

Όγιάαός ΙΎού Όçäåöþñĩ òéé Ôåß÷ìò Ðñĩóôáóßàò óôĩ FreeBSD

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\$FreeBSD: doc/el_GR.ISO8859-7/articles/dialup-firewall/article.sgml,v 1.20
2008/12/08 03:10:51 keramida Exp \$

Ôĩ FreeBSD áβιάέ Υία éáôĩ÷õñùìΥĩ ãìðñééÛ óγìãñē òĩò FreeBSD Foundation.
ÐñēēΥò áðù óéò ēΥìáéò ð õñÛóáéò ìé ìðĩßàò ÷ ñçóéììðñēìγìóáé áðù òĩòò éáóáóéãáóóðΥò ð òĩòò
ðñēçòΥò òĩòò áéá íá áéáēñβñĩòĩ óá ðñĩùìíóá òĩòò éãùññĩγìóáé ãìðñééÛ óγìãñē. ¼ðìò áóðΥò
ãìðáíβñĩóáé óá áóðù òĩ éãβìãñĩ éáé áéá ùóáò áðù áóðΥò ãìùñβæáé ç ììÛáá ÁíÛððçìçò òĩò FreeBSD ùóé
åβιάé ðééáìíí íá áβιάé ãìðñééÛ óγìãñē, éá åãßòá Υία áðù óá óγìãñē: “TM” ð “®”.

Áóðù òĩ Ûñēñĩ ðãñéãñÛóáé ðñò ìðñãßòá íá ñðēìßóãðá Υία ôåß÷ìò ðñĩóóáóßàò (firewall) ÷ ñçóéììðñēìγìóáò
ìéá PPP óγìãñēç ìΎóù òçäåöþñĩò óôĩ FreeBSD ìá òĩ IPFW. Ðéì óðãéãñēçìΥία, ðãñéãñÛóáé òç ñγέìéóç áñòð
ôåß÷ìò ðñĩóóáóßàò óá ìéá óγìãñēç ìΎóù òçäåöþñĩò ðìò Υ÷áé ãñíãñéç IP áéãýðçìç. Áóðù òĩ éãβìãñĩ ããí
áó÷ìãßóáé ìá òĩ ðñò éá ñðēìßóãðá òçí ãñ÷éç óáò óγìãñēç ìΎóù PPP. Áéá ðãñéóóóðãñãð ðççññññßàò
ó÷ãðééÛ ìá ðéò ñðēìßóãðò ìéáò óγìãñēç ìΎóù PPP åãßòá òç óãñãáá ãñðéãáò ppp(8).

1 Ðññēñĩò

Áóðù òĩ éãβìãñĩ ðãñéãñÛóáé òçí áéãáééáóßá ðìò ÷ ñáéÛæáóáé áéá íá ñðēìßóãðá Υία ôåß÷ìò ðñĩóóáóßàò óôĩ
FreeBSD ùóáí ç IP áéãýðçìç ãβñóáé ãñíãñééÛ áðù òĩ ISP óáò. Ðãññēç ðìò Υ÷ù ðñĩóðáéðóáé íá ēÛù áóðù òĩ
éãβìãñĩ ùóí òĩ ãñíãñéç ðéì ðçðñãð éáé óùóðù, åβóðá ãððññóããðñé íá óðãñãðá ðéò áéññèðóáéò, óá ó÷ùééá ð ðéò
ðññòÛóáéò óáò òçç áéãýðçìç òĩò óðããñãóΥία: <marcs@draenor.org>.

2 ÐãñÛìãññé òĩò ððññía

Áéá íá ìðñΥóãðá íá ÷ ñçóéììðñēìγìóáò òĩ IPFW, ðñΥðáé íá áíóùìãððóãðá òçí ó÷ãðééç ððñññññçç óôñ ððññía óáò.
Áéá ðãñéóóóðãñãð ðççññññßàò ó÷ãðééÛ ìá òç ìãðããèððéóç òìò ððññía, åãßòá òĩ òìñía ñðēìßóãðù òìò ððññía óôñ
Ãã÷ãññãéì (http://www.FreeBSD.org/doc/el_GR.ISO8859-7/books/handbook/kernelconfig.html). Éá ðñΥðáé íá
ðññéçΥóãðá ðéò ðãñáéÛò ãðéçñãΥò óðéò ñðēìßóãðò òìò ððññía óáò áéá íá áñãñãñññññññ òçí ððñññññçç áéá òĩ
IPFW:

```
options IPFW2
```

Ἀἰῆῆῆῆῆῆῆ οἰ ἔῆῆῆῆ ὀαβ÷ἰδὸ Ὀνῖόοάοβᾶδὸ οἰδὸ Ὀῆῆῆῆῆῆ.

