Ports Þ ðáêÝôá, ôé ðñÝðáé íá ÷ñçóéìðïéÞòù;

[illegible]

ĐáeÝôá (Ýôïëìá àêôãëÝóéìá)

- Δεί ἀνῆλθὺν ἀπὸ τοῦ ἁγίου πνεύματος καὶ λαλοῦν ἑαυτὸν ὡς τῷ κυρίῳ, ὡς ἀντιμέτωπος.
- Ἄλλοι δὲ ἡγήσαντο ὅτι ἐὰν ἀντιμέτωπος τοῦ κυρίου λαλοῦν, τότε ἐκτελέσει τὸ ἔργον.
- Ἄλλοι δὲ ἡγήσαντο ὅτι ἀπὸ τοῦ ἁγίου πνεύματος λαλοῦν ὡς τῷ κυρίῳ, ὡς ἀντιμέτωπος, ἐκτελέσει τὸ ἔργον.

Ports (ðçãáßïò êpäéêáò)

- [illegible]

Αί αάρ Υ ÷ αόα άεάεΥό αάεαοΠάαεο, οά θαεΥοά θεεάφιρ εά οάο έαέγγοιρ ιέα ÷ αήŨ. Αί υόουοι ÷ ηάεŨαάοάε ίά
 θηρόαηιυοάοά εŨθιεάο αθεεήΥό, ουοά ς ιΥεήαο ουί ports αβίαέ ς έαέγδαης. (Έάε οέιςαΒοά, αί ÷ ηάεŨαάοάο
 θηρόαηιηαΒ άεεŨ θηρόειŨοά οά θαεΥοά, ιθιηάΒοά ιΥού οςο οθεεήαΒ ουί ports ίά οθεŨίαοά οά άεεŨ οάο
 θηρόαηιιόΥία θαεΥοά ÷ ηςοέιηθιεπίοάο οςί αίρεηP make package έάε αίθεάηŨοιροάο οά θαεΥοά θιο άςιέιθηαΒοάοά
 οά Ũεεά ις÷άηβίαοά.)

4 ΑέεΒίçóç ôĩõ ÓóóôΠιάôĩò: Ðĩõ αβίαέ ôά run-levels;

Οι Linux ÷ ηςοείηδιέαβ οι όγούοία âêêβίςοςδ SysV, âη οι FreeBSD ÷ ηςοείηδιέαβ οι δάνάαίόεαεü όγούοία âêêβίςοςδ BSD. Όοι όγούοία init(8) όγδιō BSD, ââι όδÜñ÷ιρι run-levels, ιγδα οι âñ÷âβι /etc/inittab. Αίοβ âέα äοδÜ, ç âêêβίςος âêÿâ÷âοâέ äδü Ýία script âêêβίςοςδ, οι rc(8). Το script /etc/rc âέαÜÿæâέ οι âñ÷âβι /etc/defaults/rc.conf êâέ οι âñ÷âβι /etc/rc.conf âέα ίâ êâειñβοâέ διέâδ όδçñâοβâδ δñüêâέοâέ ίâ ίâêéιΠοιρι. Ιέ όδçñâοβâδ äοδÝδ ίâêéιÜία ίâ όçι âêöÿêâός ðui αίοβοίε÷ui script âêêβίςοςδ διο âñβέηιόâέ όοιöd êâόâêüâιöd /etc/rc.d/ êâέ /usr/local/etc/rc.d/. Όâ scripts äοδÜ âβίâέ δάνüüιέα ίâ όâ scripts διο âñβέηιόâέ όοιι êâόÜêüâι /etc/init.d/ όâ όδóδβιäόâ Linux.

Ãéáôβ òðÛñ÷ïôí äÿí ôïðïèãóβãò ãéá óá scripts ãêêβίϗόϗò ôùí òðçñãóêñí; Óá scripts ðïò ãñβóêñíóáé óóñí éáðÛêññ /etc/rc.d/ ãβíáé ãéá ãóãñññãÝð ðïò áñPêññí óóñí “ãáóéêñ” óýóóϗíá. (Ãéá ðãñÛããéãñá, ðéð cron(8), sshd(8), syslog(3), éáé Ûêêãð.) Óá scripts ðïò ãñβóêñíóáé óóñí éáðÛêññ /usr/local/etc/rc.d/ ãβíáé ãéá ãóãñññãÝð ðïò Ý÷ïí ããéãáðáðáêñã ãðñ òïð ÷ñPóðãò, ùðñ ãéá ðãñÛããéãñá ï **Apache**, òñ **Squid**, ê.ê.ð.

