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## INT301 – Open-Source Technologies

PROJECT REPORT

(Project Semester January-May 2023)

**To use any Open-Source Software to transfer the files from server to client.**

Submitted by:

**Manoj Sharma**

Registration No: - 11913362

Section: KE040

Course Code: **INT301**

Under the Guidance of

**Dr. Manjot Kaur: 28925**

**Assistant Professor.**

The domain of CSE/IT

**Lovely School of Computer Science and Engineering**



## **CERTIFICATE**

This is to certify that Mr. Manoj Sharma bearing Registration no 11913362 has completed the INT301: Open-Source Technologies project “To use any Open-Source software to transfer the files from server to client” under my guidance and supervision. To the best of my knowledge, the present work is the result of his/her initial development, effort, and study.

**Signature and Name of the Supervisor**

**Designation of the Supervisor**

**School of Computer Science and Engineering**

Lovely Professional University

Phagwara, Punjab.

Date: 7/03/2023

## **DECLARATION**

I, **Mr. Manoj Sharma**, student of **Open-Source Technologies (INT301)** under CSE/IT Discipline at, Lovely Professional University, Punjab, at this moment declare that all the information furnished in this project report is based on my own intensive work and is genuine.

Date: 7/04/2023

Signature: Manoj (11913362)

Registration No.: 11913362

Name of the student: Mr. Manoj Sharma

## **ACKNOWLEDGEMENT**

I would like to express my gratitude and appreciation to all those who gave me moral support and help to complete this report. Special thanks to my supervisor Mrs. Manjot Kaur whose help, stimulating suggestions, and encouragement always helped me during the Completion process and in writing this report. I also sincerely thank you for the time spent proofreading and correcting my many mistakes.

I would also like to acknowledge with much appreciation the crucial role of the students from my class, who gave me motivation and Guidance while completing my project. Many thanks go to all lecturers and supervisors who have given their full effort in guiding me in achieving the goal as well as their encouragement to maintain our progress track. My profound thanks go to all my classmates, especially to my friends for spending their time helping and giving support whenever I need it in my project.

## **CONTENT**

<b>S. No.</b>	<b>Topics</b>	<b>Page No.</b>
<b>1.</b>	<b>Introduction</b>	<b>6-7</b>
<b>2.</b>	<b>System Description</b>	<b>8</b>
<b>3.</b>	<b>Analysis Report</b>	<b>9-12</b>
<b>4.</b>	<b>Reference/Bibliography</b>	<b>13</b>

# 1. Introduction

Transferring files between a server and a client is common in many industries, ranging from software development to media production. While there are several ways to achieve this, one popular method is to use open-source software. Open-source software refers to software whose source code is freely available to use, modify, and distribute.

Using open-source software to transfer files can offer several benefits, such as cost savings, security, and flexibility. There are numerous open-source tools available for this purpose, including FTP (File Transfer Protocol) clients such as FileZilla utilities like WinSCP.

In this article, we will explore the process of using open-source software to transfer files from a server to a client. And the whole setup and configuration of the software, as well as the step-by-step process of transferring files. Whether you are a seasoned developer or a newcomer to the world of file transfer, this article will provide valuable insights on how to effectively use open-source software for file transfer needs.

FileZilla is a popular open-source software application used for transferring files over the Internet. It is a cross-platform application, which means that it can run on various operating systems, including Windows, Linux, and macOS. The software is known for its user-friendly interface, making it easy for beginners to use. FileZilla supports various transfer protocols, including FTP, FTPS, SFTP, and more. It also includes features such as drag-and-drop support, file transfer queue management, remote file editing, and more. The software is available in many different languages and is used by many individuals and organizations for file transfer and management purposes.

## 1.1 Objective of the project:

- Choose appropriate open-source software for file transfer.
- Set up the server and client environments for file transfer.
- Secure the file transfer process.
- Test and validate the file transfer.

This project is used to transfer files from a server to a client using Open-Source software to achieve reliable and secure file transfer while minimizing data loss and ensuring data integrity. To achieve this objective, the project will involve several steps. First, the appropriate open-source software will be selected based on factors such as security, ease of use, and reliability. Once the software is selected, it will be configured to suit the specific use case. This may include setting up encryption, defining transfer protocols, and configuring firewalls.

After the configuration is complete, the file transfer process will be tested to ensure that it meets the desired requirements. This testing phase will involve assessing the reliability of the transfer, identifying any data loss or integrity issues, and verifying that the transfer complies with any applicable security standards.

