

El llibre de Freeduc-cd

Ver. 1.4

Ofset

Organization for **F**ree **S**oftware in **E**ducation and **T**eaching



UNESCO
United Nations Educational, Scientific
and Cultural Organization



OFSET

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Capítol 1

Generalitats

1.1 Presentació

Aquesta versió de **Freeduc-cd** ha estat dissenyada amb el suport de l'UNESCO i incorpora un document de presentació en anglès, castellà i francès.

Freeduc-cd és un «live» CDROM del sistema operatiu GNU/Linux adreçat al món de l'ensenyament. Es pot utilitzar en qualsevol ordinador PC compatible; sigui quin sigui el sistema operatiu que ja tingui instal·lat, podeu arrencar directament de la unitat de CDROM, sense modificar el contingut del vostre disc dur.

El propòsit d'aquest CDROM és permetre als mestres familiaritzar-se fàcilment amb un sistema lliure i usar alguns dels programes lliures més adients en un context educatiu. Entre aquests programes, alguns han estat expressament desenvolupats per al món educatiu, com ara **Dr. Geo** i **GCompris**, dues creacions d'OFSET. Altres, encara que no són específics per a l'ensenyament, resulten d'allò més adients per a aquest propòsit; per exemple **Yacas**, **Gstar**, **TkGate**, **Open Office**, i molts d'altres.

1.2 Configuració del PC per tal d'arrencar Freeduc-cd

Per tal d'arrencar Freeduc-cd heu d'inserir el CDROM en la unitat i arrencar de nou el sistema. Si el vostre PC està configurat per arrencar des de la unitat de CDROM, Freeduc-cd s'executarà sense més problemes.

Els PCs moderns normalment estan configurats de manera que la unitat de disquet és la primera de la quan s'intenta arrencar el sistema operatiu. Si aquesta unitat no conté un disquet d'arrencada, la segona unitat d'on s'intenta arrencar el sistema operatiu és la de CDROM. I finalment, si aquesta unitat no conté cap CDROM d'arrencada, el sistema intenta arrencar des del disc dur.

Si el vostre ordinador no arrenca Freeduc-cd d'aquesta manera, aleshores heu de configurar el SETUP (BIOS). Instants després d'engegar l'ordinador podreu veure alguns missatges a la pantalla que indiquen quina tecla o combinació de tecles (F2, Del, ...) cal prémer per tal de configurar el SETUP (BIOS).

(!) Podeu provar les combinacions següents: Ctrl+Alt+Esc, Ctrl+Alt+A, Ctrl+Alt+S, Esc, Del, F1, F2, F3 i aleshores F2/F1, F10

Premeu aquestes tecles tan aviat com aparegui el missatge a la pantalla, abans d'escoltar un avís sonor. Us apareixerà una pantalla (BIOS Setup Utility) en la qual podreu triar diferents opcions. Les modificacions que realitzeu només tindran efecte quan finalitzeu escollint l'opció «validate the changes and exit». Mentre que si en finalitzar les modificacions trieu l'opció «exit without saving», els canvis seran descartats.

Seguint les indicacions que trobareu a la pantalla, trieu l'opció "Boot" del menú. Aquesta pantalla presenta la manera de configurar l'ordre de les unitats ("Boot devices") utilitzades en el procés d'arrencada. Normalment hi trobareu quatre possibilitats:

- First boot device (primera unitat d'arrencada)
- Second boot device (segona unitat d'arrencada)
- Third boot device (tercera unitat d'arrencada)
- Fourth boot device (quarta unitat d'arrencada)

Recomanem configurar-les en l'ordre següent:

- Primer: unitat de disquet (floppy disk)
- Segon: unitat de CDROM
- Tercer: disc dur (hard drive)
- Quart (si es dóna el cas): arrencada des de la xarxa (network boot)

Quan hagueu acabat les modificacions, premeu la tecla per sortir (normalment "Escape/Esc"). El sistema us preguntarà si voleu guardar els canvis. Responeu que sí, si voleu que les modificacions tinguin efecte. Alternativament podeu seleccionar l'opció "Save and exit" de la pantalla.

Així que sortiu de la utilitat de configuració, sentireu un avís sonor i l'ordinador arrencarà. A partir d'aquest moment, cada vegada que arrenqueu l'ordinador amb Freeduc-cd a la unitat de CDROM, executarà aquest sistema a la RAM. Sense el CDROM, el PC arrencarà com de costum amb el sistema operatiu que hi tingueu instal·lat.

1.3 Ús de l'escriptori

Les principals aplicacions del CDROM estan classificades en deu menús al quals s'hi pot accedir mitjançant deu fletxes situades a la barra d'aplicacions de l'escriptori XFCE. La barra d'aplicacions apareix a la part de baix de la pantalla i es pot desplaçar usant les nanses de dreta i esquerra, o bé es pot minimitzar tot fent clic en el botó petit de la dreta.



