

For my next project, I decided to start messing with some gaming consoles that I have in my possession. For me growing up, I didn't think of gaming electronics as computers, because I thought that they were toys for entertainment, which they are. However, at the same time, these "toys of entertainment" are pieces of computer technology that influenced people greatly and are magnificent and fascinating pieces of technology to use, examine, and test. I own a total of six consoles, with my oldest console being a Sega Mega Drive 2. I mostly own Sony consoles, because Sony is a good company, there is a better selection of games, and it is much easier to software modify Sony consoles than Microsoft. I've owned a Xbox 360, although a great purchase for the money at the time, the hardware failures of 360 consoles due to their design is the number one reason I do not own a Microsoft console. However, the Xbox One is a great console and is, basically, a Microsoft computer with its mouse and keyboard functionality for games. I only own one Nintendo console, which is the GameCube. I'm not too crazy about Nintendo products. However, I do plan to solder a modchip to the console to play backups of games.

Anyway, for this project, I decided to mess with my PS4's hardware and see if I can change the fan and paste of the system. At the time, my PS4 was beginning to get quite loud during certain games and the fan inside the system would make it sound like there was a jet going off in my room. I did some research online and there were two possible solutions for my predicament: one, I could replace the thermal paste of the system and clean out the system of dust that may be blocking the fan; second, I could replace the fan of the system. I thought about it for a while and I decided to buy a replacement fan and some thermal paste. I then watched a couple videos on how to disassemble a CUH-1115A, as well as researched tips when disassembling the PS4.

One tip that I researched that I thought helps me a lot with my IT career is applying thermal paste correctly. Most of the videos online incorporated using a credit card to spread the thermal paste evenly on the APU. However, after researching more about the proper way to apply thermal paste, I realized that spreading the thermal paste is not the correct way to apply thermal paste, because air bubbles can form inside the thermal paste when one is spreading said paste. The best method for applying thermal paste is the pea-size dot method. Then you allow the heatsink to apply the necessary pressure to naturally spread the thermal compound.

So, I took apart my PS4, properly documenting where each screw goes and how each internal part is set up inside the system to make reassembly much easier. It took some trial and error, but eventually I made it to the motherboard. I made sure to lightly heat the motherboard and heatsink before taking them apart, so that I don't rip out any of the soldering on the motherboard. Once the motherboard is safely apart from the heatsink I made sure to clean off the old paste with alcohol before applying a pea size dot of artic silver compound.

I checked my fan to see the condition of it. For the most part, the fan that came stock had better quality than the replacement fan I bought used online. Also, the replacement fan happened to be the same type of fan as the stock fan, meaning a replacement fan of the same type would not help with the noise that is coming from the PS4. I would have to order another type of fan and keep everything disassembled. I thought about it for a little and decided that replacing the

fan might not even help with the noise and might cause problems with the PS4. Plus, the PS4 fan and system were very clean and there was no dust build up anywhere. I decided to apply new thermal paste and reassemble the PS4 to see if the new paste would help with the noise.

Once done with reassembly, I turned on the system to make sure it boots properly. It boots up normally and the system sounds a little bit quieter. However, the system still sounds like a jet engine during some games, which makes me believe that the fan is the issue with the loud jet noise. Frankly, after diagnosing that it doesn't need to be cleaned and the thermal paste didn't help too much, I figured that's the way the system is supposed to be. I'm very glad I took the proper precautions in documenting the disassembly or else I could have easily put the computer back incorrectly. Moreover, I could have easily damaged something on the motherboard trying to fix this minor problem. Moral of the project, do not try to fix things that are not broken. A simple maintenance of dust buildup and checking for overheating is a lot easier and simpler than disassembling a computer to apply new paste.