

CSI 3660 Final Project

Building Your Own Plex Server

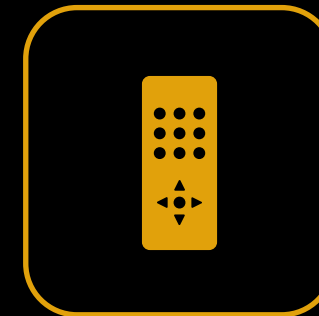
Robbie Atwood and Rachel Anthony

What is a Plex Server?

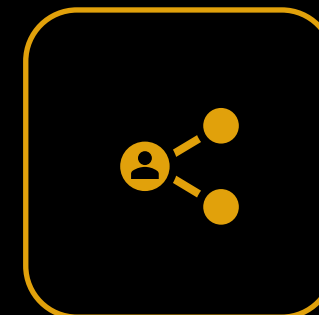
MEDIA SERVICE



Accessed through a browser or locally downloaded application



Watch movies and TV shows uninterrupted



Share content with others

Setting Up the Server

1	2	3	4	5
Step	Step	Step	Step	Step
Update your VM to ensure latest configuration	Add plex package and key to VM along with plex repository.	Install the plex media server	Access the Plex server on the web, enter the external IP address of your VM followed by the 32400 port	Now you can upload files to the Plex server to watch on the web interface or mobile app.
Sudo-apt get upgrade Sudo-apt get update	Sudo curl download Sudo apt-key add - Sudo echo deb repo Sudo tee media list	sudo apt install plexmediaserver sudo systemctl enable plexmediaserver sudo systemctl start plexmediaserver	http://SERVER_IP_ADDRESS:32400/web/	/opt/plexmediaserver/movies or /opt/plexmediaserver/series

The finished product.

VM instances – Compute Engine

console.cloud.google.com/compute/instances?authuser=1&project=anthony-3660-f23&supportedpurview=project

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VM instances

CREATE INSTANCEIMPORT VMREFRESH

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VM instances

Filter Enter property name or value

	Status	Name ↑	Zone	Recommendations	In use by	Internal IP	External IP	Connect
<input type="checkbox"/>	✓	anthony-atwood-plex-csi3660	us-central1-a			10.128.0.3 (nic0)	35.192.89.241 (nic0)	SSH ▾ ⋮
<input type="checkbox"/>	○	anthony-csi3660	us-central1-a			10.128.0.2 (nic0)		SSH ▾ ⋮
<input type="checkbox"/>	○	plex-test	us-central1-a			10.128.0.5 (nic0)		SSH ▾ ⋮

Related actions

Explore Backup and DR NEWBack up your VMs and set up disaster recovery

View billing reportView and manage your Compute Engine billing

Monitor VMsView outlier VMs across metrics like CPU and network

Explore VM logsView, search, analyze, and download VM instance logs

Set up firewall rulesControl traffic to and from a VM instance

Patch managementSchedule patch updates and view patch compliance on VM instances

Load balance between VMs ↗Set up Load Balancing for your applications as your traffic and users grow

Using a Script to Upload Movies/Series to the Plex Server

```
1 #!/bin/bash/
2
3 # $1 is the movie the user is uploading
4
5 # validate to make sure user inputted a file and it was found
6 if (( $# != 1 )); then
7     echo "Error, exactly one movie upload must be provided."
8     exit
9 else
10     if [ -f $1 ]; then
11         sudo cp $1 /opt/plexmedia/movies/
12         echo "The movie, $1, has been added to your account. You can now watch it on the Plex Server."
13
14         # log how much space the system has after executing the script
15         sudo df -h >> /var/log/memory-log
16         sudo echo >> /var/log/memory-log
17     else
18         echo "Error, that file does not exist. Check the path/file name to make sure it is correct."
19         exit 2
20     fi
21 fi
```

Overview

1. Validate user input
2. Ensure the file exists
3. Put the file in the correct directory

Goal: prevent users from incorrectly uploading/deleting files

Logging System Features

Memory, IP Addresses

30	Filesystem	Size	Used	Avail	Use%	Mounted on
31	/dev/root	29G	3.4G	26G	12%	/
32	tmpfs	979M	4.0K	979M	1%	/dev/shm
33	tmpfs	392M	972K	391M	1%	/run
34	tmpfs	5.0M	0	5.0M	0%	/run/lock
35	/dev/sda15	105M	6.1M	99M	6%	/boot/efi
36	tmpfs	196M	4.0K	196M	1%	/run/user/1001
37						
38	Filesystem	Size	Used	Avail	Use%	Mounted on
39	/dev/root	29G	3.4G	26G	12%	/
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66	tmpfs	5.0M	0	5.0M	0%	/run/lock
67	/dev/sda15	105M	6.1M	99M	6%	/boot/efi
68	tmpfs	196M	4.0K	196M	1%	/run/user/1001
69	tmpfs	196M	4.0K	196M	1%	/run/user/1002
70						

Logs every time a movie or series is added to the server

1	192.241.202.71	-	-	[30/Nov/2023:14:16:15 +0000]	"GET /
2	45.79.168.172	-	-	[30/Nov/2023:14:33:15 +0000]	"GET /
3	172.105.128.13	-	-	[30/Nov/2023:14:37:55 +0000]	"GET /
4	45.79.181.223	-	-	[30/Nov/2023:14:56:25 +0000]	"GET /
5	198.199.107.71	-	-	[30/Nov/2023:15:08:31 +0000]	"GET /
6	139.59.101.104	-	-	[30/Nov/2023:15:27:39 +0000]	"GET /
7	172.105.128.13	-	-	[30/Nov/2023:15:52:33 +0000]	"\x16\x
8	172.104.11.51	-	-	[30/Nov/2023:16:09:07 +0000]	"\x16\x
9	47.116.40.141	-	-	[30/Nov/2023:20:30:17 +0000]	"GET /
0	198.235.24.184	-	-	[30/Nov/2023:20:31:59 +0000]	"\x16\x
1	198.235.24.184	-	-	[30/Nov/2023:20:31:59 +0000]	"\x16\x
2	193.35.18.187	-	-	[30/Nov/2023:20:59:34 +0000]	"CONNEC

Logs all the IP addresses that visited our website

Logging System Processes

Seeing the Backup Status

```
#!/ bin/bash

source_dir=/opt/plexmedia
destination_dir=/usr/local/CSI3660ProjectBackup

timestamp=$(date +%Y%m%d%H%M%S)

filename="mediabackup_${timestamp}.tar.gz"

# changes directory to /opt/plexmedia where all server media is uploaded and stored
cd "$source_dir"

# this creates a new archive and compresses the file where we are now,
# to the destination previous listed along with filename.
tar -czf "$destination_dir/$filename" .

#logging the backup
if [ $? -eq 0 ]; then
    logger -t backup_script "Backup completed successfully"
else
    logger -t backup_script "Backup failed"
fi
```

Logs if the backup completed successfully

Backup Strategy



What is being backed up

The media files in

- /opt/plexmedia/movies
- /opt/plexmedia/series

How the backup is scheduled and performed

- Archived and compressed into a tar.gz file
 - Archiving is less easily corrupted
 - Compressed since the files can become very large
- Scheduled by placing the script in /etc/cron.daily
 - People are streaming at all times of the day

Where the backup is stored

- Backup script is in /etc/cron.daily
- Backups are in /usr/local/CSI3660ProjectBackup

Website

