

Installing the AMD/ATI graphics driver on Carolina

For many, installing the AMD graphics driver can be an intimidating experience. But as it is with many things in life, once you've learned how to install it, it's not that hard.

It'd be nice if we could wrap it all up in a PET or SFS package, and many have done so. But it really isn't as easy as that. While you and I may both have AMD processors, there is no guarantee that a PET for the driver that works on my system will work on yours. Chances are that our graphic cards differ. AMD provides a wide array of graphic cards, and even if it did happen to work it wouldn't be optimized for your system. We need to compile it on our own system to ensure that it functions in the manner that we expect.

In order to successfully install the graphics driver, you need to be reasonably comfortable entering basic commands into a terminal window, as this is required. Also, it would be beneficial if you have a decent internet connection, as there are three files that need downloading that are quite large.

I've done my best to make this guide as user friendly as possible, so that a novice can figure out what needs to be done. Hopefully I've succeeded in doing so. If you follow each step exactly, by the end of this guide you should have a functioning graphics driver that will greatly enhance your gaming experience.

To ensure that you avoid polluting your savefile, it would be best to do this the first time from a fresh RAM boot. In other words, a fresh Carolina with no savefile (or at least not your everyday save file). Later, when you've ensured that you have a successful build, you can repeat the installation steps on your everyday Carolina.

If you'd like to test your FPS (frames per second) before you start, open a terminal and enter `glxgears`. Every five seconds it will print out the average fps in the terminal. After you're done successfully installing the graphics driver, you can do this again to compare the results.

Step 1: Install the tools necessary to complete the build

There are two rather large downloads that we need to acquire right off the bat. The first is the devx SFS for the current Carolina version that you're running, and the second are the kernel sources SFS.

The devx can be downloaded from the repository at the following URL - <http://smokey01.com/carolina/devx/>. Be sure to pick the devx SFS that matches the current version of Carolina that you're using. For example, if you're using Carolina-001, make sure to download the devx_lina_001.sfs. Also, it's very good

practice to download the accompanying md5.txt file to check if the download was corrupted. To check the md5 checksum, open a terminal in the same directory that the md5.txt and the devx is located and enter the following: `md5sum -c devx_lina_xxx.sfs.md5.txt`, where 'xxx' stands for the version number. You'll get output in the terminal that will tell you if the download was good or if it is corrupted. After you've verified that you have a good download you need to load the SFS file. To do so, you can either click on the SFS file from within the Thunar file manager, or access the 'SFS Load program-loader' from the main application menu under the 'System' category.

The next tool that we need to download is the kernel sources. This SFS can be downloaded from the repository at the following URL - [kernel_sources_3.2.13-ski.sfs](#), or alternatively using the 'Puppy Package Manager' by clicking on the 'SFS Downloader' button. Again, download the accompanying md5.txt file and check the md5sum to ensure that the download isn't corrupted. Then load the SFS.

Step 2: Gather pertinent system information

In order to download the correct file from the AMD website, we need to gather some pertinent information about the graphics on our system. We'll do that by opening a terminal window and entering the command: `lspci | grep VGA`. For simplicity sake, and for the sake of example, we'll use my computer for the example driver installation. The terminal output on my system is: `01:05.0 VGA compatible controller: ATI Technologies Inc RS780MC [Radeon HD 3100 Graphics]`. We're mainly interested with the data that is between the brackets. On my system that would be 'Radeon HD 3100 Graphics'. Your output, of course, is almost certainly going to be different. Write this data down, or save it to a text file. We'll be using it.

Step3: Acquire the correct download from the AMD website

The next thing we need to do is go to the AMD website and download the file that will be used to compile the driver that is meant specifically for your graphics card. And fortunately, AMD has a nifty web-based form that does this for us based on the data we obtained in step 2. The web page we need is located here: <http://support.amd.com/us/gpudownload/Pages/index.aspx>. When you navigate to the web page, you'll notice two columns. The first column has drop-box selections, the second column has links. We're interested in the first column as the second column contains things that pertain specifically to Windows. Also note that any link or drop-box selection that contains anything to do with automatic detection should also be avoided, as this is also Windows specific.

The drop-boxes are conveniently broken down into steps. The first one is labeled 'Select the type of system that you have'. We're only interested in the first two selections offered within the drop-box, 'Desktop Graphics and Notebook Graphics'. If you have a desktop system or a laptop, choose the first. If you have a

notebook system, choose the later.

The second drop-box is labeled 'Select the product family your product belongs to'. Again, remember to avoid choosing 'Auto Detect and Install'. Here's where we need to use the data we gathered using Step 2. If you recall, for my system, that was 'Radeon HD 3100 Graphics'. So for my system, I'll choose the drop-box choice 'Radeon HD Series'.

The third drop-box is labeled 'Select your product'. Because of my gathered data from step 2, for my system I'll choose 'Radeon HD 3xxx Series PCIe'.

