Part 1: Starting Plex with the Basics

Original Article:

https://www.reddit.com/r/PleX/comments/m8vrdh/building_the_ultimate_plex_server_guide/

Note: This is the first of a multi-part series. I can also make videos alongside if it makes sense but please bear with me as this would be the first time I am doing a guide like this. This will require you to spend money to get everything done correctly.

*This guide is for Windows 10

*We are not using Docker

*I DO NOT ENDORSE ANY PIRATED or ILLEGAL CONTENT

*Everything in this guide is open source or will denote when it is a paid service/product

Part 1: https://docs.google.com/document/d/1vl3uckEy2Pk-EiCVNAjr2DnmBmLdZ2To

Part 2: https://docs.google.com/document/d/1t7g_ruqcu8Xw7MnpdKU2tw8taXmMyT00lhzvqpQt5ug

Part 3: https://docs.google.com/document/d/198ZOdufoFJtwGr1oveUfBphfaGSGGLUHPjYWLOoI_lw

Part 3.5: Coming Soon (ombi, Overseerr, Petio)

Part 4: https://docs.google.com/document/d/1aHQjmiL4-jMqNgruKIOMmCeejgrvc23nM8uEU_fOTVU

Part 5: Security (SSL)

Part 6: Community Questions

Summary: As the first part of this series, I am going to lay out the essentials to building a long lasting Plex Media Server. This first part of the guide goes over general hardware essentials and software essentials and preliminary setup. What is covered:

- Basic Server
- Plex Media Server Setup
- Router Port Opening
- Adding Users
- Next Steps: Guide 2

Introduction:

Let's get started with the hardware you will need. Now this is all dependent on a few factors like how many users will be streaming, how much content you will be streaming, the quality of the content, the longevity of the server, and things like backups.

What I currently am running and seems to work to support about 10-15 users no problems.

My Hardware Specs (this is more than you will need):

- Intel I5-8600K
- 16GB DDR4 Ram (recently added 8GB so I can multitask other things)
- 1 NVME 500GB SSD for the main operating system and where I put the Transcoding Folder (more on this later)
- Internal SATA: 2 8TB Western Digital NAS Drives
- Nvidia 1660TI 6GB Graphics Card
- External PCI-E Intel Wifi 6 NIC
- 2 External 8TB Drives for Backups (More on this later)

My Hardware is a bit overkill especially the backup and amount of storage needed.

Router: Linksys MAX-STREAM Mesh WiFi 6 Router (MR7350)

Specifics on Hardware:

There are certain things some users will not like to hear but there is a reason that I've chosen specific brands.

- Plex and Nvidia are the easiest to get working together for Hardware transcoding (more later) and the patch that allows multiple transcoding (HW)
- Intel's Quick Sync Video codec seems to perform very well, AMD is fine as well
- PCI-E Network Card (So I can easily swap out for 6e when it's more available), I'd prefer hard wired ethernet but that is not an option for me
- NAS Specific Drives, they may be running 24/7 and it's great to have HDDs meant for it vs the cheap drives

Software:

- The first thing that you will need is a Plex Pass (I recommend the lifetime subscription it pays for itself): **$120**
- Windows 10 (comes with normal provides like Dell, Lenovo, etc) if not you can pick it up for about **$100**

The first thing Is to download Plex Media Server for Windows 10:
https://www.plex.tv/media-server-downloads/