Ὀγῖῶῆῆῆῆ: Ἀδῶδὸ οἰ ἔῆῆῆῆῆῆ ἔῆῆῆῆῆ ὑδὲ Ὑ÷ᾶδᾶ ἄῆῆῆῆῆῆῆῆῆ ὀγῖ Ὑῆῆῆῆῆ 5.X οἰδὸ FreeBSD ῆ ἰῆᾶ Ὀῆῆ Ὀῆῆῆῆῆῆῆ. Ἀἰ ÷ῆῆῆῆῆῆῆῆῆῆῆ ὀγῖ Ὑῆῆῆῆῆ 4.X, δῶδᾶ ἔᾶ ὈῆὙῆῆῆ ἰᾶ Ἀἰῆῆῆῆῆῆῆῆῆῆῆ ὀγῖ Ἀῆῆῆῆῆῆῆῆῆ *IPFW2* ἔᾶῆ ἰᾶ Ἀῆῆῆῆῆῆῆῆ ὀγῖ ὀᾶῆῆῆῆ Ἀἰῆῆῆῆῆῆῆῆ *ipfw(8)* ἄῆᾶ Ὀᾶῆῆῆῆῆῆῆῆῆ Ὀῆῆῆῆῆῆῆῆῆ ὀ÷ᾶῆῆῆῆῆ ἰᾶ ὀγῖ Ἀῆῆῆῆῆῆῆῆ *IPFW2*. Ὀῆῆῆῆῆῆῆ ἔᾶῆῆῆῆῆῆῆ ὀἰ ὀἰῆῆῆ *USING IPFW2 IN FreeBSD-STABLE*.

```
options IPFW2_VERBOSE
```

ὈῶὙῆῆῆῆ ὀᾶ ἰῆῖῖῖῖῖῖ ἄῆᾶ ὀᾶ ἔᾶῶὙῆῆῆῆ ὈᾶῆὙῆῆῆ ὀῶἰ *log* οἰδὸ ὀῶῶὈῆῆῆῆῆῆ.

```
options IPFW2_VERBOSE_LIMIT=500
```

ἈὙᾶῆῆ ἔὙῆῆῆῆ ὑῆῆῆῆ ὀῶῆῶ ὀῆῆὙῆῆ Ὀῆῆ ἔὙῆῆῆῆ Ἀᾶᾶᾶᾶῆῆ ἔᾶ ἔᾶῶᾶᾶᾶὙῆῆῆῆῆ. ὀῶῆ ἰῆῆῆῆῆῆῆ ἰᾶ ἔᾶῶᾶᾶᾶὙῆῆῆῆῆ ὀᾶ ἰῆῖῖῖῖῖῖ ὀἰ ὀαβ÷ἰδὸ Ὀνῖόοάοβᾶδὸ ÷ῆῆῆῆ ὀἰῖ ἔῆῆῆῆῆῆ ἰᾶ Ἀᾶῆῆῆῆῆῆ ὀᾶ Ἀῆ÷ᾶῆῆ ἔᾶῶᾶᾶᾶᾶῆῆῆ ὀἰδὸ ὀῶῶὈῆῆῆῆῆῆῆ ὀᾶῶ Ἀἰ Ἀᾶ÷ὀᾶῆῆῆ ἔὙῆῆῆῆ Ἀῆῆῆῆῆῆῆ. Ὀἰ ὑῆῆῆῆ *500* ἰῆῖῖῖῖῖῖ Ἀῆῆῆῆ ἰῆᾶ Ἀῆῆῆῆῆῆῆ ἔῆῆῆῆῆῆ ἔῆῆῆῆῆῆῆ, ἈῆῆὙῆ ἰῆῆῆῆῆῆῆ ἰᾶ Ὀῆῆῆῆῆῆῆῆῆῆ ὀᾶῶ ὀᾶῶῆῆ ὀγῖ ὀῆῆῆ ἈἰὙῆῆῆῆ ἰᾶ ὀῆῶ Ἀῆῆῆῆῆῆῆῆ ὀἰδὸ Ἀῆῆῆῆῆῆῆῆ ὀἰδὸ Ἀῆῆῆῆῆῆῆῆ ὀᾶῶ Ἀῆῆῆῆῆῆῆῆ.

```
options IPDIVERT
```

Ἀἰῆῆῆῆῆῆῆ ὀᾶ *divert* sockets, Ὀἰδὸ ἔᾶ Ἀἰῖῖῖῖ ἈῆᾶὙῆῆῆῆ ὀῆ ἔὙῆῆῆῆῆ.

