Ellhniko Linux Sound Playing HOWTO

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Ayto to keimeno anaferei efarmoges gia Linux poy paizoyn diafora formats hxoy.

Contents

1 Eisagwgh

Ayto einai to Ellhniko Sound Playing HOWTO. Anaferei ta diafora format hxoy ka8ws kai tis efarmoges poy mporoun na xrhsimopoih8oun gia na ta paijoyn. Epishs anaferei merika texnasmata kai symboyles gia to pws na xrhsimopoih8oun aytes oi efarmoges. Yparxoyn epishs kapoies alles endiaferoyses efarmoges sxetikes me hxoys, oxi amesa sysxetismenes me thn ektelesh toys. Parola ayta, to keimeno ayto *den* perigrafei pws kapoios mporei na ry8misei ena susthma Linux system gia yposthrijh hxoy. Anafer8eite sto Linux Sound HOWTO apo ton `JeffTranter` gia odhgies gia yposthrijh hxoy se ena susthma Linux kai to yposthrizomeno hardware hxoy.

Ayto asxoleitai me tis fysiologikes efarmoges hxoy enos xrhsth. Dhladh, noiazetai mono me to oti enas mesos xrhsths xreiazetai na jerei apo thn pleyra twn efarmogwn hxoy, kai oxi ejwtika pragmata opws h sun8esh omilias, h pragmata sxetika me hardware poy antimetwpizontai sto Sound HOWTO.

1.1 Pneymatika Dikaiwmata toy keimenoy

To keimeno mporei na dianemh8ei kai na tropopoih8ei eleu8era (8a to ektimousa an me eidopoiousate gia allages), oso ayth h shmeiwsh peri toy copyright diathreitai. Parola ayta, den mporei na te8ei katw apo opoiodhpote allo periorismo, kai ena tropopoihmeno keimeno prepei na exei ta idia pneymatika dikaiwmata me ayto. Epishs anagnwrish prepei na apodo8ei opoy ofeiletai.

1.2 Copyright twn anaferomenwn efarmogwn

An den yparxei anafora pneymatikwn dikaiwmatwn, tote h efarmogh einai katw apo thn GNU General Public License.

1.3 Pou na breite ayto to keimeno

H pio prosfath epishmh ekdosh toy keimenoy aytou mporei na apokth8ei apo to *Linux Documentation Project* `<http://sunsite.unc.edu/LDP/>`. H pio prosfath anepishmh ekdosh toy keimenoy aytou mporei na apokth8ei apo to `<http://laplace.snu.ac.kr/wacko/howto/>`.

Mia Koreatikh ekdosh aytou toy keimenoy (polu jeperasmenh) einai dia8esimh sto `<http://laplace.snu.ac.kr/wacko/howto/Sound-Playing-HOWTO.ks>`.

Mia Giapwnezikh ekdosh aytou toy keimenoy einai dia8esimh sto `<http://jf.gee.kyoto-u.ac.jp/JF/JF-ftp/euc/Sound-Playing-HOWTO.euc>`.

1.4 Feedback

Gia sxolia, parathrhseis, dior8wseis, enhmerwseis peri ths Ellhnikhs metafrashs aytou toy HOWTO, steilte email sthn Boula Sanida : `voulariba@rocketmail.com` h ston Eyripidh Papakwsta : `epapakostas@ametro.gr` kai enallaktika : `ep@rocketmail.com`

Den eimai pantognwsths, kai den xrhsimopoiw oles tis edw anaferomenes efarmoges (merikes den mporw na tis dokimasw kan), etsi mporei na yparxoyn la8h. Epishs, ta programmata synh8ws ejelissontai synexws, etsi h tekmhriwsh teinei na jepernietai. Gi' ayto, an breite tipota strabo, parakalw `steiltemoy` o,ti dior8wseis. Protaseis h pros8hkes sto keimeno einai eyprosdektes, epishs.

1.5 Eyxaristies

Se oloys toys syggrafeis twn efarmogwn aytou toy HOWTO. Epishs, ston Hannu Savolainen gia ton spoydaio odhgo hxoy kai ton Linus Torvalds gia to spoydaio leitoyrgiko apo katw toy.

8elw epishs na eyxaristhsw ton Raymond Nijssen (`raymond@es.ele.tue.nl`), Jeroen Rutten (`jeroen@es.ele.tue.nl`), Antonio Perez (`aperez@arrakis.es`), Ian Jackson (`ijackson@gnu.org`), kai ton Peter Amstutz (`amstpi@freenet.tlh.fl.us`) gia tis plhrofories kai thn boh8eia poy proseferan.

2 Paizontas diafora Format Hxoy

Yparxoyn pollwn eidwn formats hxoy (WAV, MIDI, MPEG etc.). Parakatw, anaferoyme ta diafora formats kai tis efarmoges poy mporoun na xrhsimopoih8oun gia na ta paijoyn.

2.1 MIDI

MIDI einai to akrwnumio gia to Musical Instrument Device Interface. Ta arxeia MIDI exoyn synh8ws thn katalhjh `.mid`. Periexoyn plhrofories diadoxhs (sequencing information), dhladh, plhrofories gia to pote na paijei, poio organo, me ti tropo, klp. Analoga me to hardware sas (kai isws to logismiko me to opoio ton paizete), o hxos mporei na einai foberos, h entelws ahdia.