Once you download and install it you will be prompted with a few easy things to set up which is the location of your media. Based on my hardware setup I personally used each internal drive for their separate category, one for Movies and one for TV Shows. Now you can easily put everything on the same drive but with different folders.
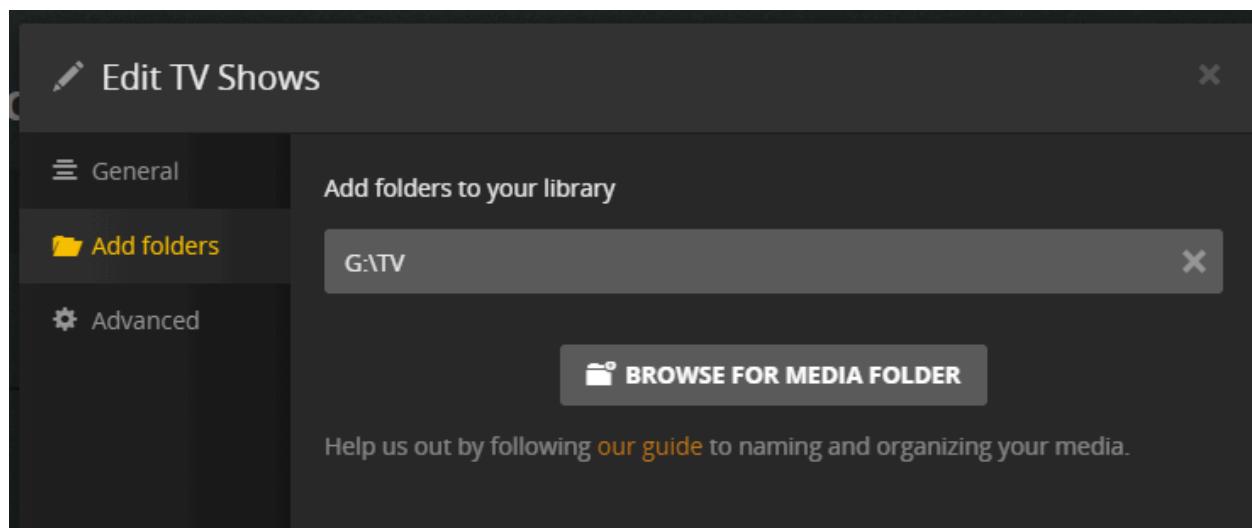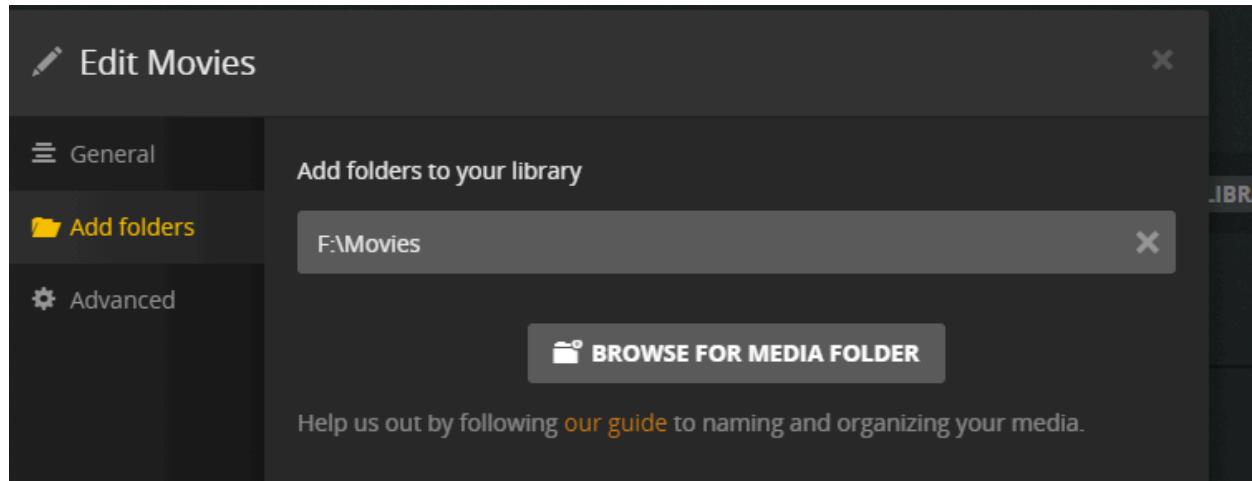
Advanced Settings in Each Category:

The major things in "Advanced" are for things like the auto-scanner. Plex has done a nice job of updating their scanners and where it gets its information from.