Ὀῆῆῆῆῆῆῆῆῆῆ: ἰῆῆῆῆ ὀᾶῆῆῆῆῆῆῆ ἰᾶ ὀῆῶ ῆῶῆῆῆῆῆῆ ἔᾶῆ ὀγῖ ἰᾶῶᾶῆῆῆῆῆῆῆ ὀἰδὸ Ὀῆῆῆῆῆ ὀᾶῶ ἰῆῖῖῖῖῖῖ Ἀῆῆῆῆῆῆῆῆῆῆῆ! Ἀἰ ἔὙῆῆῆῆ Ἀῆῆῆῆῆῆῆῆῆῆῆ ὀᾶ ἈῶὈὙ ὀἰ ὀῆῖῖῖῖ ἰῆῆῆῆ ἰᾶ ἔῆᾶῆᾶὙῆῆῆῆ ἈῆὙῖὙ ἈῆὙ ὀἰ ὀῶὈὈὙ ὀᾶῶ. ὈῆὙῆῆῆ ἰᾶ Ὀᾶῆῆῆῆῆῆῆ ἰὙ÷ῆῆ ἰᾶ Ἀῆῆῆῆῆῆῆῆῆῆῆ ἰῆ ἔᾶἰῖῖῖῖ ὀἰδὸ ὀαβ÷ἰδὸ Ὀνῖόοάοβᾶδὸ ἔᾶῆ ἰᾶ Ἀἰῆῆῆῆῆῆῆῆῆ Ὑῆῆ ὀᾶ ὀ÷ᾶῆῆῆῆ Ἀῆ÷ᾶῆῆ ῆῶῆῆῆῆῆῆ.

3 ἈῆῆῆῆὙῶ ὀῶἰ */etc/rc.conf* ἄῆᾶ ἰᾶ ὀἰῆῆῆῆῆῆῆ ὀἰ ὀαβ÷ἰδὸ Ὀνῖόοάοβᾶδὸ

Ἀῆᾶ ἰᾶ Ἀἰῆῆῆῆῆῆῆῆῆῆ ὀἰ ὀαβ÷ἰδὸ Ὀνῖόοάοβᾶδὸ ἔᾶὈὙ ὀγῖ Ἀῆῆῆῆῆῆῆ ὀἰδὸ ὀῶὈὈὙῆῆῆῆῆῆ ἔᾶῆ ἄῆᾶ ἰᾶ ῆῆῆῆῆῆ ὀἰ Ἀῆ÷ᾶῆῆ ἰᾶ ὀἰδὸ ἔᾶἰῖῖῖῖ ὀἰδὸ ὀαβ÷ἰδὸ Ὀνῖόοάοβᾶδὸ, ὈῆὙῆῆῆ ἰᾶ Ἀἰῆῆῆῆῆῆῆῆ ὀἰ Ἀῆ÷ᾶῆῆ */etc/rc.conf*. ἈῆὈὙ ὈῆῆῆῆὙῶὀᾶ ὀῆῶ ὈᾶῆῆῆὙῶὀᾶ ἈῆῆῆῆὙῶ:

```
firewall_enable="YES"
firewall_script="/etc/firewall/fwrules"
```

Ἀῆᾶ Ὀᾶῆῆῆῆῆῆῆ Ὀῆῆῆῆῆῆῆῆ ὀ÷ᾶῆῆῆῆ ἰᾶ ὀῆ ὀῆῖῖῖῖῖ ἔᾶῆᾶῆὙῶ ἈῆὙ ἈῶὈὙῶ ὀῆῶ ἈῆῆῆῆὙῶ, ῆῆῆῆῆ ἰῆᾶ ἰᾶὀῆὙῶ ὀῶἰ */etc/defaults/rc.conf* ἔᾶῆ ἈῆῆῆὙῶὀᾶ ὀγῖ *man* ὀᾶῆῆῆῆ *rc.conf(5)*

