

# **Media Transfer Documentation**

## **By OSU Media Messengers 4/15/2025**

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**Note:** Most of our work was completed in the OSU\_media\_messengers\_SP25 and media-transfer\_final branches, however at the time of this document we have merged into SE's main branch.

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## **Table of Contents**

<b>Getting Started</b>	<b>1</b>
To run API	1a
To run Frontend	1b
Running Email and Upload Service	1c
Input Requirements of Media Transfer System	1d
<b>Architecture</b>	<b>2</b>
<b>There are Several Core Functional Components Involved:</b>	<b>3</b>
<b>Functional Diagram</b>	<b>4</b>
<b>Code</b>	<b>5</b>
Media Transfer API Endpoint Specifications	5a
media-transfer Directory at a High Level	5b
Steps to run an SFTP server on a New Machine:	5c
<b>Next Steps, Improvements</b>	<b>6</b>
<b>External Educational Resources</b>	<b>7</b>
<b>Screenshots of Application</b>	<b>8</b>

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# Getting Started

## To run API

- In one terminal, cd into server directory: SE\server
- Run `npm run debug`

## To run Frontend

- In another terminal, cd into the frontend directory: SE\src\app.
- `npm install`
- `ng serve`
- If you get the following error: "... cannot be loaded because running scripts is disabled on this system..." Enter this into your terminal:  
`Set-ExecutionPolicy -Scope Process -ExecutionPolicy Bypass`

## Running Email and Upload Service

- Make sure the back end and frontend are running (see previous steps).
- Access the "Media Transfer" tab through the Digi Clips Frontend
- Fill out the fields accordingly.
  - Enter a SINGLE email for the sender email (Optional).
  - Add Subject, Body for Email Message (Optional).
  - You can enter a single email, or multiple emails in valid email format for the recipients (Required).
  - Add 1 or more files (Required).
- Users must be connected to DigiClip's OpenVPN profile in order to upload files to the server.
- After upload, email(s) containing the link for downloading the file will be sent to recipient(s).
- CHECK SPAM MAIL. Some mail providers such as Gmail will flag the email as spam.

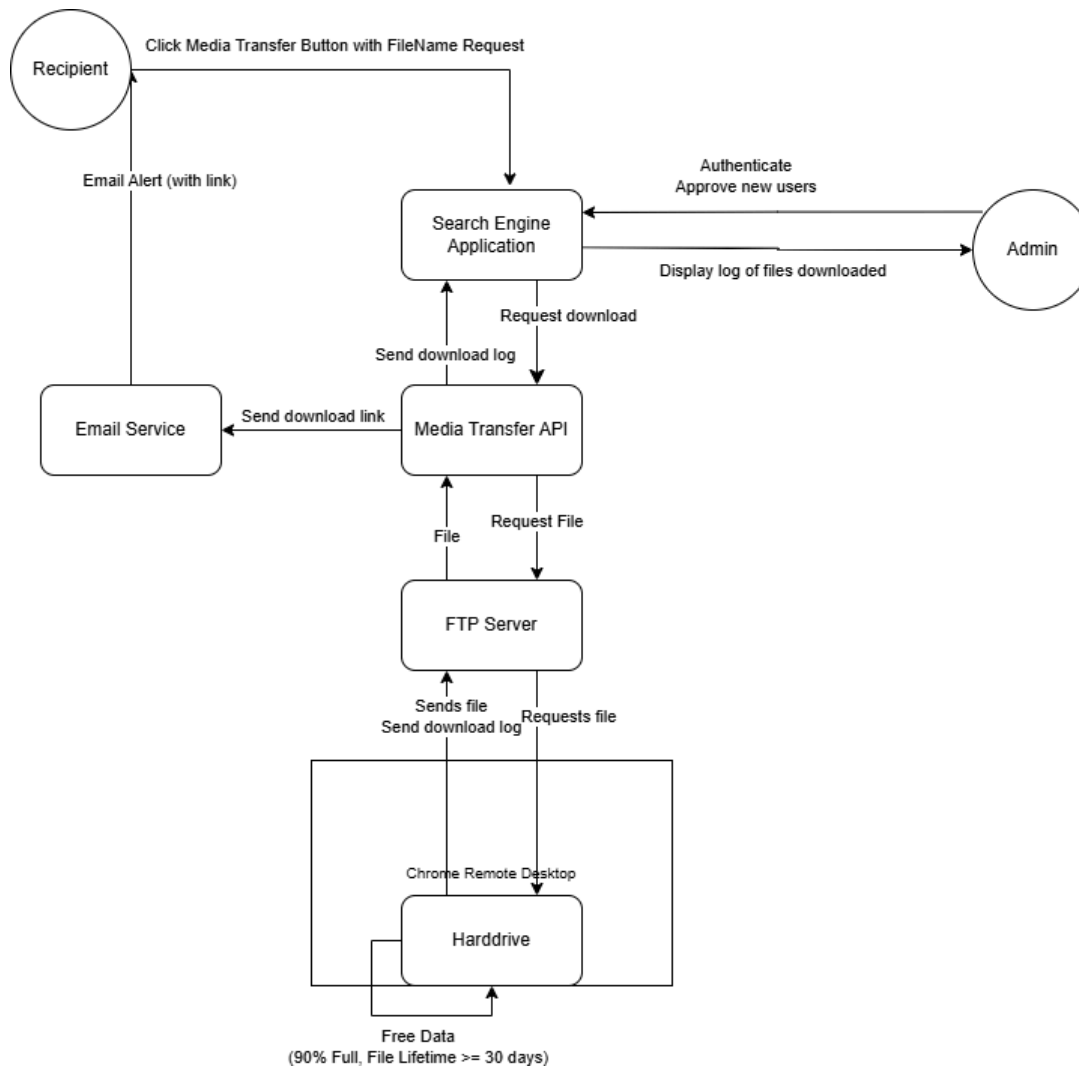
- NOTE: The email service is currently configured to run using Gmail's SMTP (With DigiClips' Email - [digiclips.mediatransfer@gmail.com](mailto:digiclips.mediatransfer@gmail.com))
  - Gmail's SMTP free service has a maximum 500 daily email limit.
- Media Transfer sender email credentials:
  - Email: [digiclips.mediatransfer@gmail.com](mailto:digiclips.mediatransfer@gmail.com)
  - Password: 3S4wPDmM6-px5ew
  - 2FA is enabled, please contact Bob or Henry to complete 2-Step Verification