In movies:

The scanner I found that does the best job after multiple tests is the Plex Movie Scanner and Agent that is "The movie Database":
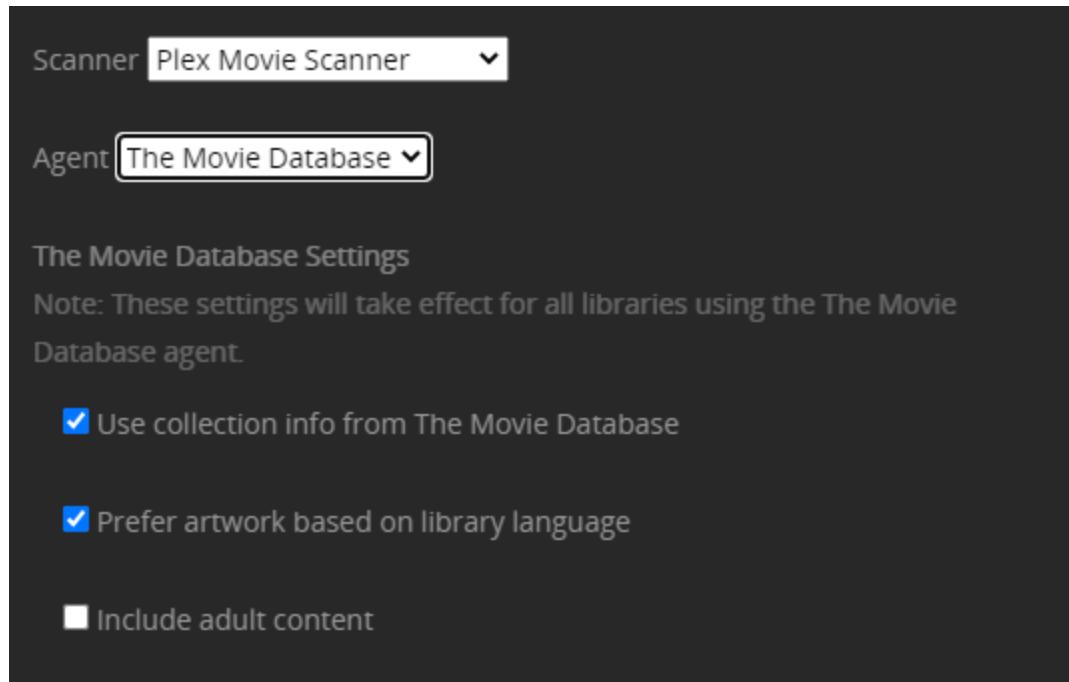
I enable collections because certain movies make organization better, think 007 James Bond Movies (You have James Bond as the first level, then each move after it vs 30+ movies on your home screen).

In TV:

I found the Plex TV series scanner and the new Plex TV Series Agent to be the best results:
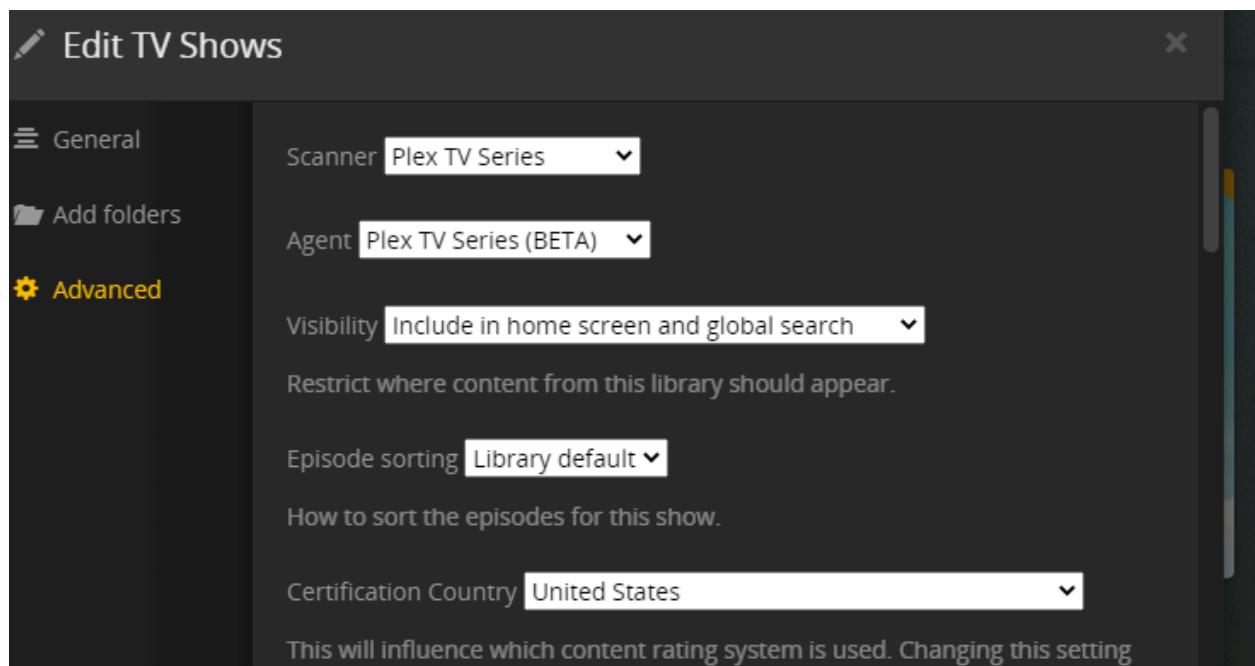
Adding Content:

I've noticed how certain movies/tv shows downloaded names can sometimes pose a big problem. There is a guide on naming conventions Plex provides:

TV: https://support.plex.tv/articles/naming-and-organizing-your-tv-show-files/

Movie: https://support.plex.tv/articles/naming-and-organizing-your-movie-media-files/

The biggest thing I noticed especially for <u>TV shows is to make a folder structure</u>. If I had a popular TV show like "House" I would make a folder called "House" and for each season a folder nested in It like "Season 1", "Season 2", etc. Plex will try and do this for you but does not always work the way you want so I manually do this a lot.
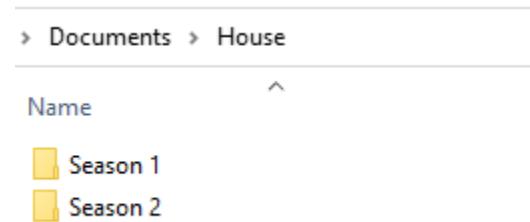
One feature of Plex I use a lot of is the "Fix Match" and there are a few things when trying to fix something you should pay attention to.
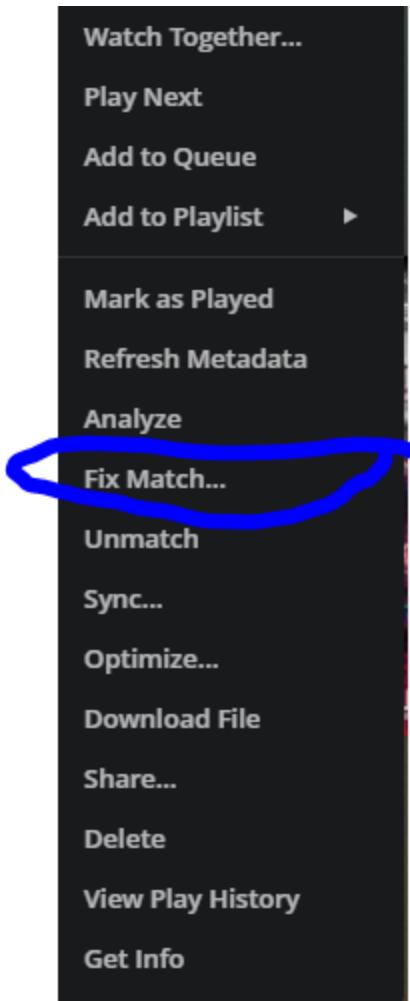
Is make sure you remove the YEAR when fixing:
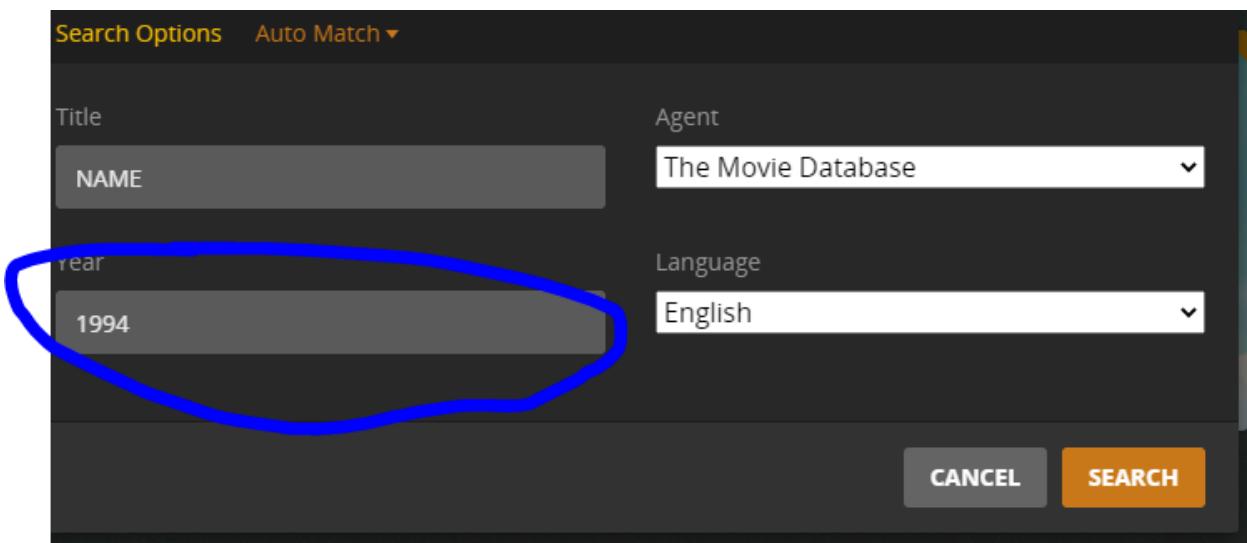
<u>The Year alone can screw up searches for the desired title.</u>