4 ΆíññìðìέΠóòά όçí ΑίóύìáòùìΎίç ìáòÛññάόç Äέáðēýíóáùì óìò PPP

Άέά íá äðέòñÝðáòá óá Ûέέá ìç÷áíΠíáóá òìò äέέóýìò óáò íá óðíáÝìíóáέ ìá òìí Ύìù èùòìí ìΎóù òìò FreeBSD, ÷ñçóέììðìέΠíóáò òì ùò “ðýέç”, έá ðñÝðáέ íá áíñññìðìέΠóòáò όçí ΑίóύìáòùìΎίç ìáòÛññάόç äέáðēýíóáùì òìò PPP (NAT). Άέά íá áβíáέ áòòù, ðñìóέΎóáò óòì áñ÷áβì /etc/rc.conf óέò ðáñáέÛòù áñáñìΎò:

```
ppp_enable="YES"
ppp_mode="auto"
ppp_nat="YES"
ppp_profile="ðñìòβέ_όçò_όγíääóçò"
```

Όόç èΎόç òìò ðñìòβέ_όçò_όγíääóçò ðñÝðáέ íá áÛέáòá òì ùíñá όçò óγíääóçò óáò, ùòòù òì Ύ÷áòá áðìέçέáýóáέ óòì áñ÷áβì /etc/ppp/ppp.conf.

5 Ìέ έáíüíáò òìò firewall

Όì ìüñ ðìò áðñìΎíáέ òðñá áβíáέ íá ìñβóìòìá òìòò έáíüíáò òìò firewall. Ìέ έáíüíáò òìòò ìðìβìòð ðáñέáñÛòìòìá ááð áβíáέ áñέáòÛ έáέìβ áέá òìòò ðáñέóóùòáñìòð ÷ñΠóóáò ìá dialup óγíääóç, áέέÛ ìýóá òðì÷ñáùóέέìβ áβíáέ, ìýóá áβíáέ áòíáòùì íá óáέñέÛέìòì ìá óέò áíÛáέáò ùέùì òùì ÷ñçóòðìí dialup. Ìðìñìýí, ùìò, íá ÷ñçóέìáýóìòì ùò Ύíá έáέù ðáñÛááέáìá ñòèìβóáùì òìò IPFW έάέ áβíáέ ó÷áðέέÛ áýέìèí íá òìòò ðñìóáñìüóáòá óóέò áέέΎò óáò áíÛáέáò.

Áò áñ÷áβóìòìá ùìòò ìá óέò ááóέέΎò áñ÷Ύò áíüò èέáέóòìý óáβ÷ìòò ðñìóóáóáò. Íá èέáέóóù óáβ÷ìò ðñìóóáóáò áðááññáýáέ έáò’ áñ÷Πì έÛέá óγíääóç. Ì áέá÷áέñέóóðò ìðìñáβ ýóóáñá íá ðñìóέΎóáέ έáíüíáò áέá íá äðέòñÝðáέ ìüñ óóáέáèñέìΎíáò óðíáΎóáέò íá ðáñìÛíá áðù òì óáβ÷ìò ðñìóóáóáò. Ç ðέì óðìçέέòìΎίç óáέñÛ òùì έáíüíüí óá Ύíá èέáέóóù óáβ÷ìò áβíáέ: ðñðóá ìέ έáíüíáò ðìò äðέòñÝðìòì ìáñέέΎò óðíáΎóáέò, έάέ òΎέìò ìέ έáíüíáò ðìò áðááññáýìòì ìðìέááΠðìòá Ûέέç óγíääóç. Ç έìáέέΠ ðβóù áðù áòòù áβíáέ ùóέ ðñðóá áÛέáòá òìòò έáíüíáò ðìò äðέòñÝðìòì ðñÛáíáòá íá ðáñÛóìòì έάέ ýóóáñá ùέá óá Ûέέá áðááññáýìíóáέ áòòùìáóá.