Els deu menús en els quals han estat classificades les aplicacions es corresponen a les categories següents:

- accés bàsic a l'ordinador,
- Internet,
- matemàtiques,
- ciències,
- àudio,
- tecnologia,
- geografia,
- llengües,
- jocs educatius,
- utilitats d'edició i d'ajuda.

Per tal de desplegar un menú, cal fer clic damunt de la fletxa situada sobre cada icona de la barra d'aplicacions; un segon clic tanca el menú.

(!) Si feu un clic sobre la icona, s'executarà una aplicació representativa de la classe.

1.4 Aplicacions del CDROM

A les següents seccions, descriurem breument les principals aplicacions. A les taules, els codis M, P i S signifiquen ensenyament infantil, ensenyament primari i ensenyament secundari respectivament.

1.4.1 Accés bàsic a l'ordinador



Fent un clic sobre aquesta icona executareu **xftree**, l'explorador del sistema de fitxers de l'escriptori XFCE. Les aplicacions disponibles des d'aquest menú permeten des d'executar un programa fins a obrir un disquet o formatar-lo. També permet accedir a aplicacions més avançades com cercar un fitxer, navegar per una xarxa Windows o gestionar claus de xifrat (GPA).

1.4.2 Internet



Fent un clic sobre aquesta icona executareu el navegador **Mozilla**. Les altres aplicacions d'aquest menú són:

Description	Niveau
Un client de correu electrònic	P/S
Un client de transferència de fitxers (FTP)	P/S
Un visualitzador de fitxers PDF	P/S

1.4.3 Matemàtiques



Fent un clic sobre aquesta icona executareu **Dr. Geo**, un programa de geometria interactiva. Les altres aplicacions d'aquest menú són:

Description	Niveau
Un programa per dibuixar patrons al pla	S
Un servidor d'exercicis interactius	P/S
Un full de càlcul	P/S
Un programa de dibuix 2D de dades numèriques	S
Un programa de dibuix de corbes	S
Una altre programa de dibuix de corbes	S
Un programa de geometria interactiva en 2D	P/S
Una calculadora	P
Una calculadora avançada	S
Un àbac xinès	P/S
Un explorador de corbes fractals	P/S
Una calculadora d'expressions numèriques i algebraiques	S
Un programa de geometria en 3D	S

1.4.4 Ciències



Fent un clic sobre aquesta icona executareu **sunclock**, un sofisticat rellotge solar sobre un planisferi. Les altres aplicacions d'aquest menú són:

Description	Niveau
Un simulador de mecànica clàssica	S
Un programa de conversió d'unitats	S
Un programa per crear mapes del cel	P/S
Un visualitzador 3D de molècules	S
Un planetari	P/S
Un editor de documents científics i estructurats	S
Un rellotge solar sofisticat	P/S
La taula periòdica dels elements	S
Un editor de molècules	S
Un explorador de l'univers!	P/S

1.4.5 Àudio



Fent un clic sobre aquesta icona executareu **audacity**, un editor de seqüències d'àudio. Les altres aplicacions d'aquest menú són:

Description	Niveau
Un programa per ensenyar solfeig	S
Un seqüenciador	S
Un reproductor multimèdia	P/S
Un programa per enregistrar sons	P/S
Un reproductor de discos compactes d'àudio	P/S
La taula de mesclades d'àudio del sistema	P/S
Un editor d'àudio	P/S

1.4.6 Tecnologia



Fent un clic sobre aquesta icona executareu **dia**, un programa per dibuixar diagrames. Les altres aplicacions d'aquest menú són:

Description	Niveau
Un editor de circuits impresos	S
Un editor/simulador de circuits	S
Un programa de metamorfosi	S
Un programa de dibuix tècnic	S
Un programa de dibuix bàsic	P
Un editor d'imatges	P/S
Un programa avançat de dibuix vectorial	S
Un programa de dibuix vectorial	S
Un editor de diagrames	P/S

1.4.7 Geografia



Fent un clic sobre aquesta icona executareu **Xrmap**, un programa per explorar mapes geogràfics d'arreu del món.

Description	Niveau
Un sistema d'informació geogràfica (GIS)	S
Mapes geogràfics	S

1.4.8 Llengües



Fent un clic sobre aquesta icona executareu **Hanzim**, un programa d'escriptura xinesa (clàssica i moderna).

Description	Niveau
Ideogrames xinesos	P/S
Aprenentatge de llatí	P/S
Aprenentatge de castellà	P/S
Un conjunt de diccionaris	P/S

L'aplicació de diccionaris permet accedir a diferents diccionaris: bilingüe, anglès tècnic, anglès. Per tal de canviar de diccionari cal anar a l'opció **Edition->Preferences** i canviar **Database**.

1.4.9 Jocs educatius



Fent un clic sobre aquesta icona executareu **Gcompris**, un joc educatiu amb més de trenta activitats. Les altres aplicacions d'aquest menú són:

Description	Niveau
Fugint de les coves	
Collint diamants	
Gestionant una ciutat	
Disfressant el senyor Patata	M
Joc d'escacs	P/S
Joc del tetris	P/S
Puzle xinès	P/S
Joc de càlcul seqüencial	P/S
Un programa de jocs educatius	M/P

Hi ha d'altres jocs educatius més o menys amagats. Divertiu-vos trobant-los!