Connecting to the World:

Now Plex itself defaults to port 32400 on your localhost or 127.0.0.1:32400 (we will talk about exposing it to the outside web in more advanced configuration later). If you have a Plex Pass it will automatically be routing your dynamic IP to your local server (we will go over how to handle Dynamic IP's later).

If anyone has a plex pass and is a user you don't need to worry about routing them around as long as the port is unblocked.

One thing you will want to do on your router is go into the Port Forwarding section and make sure that you allow port 32400 is forwarded. Sometimes it is called Port Range Forwarding, what this is doing is allowing the router to take the internal IP assigned and allow connection to be made to it. I have my router keep each devices internal IP to be static (192.168.1.X) so I set a rule in my router to keep the ports open:

outsideplex	32399 - 32401	Both	192.168.1.248	True	Edit/ Delete

DHCP:

Basically it's the internal way the router designates internal IP addresses. Because I want my Plex server to keep its internal IP and not need to change to different internal IP's, most routers either offer a MAX renew or dedicated connected devices to always designate that IP to that device. I recommend setting that so you don't have to switch internal IP's and have to reset all your port forwards (this will become more intense later as we add more services to the stack).

If all is well you should see the following:
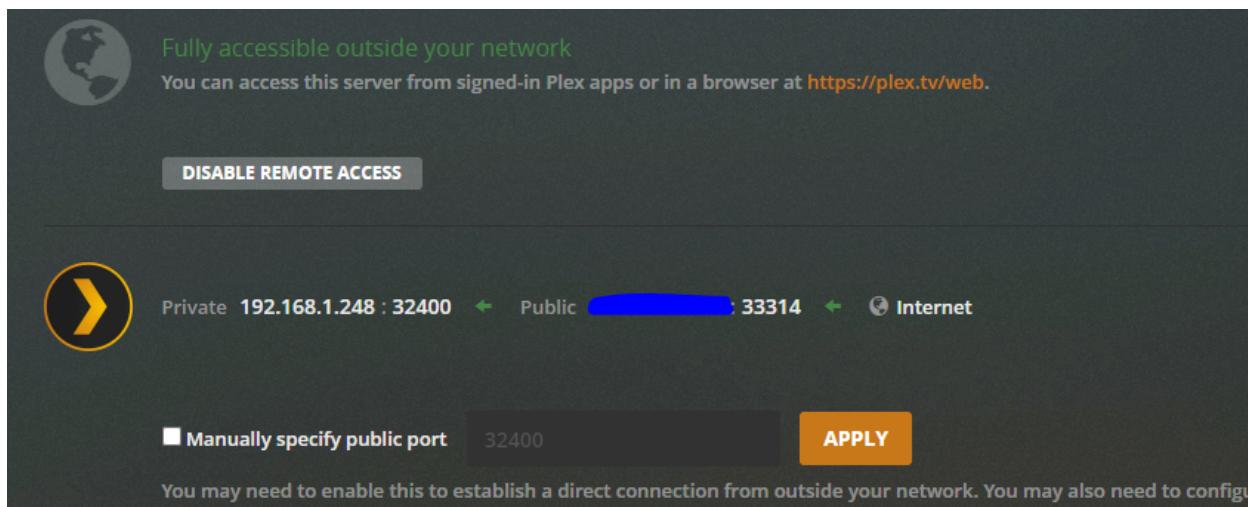
What this means is that Plex's (plex.tv) routing system can see your server and allow people outside your network the ability to connect to your server (if they are users you invited).