ΌðέÛìòá, έìέðüí, Ύíá έáòÛέìáì óòìí ìðìβì έá áðìέçέáýìíóáέ ìέ έáíüíáò òìò óáβ÷ìòò ðñìóóáóáò. Όá áòòù òì Ûñèññ ÷ñçóέììðìέìýíá ùò ðáñÛááέáìá òìí έáòÛέìáì /etc/firewall. ΆέέÛìòá έáòÛέìáì ìΎóá óá áòòùì έάέ äçìέìòñáΠóóá òì áñ÷áβì fwrules ðìò òì ùíñÛ òìò áβ÷áìá áñÛøáέ óòì rc.conf. ΌçìáέΠóóá ðùò ìðìñáβóá íá áέέÛíáòá òì ùíñá òìò áñ÷áβìò áòòìý óá ùóέ èΎέáòá. Áòòùò ì ìäçáùò áβíáέ áòòù òì ùíñá óáí ðáñÛááέáìá έάέ ìüñ.

Áò äìýíá òðñá Ύíá ðáñÛááέáìá óáβ÷ìòò ðñìóóáóáò ìá áñέáòÛ áðáíçäçíáðέέÛ ó÷έέá.

```
# Define the firewall command (as in /etc/rc.firewall) for easy
# reference. Helps to make it easier to read.
fwcmd="/sbin/ipfw"
```

```
# Define our outside interface. With userland-ppp this
# defaults to tun0.
oif="tun0"
```

```
# Define our inside interface. This is usually your network
# card. Be sure to change this to match your own network
# interface.
iif="fxp0"
```

```
# Force a flushing of the current rules before we reload.
$fwcmd -f flush
```

```
# Divert all packets through the tunnel interface.
```

```
$fwcmd add divert natd all from any to any via tun0

# Check the state of all packets.
$fwcmd add check-state

# Stop spoofing on the outside interface.
$fwcmd add deny ip from any to any in via $oif not verrevpath

# Allow all connections that we initiate, and keep their state,
# but deny established connections that don't have a dynamic rule.
$fwcmd add allow ip from me to any out via $oif keep-state
$fwcmd add deny tcp from any to any established in via $oif

# Allow all connections within our network.
$fwcmd add allow ip from any to any via $iif

# Allow all local traffic.
$fwcmd add allow all from any to any via lo0
$fwcmd add deny all from any to 127.0.0.0/8
$fwcmd add deny ip from 127.0.0.0/8 to any

# Allow internet users to connect to the port 22 and 80.
# This example specifically allows connections to the sshd and a
# webserver.
$fwcmd add allow tcp from any to me dst-port 22,80 in via $oif setup keep-state

# Allow ICMP packets: remove type 8 if you don't want your host
# to be pingable.
$fwcmd add allow icmp from any to any via $oif icmp types 0,3,8,11,12

# Deny and log all the rest.
$fwcmd add deny log ip from any to any
```

Όπná Ý÷áoá Ýía ðēēçñüíÝíí óåβ÷ìò ðñüóóáóβáo, òì ìðìβì óðíaÝóáéoð óóéo èýñáo 22 éáé 80 éáé éáoáñÜöáé üēáo óéo Üēēáo óðiaÝóáéoð óôi áñ÷åβì éáoáñáoðò òìò óóóðβiaóìò. ÐēÝíí åβóðå Ýðìēñē áéá åðáíåēβícóc. Ôì óåβ÷ìò ðñüóóáóβáo éå áíåññðēçēåβ áóðüiaóå éáé éå òñòðóå òìò éáíüáoð ðìò ðñìóēÝóáóå. Áí åå åβíåé áóðü Þ Ý÷áoå ððēéåððìòå ðññåβiaóå, Þ áí Ý÷áoå èÜðēéåð ðñìóÜóáéoð áéá íå áéññēñēåβ áóðü òì Üñēñì, åðēēñēñìðóå íåæβ ììò íå email.

6 Åñüòðóáéoò

1. ÅēÝðü ìçíýiaóå üðüò limit 500 reached on entry 2800 éáé íåðÜ áðü áóðü òì óýóóçìÜ ììò óðáíåðÜå íå éáoáñÜöáé ðå ðåÝóå ðìò åìðñåññíóåé áðü òì óåβ÷ìò ðñüóóáóβáo. Åìçåýåé áéñüå òì firewall ììò;

Áóðü áðēÜ óçiaβíåé ðüò Ý÷å ðñóéññðēçēåβ òì ìÝáéóòì ùñēñ éáoáñáoðò (logging) áéá áóðü òì éáíüia. Ì éáíüiað ì βåìð áíåñññòååβ íå ðìçåýåé, áéēÜ ååñ éå óóÝēíåé ðéå ìçíýiaóå òôi áñ÷åβì éáoáñáoðò òìò óóóðβiaóìò ìÝ÷ñé íå ìçåññóåðå ðÜçé òìò ìåñçóÝò. Ìðñåβóå íå ìçåññóåðå òìò ìåñçóÝò ìå òçí áññēÞ

```
# ipfw resetlog
```