2.1.1 To paketo adagio

Ayto to paketo symperilambanei to `mp` (ena command-line player arxeiwn MIDI) kai `xmp` (enan player MIDI arxeiwn basismeno sto Xview, kai den prepei na sygxeetai me to module player poy epishs kaleitai `xmp`). 8a xreiasteite ta SlingShot extensions gia na xrhsimopoihsete to `xmp`. Epishs periexei kai alla programmata gia na paizete ta Adagio scores.

An exete mia GUS, to `mp` mporei na paijei kai MOD (des tmhma 2.2 (Modules) gia perissoteres plhrofories sta modules).

Ena mikro enoxlhtiko bug (apo thn ekdosh 0.5 gia merika hardware) einai pws o hxos xalaei pros to telos. Dhladh, anti na teleiwsei o hxos opws ka8orizei to arxeio MIDI, teleiwnei paizontas thn proteleytaia nota gia ena megalo xroniko diasthma. Ayto den me apo8arryne apo to na xrhsimopoiw to `mp`, alla mporei na apo8arrunei kapoion na to xrhsimopoiei gia 'pragmatikh' doyleia. Epishs jekina sxetika arga.

To paketo den anaferei copyright (h toylaxiston egw den mporw na to brw), opote ypo8etw oti mporei na dianemh8ei kai tropopoih8ei eleu8era. (Me mia aysthrh ermhneia toy nomoy peri pneymatikhs idiokthsias, tipota den dinei se kapoion to dikaiwma na kanei ayta ta pragmata, alla gia kapoio logo amfiballw pws ayth 8a htan h pro8esh toy syggrafea.)

Einai mia metafora toy CMU MIDI Toolkit se Linux (an kai exoyn proste8ei tosa polla wste na einai pleon kai ayto amfisbhthsimo) apo ton Greg Lee (`lee@uhunix.uhcc.hawaii.edu`).

Mporei na apokth8ei me `anonymousFTP` apo to `tsx-11.mit.edu` at `/pub/linux/packages/sound/adagio05.tar.gz`. Ta ektelesima arxeia poy yparxoyn edw einai se a.out format (linked me arxaies biblio8hkes), kai ta `xmp` ektelesima - poy polles fores kremane se periballon X11R6 (XFree86 3.1.1, libc 4.7.2). To ektelesimo `mp` doyleuei mia xara se periballon `a.out`.

8a xreiasteite ligo hacking gia na to metaglwttisete. Pragmatika, den exei kai polu hacking. To mono poy exete na kanete einai na symperilabete to `-lfl` switch sto telos toy `SHROBJ` kai `XMPOBJ` sto Makefile. Ayto ginetai gia na kanete link me thn biblio8hkh `flex`, poy den einai linked apo default. Meta akoloy8eiste tis odhgies egkatastashs. Kai mhn jexasete na exete egkatesthmena to XView kai ta SlingShot extensions an 8elete na metaglwttisete to `xmp`.

2.1.2 TiMidity

Merikoi synistoun ayto to *experimental* programma logw ths kalhs poiothtas hxoy (to opoio alh8euei, einai polu kaluterh apo oti to `mp` se mia Sound Blaster 16, parolo poy pi8ana na mhn exei megalh diafora se kartes hxoy me sun8esh kymatomorfhs opws h GUS). Parolayta, pasxei logw entonhs xrhshs CPU. Paizei MIDI metatrepontas prwta to MIDI se WAV kai meta paizei to WAV (mporeite epishs na metatrecete to arxeio MIDI se arxeio WAV xwris na to paijete, an 8elete). Ayth einai h aitia gia thn entonh anagkh toy se poroys CPU.

Exei epishs ena proairetiko interface me ncurses, SLang, Tcl/Tk h Motif.

Xreiazeste ta patch arxeia Gravis Ultrasound gia na to xrhsimopoihsete. Koitajte sto FAQ poy perilambanetai me to TiMidity gia perissoteres plhrofories.

O syggrafeas toy einai o Tuukka Toivonen (`tt@cgs.fi`).

H teleytaia ekdosh toy TiMidity mporei na bre8ei sto *TiMidity home page* `<http://www.cgs.fi/tt/timidity/>`. Ayth h selida periexei epishs ena link se mia mikrh biblio8hkh apo GUS patches.

2.1.3 playmidi

Ayto to programma einai enas MIDI player poy paizei FM, GUS, kai external MIDI. Ypoti8etai oti exei grhgorotero xrono ekkinhshs sygkrinomeno me alloys MIDI players. Einai epishs ikano na paijei arxeia Creative Music, arxeia Microsoft RIFF, kai megala MIDI arxeia apo paixnidia opws to Ultima 7.

Exei X interface kai SVGA interface. Exei epishs mia epilogh gia anaparagwgh hxoy se pragmatiko xrono parakoloy8wntas oles tis notes se ka8e kanali kai to trexon roloi anaparagwghs hxoy (symperilambanetai aytomata me to `xplaymidi` kai `splaymidi`).

8a prepei na kanete kati san

```
$ splaymidi foo.mid; stty sane
```

an prokeitai na xrhsimopoihsete to SVGA interface, mia kai den 8etei pali to termatiko tty mode kanonika. To SVGA interface mporei na afaire8ei sto prosexes mellon.

