



How to Upgrade the Firmware of a 2009 Mac Pro 4,1

The 4,1 Mac Pro can be upgraded to be identical to the 5,1 model from 2010-2012

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INTRODUCTION

The 2009 Mac Pro shares an identical motherboard with the 2010 model. With a firmware update, you can use newer CPUs and upgrade to macOS 10.12 and 10.13.

It is important to note that you will need an official Apple GPU installed while performing the flash, so go ahead and dig out that old GT120 that came with the system when you purchased it if you've upgraded to a non-official GPU in the meantime.

If you opted for a GPU upgrade from Apple at any point, you may have a different card. This could include:

- ATI Radeon 4870
- ATI Radeon 5770
- ATI Radeon 5870

Provided these are original Apple cards, you should be fine to proceed.

Step 1 — Download the Tools & Upgrade to macOS 10.11



Mac Pro EFI Firmware Update 1.5

Download

This update is recommended for all Mac Pro (Mid 2010) models and addresses the following issues:

- Resolves an issue that prevented the firmware password prompt from being displayed
- Resolves an issue that prevented the Boot Picker from being presented if Ethernet is connected to a cable

To complete the firmware update, wait for your Mac Pro to finish installing and shutdown. Hold down the power button until the power indicator light flashes, or you hear a long tone, then release the power button. A gray screen with an Apple logo and progress bar will appear while the update is taking place. When the update is complete your Mac Pro will startup normally.

Important: The update may take a few minutes. Do not unplug, shutdown, restart or disturb your computer while the update is taking place.

For more information about firmware updates for Intel-based Macs, please visit: <http://support.apple.com/kb/HT1237>

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System Requirements

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Author: MacEFIFrom Newbie [+ on May 09, 2010, 00:01:55 PM](#)

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Mac Pro Firmware Upgrade Utility Released!

As you may know, some Mac Pro models have been introduced that are identical or very nearly identical to the model that preceded them. The 2010 Mac Pro is one of these. I have been trying to figure out how to update the firmware to see if it was possible to come up with a way to update the firmware on the 2009 Mac Pro with the firmware from the 2010 Mac Pro. The hardware of these models is very close. The only thing that differs is the CPU socket mechanism on the dual CPU boards. The 2010 Mac Pro has a different CPU socket than the 2009 Mac Pro. The SMC and BMC version are the same. The CPU socket issue is transparent to the firmware, and the SMC firmware difference between 2009 and 2010 models is negligible as long as the SMC firmware version matches between the main board and the CPU board, everything works perfectly.

To explain how this was accomplished, let me first describe how the firmware update process works on a Mac. The firmware update is done by booting the Mac with the standard boot file, /System/Library/efi/efiBoot/efiBootX64.efi, which is very similar in structure to the standard boot file that starts a Mac on the system volume in the /System/Library/CoreServices/FirmwareUpdate folder, along with the actual firmware image. This boot file is then replaced by the firmware update file, which then boots the Mac with the new firmware. The update file is run for a few seconds, this special EFI program is run.

So how do we get the program to load the other firmware? It turns out that it is surprisingly easy. Inside the /System/Library/efi/efiBoot/efiBootX64.efi file there are two strings that change from different releases of the 2010 Mac Pro, along with the CRC32 checksum of the firmware image file. If one of the firmware version strings is modified to what the 2009 Mac Pro model is, and the CRC32 checksum is changed to match the 2010 Mac Pro firmware image, and the firmware image file is run, the Mac will boot with the 2010 Mac Pro firmware.

I have tested this myself, on both 2009 and 2010 Mac Pro models. You can upgrade or downgrade at will. If you have a CPU in a 2010 Mac Pro that isn't supported in the 2009 Mac Pro, such as the Westmere 6-core Xeon, the system will not boot after the update. This is because the 2010 Mac Pro has a different CPU socket. If you have a 2009 Mac Pro, to do this, but as a service to the community, I have written an install program that does everything automatically. The program will detect the Mac you are using and will automatically update the strings in the boot file to what ever is appropriate. If you have a 2010 Mac Pro with a 6-core Xeon, the program will warn you, but still allow the firmware update. The program will then copy the firmware update files or image files. The program creates a small RAM disk, download the needed files, copies all of the scripts to the RAM disk, and then runs the scripts. Everything is left on the RAM disk for you to look at and study, if needed.