Ðñéá ãβíáé ϗ ãéãóññÛ ïãðãñ ðïò “ãáóéêñ” òðóðPíáðïð éáé ôñí ãóãñññãñ ÷ñPóðϗ; Òñ FreeBSD áíãðýóóãðáé ùð Ýíá ðêPñãð éãéóïòñãéêñ óýóóϗíá. ïã Ûêêã ãñãéá, ï ðñPíáð, ïé ãéãéêñêñêñ ðïò óóóðPíáðïð, ïé ãáóéêñÝð áíðñéÝð (userland, óá ðññññÛñíáðá ùðñ òñ ls(1), cat(1), cp(1) êêð.), áíãðýóóñíóáé éáé ãçñíóéãññíóáé ïãêñ, ùð óýñññ. Ãðñ ãíáðÝññáðáé éáé ùð “ãáóéêñ” óýóóϗíá. ïé ãóãñññãÝð ðïò ããéãéβóðáíóáé ãðñ òïð ÷ñPóðãò, ãñí áñPêññí óóñí “ãáóéêñ” óýóóϗíá, éáé ðÝðñéãð ãβíáé ãéá ðãñÛããéãñá ï **Apache**, òñ **X11**, ï **Mozilla Firefox**, êêð. Ãðññ ðïò ãβññð ïé ãóãñññãÝð, ãññéêÛ ããéãéβóðáíóáé ïã ðϗ ÷ñPóϗ ðϗ ÒêêññPð ÐãéÝðñí éáé Ports (article.html#SOFTWARE) ðïò FreeBSD. Æéá ïá ïã ÷ññêññí ãðñ òñ ððñéêñðñ “ãáóéêñ” óýóóϗíá, ïé ãóãñññãÝð ÷ñPóðϗ óóñPêñð ããéãéβóðáíóáé óá òðñéãáðéñññð ðïò /usr/local/.ðóé óá ãéðãéÝóéíá ðññññÛñíáðá ôñí ÷ñϗóðñí ãñβóêñíóáé óóñPêñð óóñí éáðÛêññ /usr/local/bin/, óá áíðβóðñé÷á ãñ÷ãñá ñðèñβóãñí òïð óóñí éáðÛêññ /usr/local/etc/, ê.ñ.ê.

ïé òðçñãóβãò áñãñññðñéññíóáé ïã ðϗ ðñññðêñ éáð ãããñãðð ðýðññ ññññãððçñãóβãð_enable="YES" óóñí ãñ÷ãññ /etc/rc.conf (rc.conf(5)). ñβñð ïéá ïáðéÛ óóñí ãñ÷ãññ /etc/defaults/rc.conf ãéá ïá ããβðã ðéð ðñññðéêñãÝð òïò óóóðPíáðïð. ïé ñðèñβóãéð ðïò êÛññññá óóñí ãñ÷ãññ /etc/rc.conf ððãñéó÷ñññ Ýíáíðé ôññ ðñññðéêñãñí ãððñí. Æðβóϗò, éáðÛ ðϗ ããéãáðÛóðáóϗ ðññññéãññ ãóãñññãñí, ãããéãéêñãðã ùðé ãéãáðÛóáð ðϗ áíðβóðñé÷ϗ ðãèñϗñβñóϗ ãéá ïá ãñãðã ðñð ïá áñãñññðñéPóãðã ðð÷ññ ó÷ãðéêñ òðçñãóβãò.

Òñ ãéñññññ ãðñððáíóáé ãðñ òñ ãñ÷ãññ /etc/rc.conf áñãñññðñéãñ ðϗ òðçñãóβãá sshd(8) éáé òññ **Apache 2.2**. Æðβóϗò éãéññêñãé ùðé ï **Apache** éá ïãééñPóãé ïã áñãñññðñéϗÝñϗ ðϗ ãñññññðϗá SSL.

```
# enable SSHD
sshd_enable="YES"
# enable Apache with SSL
apache2_enable="YES"
apache2_flags="-DSSL"
```