Grafthke apo ton Nathan Laredo (`laredo@gnu.org` h `laredo@ix.netcom.com`).

Mporeite na to breite sto `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/players/playmidi-2.3.tar.gz`.

2.2 Modules

Ta Modules (oson afora moysikh gia ypologistes) einai chfiaka arxeia moysikhs, poy apoteleountai apo ena sunolo deigmatwn kai plhrofories sequencing, kai lene ston player pote na paijei poio deigma (organo) se poio track kai se poio pitch, ektelwntas proairetika ena effe, opws to vibrato gia paradeigma.

Ena pleonekthma poy exei se sxesh me to MIDI einai oti mporei na perilabei sxedon opoiodhpote eidos hxoy (symperilambanomenhs ths an8rwpinhs fwnhs). Akomh ena einai oti akougetai sxedon to idio se opoiadhpote platforma, epeidh ta deigmata einai sto module. Ena meionekthma einai oti exei polu megalutero mege8os arxeioy sygkrinomeno me to MIDI. Akomh ena einai oti den exei pragmatiko stantart format (to mono 'pragmatiko' einai to ProTracker, me to opoio polla modules den einai kai polu symbata). Prohl8e apo thn Amiga.

To pio koino format exei to extension `.mod`. Yparxoyn polla alla extensions ta opoia ejartwntai apo to ti format exoyn mesa.

2.2.1 tracker

Ayto to eukola metafersimo programma (exei metafer8ei se polles platformes) paizei moysika modules ths Soundtracker kai Protracker. Xrhsimopoiei ejodo 16 bit stereo, kai 8ewrw oti h poiothta einai polu kalh. An xreiazeste enan aplo tropo gia na meiwsete to forto ths CPU xrhsimopoihste thn epilogh `-mono` .

Ayto einai ena programma dwro (giftware) (opws leei o syggrafeas). Ftiaxthke apo ton Marc Espie (`Marc.Espie@ens.fr`).

Mporeite na apokthsete mia ekdosh aytou toy programmatos me to Makefile hdh peiragmeno gia Linux apo to `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/players/tracker-4.3-linux.tar.gz`.

2.2.2 gmod

Ayto einai enas music module player gia thn karta Gravis Ultrasound. 4/6/8 kanalia MOD, 8 kanalia 669, MultiTracker (MTM), UltraTracker (ULT), FastTracker (XM), kai ScreamTracker III (S3M) einai ta yposthrizomena formats.

Apaiteitai ekdosh toy driver hxoy 3.0 h megaluterh. Kai fysika GUS. Mporei na xreiastei na tropopoihsete ton pyrhna wste na kanete to ry8misth ths entashs hxoy na doylecei opws eseis 8elete.

Exei X interface. Xrhsimopoiei to QT toolkit (xreiazetai thn ekdosh 0.99 h megaluterh). Elegjte th *QT toolkit homepage* `<http://www.troll.no/>` gia perissoteres plhrofories sxetika me to QT.

To programma dianemetai dwrean. Arxika grafthke apo ton Hannu Savolainen, kai twra synthreitai apo ton Andrew J. Robinson (`robinson@cnj.digex.net`).

Mporeite na to breite sto `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/players/gmod-3.1.tar.gz`.

2.2.3 MikMod

Ayto o metafersimos module player paizei XM, ULT, STM, S3M, MTM, MOD kai UNI formats. (To UNI format einai ena eswteriko format poy xrhsimopoieitai apo to MikMod.) Yposthrizei sympiesmena arxeia module. Xrhsimopoiei 16 bit stereo gia ejodo hxoy. Xrhsimopoihste thn epilogh `-m` (gia ejodo mono) an xreiazeste ena aplo gia na meiwsete to forto ths CPU.

H ekdosh gia Unix mporei na xrhsimopoihsei gia interface eite ncurses h Tcl/Tk. Mporei na xrhsimopoih8ei epishs sa biblio8hkh, oxi mono san anejarthto programma.

Grafthke arxika apo ton Jean-Paul Mikkers (`mikmak@via.nl`). Twra synthreitai apo ton Stine (`dracoirs@epix.net`). Einai shareware programma sto opoio prepei na eggrafeite (registered) an 8elete na to xrhsimopoihsete emporika. Xreiazeste epishs adeia gia na to epanadianeimete emporika (mh-emporikh epanadianomh de xreiazetai tetoia adeia).

8a to breite sto *MikMod home page* `<http://www.aics.net/amstutz/mikmod.html>`.

2.2.4 xmp

Einai enas module player (mhn ton sygxeete me ton Adagio `xmp`) poy mporei na paijei MOD, S3M, MTM, PTR, STM, 669, kai XM modules (yposthrizontai epishs kai alla formats, alla akomh peiramatika h mh oloklhrwmena). An exete karta hxoy me sun8esh kymatomorfhs (GUS h SoundBlaster 32AWE), tote mporeite na xrhsimopoihsete ayto to xarakthristiko ths kartas hxoy gia na meiwsete to forto ths CPU.

Einai epishs dia8esimo ena X frontend sto `xmp` .

Grafthke apo ton Claudio Matsuoka (`claudio@lobo.inf.ufpr.br`) kai ton H. Carraro Jr.

