Qemu 8.1 AmigaOs4.1 Pegasos 2 installation guide

Qemu is not new and many will already know this emulator/virtualizer, so what now distinguishes version 8.1 from others and makes it sspecial. In 8.1 many patches have been included and makes the installation of AmigaOs4.1 FE under the Pegasos 2 emulation even easier by the new bootloader "BBoot".

What is needed:

1.   AmigaOs4.1 Final Edition Pegasos 2 version which can be purchased from e.g. www.amiga-shop.net

2.   The system emulator and virtualizer Qemu 8.1 available for free for Linux/Windows/Mac.https://www.qemu.org

Hint! Under MacOs with **apple silicon chipset** M1/M2 Homebrew (package manager) and Xcode should be installed before. As described here:

Homebrew installation under MacOs

Qemu can then be installed via the terminal as follows:

brew install Qemu

For Mac with (Intel) chipset you can take ready build`s from here:

Qemu 8 Mac (Intel): https://www.emaculation.com/forum/viewtopic.php?t=8848

For Windows from here:

Qemu 8 Windows: https://qemu.weilnetz.de/w64/

3.   The bootloader BBoot that Balaton Zoltan developed especially for Qemu Pegasos 2.

   http://zero.eik.bme.hu/~balaton/amiga/bboot/

4.   An HD created with Qemu or img that can be created as follows.....

   Open console/shell/terminal on Windows/Linux/Mac:

   Qemu-img (.exe) create -f raw -o size=2G hd.img (2G stands for 2 gigabyte disk size) and can be customized depending on how big you want the virtual disk to be. For the beginning I recommend not to go higher than 2G. Important! For the creation of the hd.img you have to be in the Qemu directory. Of course you can also create hd.img outside of Qemu with freeware tools like ImgBurn for Windows. Also WinUae could be helpful for this.

5.   Furthermoreyou need AmigaOs4.1 FE Pegasos 2as ISO installation medium which you can download after registration and after entering provided CD-Key from hyperion-entertainment and AmigaOs4.1Update3 which contains the SiliconMotion Gfx driver, to be found in AmigaOs4.1Update3/Update 3/Files_Sam460ex/Kickstart.

6.   An unpacker that can unpack LHA packed files such as WinRar, WinZip, etc. depending on which system Qemu is installed For Linux and MacOs there are similar tools that can do this.

If you have everything together we can come to the actual part, the preparation of the installation by BBoot to be able to boot the AmigaOs.4.1 Pegasos 2 installation medium. First you should mount your AmigaOs4.1 Pegasos2.ISO so that you have access to it. Open the ISO, in the system folder there is another folder called Kickstart, copy this whole Kickstart folder to BBoot, BBoot has to be unpacked before. Next you should unpack the archive AmigaOs4.1Update3 and search for the file **siliconmotion502.chip** as described in section 5.

Now copy **siliconmotion502.chip** to BBoot into your Kickstart folder which we placed there before. Now we come to the last step, open your Kickstart folder in BBoot and edit the file Kicklayout and add the following line:

- **MODULE Kickstart/siliconmotion502.chip**

It is best to add the entry under "MODULE System/Kickstart/PCIGraphics.card".

Save the changes. Since BBoot writes the modules to memory as a ZIP, we need to pack the entire Kickstart folder including changes we made as a ZIP packed archive so that you end up with Kickstart.zip in the BBoot folder. Console/Terminal/Shell open CD path/to/BBoot/ then type "zip -r Kickstart.zip Kickstart/" this will create the archive Kickstart.zip which contains a subfolder Kickstart with the files. You have to be in the BBoot folder of course, BBoot also contains a readme where it is explained how to use BBoot.

Let's move on to the first Qemu Pegasos2 boot

Hint! This is just a basic command line to boot from the Pegasos2InstallCD.ISO under Qemu, the paths to BBoot, hd.img and also to the Pegasos2InstallCD.ISO have to be adjusted accordingly. Make sure you are in the Qemu directory. Via Terminal/Shell/Console, change with CD path/to/your/Qemu/directory and use the following command line:

qemu-system-ppc -M pegasos2 -m 2048 ^

-kernel /path/to/BBoot/BBoot -initrd /path/to/Kickstart.zip -vga none -device sm501 ^

