

# mediaa - Saiph

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The goal of our research is to gauge how a user may interact with a self-hosted streaming service along with their interests with such a service. The purpose of our interviews will be to get a better understanding of the requirements a user might want with a media server service. We will also want to get insight on the certain system specifications a user may use to host and view their media.

## **KEYWORDS**

app; software; media; streaming; server

## **1. Research Questions/Goals**

There are 3 categories of questions that will be used during the interview process.

- Category 1: To survey the demographics of users, new and existing, of different media server applications.
- Category 2: To identify popular media server applications along with wanted features by their users.
- Category 3: To investigate flaws with current media server solutions and identify potential areas of improvement.
- Category 4: To help understand the types of devices that are used to access various media servers.

## **2. Process**

### **Interviews:**

We will conduct semi-structured/structured interviews (the choice for which is left up to the discretion of each interviewer) in order to get information regarding how current or potential users of media server software use their software. The following questions will form the basis for the questions in the interview but we will allow for each interviewer to adapt the questions to be suit the interview:

- Have you ever used a media server application before?
- Do you currently have a media server?
- How often do you use your media server?

- What devices do you use your media server with?
- What type of media do you store and share on your media server?
- Do you share your media server media with other users?
- If you share your media on your media server do you share that media via LAN connection or over the internet?
- What software do you currently use to manage your media server?
- What software do you currently use to view the media on your media server?
- How much media content do you have on your media server?
- How would you describe your experience with your current media server software?
- What problems do you have with your current media server software?
- What are things that you like about your current media server software?
- How interested would you be in a media server software that allows you to easily manage and view your media on your media server?

These questions are more specific to if the user has not used a media server before:

- Do you have media on your computer or personal device that you would like to be easily played on other devices?
- Would you like to be able to easily share your media with family members or friends?
- Do you currently have a device that could serve as a media server?
- Have you heard of any specific media server software solutions?
- If you have heard of any specific media server software solutions, where have you heard of them?
- If you have heard of any specific media server software solutions, which ones have you heard of?

### ***Observations:***

- Observe how many STEM college students, avid media consumers, and people with servers use many media servers in their spare time.
- Observe that current media server applications fail to create a balance between the number of features and ease of use.
- Observe to figure out why media server users may choose to use more than one media server in their spare time.
- Observe how media server users download media contents and access it using different media server applications.
- Observe if students and other media server users rather manually modify their dashboards to suit their preferences or they like to be automatically done.

### ***For Interview 1:***

The interview was conducted over a zoom call at 2:00 pm. This was a semi-structured interview which allowed for many of the written questions to be asked, while also omitting some that were not relevant based on other questions answered.

- What is your major and year?
- When you hear “Media Server”, what comes directly to mind?
- Do you have a media server?
- Do you have media on your computer/device that you would like to be able to be played on other devices?
- Do you have a local collection of music or movies?
- What do you know about Plex?
- Back when you did use Plex, what were you using it for?
- Would you say you used it very often?
- What devices did you use with Plex?
- Do you know of anyone else that uses something like Plex?
- Did you ever encounter any problems when using/setting up Plex back when you used it?
- What features would you want with a new media server solution that Plex doesn’t offer?
- What would be your thoughts on a community aggregated metadata system?

***For Interview 2:***

This interview was conducted through a zoom call at 1pm in the afternoon, over the weekend. The interview was semi-structured, following the pre-written questions as a guideline. The questions asked are as follows:

- What is your name?
- Which school do you attend and what do you study?
- What year are you in school?
- What type of media do you consume regularly?
- Are you familiar with a media server? If so, what is your experience with media servers?
- When using media servers in the past, have you had any issues with them?
- Have you heard of Plex? Do you have any thoughts or feelings about this software?
- Would you benefit from a media server that is more functional/easier to use?
- Do you know others who would benefit from a good media server?
- Which features would you like to see implemented in a media server?
- Which shortcomings in a media server matter the most to you?
- Do you intend to share the media you consume?
- Do you have any other thoughts or considerations?