Mporeite na to breite sto *xmp home page* `<http://www.merdre.net/claudio/xmp/>`.

2.2.5 s3mod

Paizei 4/6/8 track MOD modules kai Scream Tracker 3 modules. Xrhsimopoiei monofwnikh ejodo twn 8 bit me syxnothta deigmatolhcias twn 22000 Hz apo default. Mporeite na xrhsimopoihsete thn epilogh `-s` gia na energopoihsete to stereo, thn `-b` gia thn ejodo 16 bit, kai thn `-f` gia na 8esete thn syxnothta deigmatolhcias. Parola ayta, o hxos einai xeiroteros apo ayton toy tracker (exei kapoio 8orybo), gi ayto synistw th xrhsh toy `tracker` anti toy `s3mod` gia na paijete kanonika arxeia MOD (ektos kai an exete mia xamhlwn dynatothtwn mhxanh). Exei polu mikroteres apaithseis se CPU se sxesh me to tracker.

Ta pneymatika dikaiwmata anhkoyn stoys Daniel Marks kai David Jeske (`jeske@uiuc.edu`), but alla mporeite na kanete oti 8elete me ayto (ektos apo to na isxyris8eite pws to gracate eseis).

Mporei na apokth8ei me `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/players/s3mod-v1.09.tar.gz`.

2.2.6 mod

Ayto to *beta* programma paizei MODs (15/31-instrument, mexri 32 fwnes), MTMs, ULTs kai S3Ms sthn karta Gravis Ultrasound. Mporei na xrhsimopoihsei kai packed modules an ta exete `gzip`, `lharc`, `unzip`, kai `unarj` egkatesthmena. Den mporei na paijei ta Powerpacked modules h modules sympiesmena me kapoioys composers ths Amiga(me ypografh "PACK").

Apaitei toylaxiston thn ekdosh 3.0 toy odhgou hxoy. *Den* 8a doylecei me thn ekdosh 2.90-2 h palaioteres ekdoseis toy odhgou hxoy. To text interface apaitei ncurses. Symperilambanetai kai ena X interface, poy xrhsimopoiei Tcl/Tk.

Grafthke apo ton Mikael Nordqvist (`mech@df.lth.se` h `d91mn@efd.lth.se`).

Mporei na apokth8ei me `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/players/mod-v0.81.tgz`.

2.2.7 nspmod

Einai enas *alpha* module player poy mporei na paizei MTM, S3M, kai MOD modules. Proorizetai na einai enas module player gia kartes hxoy xwris DSP (mhn to sygxeetai me ayto poy h Creative Labs onomazei DSP). Kanei peripoy thn idia xrhsh ths CPU me ton `tracker`.

Exei ena xarakthristiko poy epitrepei ta modules na epanektelountai (loop) an 8elete. O ari8mos twn epanektelesewn mporei na perioristei me thn epilogh `-l`. Xrhsimopoiei mono ejodo hxoy twn 8 bit(apo thn ekdosh 0.1).

Grafthke apo ton Toru Egashira (`toru@jms.jeton.or.jp`).

Mporei na apokth8ei me `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/players/nspmod-0.1.tar.gz`.

2.2.8 yampmod

To *alpha* ayto programma sxediasthke na paizei 4kanala modules xrhsimopoiwntas elaxista CPU resources. *Den* sxediasthke na parexei hxo ychlhs poiothtas. Etsi, h monadikh ejodos hxoy poy paragei einai monofwnikh ejodos twn 22 kHz. Epishs, h ejodos den einai oso ka8arh oso 8a eprepe, pragma poy antikatoptrizei kai thn alpha katastash toy programmatos.

Grafthke apo ton David Groves (`djg@djghome.demon.co.uk`).

Mporei na apokth8ei me `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/players/yampmod-0.1.tar.gz`.

2.3 MPEG audio streams

To MPEG einai ena protypo poy perigrafei thn kwdikopoihsh toy video kai toy sysxetizomenoy hxoy gia chfiakh apo8hkeysh. To MPEG synh8ws sxetizetai me to video, alla to meros toy hxoy toy protupoy mporei na xrhsimopoih8ei jexwrista. To hxhtiko meros toy protupoy orizei tria epipeda, epipedo I, II, kai III. Oi players poy mporoun na apokwdikopoioun ychlotera epipeda mporoun na apokwdikopoioun kai xamhlotera. (p.x. players toy epipedoy III mporoun na paizoyn arxeia toy epipedoy II). Ta arxeia hxoy MPG epipedoy I synh8ws exoyn thn katalhjh `.mpg` (etsi an yparxei ena arxeio me ayth thn katalhjh poy den ekteleitai apo enan MPEG video player, einai pi8anothta ena stream hxoy), toy epipedoy II exoyn synh8ws thn katalhjh `.mp2`, kai toy epipedoy III thn katalhjh `.mp3`. H sympiesh toy hxoy einai polu kalh. Ena arxeio hxoy MPEG II twn 2MB 8a parei pi8anotata 25 megabytes san asympiesto PCM arxeio idias poiothtas.

2.3.1 mpg123

Ayto to *beta* programma einai enas ikanos MPEG audio stream player, poy exei yposthrijh gia layers I, II, kai III. Basizetai se kwdika apo polles phges. Mporei na paijei streams se pragmatiko xrono poy diabazontai apo HTTP (p.x. kapoios mporei na paijei ena MPEG stream hxoy katey8eian mesw toy World Wide Web).