The fourth drop-box is labeled 'Select the supported operating system that you have'. Because of the kernel used in Carolina Linux, you must choose 'Linux x86'.

Finally, click the 'Display Results' button to continue. After the new page loads, scroll to the bottom to find the link for the file you need to download. The download will take a while as it is quite large, and when you finish you'll end up with a file with a horrendously long name, something on the order of 'amd-driver-installer-12-6-x86.x86_64.run', for example (yours may differ in name, but it will still be horrendously long).

There are two things that need to be done with this file before we proceed to the next step, and both can be done from the mouse 'right-click' menu. Right-click the file and choose 'Properties' from the pop-up menu (context menu for ex-Windows users). This will open a tabbed dialog box. Choose the 'Permissions' tab and check the box at the bottom, after 'Allow this file to run as a program'. Click 'Close'.

The next thing we need to do is change that file name. We're going to be working in the console, so we need to rename it into something short enough to type accurately, but yet is descriptive enough to know what the file is. Right-click on the file again, and this time select 'Rename...' from the pop-up menu. Rename it something like 'amd-driver'.

Step 4: Archive all three of the downloaded files

This step is very important. You'll want to save the three files you've downloaded – the devx, the kernel sources, and the amd-driver – to a safe location, preferably an external drive, DVD, or someplace where you don't have to worry about them being accidentally deleted. Any time you wish create a new savefile that has the graphics driver on it, you must follow these installation steps again. Well, it stands to reason that if you have these files saved, you can save yourself quite a bit of time by not having to re-download them, making subsequent installations a snap. That way, the next time you wish to install the driver, you can start with the next step, step 5.

Step 5: Set up the installation environment

We're going to be working in the console soon, so in order to simplify things,

we need to put the 'amd-driver' file where we can easily find it. Right-click on the file and choose 'Cut'. Open the Thunar file manager and go to the 'root' directory. Right-click on an empty area and select 'Paste'. Next thing we need to do is to drop into the console. This is not the same thing as opening a terminal window. We need to go to the console because it stops the x-server. To do this, from the main menu select 'Shut Down', and then 'Exit to Prompt'. Click 'OK'. You should be in the console. At any time that you wish to return to the desktop environment, type `xwin` at the prompt and press enter. You should only do this after successful installation, or upon receiving errors.

Step 6: Start the installation process

At the prompt, type in `./amd-driver` and press enter (replace "amd-driver" with whatever you happened to rename the AMD download file with).

You will be greeted with an old-fashion dialog application, something straight out of the early nineties. What you're going to do with the following dialog screens is to select the default, in other words the value already highlighted. But I'm still going to describe each screen and what to choose.

The first screen that displays has an 'OK' button. Press enter on your keyboard. If you get an error at this point, you may have downloaded the wrong file from the AMD site.

The next screen of the installation dialog is important. You're presented with two options. Pick the first option, 'Install Driver'. Option number two won't work for Carolina. The packages generated either won't be compatible, or you will get errors about missing build tools. Make sure option one and 'OK' is highlighted and press enter to continue.

The next screen is actually the very first screen. It has an 'OK' button. Press enter to continue. If you get an error at this point, ensure that you have the devx and the kernel sources SFS files loaded.

The next screen is the license agreement. The exit button is highlighted. Press enter to continue.

On the next screen, if you agree with the license, the 'Yes' button should be highlighted (you can toggle between the two choices with the arrow buttons on your keyboard). Press enter to continue.

On the next screen leave the default setting as is ('Recommended' should have an (X) in front of it). The 'OK' button should be highlighted. Press enter to continue.

Installation will then proceed. If you have downloaded the correct file from the AMD web-site for your computer, at the end you'll get a dialog that says "Installation complete!". If not, you'll get an error message at the prompt.

If your installation was successful, at the prompt enter `aticonfig --initial`. This will set up the driver to be loaded on the next boot-up.

Type `xwin` at the prompt and return to the Carolina desktop.

We need to clean up some stuff. Open the Thunar file manager, and navigate to `/usr/share/applications`. You should see two AMD icons in the directory.

The file labeled '**AMD Catalyst Control Center (Administrative)**' should be deleted. It won't run on Carolina due to the fact that we're already running as root. After deleting this file, close Thunar, go to the main menu, and open the Control Panel. Once open, click the 'Hardware' selection, and highlight the 'AMD Catalyst Control Center'. Launch it. It should display the Catalyst Control Center welcome dialog. Close the dialog. If the dialog didn't work for you, or if the dialog contains an error message, you either didn't follow the installation directions, or you downloaded the wrong file from the AMD web-site.

That's it. If you followed the steps to a tee, and if you downloaded the correct file from AMD, you should now have the driver files installed on your system. You can check the FPS and compare it to what it was before the installation to see how big of a difference having the graphics driver makes. All that remains to do now is to load up your favorite game and enjoy.