## 1.2 Description of the project:

The project involves transferring files from a server to a client using open-source software. The main goal is to implement a secure and efficient file transfer protocol that ensures the integrity and confidentiality of the transferred files.

- To achieve this, the project will start by identifying suitable open-source software for file transfer. There are several options available, including FileZilla, WinSCP, and RSYNC. The choice of software will depend on factors such as the operating system, network infrastructure, and project security requirements.
- Once the software is selected, the next step is to configure the server and client to establish a connection. This may involve setting up user accounts, network permissions, and firewall rules to enable file transfer between two devices.
- Once the connection is established, the project will implement the file transfer protocol. This may involve configuring the software to use encryption, compression, or checksums to ensure the integrity and confidentiality of the files. Additionally, the project may implement error-checking and recovery mechanisms to prevent data loss or corruption during the transfer process.
- Finally, the project may involve developing user-friendly interfaces to simplify the process of file transfer and improve user experience. This may include designing a graphical user interface (GUI) or command-line interface (CLI) that allows users to easily transfer files between the server and client.
- Overall, the project aims to enable reliable and seamless file transfer between the server and client using open-source software. The project will be evaluated based on the efficiency, security, and usability of the file transfer protocol implemented.

## 1.3 Scope of the Project:

This project's scope includes developing a file transfer system using open-source software. The project will involve selecting the appropriate open-source software for file transfer, configuring the software to meet the project's requirements, and testing the system's functionality and performance.

## 2. System Description

### 2.1 Target System Description:

The system to be developed will allow for the transfer from a server to a client using open-source software. The system will consist of two main components: a server component and a client component. The server component will be responsible for storing the files to be transferred and providing access to those files to the client component. The client component will initiate the file transfer and receive the files from the server.

Therefore, the target system will provide a reliable, efficient, and secure method for transferring files from a server to a client using open-source software, with the flexibility to adapt to different network architectures and requirements.

### 2.2 Assumptions:

- The Open-source Software (FileZilla and WinSCP) is a file transfer protocol or client-server application that facilitates the file transfer of files from a server to a client over a network.
- The server and client are connected to the same network and have the necessary permissions to access and transfer files between them.
- The Open-Source software (FileZilla and WinSCP) is compatible with the operating systems running on the server and client.

- **Dependencies:**

- The Open-Source Software (FileZilla and WinSCP) must be properly installed and configured on both the server and client machines.
- The server must have sufficient disk space and bandwidth to transfer the files to the client machines.
- The client must have sufficient disk space to receive the files being transferred.
- The network connection between the server and client must be stable and have sufficient bandwidth to transfer the files in a reasonable amount of time.

### 2.3 Functional Dependencies:

- File type Support
- Transfer Speed
- File Size Support
- User Authentication

- **Non-Functional Dependencies:**

- Security
- Reliability
- Scalability
- Usability
- Compatibility



### 3. ANALYSIS REPORT

#### 3.1 System snapshots and full analysis report:

Q35. Using any Open-Source Software transfer the files from server to client. Explore other options for this open-source software.

- Starting with downloading the software named FileZilla, as per the requirements of the question. It is a free, open-source, cross-platform FTP application consisting of a FileZilla server and FileZilla client. Clients are available for Windows, LINUX, and macOS. Both client and server support FTP and FTPS (FTP over SSL/TLS), while the client can in addition connect to SFTP servers.
- Prior to launching FileZilla, access to web hosting is required. For personal web hosting, Infinity Free was chosen as the web hosting provider. Infinity Free, a US-based company, offers hosting services for an indefinite period without charge, as its name implies.