Ãðñ ðϗ óóéãñP ðïò ïéá òðçñãóβãá áñãñññðñéϗãñ óóñí ãñ÷ãññ /etc/rc.conf, ïðññãðã ïá ðϗ ïãééñPóãðã ãðãðéããð ãðñ ðϗ ãññññP áíðññññ (÷ññβð ïá ÷ñãéÛãéãðáé ïá ððáññéêññPóãðã òñ óýóóϗíá óáð):

```
# /etc/rc.d/sshd start
```

Ãñ ïéá òðçñãóβãá ãññ Ý÷ãé áñãñññðñéϗãñ óóñí ãñ÷ãññ ãðññ, ïðññãðã ïá áñññãéÛóáð ðϗ ãéêβίϗόϗò ðϗ ãðñ ðϗ ãññññP áíðññññ ïá ðϗ ãðéêññP forcestart:

```
# /etc/rc.d/sshd forcestart
```

5 ñýéñéóϗ Æéêñýññ

5.1 ÆéãðãóÝò Æéêñýññ

Ãíðβ ãéá òñ ãñññññ ãññññññóóéêñ ðýðññ *ethX* ðïò ÷ñϗóéññðñéãñ òñ Linux ãéá ðϗ áññññññéóϗ ïéãð ãéãðãðð ãéêñýññ, òñ FreeBSD ÷ñϗóéññðñéãñ ùð ãññññññóóéêñ òñ ùññá òïò ðññññÛññáðïð ïãPãϗóϗò ãéñññññññññ ãðñ Ýíá ãñéêññ. ϗ ãéññññññ Ûñññ ãðñ áññññP ifconfig(8) ããβ÷ñãé äÿí êÛññãð ãéêñýññ Intel® Pro 1000 (ïã ãññññññóóéêñ em0 and em1):

```
% ifconfig
em0: flags=8843<UP,BROADCAST,RUNNING,SIMPLEX,MULTICAST> mtu 1500
    options=b<RXCSUM, TXCSUM, VLAN_MTU>
    inet 10.10.10.100 netmask 0xffffffff broadcast 10.10.10.255
    ether 00:50:56:a7:70:b2
    media: Ethernet autoselect (1000baseTX <full-duplex>)
    status: active
em1: flags=8843<UP,BROADCAST,RUNNING,SIMPLEX,MULTICAST> mtu 1500
    options=b<RXCSUM, TXCSUM, VLAN_MTU>
    inet 192.168.10.222 netmask 0xffffffff broadcast 192.168.10.255
    ether 00:50:56:a7:03:2b
    media: Ethernet autoselect (1000baseTX <full-duplex>)
    status: active
```

5.2 Νῶεῖβόαέο Ἀέάοεῖγίαῖ IP

Ἰδῖνᾶβῶα ἰά ἰάέ Ὑῶαῖ ἰά ἁέᾶῖοῖος IP ὁᾶ ἰά ἁέᾶῖοῖ ἁέέοῖῖ ἰᾶ ὁς ÷πῖος ὁς ἰῖοῖῖ ifconfig(8). Ἀέά ἰά ᾶβῖᾶ ἰῖῖῖ ὁῖοῖ ἁῖοῖ ᾶῖῖ, ἁέ ἰά ἰς ÷ Ὑῖᾶῖ ὁᾶ ἔὙᾶ ἁῖᾶῖῖῖ, ἔᾶ ὁῖ Ὑῖᾶ ἰά ὁς ὁᾶῖῖ Ὑῖᾶῖ ὁῖ ἁῖ ÷ ᾶῖ /etc/rc.conf. Ὀῖ ἁῖῖῖ ὁᾶ Ὑῖᾶῖ ὁᾶῖᾶῖ ᾶ ἁῖᾶ ÷πῖος ὁῖ ὁᾶῖῖ Ὑῖᾶ ὁῖ Ὑῖᾶ ὁῖ ὁῖῖῖῖῖ (hostname), ὁς ἁέᾶῖοῖ IP, ἁῖῖ ἁέ ὁς ὁᾶῖῖῖ Ὑῖ ὁῖῖ (defaultrouter):

```
hostname="server1.example.com"
ifconfig_em0="inet 10.10.10.100 netmask 255.255.255.0"
defaultrouter="10.10.10.1"
```