I hope you enjoy this utility, and enjoy the benefits of extending the value of your Mac Pro.

[MacPro2009-2010FirmwareTool.app \(131.99 KB - downloaded 20380 times.\)](#)

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- First thing's first: You will want to upgrade to macOS 10.11, which is the latest "officially" supported version of macOS for the 4,1 Mac Pro.
- Provided you are on at least 10.6.6, you should be able to download the installer from the Mac App Store [by following this link](#)
 - If you are on 10.6.5 or earlier, you will need to first upgrade via Software Update to the last release of Snow Leopard (10.6.8) to get access to the Mac App Store.
- You will need to download two different packages to complete the upgrade:
 - [Mac Pro EFI Update](#)
 - [Firmware Update Tool](#) (hosted at Netkas in the bottom of the first post)

Step 2 — Disable SIP



- You'll need to disable System Integrity Protection (SIP) in order to flash the new firmware.
- Restart your Mac Pro and hold **cmd+r** to boot into the recovery partition on your boot drive.
- Once in Recovery Mode, go to the Utilities menu at the top of the screen and click **Terminal**
- Enter the following command:
 - **csrutil disable**
- Hit return and restart your Mac Pro as normal.

Step 3 — Run the Firmware Tool



- While the tool was originally designed to pull the firmware directly from Apple's website, a change in the file location and name on Apple's part has made it necessary to download & mount the .dmg prior to running the tool.
- Double click the firmware file you downloaded in step one to mount the disk image to your desktop.
- Right click and select "Open" on the firmware update tool. Since it is not signed with the proper certificate, macOS will likely refuse to open it just by double clicking the file. Right click the file and open from the menu to fix this.
- You should have two options in the window - upgrade to 2010 firmware and downgrade to 2009 firmware. Only one option will be available at any given time, dependent on which firmware you have installed.
 - There is really no reason to ever downgrade to 2009 firmware, as none of those machines are still under any warranty from Apple and the system discs are not as important now that all OS versions are given as software downloads.
 - You are not required to upgrade your CPUs if you update to the 2010 firmware- your original system configuration will continue to operate as it always has.
- Be sure to read any and all information that the utility may pop up.
- **IF YOU HAVE DIFFICULTY:** Try using this [alternate tool](#).

Step 4 — Shut Down & Flash



- After the tool has finished its work, it will tell you to shut down your computer. Just perform a normal shut down procedure.
- After your Mac Pro is powered off, hold the power button down until you see the power LED blink quickly or you hear an audible tone. The blinking LED will precede the tone.
- Your computer should now begin to update the firmware on its own. You should see a gray screen with a progress bar at the bottom of the screen.
 - This is a different bar than you would normally see with macOS- the firmware updating bar will be a hollow rounded rectangle that slowly fills up, rather than just a bar that slowly gets longer as you would typically see.
- Your computer may restart on its own again following the flash.

Step 5 — Check to make sure it worked!



- Once your machine has rebooted to the desktop, it's time for the moment of truth.
- Open **About this Mac** and click on **System Report**
 - It is worth noting that **About this Mac** will still report this as a Mac Pro (2009), even after a successful flash.
 - In **System Report** you should see a line in the first window labeled *Model Identifier* - if the firmware flash was successful, you should see **Mac Pro5,1**

Step 6 — Re-enable SIP



- Unless you have a compelling reason otherwise, you'll want to reenable SIP. Once again, you'll have to go into Recovery Mode just like you did before and open the Terminal.
 - Enter the following command
 - csrutil enable**
- Reboot the machine and let it load to the desktop. Open a new terminal window and enter the following command to check the status of SIP
 - csrutil status**
 - If all was successful, you should get a line back that reads:
 - System Integrity Protection status: enabled.*

Step 7 — That's it!



- And that's all there is! Now you should be able to upgrade the processors to a much wider swath of options.