***For Interview 3:***

This interview was conducted over the Internet on zoom at around 5pm. This was a semi-structured interview to allow for many of the written questions to be asked, but also so some could be excluded if need be. The questions asked are as followed:

- What is your name and where are you from?
- What is the name of the university you attended and what is your major?
- Which field do you want to go into after graduating from university ?
- What do you like to do in your spare time?

- Do you know what a media server is ? if yes, please tell me what it is in your own words.
- What devices do you use a media server application with?
- What type of media do you store and share on your media server?
- Do you sometimes share your media server media with other users?
- When sharing media on your media server do you share that media via LAN connection or over the internet?
- What software do you currently use to manage and view your media on your media server?
- How much media content do you have on your media server? Just guess if you can't show or give me a specific amount.
- How would you describe your experience with your current media server software?
- What problems do you have with your current media server software?
- What are things that you like about your current media server software?
- How interested would you be in a media server software that allows you to easily manage and view your media on your media server?
- Is there anything you would like to add to the record about current media server applications found on the market ?

***For Interview 4:***

The interview was conducted in-person at noon. It was done in the user's living room. The room had a tv along with my own laptop. This location was chosen because it worked out the best for our schedules and created a relaxed environment. The interview was semi-structured and the questions below were used as guides in the conversation.

- Are you currently in school? If so, what are you majoring in?
- Have you used a media server before?
- What media server software are you familiar with?
- What devices do you use your media server with?
- What type of media do you store and share on your media server?
- How much space do these resources take up?
- Do you share your media server media with other users?
- What problems do you have with your current media server software?
- What are things that you like about your current media server software?
- What are the main features that you would like in a media server application?
- Do you have any other comments about your experiences with Plex?

***For Interview 5:***

The interview was conducted over a zoom call at 1:00 pm. This was a semi-structured interview which allowed for many of the written questions to be asked, while also omitting some that were not relevant based on other questions answered.

- What is your major and year?
- Have you ever used a media server application before?
- Do you currently have a media server at all?
- When you used Plex in the past, how often have you used it?

- What types of content did you have on it[Their Plex Server]?
- If you were to have your own media server, would you be willing to share that? Would that be the goal of yours? To share the media server with other people.
- Do you feel like you have enough media currently to justify owning a media server?
- Let's go back to your usage of Plex. Were there any specific problems with the web server application that you can recall?
- Do you feel like any features were missing with Plex that you would have liked to have had?
- You would say that one of the features of a media server that you would like is something that would make it more accessible to phones and stuff like that?
- What types of devices would you like to be able to play these media from these media server applications?
- So PC is like your base requirement, needs to be able to play on a PC?
- How would you describe your experience with Plex? Would you say it is overall good, bad?
- Did you ever hear of any other media server applications other than Plex?
- Do you have anything else about media servers that you would like to say at the end of the interview here?

### 3. Inventory

#### The People in the Space

##### 3.1 Who are they, what are they like?

###### **For Interview 1:**

- Myself and the interviewee.
- The interviewee is a male 4th year Computer Science major at Oregon State University.

###### **For Interview 2:**

- Just the interviewee and myself were present.
- The interviewee is a male 4th year Ecological Engineering major at Oregon State University.

###### **For Interview 3:**

- The interviewee and myself.
- The interviewee is a male 4th year Computer Science major at Oregon State University.
- The interviewee like to stream media in his spare time

###### **For Interview 4:**

- The interviewee and myself.
- The interviewee is a recent female graduate from Oregon State University.

###### **For Interview 5:**

- My interviewee and myself.
- The interviewee is a male 4th year Computer Science major at Oregon State University.

### 3.2 What are they doing?

#### ***For Interview 1:***

- They were exclusively focusing on the interview through Zoom.

#### ***For Interview 2:***

- Interviewee was interacting with the interviewer the whole time through Zoom.
- Interviewee answered questions and gave feedback about their personal experiences and beliefs.
- Interviewee was also drinking coffee during the interview.

#### ***For Interview 3:***

- Answers the questions being asked throughout the interview.
- Demonstrating how he uses plex media server spare time.
- Pointing out issues he experienced using the application.

#### ***For Interview 4:***

- The interviewee was focusing on the interview and answering questions.

#### ***For Interview 5:***

- Purely focusing on the interview through Zoom.