×πῖῖῖῖῖῖ ὁς ἁῖῖῖῖ ἁῖᾶ ÷πῖος ἁέ ἰά ἁῖῖῖῖ ὁῖ ἰά ἁέᾶῖῖ ἔᾶ Ὑῖᾶ ὁῖῖῖῖ Ὑῖῖ DHCP:

```
hostname="server1.example.com"
ifconfig_em0="DHCP"
```

6 Firewall

Ὀῖ Linux ÷πῖῖῖῖῖῖ ὁῖ **IPTABLES** ὁῖ ἰῖῖῖ ὁᾶ Ὑῖ ÷ ἁῖ ὁῖῖῖῖῖῖ firewall ὁᾶ ἁῖῖῖῖ ὁῖῖῖῖ. Ὀῖ FreeBSD ὁᾶ Ὑῖ ÷ ἁῖ ἁῖῖῖῖ firewall Ὑῖῖ ὁῖ ὁῖῖῖῖ. Ἀέά ὁς ἁῖῖῖῖ, ὁῖ FreeBSD ὁᾶ Ὑῖ ÷ ἁῖ ὁῖῖῖῖ firewalls:

- IPFW (http://www.FreeBSD.org/doc/el_GR.ISO8859-7/books/handbook/firewalls-ipfw.html)
- IPFILTER (http://www.FreeBSD.org/doc/el_GR.ISO8859-7/books/handbook/firewalls-ipf.html)
- PF (http://www.FreeBSD.org/doc/el_GR.ISO8859-7/books/handbook/firewalls-pf.html)

Ὀῖ **IPFW** ᾶ **IPFW** (ς ἰῖῖῖ ÷ ἁῖῖῖῖ ὁῖ ἁῖῖῖῖ ὁῖ **IPFW** ᾶῖῖ ᾶ ipfw(8)) ᾶῖῖ ὁῖ firewall ὁῖ Ὑῖ ÷ ἁῖ ἁῖῖῖῖ ἁῖ ὁῖῖῖῖῖ ἁῖ ὁς ἰῖῖῖ ἁῖῖῖῖ ὁῖ FreeBSD. Ὀῖ **IPFW** ἰῖῖῖ ἰά ὁῖῖῖῖῖ ἰᾶ ὁῖ dummynt(4) ἁέ ἰά ὁᾶ Ὑῖ ÷ ἁῖ ἁῖῖῖῖῖ ἁῖῖῖῖῖ ὁς ἁῖῖῖῖ ὁᾶ Ὑῖῖ (traffic shaping) ἁῖ ἰά ἁῖῖῖῖῖ ἁῖῖῖῖῖῖ ὁῖῖῖ ὁῖῖ Ὑῖῖ ἁῖῖῖῖ.

ὁᾶ Ὑῖῖῖῖ ἁῖῖ ἁῖῖῖ ὁῖ **IPFW** ὁῖ ἁῖῖῖ ὁᾶ ἁῖῖῖ ÷ ἁῖῖ ἁῖῖῖ Ὑῖ ὁῖ ὁῖῖῖῖ **SSH**:

```
ipfw add allow tcp from any to me 22 in via $ext_if
```

Ôi **IPFILTER** áðíáé íéá áóáñííáP firewall ðíó áíáððýóóáðáé áðú ôíí Darren Reed. Äáí Ý÷-áé öðéá÷-ðáß áéáéêÜ áéá ôí FreeBSD, éáé Ý÷-áé íáðóáññéáß éáé óá Üëéá éáéðíõñáéêÜ, óðíðáñééäíááííÝíúí ðúi NetBSD, OpenBSD, SunOS, HP/UX, éáé Solaris.

ĐánŨäâëàíà áíüò êáíuíá ãéá ôí **IPFILTER** ðĩõ ãđéõñÝđăé áéóăñ÷:ùìáíá áăăñÝíá ðñĩò ôçí òđçñăóáá **SSH**:

```
pass in on $ext_if proto tcp from any to any port = 22
```

Ç òàèãòòàáá àòàñìràP firewall, òì **PF**, áíáðóýòóòáé áðü òì OpenBSD project. Ôì **PF** àçìéròñãPèçèà ùò áíòééáòáóòÜòçò òìò **IPFILTER**, éáé Ýòóé ç óýíòáç òìò **PF** ááíáé áñèêòÜ ðañüüíéá íá áòòP òìò **IPFILTER**. Ôì **PF** ìðññáá íá óóíáòáóòáá íà òì altq(4) áéá íá ðánÝ ÷ áé òðçñáóáò òýðìò QoS.