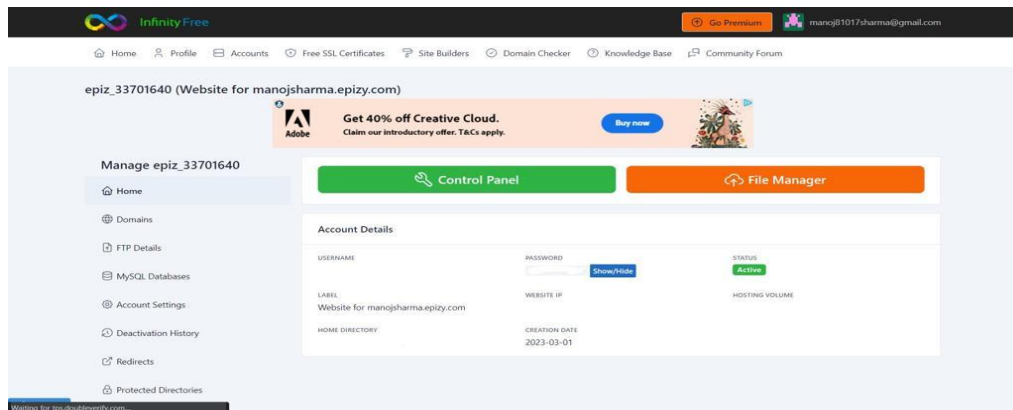


fig.: 1.1

- Once the account is set up on Infinity Free, the next step is to select the “File Manager” option.

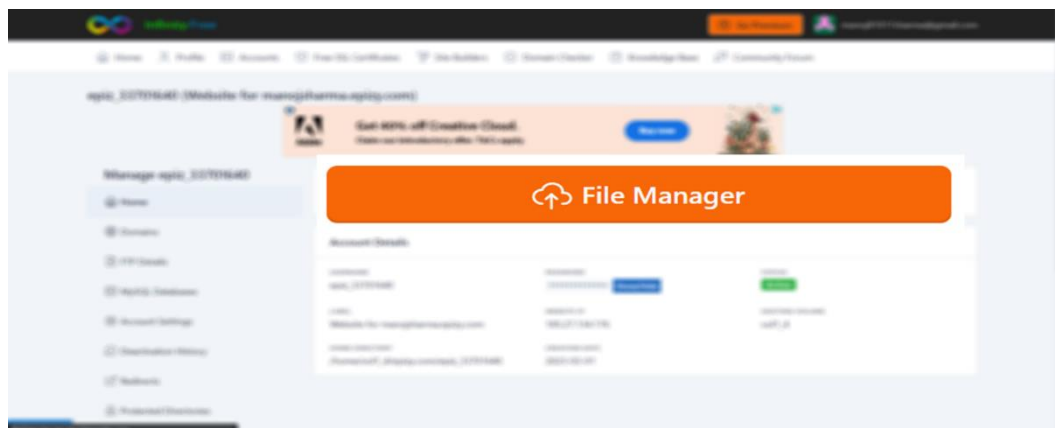
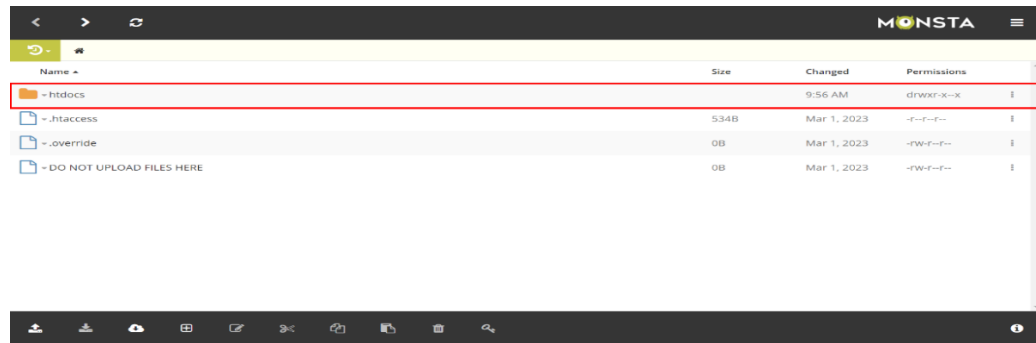