## **Input Requirements of Media Transfer System**

- File must exist.
- File name must not have any spaces.
- File must be < 10 GB.
- Email must be a valid email format.

# Architecture

Below is a High-Level Diagram of how the Media Transfer System works.



There are Several Core Functional Components Involved:

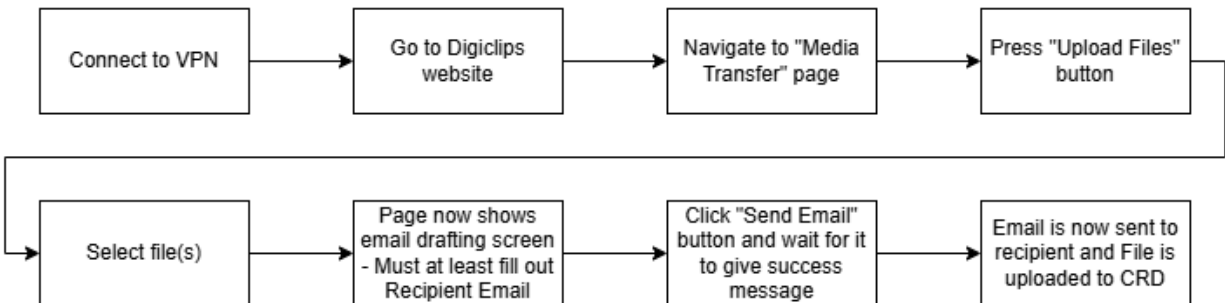
- Search Level Application
  - Application used for Development.
- Media Transfer API
  - The core API for uploading and downloading files.
  - The core API for sending emails.
- Chrome Remote Desktop Hard Drive
  - File Storage for Uploaded files to be downloaded.

- Email Service
  - Service used to send download links to the Recipient.

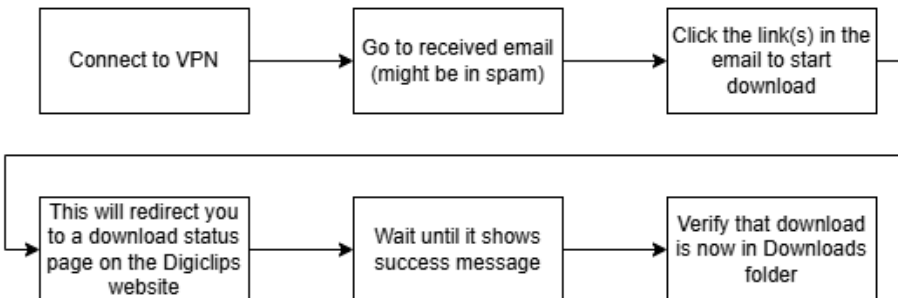
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## Functional Diagram

### Uploading and Sending Email



### Downloading From Email Links



# Code

## Media Transfer API Endpoint Specifications

**Download File Endpoint:** /media-transfer/ get-media-link/:email/:fileId

**Function:** Trigger file download of {fileId} if {email} is present

**Params:**

:email -> this variable points to a user ID directory to download from the server

:fileID -> name of the specific file to download off of SSD: /{uid}/

HTTP Request Method: **GET**

**Responses to Catch:**

200: Download successfully initiated

404: Downloaded file not found in user's download directory (download failed)

500: ExpressJS server error

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**Upload File Endpoint:** /media-transfer/upload

**Function:** Upload file to a directory {uid}/{file(s)}, create directory if not present

**Params:**

uid -> user ID in upload directory

files -> array of files to be uploaded

HTTP Request Method: **POST**

**Responses to Catch:**

200: Upload Successfully Initiated  
400: Uploaded Files Missing  
500: Server side error when uploading files