1.4.10 Utilitats d'edició i d'ajuda



Fent un clic sobre aquesta icona executareu **GQview**, un visualitzador d'imatges. Les altres aplicacions d'aquest menú són:

Description	Niveau
El paquet d'ofimàtica lliure	P/S
Visualitzador d'imatges	P/S
Programa de publicació electrònica	P/S
Processador de textos	P/S
Editor de textos bàsic	P/S
Programa per engrandir la imatge de pantalla	
Editor HTML de Mozilla	
Explorador del sistema d'ajut (man)	
Explorador del sistema d'ajut (info)	

A més a més, la icona dóna accés a ajut en línia. Tingueu paciència perquè necessita executar un navegador d'Internet.

1.5 Qüestions avançades

1.5.1 Xarxa

Si useu **Freeduc-cd** en una màquina connectada a una xarxa local amb un servidor DHCP, la interfície de xarxa es configurarà automàticament, de manera que podreu accedir als recursos de la xarxa local i possiblement a Internet. Per altra banda, el navegador SMB —al primer menú per l'esquerra trieu l'opció **Windows sharing**— permet connectar-vos a una xarxa Windows i llegir i escriure dades d'ella.

1.5.2 Disquet

Al primer menú de l'esquerra hi trobareu l'opció **Open floppy** que us permetrà obrir el disquet. Per tal de guardar documents al disquet, guardeu o copieu els documents al directori `/mnt/floppy`, que correspon a la unitat de disquet.

1.5.3 Dades de programa

En un sistema GNU/Linux, cada usuari disposa de l'anomenat *directori de l'usuari* on s'emmagatzemen les dades que guarden els programes. Malgrat que Freeduc-cd no usa per a res el disc dur, no pot pas prescindir d'aquesta norma, així que l'usuari predeterminat emmagatzema les seves dades en el directori `/home/knoppix`. Usant el programa `xftree`, podeu copiar dades des d'aquest directori al disquet. A més, hi ha programes que guarden les dades en fitxers o directoris amagats — de fet, són fitxers o directoris que el seu nom comença per “.”—. Per tal de veure aquests fitxers, heu d'activar la visualització de fitxers amagats en `xftree`, tot fent clic en la icona de la dreta de la seva barra d'eines.

1.6 Resolució de problemes

1.6.1 Bloqueig de l'ordinador durant l'arrencada

En un petit nombre de casos, el procés de detecció de dispositius pot fer que l'ordinador es bloquegi. Si succeís això, hauríeu d'esbrinar en quin moment succeeix i arrencar de nou el vostre PC. En el moment que apareix l'indicador d'arrencada (`boot:`) del CDROM, aneu a les opcions avançades (prement 'F2'). Allí podreu desactivar la detecció dels dispositius que han causat el problema. Per exemple, si l'ordinador es bloqueja mentre està detectant els dispositius USB, arranqueu escrivint la comanda `knoppix nousb`.

Tingueu present que podeu concatenar opcions com per exemple en `knoppix nousb nopcmcia`.

1.6.2 Tot sembla anar bé, però no apareix res a la pantalla

En aquest cas, hi ha hagut un problema a l'hora de detectar la pantalla. Això succeeix de vegades amb pantalles antigues i de mida petita.

En primer lloc, podeu comprovar que el CDROM està funcionant correctament tot prement simultàniament les tecles 'Ctrl Alt -' o 'Ctrl Alt +' (useu el + i el - del teclat numèric). Hauríeu de veure l'escriptori a una definició menor, però amb una pantalla virtual més gran.

Per tal d'evitar aquest comportament desagradable, podeu triar, en temps d'arrencada, l'opció `'knoppix xvrefresh=60'` o `'knoppix scre-`

en=800x600' (les definicions més habituals són 640x480, 800x600, 1024x768, 1280x1024).

1.6.3 Tinc un portàtil i no apareix res a la pantalla

Si el mètode anterior no funciona, i tens un portàtil, tria l'opció 'knopix fb600x600' (per altres definicions, pots provar fb640x480, fb1024x768, fb1280x1024).

1.6.4 La BIOS del meu PC no permet arrencar des de la unitat de CDROM

En el CDROM hi trobareu una imatge d'un disquet que us permetrà activar-la.

Des de MS Windows: inseriu un disquet verge en la unitat i executeu la utilitat mkfloppy.bat que hi ha al CDROM.

Des de Linux: inseriu un disquet verge en la unitat i executeu la comanda mkfloppy.sh que hi ha al CDROM.

1.6.5 Ho he provat tot i res no funciona

Subscriu-te a la llista de distribució de Freeduc-cd i explica els problemes en què t'has trobat allí. T'hi pots subscriure a l'adreça <http://lists.sourceforge.net/lists/listinfo/offset-freeduc>

Appendix A

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