### 3.3 How are they doing it?

#### ***For Interview 1:***

- They were sitting at their desk in their bedroom with a virtual background of a star wars set.

#### ***For Interview 2:***

- Interviewee was sitting at his desk at home in his room, with cool paintings in the background.

#### ***For Interview 3:***

- The interviewees were sitting at his computer desk casually with a curious look on their faces wanting to hear the next question that is going to be asked.

#### ***For Interview 4:***

- The interview was sitting at a desk in the living room.

#### ***For Interview 5:***

- They were in Zoom in their bedroom at their computer desk.
- They communicated through a gaming headset. And used a monitor mounted camera.

### 3.4 What do their emotions, purposes, reactions seem to be, and (if field interview) what did they say?

#### ***For Interview 1:***

- They were very thorough with their answers, usually taking a few seconds after me asking to think about the question.
- They seemed to be genuinely interested in helping us out with our project and giving good responses.

#### ***For Interview 2:***

- The interviewee gave good feedback to all the questions asked, and seemed to be in a good mood.

- The atmosphere of the interview was friendly and the interviewee showed interest in the class project.

**For Interview 3:**

- They show a lot of interest in talking about by being in-depth with their response to the questions.

**For Interview 4:**

- The interviewee seemed relaxed and calm during the interview.
- They seemed interested in the interview and answered to the best of their ability.
- They took time to think before responding.

**For Interview 5:**

- They seemed eager to answer the questions to the best of their ability.
- They displayed willingness to expose ignorance on the subject but were willing to give their opinion.

### 3.5 What problems do they encounter with their activities?

**For Interview 1:**

- There were no problems that were encountered.

**For Interview 2:**

- No issues during the interview.

**For Interview 3:**

- There wasn't any problem encounter with their activity

**For Interview 4:**

- There were no problems during the interview.

**For Interview 5:**

- No problems observed.

## The Objects in the space with the people

### 3.6 What are the functional elements of the objects?

**For Interview 1:**

- Chair: Both the interviewer and interviewee used to sit in
- Laptop: Used to conduct the interview
- Headset: Used by the interviewee as a microphone

**For Interview 2:**

- Chair: Both interviewer and interviewee were sitting.
- Computer: Both interviewer and interviewee communicated through the use of a computer using Zoom
- Headset: Both interviewer and interviewee wore headsets for communication.
- Camera: Video feed was recorded from both ends through zoom.
- Coffee: Interviewee was drinking coffee, probably containing caffeine.

**For Interview 3:**

- Computer: Use to conduct the interview between the interviewer and interviewee
- Chair: Both the interviewer and interviewee used to sit
- Phone: We both smartphone on our computer desk
- Headset : Used by both interviewer and interviewee to communicate

***For Interview 4:***

- Chair: Both the interviewer and interviewee used to sit in
- Laptop: Placed on the desk.

***For Interview 5:***

- Chair: Both the interviewer and interviewee used to sit in
- Headset: Used by both the interviewer and interviewee to communicate.
- Camera: Used to display video of the environment of both the Interviewee and interviewer

***3.7 What are the decorative elements?******For Interview 1:***

- User didn't want to show his real background, opting instead for a virtual backdrop of a star wars set

***For Interview 2:***

- Interviewee had a well lit and well decorated room. Interviewer had a fairly basic room background with good lighting.

***For Interview 3:***

- The bedroom had anime posters on the walls and a tv mounted in one of the corners of the room
- The bed was untidy
- There was snacks laying on the computer table

***For Interview 4:***

- The living room had a tv, couch, and table against the wall.
- There were lights strung across the wall and ceiling.
- There was an apple speaker on the counter.

***For Interview 5:***

- Interviewee had a relatively basic room with no effect on the interview.

***3.8 Which objects do people look for (perhaps to somehow interact with)?******For Interview 1:***

- Mainly the computer for the purposes of the interview.

***For Interview 2:***

- Interviewee solely interacted with the computer for the interview and occasionally took sips from his coffee mug.

***For Interview 3:***

- The main objects to interact with in the room were the phone, headset, chair and the computer.

***For Interview 4:***

- The main objects to interact with in the room were the speaker, laptop, and tv.