O kyriws syggrafeas toy einai o Michael Hipp (`Michael.Hipp@student.uni-tuebingen.de`). Mporei na xrhsimopoih8ei kai na dianemh8ei se aparallaxto, eleu8era gia mh kerdoskopikous skopous. H enswmatwsh toy se sylloges me dwrean logismiko (opws CD-ROM images se FTP servers) rhta epitrepetai.

H teleytaia ekdosh mporei na apokth8ei apo to *Oliver Fromme's mpg123 page* `<http://www.heim3.tu-clausthal.de/olli/mpg123/>`.

2.3.2 maplay 1.2

Aytos MPEG stream player hxoy exei yposthrijh mono gia layer I kai layer II streams, kai ypoleipetai yposthrijhs gia layer III streams. Yposthrizei kartes hxoy bit se Linux.

Apaitei megalh ypologistikh isxu, pairnontas peripoy to 55% toy xronoy ths CPU se enan 60MHz Pentium. H ejodos den antexetai se enan 66MHz 486 giati h CPU apla den mporei na prolabei ton hxo. An ayto symbei se esas, prospa8hste na paijete mono thn mia pleyra toy stream hxoy (me thn epilogh `-l` or `-r` option), anti gia to stereo poy einai to proka8orismeno.

Mia mikrh allagh se ena apo ta arxeia isws einai anagkaia, gia na to kanete compile. Onomastika, mporei na xreiastei na pros8esete thn epomenh grammh sthn arxh toy arxeioy `configuration.sh`.

```
#! /bin/sh
```

O syggrafeas einai o Tobias Bading (`bading@cs.tu-berlin.de`). To `maplay` 1.2 mporei na apokth8ei me `anonymousFTP` apo to `ftp.cs.tu-berlin.de` sto `/pub/multimedia/maplay1.2/maplay1_2.tar`.

2.3.3 maplay 1.3b

Ayth einai mia anepishmh tropopoihsh (dhl. oxi apo ton epishmo syggrafea) toy `maplay` 1.2, wste na mporei na trexei me polu ligotero forto sthn CPU. Ayto to petyxainei kanontas thn ejodo u-law na doyleuei kai se alles platformes ektos toy SPARC. Shmeiwste pws xrhsimopoiei u-law output apo default, kai etsi h poiothta toy hxoy einai xamhloterh.

Oi tropopoihseis eginan apo ton Orlando Andico (`orly@gibson.eee.upd.edu.ph`). Mporei na apokth8ei me `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/players/maplay-1.3b-Linux.tar.gz`.

2.3.4 maplay3

Ayto einai ena akoma paragwgo toy `maplay` 1.2. Pros8etei yposthrijh gia MPEG Layer 3 streams hxoy. Ayth th stigmh deixnei na exei kapoia bugs sto playback (isws akousete kapoioys 8oruboys san gratsounisma). Isws prepei na paijete me tis epiloges toy gia na lusete ayto to problhma.

Oi tropopoihseis eginan apo ton by Timo Jantunen (`timo.jantunen@hut.fi` h `jeti@cc.hut.fi`). Leei pws mporei na xrhsimopoih8ei eleu8era, alla kerdos apo ayto apagoreuetai. Parola ayta, den eimai apolyta sigoyros gia thn egkyrothta ayths ths pneymatikhs idiokthsias, mia poy to arxiko `maplay` einai katw apo thn GNU General Public License, poy den epitrepei se paragwges doyleies na exoyn diaforetiko ka8estws pneymatikhs idiokthsias.

Mporei na apokth8ei me `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/players/maplay3.tar.gz`.

2.3.5 splay

Aytos o *beta* player einai ena akoma paragwgo toy `maplay` 1.2 (pragmatika, einai paragwgo toy `maplay` 1.2+, to opoio einai ena paragwgo toy `maplay` 1.2 apokleistika kai mono gia ta MS Windows). Pros8etei yposthrijh gia MPEG Layer 3 streams hxoy. Einai epishs ikano na paizei arxeia WAV. Mporei na paijei streams hxoy poy lambanontai apo mia HTTP sundesh.

Ena akoma xarakthristiko toy `splay` einai pws mporei na xrhsimopoih8ei san biblio8hkh (katw apo thn LGPL), wste na mporei na xrhsimopoieitai kai apo alla programmata. Epishs epixeirei na beltiwsei thn apodosh xrhsimopoiwntas threading (xreiazeste `pthread` gia na kanete xrhsh ayths ths dynatothtas) kai ligh inline assembly.

To `splay` xrhsimopoiei ena command line interface kai ena proairetiko X interface (poy xrhsimopoiei QT).

An meta to compile den doyleuei (p.x. kanei segmentation fault), prospa8hste na to metaglwttiste jana xwris to threading.

Apo ton Jung Woo-jae (`jwj95@eve.kaist.ac.kr`).

Mporei na apokth8ei sto *splay's home page* `<http://adam.kaist.ac.kr/jwj95/>`.

2.3.6 Sajber Jukebox

To programma ayto einai enas MPEG player hxoy me ena grafiko user interface. Basizetai sto `splay`, kai etsi perilambanei yposthrijh gia MPEG hxoy, mexri kai to III. Epishs einai ikano na paizei MPEG streams hxoy se pragmatiko xrono, me to stream na trofodoteitai apo HTTP. Fainetai epishs eukolo sthn ru8mish toy..