Bandwidth:

I luckily have a 1gpbs up and down fiber connection. This gives me a lot of freedom for streaming but I still set my connections speed conservatively to outsiders. The 400mbps upload gives me a healthy and reasonable bandwidth setting.
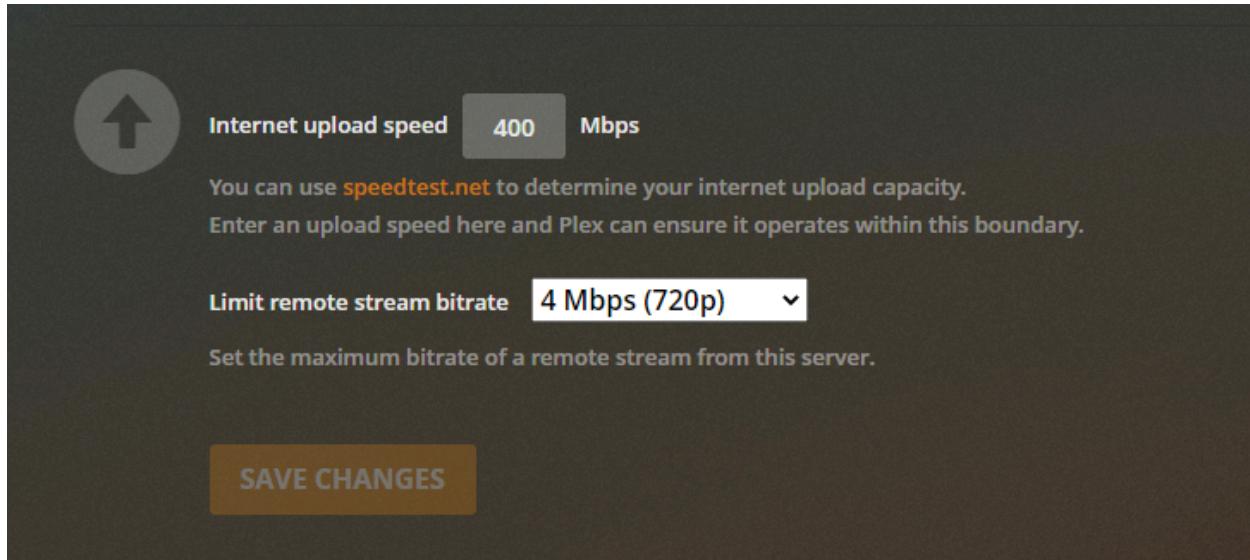
I found that 4mbps for external users is enough for a good quality stream without much degradation **for external users**.