***For Interview 5:***

- The interviewee would inspect his computer monitor from time to time while they were thinking.



**3.9 Which objects do people bring with them that matter to the activities they are trying to do?****For Interview 1:**

- A computer and a headset.

**For Interview 2:**

- Computer and headset for interview.

**For Interview 3:**

- The computer and headset

**For Interview 4:**

- The interviewee had a laptop.

**For Interview 5:**

- Headset, computer, and camera.

**The environment: spaces, architecture, lighting etc.****3.10 What is the layout?****For Interview 1:**

- Unable to tell due to interviewee not wanting to show real background.

**For Interview 2:**

- Well decorated bedroom, with paintings showing in the background. Not much else was visible.

**For Interview 3:**

- It was a regular college room setting with a tv, untidy bed, desk and posters on the wall .

**For Interview 4:**

- It's a rectangular room. There is a couch, tv, desk, and table. The room directly connects to the kitchen.

**For Interview 5:**

- Layout was a standard bedroom layout with low lighting.

**3.11 What is the environment like?****For Interview 1:**

- Unable to tell due to interviewee not wanting to show real background.

**For Interview 2:**

- The room was well decorated and had good lighting. The bedroom seemed organized and tidy.

**For Interview 3:**

- It was in the evening and the bedroom had natural lighting. I was sitting at my computer desk in my room and the interviewee was also doing the same thing. There was snack and books on the computer desk, clothes on the bed, tv mounted to the wall and posters on the walls. You also hear people talking in the background with each other.

**For Interview 4:**

- The interviewee and I were the only ones in the room at the time. The room was bright with sunlight coming in through the windows. The place was clean and tidy.

**For Interview 5:**

- Seemed calm and tidy.

### ***3.12 How does it influence the activities people engage in?***

#### ***For Interview 1:***

- Unable to tell due to interviewee not wanting to show real background.

#### ***For Interview 2:***

- Interviewee seemed to be in a good mood, and their nice room probably had a slight influence on that.

#### ***For Interview 3:***

- The environment setting set a comfortable atmosphere for the interview

#### ***For Interview 4:***

- The light coming in and the user being in their own apartment helped create a relaxed environment.
- The interviewee and I being the only ones in the room made it easy to conduct the interview.
- The interviewee's laptop was off for the duration of the interview.

#### ***For Interview 5:***

- Likely no influence at all.

### ***3.13 How does the environment support the objects above?***

#### ***For Interview 1:***

- Unable to tell due to interviewee not wanting to show real background.

#### ***For Interview 2:***

- The environment provided a comfortable and relaxed interview.

#### ***For Interview 3:***

- The environment provides a relaxing feeling because it was in the evening time with natural lighting inside the room and people talking in the background to each other. Snacks and books were laying on the desk with other stuff.

#### ***For Interview 4:***

- Since the user was in their home and the room was bright with sunlight, it made the user relaxed during the duration of the interview.
- The interviewee was able to focus on the interview questions without any distractions.

#### ***For Interview 5:***

- Not applicable really to the interview.

## **Detailed Observations/Interview Responses**

#### **For Interview 1:**

Q: What is your major and year?

A: Sure! Computer science; Undergrad; Fourth year

Q: When you hear "Media Server", what comes directly to mind?

A: Uhh [brief pause], software like Plex used for like if you have a collection of movies or videos or whatever and you can host the files locally and have a nice interface.

Q: Do you have a media server?

A: No [Sits back in chair]

Q: Do you have media on your computer/device that you would like to be able to be played on other devices?

A: [Pause] Uh, honestly not really. Most of the stuff I do is like cloud streaming, and videos I have locally are just screen recordings for demos and stuff.

Q: So you don't really have a local collection of music or movies?

A: [interrupts] No, it's just all streaming services.

Q: What do you know about Plex?

A: I've used Plex a little bit. I know it's a nice interface that I can connect to over a web browser, and uh, it also works good on, like a TV environment. It's been a long time.

Q: Back when you did use Plex, what were you using it for?

A: TV shows and movies that I downloaded.

Q: Would you say you used it very often?

A: Not really, maybe a couple times a week. I just didn't have the time cause of school and all that.

Q: What devices did you use with Plex?