ΆίάέέάέόέέÛ, ìðññáβóá íá áðñáóáðá òì ùñéì éáóáññáöðò óóέò ñòèìβóáέò òìò ðòñáíá óáo ìá όçí áðέέìáÐ IPFWALL_VERBOSE_LIMIT ùðòò ðáñέáñÛðáìá ðáñáðÛì. Ìðññáβóá íá áέέÛíáðá áðóò òì ùñéì (÷ ùñβò íá ìáðááèòóðβóáðá ðÛέέ òì ðòñáíá óáo éάέ íá èÛíáðá reboot) ÷ ñçóέììðìέáðáð όçí sysctl(8) όέìÐ net.inet.ip.fw.verbose_limit.

2. ÈÛðìéì èÛèò ðñÝðáé íá Ýáέíá. Áέèìýçéóá óέò áíòìéÝð éáoÛ ãñÛìá éάέ όþñá èèáέäþèçéá áðÝì.

Áðóòò ì ìäçáùð òðìéÝðáé ùðé ÷ ñçóέììðìέáβóá òì *userland-ppp*, áé áðóò èé ìé éáfííáð ðìò áβñíóáé ÷ ñçóέììðìέíýì òì tun0 interface, ðìò áíóέóòìé÷ áβ óόçí ðñþόç όγíááόç ðìò óðéÛ÷ íáðáé ìá òì ppp(8) (áέέέþð áñóóò èάέ ùð *user-ppp*). Ç áðñíáíç όγíááόç éá ÷ ñçóέììðìέíýóá òì tun1, ìáðÛ òì tun2 éάέ ðÛáé èÝáñíóáð.

Èá ðñÝðáé áðβόçò íá èòìÛóðá ùðé òì pppd(8) ÷ ñçóέììðìέáβ òì interface ppp0, ìðòðá áí ìáέέíáóáðá όç όγíááόÐ óáo ìá òì pppd(8) éá ðñÝðáé íá áíóέέáóáóóðáðá òì tun0 ìá ppp0. ÐáñáéÛòù éá ááβñíòìá Ýíá áýέèì ðñùðì íá áέέÛíáðá òìòò éáfííáð òìò firewall éáoðÛέçéá. Ìé áñ÷έέìβ éáfííáð όþæííóáé óá Ýíá áñ÷áβì ìá ùññá fwrules_tun0.

```
% cd /etc/firewall
/etc/firewall% su
Password:
/etc/firewall# mv fwrules fwrules_tun0
/etc/firewall# cat fwrules_tun0 | sed s/tun0/ppp0/g > fwrules
```

Άέά íá éáðáéÛááðá áí ÷ ñçóέììðìέáβóá òì ppp(8) Ð òì pppd(8) ìðññáβóá íá áíáðÛóáðá όçí Ýññáì όçò ifconfig(8) áóìý áíáñáñðìέçéáβ ç όγíááόÐ óáo. Ð.÷., áέá ìéá όγíááόç ðìò áíáñáñðìέþèçéá áðù òì pppd(8) éá ááβðá èÛóέ óáf áðóò (ááβ÷ñíóáé ìùì ìé ó÷áðééÝð ãñáñìÝð):

```
% ifconfig
(skipped...)
ppp0: flags=8051<UP,POINTOPOINT,RUNNING,MULTICAST> mtu 1524
    inet xxx.xxx.xxx.xxx --> xxx.xxx.xxx.xxx netmask 0xff000000
(skipped...)
```

Άðù όçí Ûέçç, áέá ìéá όγíááόç ðìò áíáñáñðìέþèçéá ìá òì ppp(8) (*user-ppp*) èÛ ðñáðá íá ááβðá èÛóέ ðáñññìέì ìá òì ðáñáéÛòù:

```
% ifconfig
(skipped...)
ppp0: flags=8010<POINTOPOINT,MULTICAST> mtu 1500
(skipped...)
tun0: flags=8051<UP,POINTOPOINT,RUNNING,MULTICAST> mtu 1524
    (IPv6 stuff skipped...)
    inet xxx.xxx.xxx.xxx --> xxx.xxx.xxx.xxx netmask 0xffffffff00
    Opened by PID xxxxx
(skipped...)
```