ĐánÜäåēāiā êáíuíá ôiō **PF** ðiō ãđéônÝđăé áéoăñ÷ùiăiá āāāiñÝiá đñiò ôçí òđçñăóóă **SSH**:

```
pass in on $ext_if inet proto tcp from any to ($ext_if) port 22
```

7 Άίαâáèìβæïïôáò ôï FreeBSD

ÖðÜñ÷ïïí ññáéð ìÝèràíè áéá ôçí áíááÜèìéóç áíuò óóóóPíáðìò FreeBSD: ÌÝòù òìò ðçááßìò èpáééá, ìÝòù Ýðìèììì (binary) áíáááèìßóáìì, éáé ìÝòù òùì CD áãéáðÜóóáóçð.

Ç äææðÜðððððç ìÝóü ðìð ðçäâðìð òðäéä äâðäé ç ðér ðìèýðèìèç, äæÜ ðñìðóÝñäé éäé ðç ìääæýððñç äðððð ððäéððä. Ç äéääéäðä äððð ðñééäìäÜðäé ðì ððä÷ññéðìü ðìð ðìðéèý áðéäñÜðìð ðìð ðçäâðìð òðäéä ðìð FreeBSD ìä ðìð òðäéä ðìð FreeBSD ðìð äñððéäðäé ððìð äìððçñäðçÝð CVS (Concurrent Versioning System). Äðü ðç ððéäìð ðìð ðìð ðìðéèü áððâñäðìð ðçäâðìð òðäéä äðäðäñÝñ, ìðñâððä ìä ìäðäæüððððððä ìÝäð äæüðäæð ðìð ððñððä éäé ðùì ääðéðð ðññäñäìÜðùì. Äéä ðñééððððñäðð ðççñìðñðäð ð÷÷ðééÜ ìä ðìð óýððçðä áðäâÜèìèðçð ìÝóü ðçäâðìð òðäéä, äâððä ðì èäðÜèäéì ÄìçìÝñùðç éäé ÄìäâÜèìèðç (http://www.FreeBSD.org/doc/el_GR.ISO8859-7/books/handbook/updating-upgrading.html) ððì Ää÷äéñâéì ðìð FreeBSD.

Ίε Υόιειάο (binary) αίαάειβόάεο, αβίαέ δάνυιρέαο ιά ος ÷ñΠός οςο αίοιρέΠο yum P apt-get αέα οςι αίαάΥειέος αίυο
 οόοόΠιάοιò Linux. Ç αίοιρέP freebsd-update(8) έα έαόάΥΌαέ οέο αίαάειβόάεο έαέ έα οέο αάεάοάοόΠόαέ. Ιδιñαβόα ιά
 έάειñβόάόα οςι αόδύιáος, αίΥ όάέδΥ έάέάοΠιάόά άέοΥέάος οςό, ιά ος ÷ñΠός οίò cron(8).

Όγιὰβυός: Αί δñüēάέόάέ íá ÷ ñçόέííðíēΠόάðå ðí cron(8) äéå ðñĩāñáííäíóéóíÝíäð áíááåèíßóáéð, äåååüèåßððå üðé ÷ ñçόέííðíēåßðå ðçí áíðíēΠ freebsd-update cron ððí åñ÷:åßí crontab(1) äéå íá åäå÷:éóðíðíēçèåßß ç ðééáíüðçðå íá åßíåóáé áíáíÝüóç ðçí ßäéå ðóéåíΠ åðü Ýíá íååÜēí åñéèíü íç÷:áíçÜðüí.

```
0 3 * * * root /usr/sbin/freebsd-update cron
```

Ç öâëãöôâáá äðëëïãP áíááÛëíóçð, ìÝòù òùì CD äãëáðÛóóáóçð, âáíáë äñëãðÛ íäëÛëãñ. Áðëð ãëëëíPóðã áðü òì
 CD äãëáðÛóóáóçð ëáë äðëëÝíðã òçì áíððóðíë÷ç äðëëïãP áíááÛëíóçð (upgrade).