A: [Sighs and looks up at the ceiling trying to remember] I think it was hosting on a computer. Yeah, there's a web interface right? I think that's what I primarily used to access it.

Q: Do you know of anyone else that uses something like Plex?

A: Not that I know of, no.

Q: Did you ever encounter any problems when using/setting up Plex back when you used it?

A: I remembered there being some hiccups like, comparable to typical streaming services. There's definitely more issues with latency and transcoding of media, subtitles are always a mess, you gotta hook up your downloading system to also pull VSTs. Getting metadata and images working like album and cover art, it was always a mess to get working, and I was trying to develop a more streamline setup, like automated ingested metadata VSTs and stuff. That stuff was always messy to set up, and I was like "yeah, this isn't working".

Q: What features would you want with a new media server solution that Plex doesn't offer?

A: Yeah, automated ingestion of all the metadata I think could definitely be helpful. Because, at least for music there is the grace note database to automate, but there isn't really any good protection for video files. Lot's of manual work that had to be done. So yeah, an automated ingest system would be useful for archiving my own collection of DVDs and stuff. I don't know if blu-ray ripping is a thing, but that would also be something I would find useful, along with more modern media formats.

Q: What would be your thoughts on a community aggregated metadata system?

A: [Looks up at ceiling to think] I think that definitely would be interesting, especially if I'm dedicated to filling a DB on my own, [pause] yeah, that would be a useful system. I'd set that up.

## **For Interview 2:**

Q: What is your name?

A: Colton Shaw

Q: Which school do you attend and what do you study?

A: I'm currently at Oregon State majoring in Ecological Engineering.

Q: What year are you in school?

A: I'm a senior on my four year here, but I will probably graduate after my fifth year.

Q: What type of media do you consume regularly?

A: Um I spend a lot of time listening to music. I usually have it playing in the background while I do school stuff or work. I also watch videos on YouTube and movies through Netflix.

Q: Are you familiar with a media server? If so, what is your experience with media servers?

A: I'm not exactly sure what a media server is but if I'm thinking of the right thing then I have a little bit of experience because I used to store my music locally. Now I just stream it on Spotify though.

Q: When using media servers in the past, have you had any issues with them?

A: Uh from what I remember the interface was terrible and hard to use but it got the job done. It also didn't have any built in sharing functionality.

Q: Have you heard of Plex? Do you have any thoughts or feelings about this software?

A: I have not.

Q: Would you benefit from a media server that is more functional/easier to use?

A: Ya I mean if I could consolidate all my stuff in one place that would be nice. Although I don't really see a need in my own life to have a media server because I stream basically everything.

Q: Do you know others who would benefit from a good media server?

A: Ya I have some friends that might like having one more than I would. I know some dudes who are pretty into tech stuff and I'm sure they could put something like this to good use.

Q: Which features would you like to see implemented in a media server?

A: Uh... for me personally, I think some kind of sharing feature would be the biggest thing for me because I really enjoy showing my friends new music I've found.

Q: Which shortcomings in a media server matter the most to you?

A: The biggest thing for me is probably the interface. I mean there are a lot of modern applications that have poorly designed interfaces and that definitely takes away from the actual experience of that application. I can't tell you how frustrating it can be when you have to navigate through weird menus just to do something very simple.

Q: Do you intend to share the media you consume?

A: Yup. As I said earlier I love sharing new stuff I find.

Q: Do you have any other thoughts or considerations?

A: Um not really but I hope you guys do well on your project!

### **For Interview 3:**

Q: What is your name and what do you like to do in your spare time

A: My name is Taylor Zachary. In my spare time I like to stream media contents, write computer programs and hang out with friends.

Q: What is the name of the university you attended and what is your major?

A: I go to Oregon State University and I'm majoring in computer science.

Q: Which field do you want to go into after graduating from university ?

A: I would like to work in the A.I field of computer science.

Q: Do you know what a media server is ? if yes, please tell me what it is in your own words.

A: Oh yah for sure. Ahh..hmmm as far as i'm aware unless there is another definition of a media, a media server is something that I use to host my own media on it like movies, photos or different media like that guess.

Q: What devices do you use a media server application with?