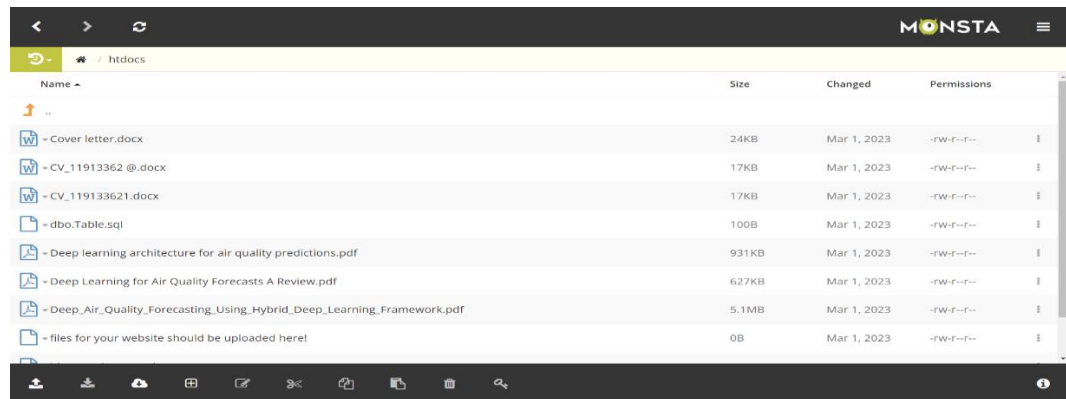
fig.:1.2

- Upon selecting “File Manager”, an interface appears where we can create a folder. Here with the help of add or ‘+’ button in the bottom left corner, we can create a folder.



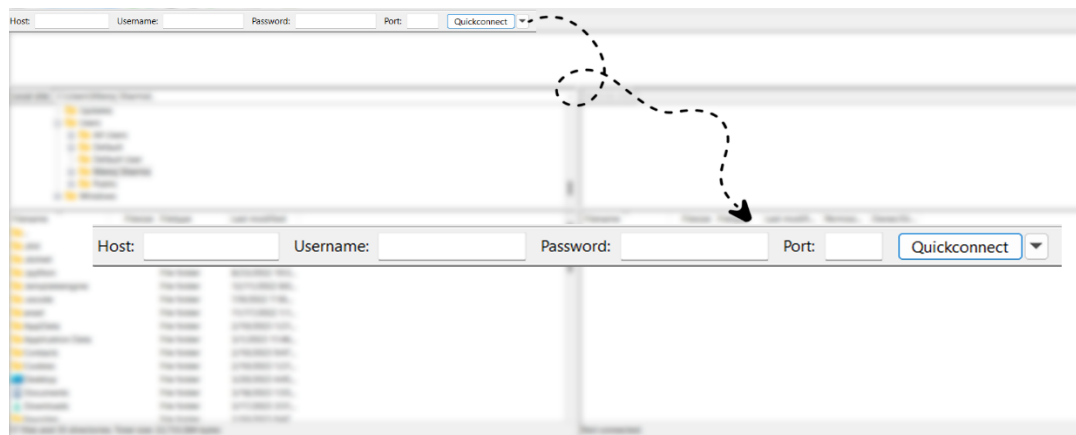
*fig:1.3*

- Inside this folder we can upload files or documents to the server.



*fig:1.4*

- Once this is completed, we need to launch the FileZilla application and establish a connection to the server by providing the Ip address, username, password, hostname, and port number.



*fig:1.5*

- Once the connection is successfully established, then we can see the remote directory on our screen. After that navigate to the local directory on the client machine where you want to save the files.

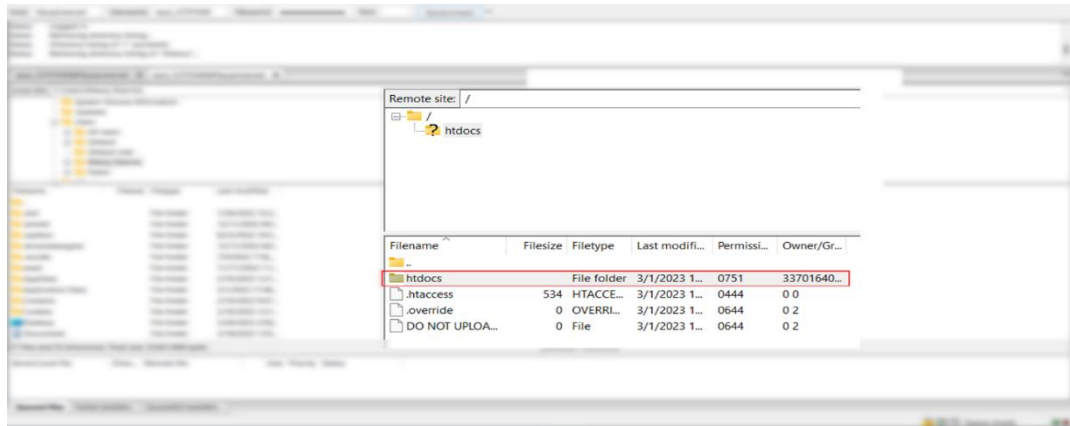


fig:1.6

- Select the files you want to transfer from the server to the client and drag them to the local directory on the client machine or else we can also use the download button.