Xrhsimopoiei to `QTtoolkit` (xreiazetai h ekdosh 1.2 toylaxiston). Epishs xrhsimopoiei thn biblio8hkh `LinuxThreads` (to ektelesimo doyleuei mono me thn ekdosh 0.5).

O syggrafeas einai o Joel Lindholm (`wizball@kewl.campus.luth.se`).

H teleytaia ekdosh mporei na apokth8ei me `anonymousFTP` apo to `kewl.campus.luth.se` sto `/pub/jukebox`.

2.3.7 amp

Aytos o *beta* MPEG player hxoy exei yposthrijh mono gia MPEG Layer 3 streams hxoy. Einai ikanos na paizei katey8eian sthn karta hxoy, kai mporei na ejagei se asympiesta arxeia PCM h WAV. Kai aytos apasxolei polu thn CPU (peripoy 60% se ena 133MHz Pentium).

Grafthke apo ton Tomislav Uzelac (`tuzelac@rasip.fer.hr`). Mporei na xrhsimopoih8ei kai dianemh8ei eleu8era, oso den pwleitai emporika, xwris adeia (to na symperilhf8ei se CD-ROMs poy periexoyn eleu8ero logismiko epitrepetai rhta, parola ayta).

Mporei na apokth8ei me `anonymousFTP` apo to `ftp.rasip.fer.hr` sto `/pub/mpeg/amp-0.7.3.tgz`.

2.3.8 XAudio

Aytos h *alpha* biblio8hkh grafthke gia na apotelesei mia grhgorh ylopoihsh mias biblio8hkhs apokwdikopoihshs MPEG hxoy, poy na xrhsimopoieitai apo diafora grafika front-ends. Yposthrizei MPEG hxo gia layers I, II, kai III. Einai ikanos gi tyxaia prosbash se bitstreams. Ena interface grammhs-entolhs symperilambanetai. Mia ekdosh gia Motif (Lesstif) front-end epishs symperilambanetai sthn ekdosh gia Linux.

Einai apo ton Gilles Boccon-Gibod, Alain Jobart kai alloys. Ta front-ends sth biblio8hkh mporoun na dianemontai eleu8era. H idia h biblio8hkh prepei na kataxwrh8ei (licensed) gia na xrhsimopoih8ei (adeia gia kwdika kai gia ektelesimo einai dia8esimh).

Ta front-ends sthn biblio8hkh mporoun na apokth8oun apo thn *XAudio home page* `<http://www.mpeg.org/xaudio/>`.

2.3.9 Layer 3 Shareware Encoder/Decoder

Aytos einai oysiastika enas metatropeas apo MPEG Layer 3 streams hxoy se WAV, AIFF, SND, AIFC, h apla asympiesta PCM arxeia. H ekdosh gia The Linux den kanei apey8eias ejodo sthn karta hxoy. Prepei na to metatrecete prwta se kapoio allo format.

Parola ayta, otan epixeirhsete na paijete ena arxeio apo metatroph, xrhsimopoiwntas to `sox`, 8a akousete pi8anws kapoio 8orybo giati h diatajh twn lejewn (words sta deigmata toy PCM den einai swsth (toylaxiston se Intel platformes). 8a xreiastei na dwsete sto `sox` thn epilogh `-x` gia na lusete ayto to problhma. Alla yparxoyn kapoioi players poy den xreiazetai na eidopoih8oun pws h diatajh twn lejewn einai la8os, kai etsi isws na mhn xreiastei na anhsyxhsete gia ayto. An exete ena alh8ina grhgoro H/Y (toylaxiston ena 100Mhz Pentium),

tote mporeite na dokimasete na paijete MPEG Layer 3 streams apey8eias xwris na metatrecete to arxeio hxoy se allo format, opws sto paradeigma poy akoloy8ei(to paradeigma ypo8etei pws xrhsimopoieite to `sox` kai paizete ena stereofwniko deigma twn 44.1 kHz).

```
$ l3dec foo.mp3 -sto | play -t raw -x -u -w -c 2 -r 44100 -
```

O ari8mos meta to `-r` einai o ry8mos deigmatolhcias toy stream hxoy, kai o ari8mos meta to `-c` ejartatai apo to an einai monofwniko h stereofwniko (h akoma kai tetrafwniko). An ayto moiazei polu mplegmeno, mporeite na xrhsimopoihsete kati san script-floiou (shell script) h ena ceydwnymo (alias).

Einai se adeia pneymatikhs idiokthsias gia shareware apo to Fraunhofer-IIS. Mia ekdosh epideijhs gia Linux se systhmata x86 mporei na apokth8ei me `anonymousFTP` apo to `ftp.fhg.de` sto `/pub/layer3`. H ekdosh epideijhs (demo version) metatrepei mono streams hxoy layer III.

2.4 WAV

Para8esh apo thn selida boh8eias (man page) toy `sox`:

> Moiazoyn na einai polu paromoia me arxeia IFF, alla oxi ta omoia. Einai to eggenes format arxeioy hxoy twn Windows 3.1. Profanws, ta Windows 3.1 einai toso apisteyta spoydaia gia thn biomhxania twn H/Y poy eprepe na exoyn to diko toys format arxeiwn hxoy.