A: ohh yah general I do most stuff from my desktop here or my laptop but mostly from my laptop. However, if I have photos of when i went on a trip with some friends i would use my phone to connect to my media server or use their laptop to connect to the media server to download those photos. So, generally on my computers or my phone.

Q: What type of media do you store and share on your media server?

A: A few movies and photos from climbing trips. I don't use it for music, I used Spotify for that.

Q: Do you sometimes share your media server media with other users? When sharing media on your media server do you share that media via LAN connection or over the internet?

A: As I said, I used it for getting photos that I would take of my friends on trips or I would just tell them how to connect to it using the internet.

Q: What software do you currently use to manage and view your media on your media server?

A: I'm currently just using Plex at the moment. I am working on my own media software as well but i don't think that would be a good use for this interview.

Q: How much media content do you have on your media server? Just guess if you can't show or give me a specific amount.

A: For photos, I probably have 9 to 10gb of photos and probably around the same or a little bit more for movies. I don't have a lot of movies stored on it, probably like 4 to 5 movies on it.

Q: How would you describe your experience with your current media server software?

A: Generally I would say it's pretty positive but, there would be a couple things that I would change if worte my own. But yah, generally I would say it's been a positive experience overall.

Q: What problems do you have with your current media server software?

A: Ahh..one of the things that I found to be an issue with the current media software that I'm using at the moment is that I have to add all my new media contents locally to the media server folder so that the media server can read it. I wish that the software would have provided an extra GUI to allow me to do that using the software. Another problem that i have is that whenever i add new media contents to the media server i have to manually tell the media server application to refresh itself for it to read the new added media contents.I don't think it's hard to design the application to go through the media directories and look for newly add media contents.

Q: What are things that you like about your current media server software?

A: I like the way they categorize media contents on their platform. It makes media contents easier to find based on your preference in the moments of using the application. It allows you to customize your dashboard a bit. Yah, stuff like that.

Q: How interested would you be in a media server software that allows you to easily manage and view your media on your media server locally using a single application?

A: It's always interesting to try new softwares with better user abilities and experience for sure.

Q: Is there anything you would like to add to the record about current media server applications found on the market ?

A: It would be pretty interesting to have access to new features that none of the other platforms out there have. Like for instance a mp3 downloader or a video converter where you can just copy the link to a media and download them to the server locally. It would be nice to have a media server application that handles metadata better. For instance it would be nice if the application can read metadata from the media file instead of me having to do it manually.

**For Interview 4:**

Q: Are you currently in school? If so, what are you majoring in?

A: No, I recently graduated. My major was in Public Health.

Q: Have you used a media server such as Plex before?

A: Uhhh, I believe so. I am not too familiar, but have used Plex before.

Q: What media server software are you familiar with?

A: The software I previously used was Plex. I have heard good things about Kodi from classmates, but never had the chance to actually try it.

Q: What devices do you use your media server with?

A: I used it on my laptop and iPhone. I would say I used it mostly on the laptop and only a few times on the phone.

Q: What type of media do you store and share on your media server?

A: I used the media server to store a few movies and mostly music. I had a bunch of songs that I had saved over the years.

Q: How much space do these resources take up?

A: Uhhh, it was a long time ago when I had Plex. [Gets up to get a drink of water] I remember the stuff I uploaded not being that large. Only a few gigs at most.

Q: Do you share your media server media with other users?

A: No, I was the only one who used Plex.

Q: What problems do you have with your current media server software?

A: Plex became a hassle to use when I had it installed. It required a lot of work to get set-up and I always needed to have my laptop on. [Pauses to think] I mainly use streaming services for movies and music now. I know I dealt with some buffering issues when playing movies on Plex, but it was likely just issues with my own internet connection.

Q: What are things that you like about your current media server software?

A: I really liked being able to access files on multiple devices. I would say being able to pull out my phone and having access to the same files on my laptop was great. I liked how it was seamless.

Q: What are the main features that you would like in a media server application?

A: Less commitment to get everything set-up would be great. Uhh, I guess I would prefer something with less manual management needed. One feature I would really like would be to share certain files or folders with friends. It would be nice if it could be shared through a weblink or something. Something that would not require friends needing to make a Plex account.