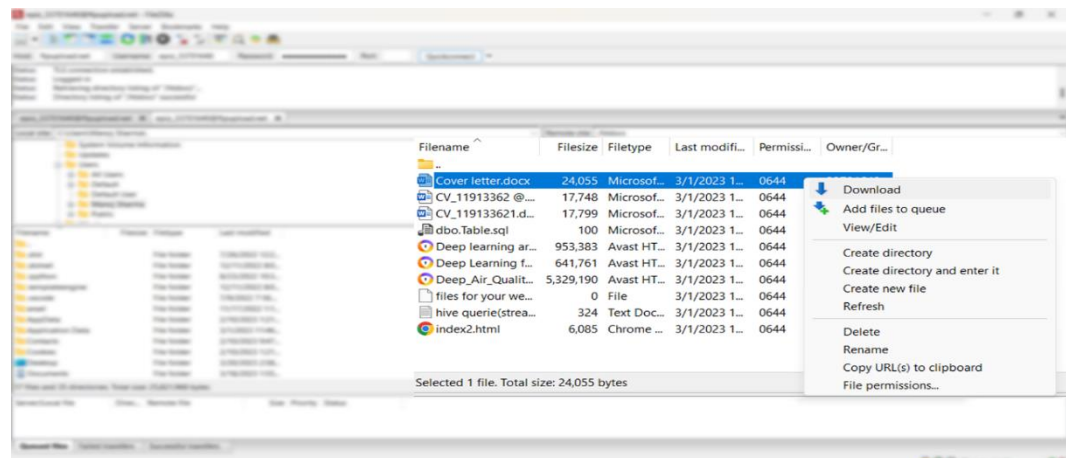


fig:1.7

An alternative option for this open-source software:

- WinSCP (Windows Secure Copy): is a free open-source SSH File Transfer Protocol (SFTP), File Transfer Protocol (FTP), WebDAV, Amazon S3, and Secure Copy Protocol (SCP) client for Microsoft Windows.



The steps for the following applications are identical to those for FileZilla:

- After downloading the application, the subsequent step is to obtain web hosting and establish a connection to the server. This can be achieved by providing the IP address, username, password, hostname, and port number.

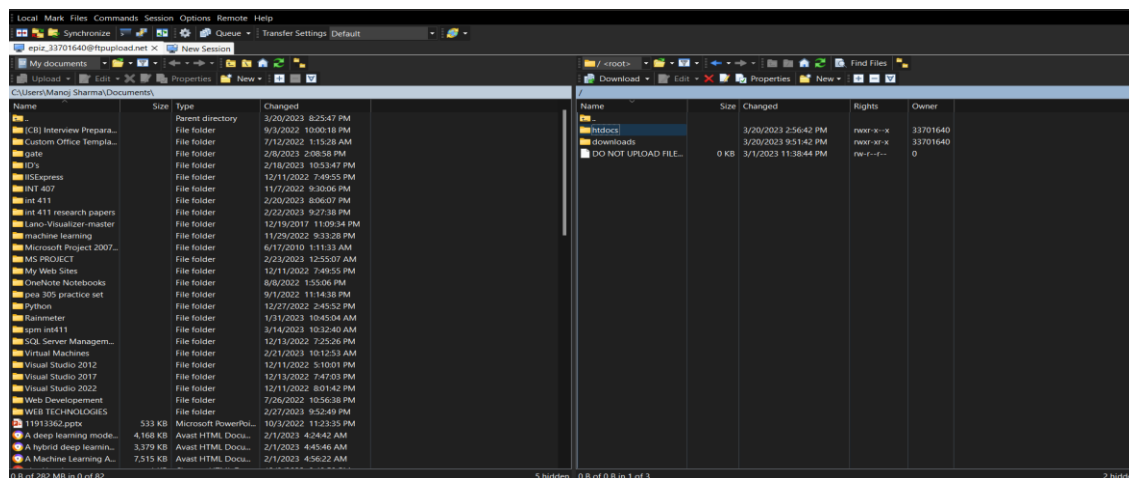


fig:2.1: The interface of WinSCP after logging in to the application.

- Once we successfully accessed the WinSCP interface, we can view our online directory, which allows us to retrieve our files by downloading them.
- The process persists, referring to the previously mentioned application within FileZilla.

## Reference/Bibliography:

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- 7) WinSCP Guide: <https://winscp.net/eng/docs/start>

GITHUB : <https://github.com/Manoj-sharma188/open-source-ca3>