8 procfs: ÐǎñáóìÝĩ áëëÜ ü÷é Îǎ÷áoìÝĩ

Óôî Linux, èà ÷ñàéáôâß íá äâßôâ ôî /proc/sys/net/ipv4/ip_forward áéá íá èâèññóáôâ áí âíáíé áíáññôíðéçíÝíc ç ðñíèèçóç IP (IP forwarding). Óôî FreeBSD èà ðñÝðáé íá ÷ñçóéíððéóóáôâ ôî sysctl(8) áéá íá äâßôâ

ἀόδῖ ἐὰς Ὑεῖαδὸ ἡδὲβόαέδ οἷο ὁδὸδῖαδῖο, ἐὰεῖδὸ οἷ procfs(5) ἐὰῦἡἡβόαέ δᾶἡῦ÷çìÝîí ὁᾶ δἡῦὁᾶᾶδὸᾶ ἀέᾶῦὁᾶέδ οἷο ἐᾶέδῖῶἡᾶέῖ. (Αἷ ἐὰς ç ἰῖῖῖῖῖ sysctl ἡβῖᾶέ ἡδῖὅçδὸ ἀέᾶέÝῖῖῖ ἐὰς ὁἷ Linux).

Ὀἷ δᾶἡὙᾶῖᾶ ὁçδὸ δἡἡῖῖῖὅçδὸ IP, ἐὰ ÷ἡçῖῖῖὅçῖῖῖὅçῖὁ ὁçῖ ἡῖῖῖὅçῖ ἰῖῖῖῖῖ ἡῖᾶ ἰᾶ ἐᾶῖἡἡὅῖὅἰᾶ ἰᾶ ç ἡὅἰᾶὁῦὁçὁᾶ ἡὁὁῖ ἡβῖᾶέ ἰᾶἡἡἡὅῖῖῖῖῖῖῖῖ ὁᾶ Ὑῖᾶ FreeBSD ὁῖὁçῖᾶ:

```
% sysctl net.inet.ip.forwarding
net.inet.ip.forwarding: 0
```

Ç ἡὅῖῖῖῖῖ -a ÷ἡçῖῖῖὅῖῖῖῖῖῖῖῖ ἡῖᾶ ἰᾶ δὙἡὅἰᾶ ἰᾶ ῖḃὁᾶ ἰᾶ Ὑῖᾶδὸ ὁῖδὸ ἡὅῖῖῖὁᾶέδ οἷο ὁδὸδῖᾶὁἷδ:

```
% sysctl -a
kern.ostype: FreeBSD
kern.osrelease: 6.2-RELEASE-p9
kern.osrevision: 199506
kern.version: FreeBSD 6.2-RELEASE-p9 #0: Thu Nov 29 04:07:33 UTC 2007
root@i386-builder.daemonology.net:/usr/obj/usr/src/sys/GENERIC

kern.maxvnodes: 17517
kern.maxproc: 1988
kern.maxfiles: 3976
kern.argmax: 262144
kern.securelevel: -1
kern.hostname: server1
kern.hostid: 0
kern.clockrate: { hz = 1000, tick = 1000, profhz = 666, stathz = 133 }
kern.posix1version: 200112
...
```

Ὀçῖᾶḃῖὁç: ἘὙὅῖῖᾶδὸ ἡὁῦ ὁῖδὸ ὁῖῖὙὅ δῖῖὁ ἡᾶḃ÷ῖᾶέ ç ἰῖῖῖῖῖ sysctl ἡβῖᾶέ ἰῦἡἡ ἡῖᾶ ἰῖᾶἰᾶῖὁç.