Ayta exoyn synh8ws thn katalhjh`.wav`.

Deite epishs to tmhma 2.5.1 (sox) kai to 2.5.2 (bplay) gia alloys players WAV ektos apo aytous poy anaferontai edw.

2.4.1 wavplay

To programma ayto yposthrizei ektelesh kai eggrafh se WAV format. Xrhsimopoiei kleidwma (locking) etsi wste mono enas hxos thn fora mporei na ektelestei. Oi dynatothtes toy gia kleidwma mporoun na xrhsimopoih8oun kai jexwrista apo tis dynatothtes ekteleshs hxwn toy.

Ektos enos interface grammhs-entolhs, exei kai ena Motif interface, to opoio mporei na xrhsimopoih8ei me Lesstif.

Arxika grafthke apo ton Andre Fuechsel (`af1@irz.inf.tu-dresden.de`), alla ejelix8hke mexris shmeioy na jana graftei apo thn arxh apo ton Warren W. Gay (`bx249@freenet.toronto.on.ca` h `wwg@ica.net`).

Mporei na apokth8ei me `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/players/wavplay-1.0.tar.gz`.

2.5 Loipa pragmata

Ayth h enothta anaferei loipo yliko poy paizei formats hxoy poy den ajizoyn jexwristh enothta(p.x. formats poy exoyn mono enan player), kai players poy paizoyn ena h kai perissotera format.

2.5.1 sox

To programma einai oysiastika enas metatropeas, dhladh metatrepei ena format arxeioy hxoy se ena allo. Parola ayta, merikes ekdoseis toy `sox`, otan kalountai apo to `play`, paizoyn kai ton hxo (h efarmogh `play` sto Sound HOWTO probably anaferetai se ayto). Yposthrizei apla (raw - no header) dyadika dedomena kai dedomena xarakthrwn, arxeia hxoy IRCAM, Sound Blaster `.voc`, SPARC `.au` (xwris header), Mac HCOM, PC/DOS `.sou`, Sndtool, kai Sounder, NeXT `.snd`, Windows 3.1 RIFF/WAV, Turtle Beach `.smp`, CD-R, kai Apple/SGI AIFF kai 8SVX formats

Apo kapoy stoys pyrhnes 1.3.6x, mporei na xreiastei na kanete mia mikrh allagh se ena apo ta arxeia gia na paizetai toys hxoys apey8eias. Dhladh, 8a prepei na allajete thn grammh 179 sto `sbdsp.c` from

```
if (abuf_size < 4096 || abuf_size > 65536) {
```

se

```
if (abuf_size < 1 || abuf_size > 65536) {
```

Isws pali na mhn xreiazetai na to kanete. Alla kanontas to, den 8a xalasete tipota.

Exei graftei kai, ta pneymatika toy dikaiwmata, katoxyrw8ei apo pollous, kai mporei na xrhsimopoih8ei gia ka8e skopo.

Mporei na apokth8ei me `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/convert/Lsox-linux.tar.gz`.

Mia pio prosfath ekdosh apo ton Chris Bagwell (`cbagwell@sprynet.com`) (poy basizetai sthn teleytaia gamma ekdosh toy prwtotupoy `sox` (kai symperilambanei thn parapanw dior8wsh) fix) kai mporei na apokth8ei me `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/convert/sox-11gamma-cb3.tar.gz`.

2.5.2 bplay

Ayth to *beta* programma paizei asympiesta apla arxeia hxoy, WAV, kai VOC files. einai epishs ikano na hxografei se tetoia arxeia. Xrhsimopoiei mia poikilia texnikwn gia na epituxei thn ychloterh dynath taxuthta, wste na trexei apodekta akoma kai se arges mhxanes. Mia apo aytes tis texnikes apaitei ta egkatesthmena programmata na einai setuid root. Oi paranoikoi poy elpizoyn na to xrhsimopoihsoyn, isws 8eloyn epishs kai to paketo gia Debian toy Ian Jackson (`ijackson@gnu.org`, poy akyrwnei ayth to xarakthristiko toy, poy xreiazetai to setuid bit.

O syggrafeas einai o David Monro (`davidm@gh.cs.usyd.edu.au`).

Mporei na apokth8ei me `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/players/bplay-0.96.tar.gz`.

2.5.3 SIDPLAY

Ayto to programma prosomoiwnei to Sound Interface Device chip (MOS 6581, syxna apokaloumeno SID) kai to Micro Processor Unit (MOS 6510) toy Commodore 64. Gi'ayto einai ikano na fortwnei kai na ektelei programmata se glwssa mhxanhs C64 poy paragoyn moysikh h hxo. Genika, fragments kwdika kai dedomenwn poy exoyn ejax8ei apo paixnidia kai programmata epideijewn poy kai metafer8ei katey8eian apo ton C64. Xrhsimopoiei kapoio proka8orismeno interface grammhs-entolwn. Yparxoyn epishs Tk kai QT interfaces dia8esima jexwrista apo to kyriws paketo.

Synthreitai apo ton Michael Schwendt (`sidplay@geocities.com`).

Mporei na apokth8ei apo thn *SIDPLAY's home page* `<http://www.geocities.com/SiliconValley/Lakes/5147/>`.