Q: Do you have any other comments about your experiences with Plex?

A: No, I think that is all.

**For Interview 5:**

Q: What is your major and year?

A: I am a computer science major and this is my fourth year, I am a senior standing.

Q: Have you ever used a media server application before?

A: I am not quite familiar with what that term really is defined, but I recall looking back at our email stream and you were mentioning Plex which I have used in the past. I wasn't aware that is what a media server was defined as.

Q: Do you currently have a media server at all?

A: No. About the closest thing I have is a little personal Discord I have that I just upload small little videos to it to save the content.

Q: When you used Plex in the past, how often have you used it?

A: It actually didn't take a huge portion of my life. It was an internet sort of application, if there was an app I did not use it. I mostly was aware of Plex through the internet browser. And that tends to be one step too far for me to use frequently. I always knew I had a Plex server with content in it. I just didn't see a reason to go check it out.

Q: What types of content did you have on it[Their Plex Server]?

A: It contained a lot of Marvel content and a good portion of an animated Batman series. I took part in it but it wasn't really mine.

Q: If you were to have your own media server, would you be willing to share that? Would that be the goal of yours? To share the media server with other people.

A: [thinks for a moment] I mean I do like the idea of having my media and then being able to share it, but it is like...[thinking] I am not sure, it is good to get the content out there, but I do not know if my content or the content that I watch is interesting.

Q: Do you feel like you have enough media currently to justify owning a media server?

A: I don't think I do. Because the ways it goes is that most of the media I do own is locked behind services like Amazon. I watch a couple of my movies from there. They are very specific about how a person can watch their movies. You can't really rip the MP4s from them that easily. If I had the movies and enough content, maybe I would consider putting it on a media server? But I am nowhere near that number.

Q: Let's go back to your usage of Plex. Were there any specific problems with the web server application that you can recall?

A: I do remember it going down sometimes but that was mostly due to the server it was running on. The hardware it was running on. Every now and then we had to boot it back up and sign back in. Aside from that it didn't seem anything on the fault of the Plex counterpart.

Q: Do you feel like any features were missing with Plex that you would have liked to have had?



A: This might be my ignorance showing but if it was an app I think that would make the service a lot more accessible. If there is one then I retract this. There did not seem to be an accessible way to quickly get on to Plex.

Q: You would say that one of the features of a media server that you would like is something that would make it more accessible to phones and stuff like that?

A: It's like uh out of the.. If it was to be available at startup of my computer. To be one of the 15 apps that already does that. To say this computer is on I am now connecting to the Plex server so that you have this content ready and available to you.

Q: What types of devices would you like to be able to play these media from these media server applications?

A: I would like it to be runnable on my PC at least because that is the easiest way for me to access my content. A phone application I could see but I could also see the connection being shotty going through there. So just a PC media server is fine for me.

Q: So PC is like your base requirement, needs to be able to play on a PC?

A: Yeah that is where it all revolves around.

Q: How would you describe your experience with Plex? Would you say it is overall good, bad?

A: I would say it was an overall good experience because the stream quality was as good as the media that was saved. It didn't really have to cut out and buffer. I feel like the Plex application served its purpose.

Q: Did you ever hear of any other media server applications other than Plex?

A: No I have never heard of any others. It is like if you were to say to me that youtube is a media server I wouldn't know exactly, so maybe I have heard of it and maybe that is a media server. But right now Plex is the only thing that comes to mind.

Q: Do you have anything else about media servers that you would like to say at the end of the interview here?

A: Um[thinking]... I really do think that it is a promising concept to sort of have a platform that you can store your content. One of the issues that I have kind of ran into recently, when it comes to streaming movies at real time that me and my friends in a watch together, it would be really nice if the media server was also able to host a watch together like service. It just feels like that since everyone is connected to the same server it should be easy to regulate.

## Places that provide Results/Insights

### *Interview 1:*

The interviewee clearly had quite a bit of knowledge regarding media servers along with his own problems he encountered in the past with them. He seemed very interested in helping our team out in providing feedback with our own ideas, along with providing valuable information about the types of devices used for these services. The interviewee expressed his problems with metadata being incredibly messy and tedious to set up manually, and really liked our idea of the

community aggregated database. They also stated that they don't use Plex anymore because they find using streaming services to be much more easy to use and set up. So if we can make our media server solution match more like a streaming service, we would be most likely reaching a wider audience with our product.