Users:

There are two major types of users for Plex. The first is "Home Users" and "Friends". Home users are ones that sit on the same LAN (all connected to the same LAN or Router/Wifi). These will also show up when you login to Plex on your LAN as profiles (like how Netflix has profiles). Friends are ones that you invite to connect and stream from outside your local network.
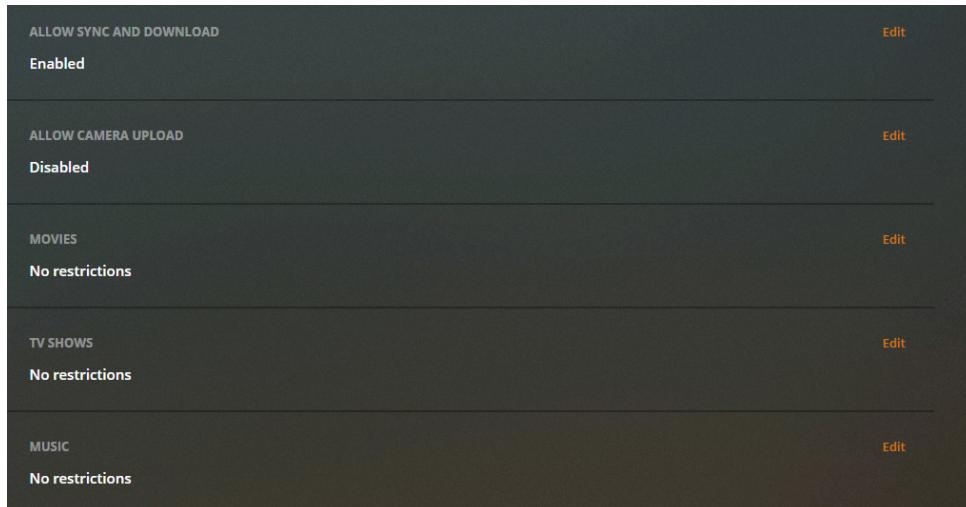
They also do not have the ability (if you have something like Live TV&DVR setup to be used).

Signing Up Friends:

For all your friends, all you need them to do is signup at http://plex.tv and have them send you the email they used. Once you add them as a friend using that email, they get a link and become connected to your server going forward (even when your dynamic IP address changes).

You can control what libraries they can see and additional features for things like Kids and Ratings, download options, and specific libraries.

Adding Content:

Whenever you add content to the designated folder (Movies, TV) there are intervals you can set for Plex to automatically scan and index the new content. You can also easily force it to scan by simply finding the service in your task bar and selecting it to scan media: (Update Libraries)
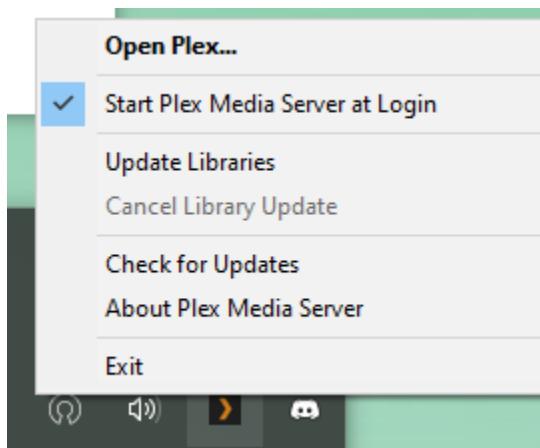
Total Cost:
- Hardware
- $120 Plex Pass
- Windows License

What should be accomplished so far:
- You have Plex Media Server Running
- You have libraries loaded
- You opened up ports on our router
- Your existing content is scanned in and you can fix mismatches
- You can stream content LAN and externally to friends you've added

What is coming next:

Part 2: Optimizing and Extending Plex
(https://docs.google.com/document/d/1t7g_ruqcu8Xw7MnpdKU2tw8taXmMyT00lhzvqpQt5ug/edit?usp=sharing)
- How to optimize Hardware for Transcoding
- How to auto backup content
- Adding Plugins
- How to Install basic monitoring tools like Tautulli
- Auto Backup both Content and Server Settings

Part 3: Outside tools to automate media
- How to create automate downloads
  - Jackett
  - Sonarr
  - Radarr
  - OMBI
- How to setup a request system like Ombi

Part 4: The nuances of hosting with a Dynamic IP
- How to setup a outside domain to point to your server
- Handling Dynamic IP addresses
- Nuances of various domain name hosting and DNS records

Part 5: How to work with security and SSL
- How to enhance security on your server with SSL
- Additional Router Settings to Help
- Other Addons to help monitor

Part 6: TBD
- Common Issues and how to solve them
- Additional Questions that come up from Reddit Q/A