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**Email Endpoint:** /media-transfer/send-email-info {params}

**Function:** Send an email to {email} from {sender} with link for downloading files

**Params:**

email -> recipient email address

uid -> user ID to specify directory

fileName -> name of file being uploaded and linked to in the email

subject -> subject for email

body -> body for email; this will contain a link to the Digiclips site that will call a download for fileName

sender -> sender email address

HTTP Request Method: **GET**

**Responses to Catch:**

200: Email sent successfully

500: Server side error with email being sent out

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**List Files Endpoint:** /media-transfer/get-list/:username

**Function:** List files in {username} directory

**Params:**

username -> username responding to directory to list files from

HTTP Request Method: **GET**

**Responses to Catch:**

200: Files successfully listed

404: Files not successfully listed (username may not exist)

## media-transfer Directory at a High Level

- SE\src\app\media-transfer\pages
  - Each page we've worked on.
- SE\src\app\media-transfer\shared
  - Reusable Components (success, error, progress spinner, full media-transfer component)
- SE\src\app\media-transfer\uploads
  - Files as they are intermittently uploaded and then deleted. This directory should remain empty when not in use.

## Steps to run an SFTP server on a New Machine:

These steps require an active directory and it will help to look at the “Setting up the SFTP server” reference links while completing this.

### Setup:

In ‘sudo nano /etc/ssh/sshd\_config’ scroll to bottom, and add these lines:

```
Match Group sftpgroup
ChrootDirectory %h
ForceCommand internal-sftp
AllowTcpForwarding no
PasswordAuthentication yes
```

### Group and user setup:

```
sudo addgroup sftpgroup
sudo adduser username
sudo adduser username sftpgroup
sudo chown root:root /driveFilePath
sudo chmod 755 /driveFilePath
sudo chown -R henry1:sftpgroup /driveFilePath
```

```
sudo systemctl restart ssh (restart the ssh file)
```

```
sudo ufw allow ssh (just to ensure ssh is enabled)
```

### File Changes:

Need to change the path in SE github to the new drive file path.

## Next Steps, Improvements

- Modularize codebase.
  - Deploy media transfer system on AWS Lightsail.
  - **Move SFTP server to a new computer for greater performance benchmarks.**
  - Migrate from Nodemailer to AWS SES.
  - Find a way to combat email being classified as spam.
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## External Educational Resources

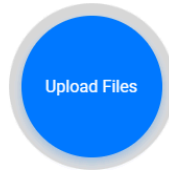
- Nodemailer documentation: <https://nodemailer.com/>
  - Nodemailer is our NodeJS emailer
  - Uses SSL for secure emailing
  - 2-step verification must be activated on the email account used to send
  - App password is used by node mailer to verify credentials
- Multer documentation: <https://www.npmjs.com/package/multer>
  - Used to configure file uploads
- Node.js module: <https://www.npmjs.com/package/ssh2-sftp-client>
  - Used for core file transfer
- Setting up an SFTP server
  - <https://www.youtube.com/watch?v=GFQUqSrYY4Q>
  - <https://www.techrepublic.com/article/how-to-set-up-an-sftp-server-on-linux/>
  - <https://www.cloudthat.com/resources/blog/a-guide-to-setup-an-sftp-server-on-linux>

# Screenshots of Application

## Media Transfer Upload Button:

Search   Email Alerts   Media Analytics   Media Transfer   Language Translation   Contact Us   Help   Survey




### Media Transfer Request



## Media Transfer Request Panel:

### Media Transfer Request


Select Files to Send to Recipient

1 File		bennettgn@gmail.com
Veterinary.jpg		<span>bennettgodinhonelson@gmail.com</span> 

Recipients' emails

I want to send you this Large file

Here is a message about the file.



## Email Sent:

I want to send you this Large file Inbox x



digiclips.mediatransfer@gmail.com  
to me

2:29 PM (0 minutes ago) ☆ ☺ ↶ ⋮

File(s) Sent by: [bennettgn@gmail.com](mailto:bennettgn@gmail.com)

Message from the Sender: Here is a message about the file.

Downloadable Links:

- <http://localhost:4200/media-download/b8da070-4aa5-4c9c-a872-6ee186f988f0/Veterinary.jpg>

The link(s) will expire in Sunday, April 20, 2025, 11:59 PM

If you were not expecting this email or have any questions, please reach out to [digiclipsemail@gmail.com](mailto:digiclipsemail@gmail.com)

## Successful Download Page:

[Search](#)

[Email Alerts](#)

[Media Analytics](#)

[Media Transfer](#)

[Language Translation](#)

[Help](#)

[Survey](#)



### Success!

Your files have been successfully downloaded.

[Return Home](#)

## Error Download Page:

[Search](#)

[Email Alerts](#)

[Media Analytics](#)

[Media Transfer](#)

[Language Translation](#)

[Help](#)

[Survey](#)



### Error!

Something went wrong while processing your request.

[Return Home](#)