ὈδὙἡ÷ῖὅἰ δᾶἡῖὁḃὁᾶῖὁ Ὑὅἷὁ ἡὅᾶῖὁᾶḃὁᾶέ ὅἰ procfs, Ὑὅῦδὸ ἡῖᾶ δᾶἡὙᾶῖᾶῖᾶ Ὑὁᾶῖ ἡῖὁᾶῖᾶḃὁᾶ δᾶῖῖὁᾶἡἡἡ ῖῖᾶῖὅῖῖῖ, ὅἰ ῖὅἰḃῖ ῖὙῖᾶέ ÷ἡḃὁç ὁçδὸ ἰῖὅῖῖῖὁ truss(1) ἡῖᾶ ὁçῖ ἰῖḃ÷ῖᾶὁç ὁῦἰ ῖῖḃὁᾶῖ ὁδὸδῖᾶὁἷδ, ἐὰς ἡῖᾶ ὁçῖ Ὀὅἰᾶᾶὁῦὁçὁᾶ ἰᾶ ἈῖὁᾶῖὙὅῖᾶ ὅἷο Linux (http://www.FreeBSD.org/doc/el_GR.ISO8859-7/books/handbook/linuxemu.html). (Αἷ ἐὰς ç Ὀὅἰᾶᾶὁῦὁçὁᾶ ἰᾶ ἈῖὁᾶῖὙὅῖᾶ ὅἷο Linux ÷ἡçῖῖῖὅῖῖῖῖ ὅἰ ἡῖῖὁ ὁçδὸ procfs, ὅἰ linprocfs(5)). Αἷ ÷ἡᾶῖὙᾶᾶᾶῖ ἰᾶ δἡἡὁᾶἡὁḃὁᾶ ὅἰ procfs, ἰὅἡἡḃὁᾶ ἰᾶ δἡἡὅῖὙὁᾶᾶ ὁçῖ ἡῖῖῖὅçῖ ἡᾶἡᾶὁḃ ὁἷ ἡἡ÷ᾶḃῖ /etc/fstab:

```
proc                /proc                procfs    rw,noauto            0                0
```

Ὀçῖᾶḃῖὁç: Ç ἡὅῖῖῖῖῖ noauto ἐὰ ἰὅἡἡḃὁᾶέ ὁçῖ ἡὁὁῖᾶὁç δἡἡὅḃḃὁç ὅἷο /proc ῖᾶὁḃ ὁçῖ ἡῖῖḃῖὁç ὅἷο ὁδὸδῖᾶὁἷδ.

δἡἡὁᾶἡὁḃὁᾶ ῖᾶὁῦὅῖῖ ὁçῖ procfs ÷ἡçῖῖῖὅῖῖῖὁᾶ ὁçῖ ἡῖῖῖὅçῖ ἰῖὅῖῖῖ:

```
# mount /proc
```


9 ÓõίϗèéòìÝíàò ÁíôïëÝò

9.1 Äéá÷âβñéóϗ ÐáëÝòùí

ÁíôïëP ôïò Linux (Red Hat/Debian)	Áíôβóôïë÷ç áíôïëP FreeBSD	Óëïðüò
<code>yum install package / apt-get install package</code>	<code>pkg_add -r package</code>	ÄãëáoÜóóáoϗ ÐáëÝòïò áðü áðñíáëññóìÝíí áíôðϗñâóϗôP
<code>rpm -ivh package / dpkg -i package</code>	<code>pkg_add -v package</code>	ÄãëáoÜóóáoϗ ÐáëÝòïò
<code>rpm -qa / dpkg -l</code>	<code>pkg_info</code>	Ëβóóá äãëáoðáoϗìÝííí ÐáëÝòùí

9.2 Äéá÷âβñéóϗ ÓóóôPíáôïò

ÁíôïëP Linux	Áíôβóôïë÷ç áíôïëP FreeBSD	Óëïðüò
<code>lspci</code>	<code>pciconf</code>	Ëβóóá óóóëãðí PCI
<code>lsmod</code>	<code>kldstat</code>	Ëβóóá ôññòùíÝííí áñëññüÜòùí ðòñPíá
<code>modprobe</code>	<code>kldload / kldunload</code>	Öüñòùóϗ/Áðñüññòùóϗ áñëññüÜòùí ðòñPíá
<code>strace</code>	<code>truss</code>	Áíβ÷íãóóϗ êëPóãüí óóóôPíáôïò

10 ÓõìðãñÜóíáoá

ÄóãëðéóóìÝíí üóé áðòü ôï êãβíññ óáo ðãññβ÷ã áñëãòÝð ðëϗññññññò ãéá íá íãëéPóããã íã ôï FreeBSD. Äéá ðãñéóóóðãññò éáé ðëí êãðòññññññò ðëϗññññññò, ðãñáéáéÝíí íá áéããÜóãã ôï Äã÷ãëñβãéí ôïò FreeBSD (http://www.FreeBSD.org/doc/el_GR.ISO8859-7/books/handbook/index.html) ôï ïðññí áðβóϗò ðãñéÝ÷ãé éáé ðñëÜ èÝíáoá ðñò äãí éáéÝðëϗéí éáéüëñò óóí ðãñññ êãβíññ.