2.5.4 RealAudio Player

Sas epitrepei na akoute ton hxo, poy apo8hkeuei se diko toy (proprietary) format, se pragmatiko xrono apo to Internet xwris na katebasete oloklhro to arxeio hxoy prwta. 8a mporouse na xrhsimopoih8ei mono toy, alla alh8ina stoxeuei sth xrhsh me kapoion web browser (rhta yposthrizei Mosaic kai Netscape). Den mporei na xrhsimopoih8ei xwris ta (den 8a mporesete na to balete na doylecei me apo konsola).

Einai ths Progressive Networks, Inc. Den mporei na dianemh8ei, allax8ei klp. Koitajete thn adeia xrhshs gia akribeis leptomereies toy ti mporeite na kanete. Mporei na apokth8ei ean dhlw8eite xwris kostos sthn *RealAudio home page* `<http://www.realaudio.com/>`.

2.5.5 cat

Kapoioi pisteuoyn, pws merikes fores h polyxrhsimopoioumenh efarmogh synenwshs `cat`, exei sxesh kai me thn ektelesh hxwn. 8a sas deijw thn xrhsh ths mesw enos paradeigmatos

```
$ cat sample.voc > /dev/dsp
$ cat sample.wav > /dev/dsp
$ cat sample.au > /dev/audio
```

Kanontas `cat` se ena arxeio `.au` sto `/dev/audio` synh8ws 8a doylecei, kai an eiste kai arketa tyxeroi na exei to arxeio thn swsth diatajh twn byte (gia thn platforma sas) klp., ena `cat` enos arxeioy hxoy poy xrhsimopoiei deigmata PCM (opws `.wav` h `.voc`) sto `/dev/dsp` mporei na akoystei swsta epishs.

Ayth den einai mia entelws axrhsth efarmogh ths `cat`. Mporei na einai xrhsimh ,gia paradeigma, ean exete ena arxeio hxoy poy kanena apo ta programmata sas den anagnwrizei, kai jerete pws xrhsimopoiei PCM , tote mporeite na parete, me ayto ton tropo, mia xontrikh idea toy pws akougetai (an eiste tyxeroi).

3 Alles xrhsimes efarmoges hxoy

Ayth h enothta den exei na kanei me thn ektelesh arxeiwn hxoy. Perissotero, einai mia syllogh apo efarmoges hxoy poy mporei na fanoun xrhsimes.

3.1 volume

Einai ena interface grammhs entolwn gia elegxo ths entashs (ti allo 8a'tan;). Exei epishs ena jexwristo interface se Tcl/Tk interface poy symperilambanetai sto paketo, gia elegxo hxoy kai ektelesh arxeiwn `.au`. Enas polu aplos Tcl/Tk CD symperilambanetai epishs.

Einai Freeware kai grafthke apo ton Sam Lantinga (`slouken@cs.ucdavis.edu`).

Mporei na apokth8ei apo to `anonymousFTP` sto `sunsite.unc.edu` sto `/pub/Linux/apps/sound/soundcard/volume-2.1.tar.gz`.

3.2 Sound Studio

Einai mia efarmogh se Tcl/Tk poy yposthrizei ektelesh, hxografhsh kai dior8wsh chfiakwn hxwn xrhsimopoiwntas `sox`. Perilambanei to `sox` sth dianomh ths gia na apofugei problhmata symbatothtas.

Grafthke apo ton Paul Sharpe kai ton N. J. Bailey (`N.J.Bailey@leeds.ac.uk`). Mporei na xrhsimopoih8ei eleu8era kai dianemh8ei, an steilete ston syggrafea ena kart-postal.

Mporei na bre8ei sth *Sound Studio's home page* `<http://www.elec-eng.leeds.ac.uk/staff/een6njb/Software/Studio/screens.html>`.

3.3 Tickle Music

Ayto to *beta* Tcl/Tk programma einai enas browser moysikwn arxeiwn poy epitrepei thn ektelesh diaforwn format hxwn, ean exete sto susthma sas to katallhlo programma na toys paijei. Apo proepilogh to `gmod` xrhsimopoieitai gia na paizei arxeia MOD kai to `mp` gia arxeia MIDI (mporeite na allajete ton kwdika na xrhsimopoiei alla programmata).

Exei graftei kai katoxyrw8ei apo ton Shannon Hendrix (`shendrix@pcs.cnu.edu` h `shendrix@escape.widomaker.com`).

Mporei na apokth8ei me `anonymousFTP` apo to `sunsite.unc.edu` sto `/pub/Linux/apps/sound/players/tmusic-1.0.tar.gz`.

4 Parapompes

1. H tekmhriwsh poy symperilambanetai stis efarmoges poy emfanizontai se ayto to keimeno.
2. To Linux Sound HOWTO. Mporei na bre8ei sto *Linux Documentation Project* `<http://sunsite.unc.edu/LDP/>`.
3. *Linux MIDI and Sound Pages* `<http://www.digiserve.com/ar/linux-snd/>`
4. *MPEG Audio Layer 3 FAQ* `<http://www.iis.fhg.de/departs/amm/layer3/sw/>`
5. *Programmer's Guide to OSS* `<http://www.4front-tech.com/pguide/>`
6. *SoX home page* `<http://www.spies.com/Sox/>`