

# Lisa Emulator Setup Instructions

22 Jan 2023

Original instructions: <https://www.applerepairmanuals.com/lisa/lisaem-howto.html>

My updates in red.

Here is a step-by-step guide to set up the LisaEm emulator with Lisa Office System on an emulated 10MB ProFile drive. This process has been tested on an Intel iMac running OS X 10.4.9, a 2022 Mac Pro M1 16 MacBook running Ventura 13.0.1.

1. Download the emulator from <https://lisa.sunder.net/> .

Select the DMG file, not the package installers.

Don't drag LisaEM to Applications, instead copy to ~/LisaEM/

As per [Zydeco's AppleFritter post](#):

Get the ROMs collection from here: [http://www.apple2.org.za/gswv/a2zine/System/A2\\_ROMsCollection.zip](http://www.apple2.org.za/gswv/a2zine/System/A2_ROMsCollection.zip)

UnZip it and rename 3410175H.bin to boot.hi and 3410176H.bin to boot.lo.

NOTE: This tripped me up initially. I first attempted to rename those files in the Finder, and it appeared to work; however, OS X retained the additional ".bin" suffix (hidden), so the filenames were actually "boot.hi.bin" and "boot.lo.bin". That caused the emulator to throw an error about the checksum, then crash. I had to rename them in the Terminal, like so:

```
mv boot.hi.bin boot.hi
mv boot.lo.bin boot.lo
```

Just use the boot.ROM file in my distribution instead.

2. Make a folder under your Mac OSX home directory named LisaEM. Inside it, put the LisaEm app, boot.hi, and boot.lo, boot.ROM and the five de-serialized Lisa Office System disk images from here or elsewhere: [http://www.applerepairmanuals.com/lisa/software/LOS\\_archives/](http://www.applerepairmanuals.com/lisa/software/LOS_archives/)

Use the files Office Sys 1 to 4 in this distribution. They are from

<https://www.macintoshrepository.org/641-lisa-os-2-and-3>

~~Un-bihex the LOS files with Stuffit Expander. You do not need to convert them any further.~~

3. Launch the LisaEM app. When it opens, go to Preferences. For "Lisa ROM", browse to ~~boot.hi~~ **boot.ROM**. Then hit Apply.

~~NOTE: This step causes two files to be generated: a "boot.ROM" file in the same directory as the boot.hi and boot.lo files, AND a lisaem.conf file in your home directory in ~/Library/Preferences. There does not appear to be a way to override that location; furthermore, that conf file contains entries with absolute file paths to the ROM and (later) hard disk files. So, if you move your LisaEm files or rename the enclosing folder, things will break unless you modify the conf file manually, or re-set your preferences (which may in turn kick off a whole new hard drive setup process — I don't know yet.)~~

**This step creates files in ~/Library/Preferences:**

**lisaem-arm64-11.00-wx3 Preferences.1**

**lisaem.conf**

**net.sunder.lisaem.plist**

**These files must be deleted before attempting re-installation.**

**4. From Throttle menu select highest speed.**

5. Then go to LisaEm's key menu **and select Start Key**. ~~File menu and selected "Run".~~ A dialog box pops up asking, "Hard Drive Size?" I picked the 2nd option, "10M - any OS". After a few seconds, the Lisa self-test screen appears, followed by the Lisa's "Startup From" menu.

~~NOTE: This step causes another file to be created in the same directory as the ROM file(s); a disk image named "lisaem-profile.dc42." This is your emulated hard drive. You can't mount it under OS X, because it has an unreadable file system to OS X.~~

**This file must be deleted before attempting re-installation.**

6. From the Lisa's "Startup From" menu, select the first option, start from floppy. The next screen shows a picture/dialog indicating that you need to insert a floppy and continue.

7. Go to LisaEm's File menu and select "insert diskette." ~~From the dialog box that appears, first select the "All (\*.\*)" option from the top "Enable" popup menu, then select the first of the Lisa Office System disk images.~~

**It Might take several reinstall attempts to get past errors of the form:**

**ERROR: Stop: The Lisa Office System startup software could not be installed because the Lisa could not write to the disk. Call a qualified service representative for help.**

It is necessary **each** time to:

- Delete LisaEM and reinstall LisaEm from the DMG file
- Delete all dc42 files in ~/LisaEM
- Delete the files created in ~/Library/Preferences mentioned above:
  - lisaem-arm64-11.00-wx3 Preferences.1
  - lisaem.conf
  - net.sunder.lisaem.plist

Do not do anything else on your computer while the OS is installing. It might help to also quit all other apps, and turn off WiFi and Bluetooth. The installation process appears to be sensitive to any process delays.

After 10 attempts or so, the OS finally installs!

8. Then hit the Lisa's Continue button, and after a couple seconds, the LOS installer should appear. From there, follow its prompts to install LOS to the emulated 10MB ProFile hard disk. Whenever it asks for another floppy, repeat the "insert floppy" process from LisaEm's File menu.

Each of the Office Sys K file (for K = 1 to 5) is converted to an Office Sys K.dc42 file when first mounted.

When the Lisa asks for Office Sys 1 to be **reinserted**, select the dc42 version of that disk.

After the last step, be sure to select **OFF** not reboot! Selecting boot will corrupt the ProFile disk and send you back to zero.

After this, the emulated Lisa will be able to boot from the ProFile hard disk.

9. Always select the Power button under Keys to turn off the Lisa before quitting the emulator, otherwise the ProFile disk may become corrupted.

10. When it's booted, you can insert more diskettes to load LisaWrite, LisaDraw, LisaCalc, LisaGraph, and optionally various utility programs.

Download applications from <https://www.macintoshrepository.org/>

Choose only zip files, sit files can no longer be "unstuffed" because Stuffit Expander does not work even though it is still on Mac Store.

1. Download zip file for application.

2. Unzip it. The results should be a dot .image file.

3. Start emulator. Boot from ProFile disk.
4. Select ProFile Disk, and under Lisa File/Print menu select Open ProFile Disk.
5. From Mac file menu, select insert disk and select the .image file.
6. The disk should appear on the Lisa screen. Under the Lisa's File/Print menu, select Open DISK for whatever the DISK is.
7. Select the contents of the disk with the mouse.
8. Under Lisa File/Print menu, select Duplicate.
9. Drag the flashing duplicated copies to the ProFile disk.
11. No programming languages are included in Lisa Office. To write programs for Lisa, you use a different environment named Workshop. You can download the Workshop installation disk images from <https://www.macintoshrepositary.org/23313-workshop-3-0-updates> . These disks cannot be read by the Lisa Office OS. Instead, you need to boot from the first Workshop disk and then install the Workshop environment alongside of Lisa Office on the ProFile disk.

When you next boot, you should see the option to boot from either environment.

Note that if installation of Workshop fails, it corrupts the entire ProFile disk and wipes out Lisa Office as well, and you must delete everything as noted above and reinstall from scratch.

There is also a third OS for Lisa just for Small Talk 80. However, when I tried installing it as well it failed and corrupted my virtual ProFile disk.

#### **Additional Notes:**

The LisaEm app cannot be copied or backed up, because after it runs it creates a subdirectory cycle within its resources.

Attempting to copy and restore the ProFile disk dc42 file never works. Presumably, the emulator uses hard links. The fact that ProFile disk images cannot be reliably copied thus leads to the necessity of the complex setup procedure above.