Building an at-home server – Eddie Yoshie

Rational

I was tired of hosting Minecraft servers off of my personal pc because when my friends or girlfriend wanted to join the server, I would have to manually boot up the server or keep the server running in the background and pc powered on (also a server cannot run in sleep mode). Thus, I took a look into Minecraft hosting sites, and they charge incredible amounts in subscriptions which quickly add up. As well, if I wanted to host other games, I would need to look into even more subscriptions. Therefore, I decided to make a one-time upfront payment of buying a new server PC and host everything from home and learning something in the process.

The Process

Looking on Facebook Marketplace, I found a vendor who sold used industrial crappy pc's, in particular, I found a Dell OptiPlex 7040 SFF for a measly $89. This pc came with an i5-6th gen CPU, 8 gigabytes of DDR3 ram, and 180 gigabytes of Sata SSD. This, by no means, is a good pc but it was the cheapest option that could run exactly what I needed. Picture of listing below:

DELL SFF Business Desktop PC on Sales!! Only $89 i5-6/8G RAM/180G SSD

CA$89

Listed 2 weeks ago in Vancouver, BC

Message Again

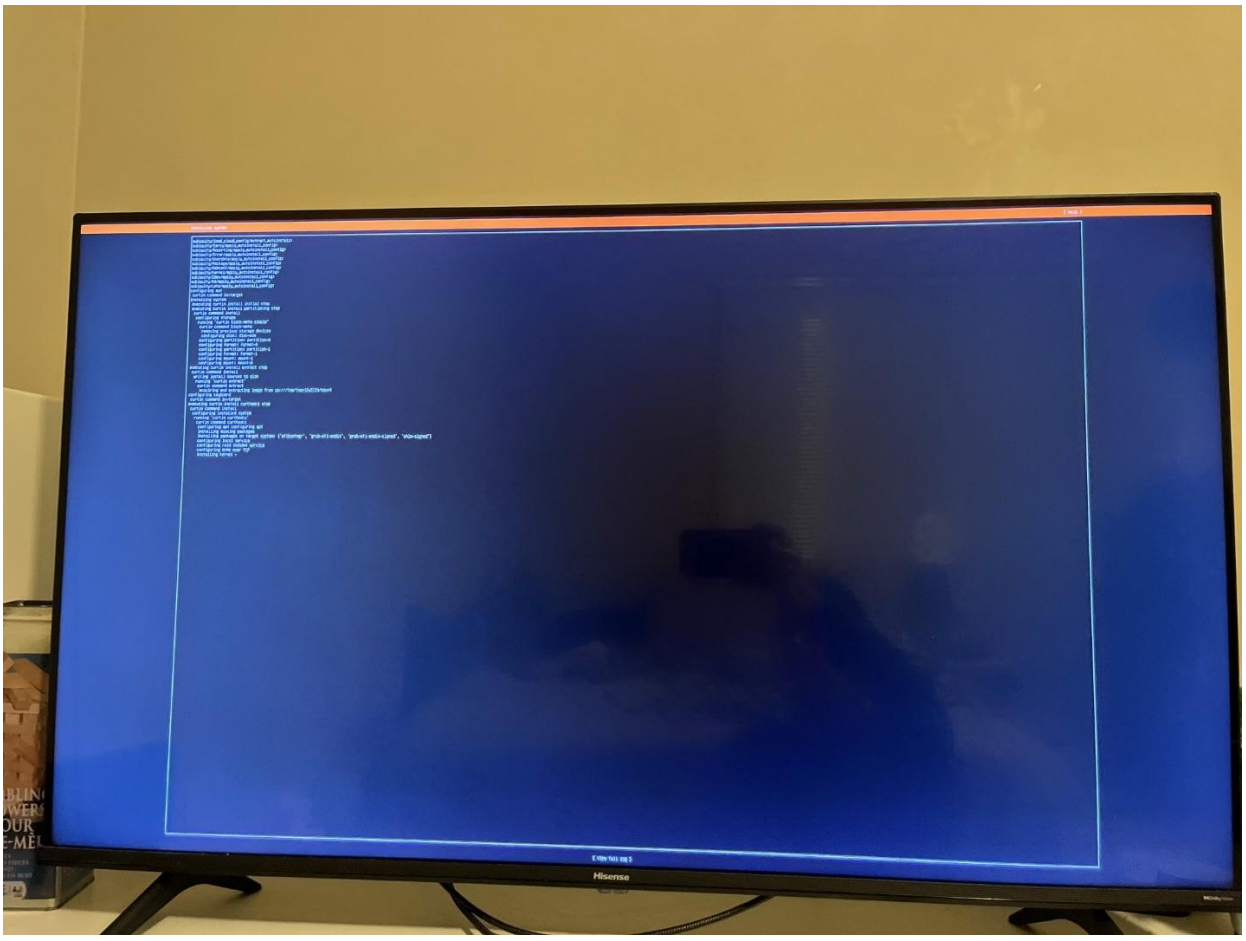
Details

Condition Used - like new

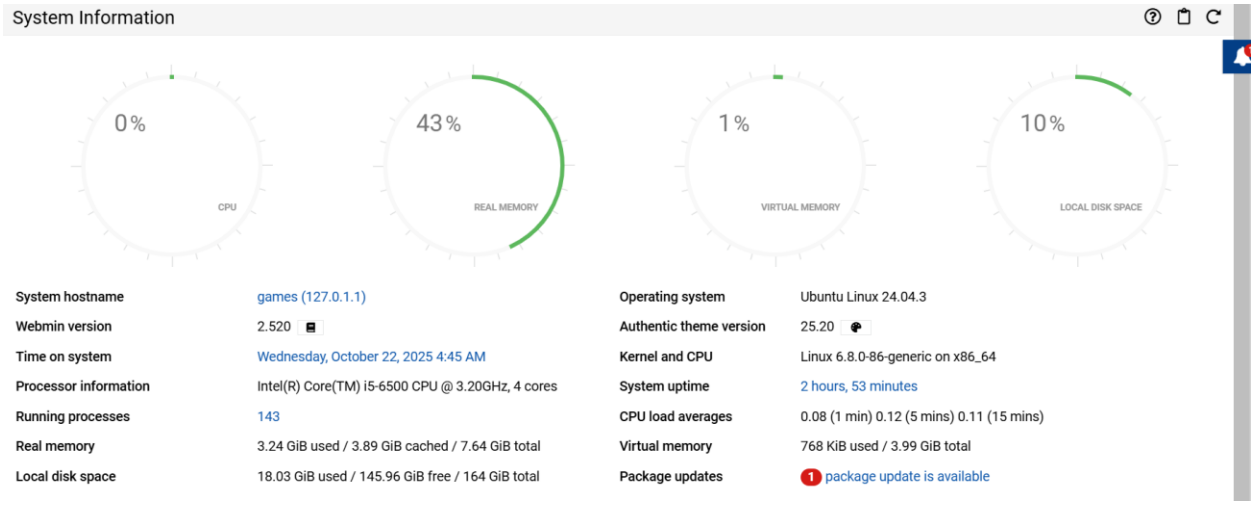
Famous Dell Optiplex 7040 SFF pc only asking $89 each with 3 months warranty!

Super Value Deal time... See more

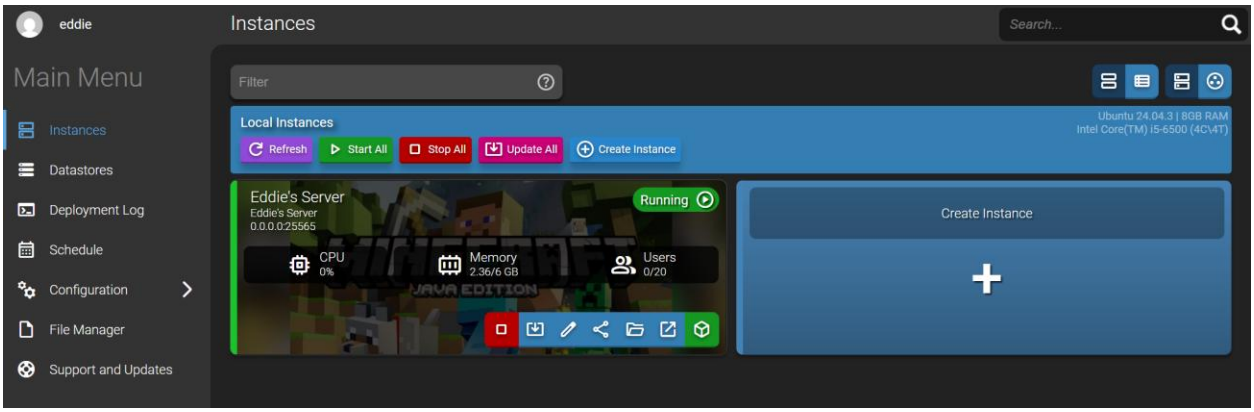
Therefore, I snatched this pc up and bought a cheap $7 foot-and-a-half ethernet cord and connected it all together. To save some overhead over Windows OS, I booted this PC using Ubuntu and set up the ssh server. Picture of the set up below:



Following this processing, I could now ssh into this server pc and access its contents. To simplify the server management process for myself, I installed Webmin using a series of bash commands. Webmin provides me with real-time updates on the server like CPU and RAM load, local disk space, and temperatures of the server pc.