-drive if=none,id=cd,file=/path/to/Pegasos2InstallCD.iso,format=raw ^

-device ide-cd,drive=cd,bus=ide.1 ^

-drive if=none,id=hd,file=/path/to/eure/hd.img,format=raw ^

-device ide-hd,drive=hd,bus=ide.0 ^

-device rtl8139,netdev=net0 ^

-netdev user,id=net0 ^

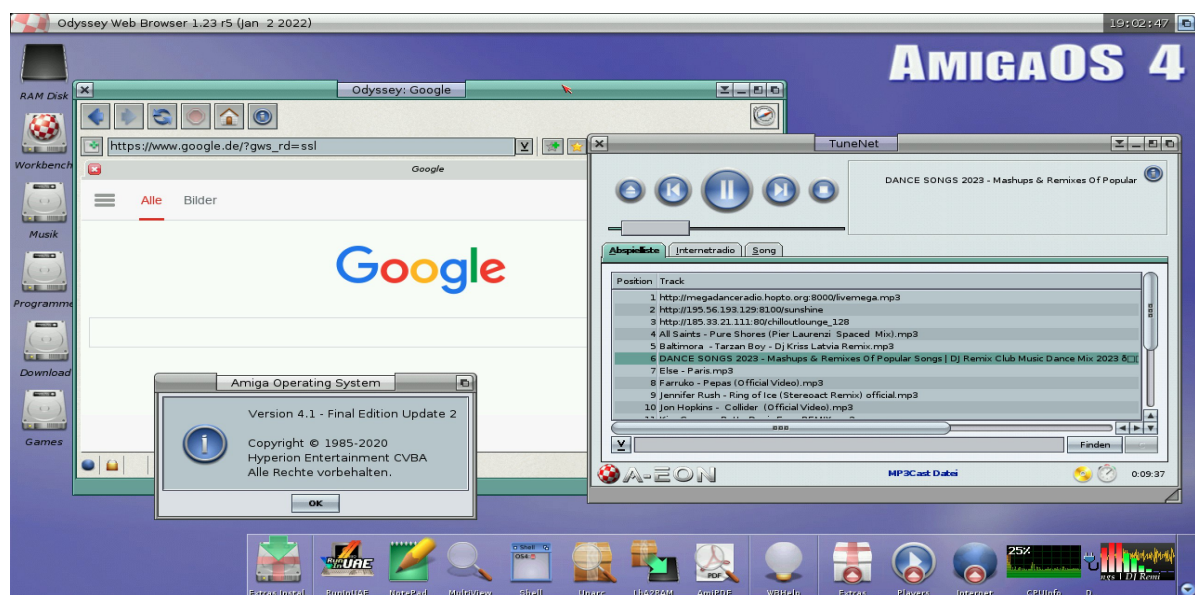**-rtc base=localtime -display gtk ^**

-serial stdio ^

Under MacOs the line **-display cocoa has** to be used, otherwise no window will be opened. For Windows/Linux/Mac you can also use the window manager **-display sdl** alternatively**.**

If everything worked BBoot should now boot AmigaOs4.1 Pegasos 2.ISO. The installation of AmigaOs4.1 will then run as usual. The link below will help you.

AmigaOS4_Install/PegasosII/Installation_AmigaOS_4.1_Pegasos2_English.pdf

After the installation on your virtual hard disk and after ejecting the installation CD (ISO)

For some reason that is not yet known, the first boot after the installation starts in Pal LowRes 8bit mode and the screen is displayed incorrectly. The problem can be solved easily by calling System/Prefs/Screenmode and selecting a 16 bit screen mode. After you have done that you can use AmigaOs4.1 Peg2 as usual. Have fun with it....

After setup and installation you should update your system with AmiUpdate or AmigaOs4.1 FE Update 1 and 2. If you have done this I recommend to install the latest Silicon Motion graphics card driver from Os4Depot, so you can use resolutions up to 1920x1080 16bit under AmigaOs4.1.

Additionally you have to remove your AmigaOs4.1 system partition after all AmigaOs4.1 FE updates 1 and 2 including Silicon Motion Chip from Os4depot, the Kickstart folder again and create Kickstart.Zip from it as described above, also make sure that the entry "MODULE Kickstart/siliconmotion502.chip" is in the Kicklayout.
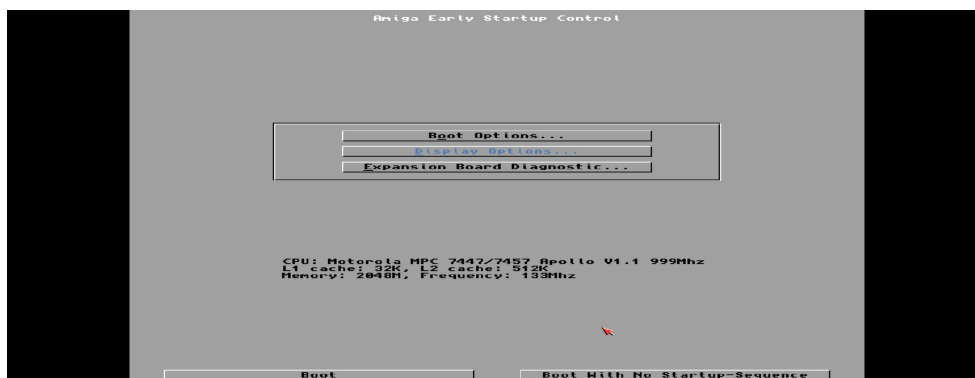
Current problems:

– **Using -cpu 7447/7457 with Altivec support there is no correct display of GUI/window output for some SDL1 applications, use -cpu 750cxe instead**

- **After update FE 2 it is possible that your network connection becomes unstable, if this is the case, please copy the older RTL8391 driver from the Pegasos install.iso to system/devs/Networks on your installation HD**

- **Currently the maximum resolution is limited to 1920x1080 16bit under Qemu Pegasos2 emulation**

- **If windows and GUI feel sluggish under AmigaOs4.1 you can adjust this under SYS:Prefs/GUI tab Effects, just deactivate the effects, or take out the transparency this will speed up GUI/windows considerably.**

Tips and tricks on how to use Qemu

- **CD/ISO files can be mounted with -cdrom /path/to/CD/ISO under Qemu**

- **With "-full-screen" you can start the emulation in fullscreen, helpful for all display managers "-display sdl" "-display gtk" and "-display cocoa", just append this abbreviation to your Qemu command line**

- **Access the Amiga Early Startup Control screen by starting or restarting Qemu while holding down both mouse buttons. Helpful if you need the AmigaOs4.1 Install Boot Medium for the Extras Installer but want to boot from HD.**

The biggest thanks goes to **BALATON Zoltan** who made the whole thing available for us. On his **Qmiga** project page you can read all the information you need.

There you will also find a detailed explanation of the installation process:

 Qemu Pegasos 2 Install