***Interview 2:***

This interview gave some good insights into how someone who isn't exactly savvy with media servers feels about the subject. Although the interviewee hadn't had much experience with the interview topic, he still gave some good input about the issues he sees in other, similar applications. The main point he came back to at several moments during the interview was that many modern applications have cumbersome interfaces, specifically referring to their usage of navigation menus that are not user friendly or interface poorly with the user's control inputs. This is an important consideration for our own interface design, as we would like to provide our users with an easy-to-use system that interfaces seamlessly with our user's controls. Another important conclusion that can be made from this interview is the interviewee's focus on sharing functionalities. He described this function to be crucial to his usage of media, which is another aspect of our design that our team needs to consider.

***Interview 3:***

The interviewees had a fair understanding of what a media server is and how it is used. Plex was the most popular media server application used to manage and view media content among the interviewees. One of the main issues the interviewee has with Plex is it doesn't automatically refresh itself to check for recently added media when the application is open. Some of the interviewees also mention buffering issues and update issues using Plex. Interview complains that whenever there is an update available, they have to update Plex manually. Some interviewees said that they switch to other platforms like Netflix to solve the buffering issues if the contents are available there..

***Interview 4:***

The interviewee had a fair amount of knowledge with different media server applications. They had some experience using Plex and were aware of Kodi, but had not used it before. The interviewee was interested, thoughtful, and gave clear responses. One of the problems the interviewee came across was buffering when playing movies on Plex, but that could have been because of their internet connection. They were not sure of this themselves. The interviewee mentioned moving away from Plex to streaming services such as Netflix because of the set-up time and hassle of needing to keep a laptop on at all times. They mentioned wanting a media server application that could quickly be set-up and prioritize the sharing of files with friends, not necessarily other Plex members.

***Interview 5:***

The interviewee displayed some knowledge in media server applications, mostly Plex. Their experience came from using the Plex server owned by a friend and using it to watch movies and T.V. series. They had little problems with Plex other than feeling like it was missing an app that was not web based, something that would launch on startup for their PC. They did mention that

they did not believe they had enough media content to justify a media server. They mentioned that they really desire the functionality of a watch together feature handled by the media server application itself. They mostly saw a media server as a way of sharing media rather than for their own personal use. He did also mention an issue that they have a fair amount of media but it is all locked behind other media services such as Amazon.

Member Name	Role	Responsibilities & Assigned Tasks	Tasks Completeness Grade
<b>Cameron McCawley</b>	Leadership/Management	Wrote the Goals of our Research. Set up document formatting. Conducted an interview.	<u>5</u>
<b>Benjamin Mayinger</b>	Writing/Deliverables	Conducting interview, recording observations.	<u>5</u>
<b>Danmar Green</b>	User Research and Communication	Wrote the items we are observing. Conducted an interview.	<u>5</u>
<b>Joshua Shequin</b>	User Research and Communication	Wrote the interview questions. Conducted an interview.	<u>5</u>
<b>Anthony Trinh</b>	Visual Design/UX Design	Wrote the categories of questions. Conducted an interview.	<u>5</u>

#### Email template:

Dear [person's name],

My name is [Your name]. I am part of a group in a usability engineering class with the goal of getting a better understanding of what people know about media servers and how they use them. We want to gauge how a user might interact with a self-hosted media server along with their interests in such a service, with the intent to better our own designs and user experience.

In order to do this, we are asking for less than an hour of your time to answer some simple questions, along with an observational interview of watching you use and interact with the free media hosting software Plex (if you don't already have a media server), or how you interact with your own media server (if you do).

The interview will take place over Zoom sometime between 01/22/21 and 01/29/21 so that we can get an accurate recording of the interview. You will remain completely anonymous in the report, and all sensitive information will be changed and censored.

Please feel free to Email me back the times that work for you. I will be available from [Insert times you are available there].

We look forward to your contribution to this project.

Thank you,

[Your name here]