For Minecraft in particular, I paid $10 for AMP (Application Management Panel). There is an open-source version which you can access purely through the command line, however, I felt the $10 was worth having a better UI and easy server management. I instantiated the Minecraft server allocating 6 gigabytes to the server (as I will only run one server at a time) and manually set render distance to 14 (to keep performance high). I also set up a backup each day to ensure I do not lose too much data in case of a power outage or any other kind of failure.



To connect, my friends and girlfriend would need access to some kind of port. Instead of the popular method of port-forwarding, I decided to leverage network tunneling this time round, preventing my public IP and local network from being directly accessible. This reduces security risks while maintaining server accessibility.

Future plans

I plan to leverage AMP more and host servers for other games including: Subnautica, Skyrim, Terraria, and Ark Survival Evolved. I will likely only be able host one server at a time, as the server pc is quite limited hardware-wise. This leads me to my next points below.

I would love to add another pc as a second at-home server. This would allow me to host multiple games at once, perhaps one friend would want to play Minecraft, and another could play Subnautica, where both are automatically backed up and on 24/7.

Alternatively, I would love to upgrade the current server I have set up. This includes upgrading the SSD and the RAM. 8 gigabytes of RAM is quite low and increasing that would allow me to host more games at once. Furthermore, more SSD is always better as I can have more backups at a time. It would be difficult to upgrade the CPU as it is on an older architecture and thus, I would need a whole new motherboard and basically replace the entire PC.

In the far future, when I am very very very rich (hopefully), I will create a much better at-home PC, with modern components, 96 gigabytes of RAM, the newest generation CPU, and multiple terabytes of storage.

Thank you for reading until the end! I hope you enjoyed my summary of how I built my at-home server. I am very proud of it and excited to host many games for my friends and girlfriend. If you have any questions about this process or would like to reach out to me for any other reason, please reach me at: eddieyoshie@gmail.com.

Have a great day!