

Mini Project

on

FileZilla Data Upload to AWS S3

Report Submitted to

Jawaharlal Nehru Technological University Anantapur,
Ananthapuramu

in partial fulfillment of the requirements for the award of
the degree of

BACHELOR OF TECHNOLOGY

IN

INFORMATION TECHNOLOGY

Submitted by

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21121A3543



Department of Information Technology

SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)

(Affiliated to JNTUA, Ananthapuramu, Approved by AICTE, Accredited by NBA & NAAC)
Sree Sainath Nagar, Tirupati – 517 102, A.P., INDIA
2021-2025

DEPARTMENT OF INFORMATION TECHNOLOGY

VISION

To become a nationally recognized quality education center in the domain of Computer Science and Information Technology through teaching, training, learning, research and consultancy.

MISSION

- The Department offers undergraduate program in Information Technology to produce high quality information technologists and software engineers by disseminating knowledge through contemporary curriculum, competent faculty and adopting effective teaching-learning methodologies.
- Igniting passion among students for research and innovation by exposing them to real time systems and problems
- Developing technical and life skills in diverse community of students with modern training methods to solve problems in Software Industry.
- Inculcating values to practice engineering in adherence to code of ethics in multicultural and multi discipline teams.

PROGRAM EDUCATIONAL OBJECTIVES

After few years of graduation, the graduates of B. Tech. (IT) Program will be:

1. Enrolled or completed higher education in the core or allied areas of Computer Science and Information Technology or management.
2. Successful entrepreneurial or technical career in the core or allied areas of Computer Science and Information Technology.
3. Continued to learn and to adapt to the world of constantly evolving technologies in the core or allied areas of Computer Science and Information Technology.

PROGRAM OUTCOMES

On successful completion of the Program, the graduates of B. Tech. (IT) Program will be able to:

1. Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES

On successful completion of the program, the graduates of B.Tech. (IT) program will be able to:

- PSO1:** Design and develop database systems, apply data analytics techniques, and use advanced databases for data storage, processing and retrieval.
- PSO2:** Apply network security techniques and tools for the development of highly secure systems.
- PSO3:** Analyze, design and develop efficient algorithms and software applications to deploy in secure environment to support contemporary services using programming languages, tools and technologies.
- PSO4:** Apply concepts of computer vision and artificial intelligent for the development of efficient intelligent systems and applications.

Institute Vision and Mission

VISION

To be one of the Nation's premier Engineering Colleges by achieving the highest order of excellence in Teaching and Research.

MISSION

- To foster intellectual curiosity, pursuit and dissemination of knowledge.
- To explore students' potential through academic freedom and integrity.
- To promote technical mastery and nurture skilled professionals to face competition in ever increasing complex world.

FileZilla Data Upload to AWS S3

ABSTRACT:

The process of uploading and managing data on Amazon Web Services (AWS) S3 using FileZilla provides an efficient method for transferring large files and datasets to cloud storage. AWS S3 is a popular object storage service known for its scalability, durability, and integration with various cloud services. FileZilla is an open-source FTP client that can be used to transfer files between a local machine and a remote server, including AWS S3. This method is particularly useful for users who are looking for a graphical user interface (GUI) to interact with AWS S3, making it easier to manage data without needing to write scripts or use the command line. This document explores the step-by-step process of configuring FileZilla to connect with AWS S3, uploading data, and managing files effectively, offering a user-friendly solution for data migration and storage needs in the cloud.

INTRODUCTION:

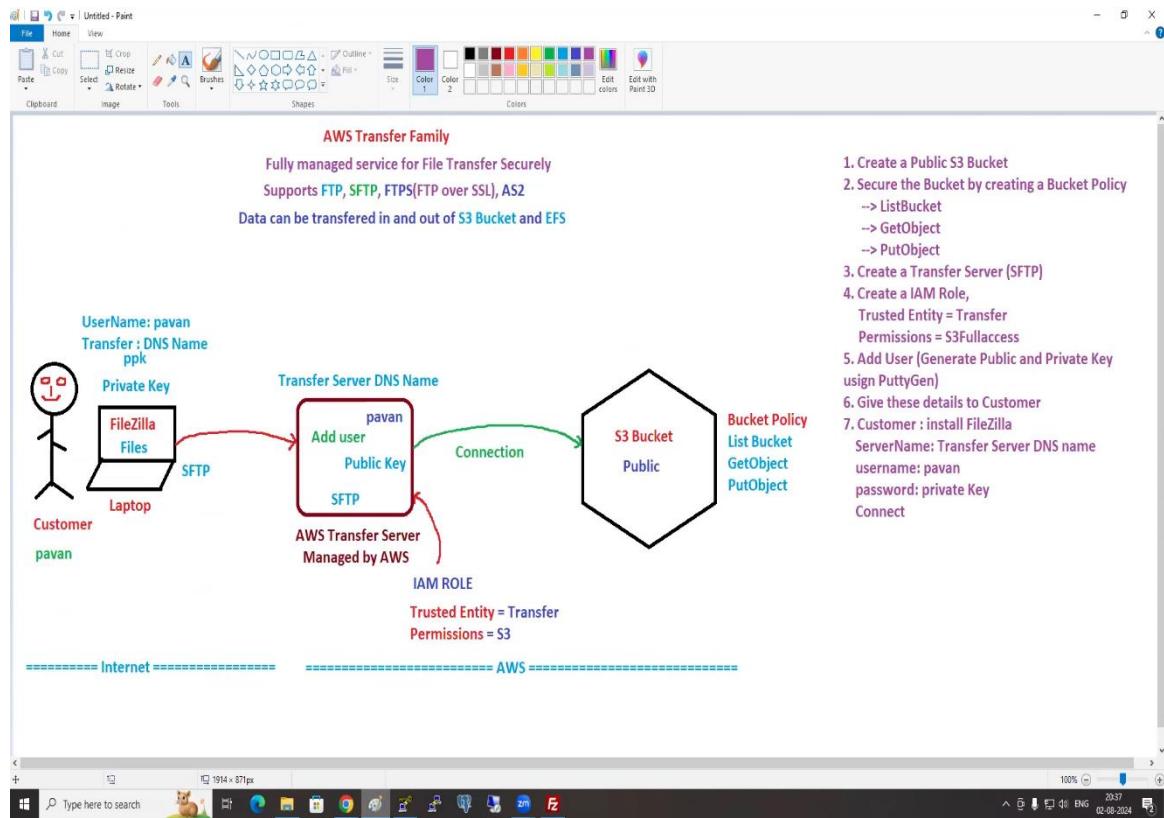
In the era of cloud computing, businesses and individuals increasingly rely on cloud storage to store, manage, and analyze data. Amazon Web Services (AWS) S3 (Simple Storage Service) is one of the most widely used cloud storage services due to its ability to store and retrieve any amount of data from anywhere on the web. AWS S3 is known for providing high availability, security, and data redundancy, making it a reliable choice for data storage.

FileZilla, on the other hand, is a free, cross-platform FTP client that supports various file transfer protocols such as FTP, SFTP, and FTPS. With its user-friendly graphical interface, FileZilla simplifies the process of transferring files between a local computer and remote servers. While it is commonly used for managing websites and servers, FileZilla can also be configured to work with AWS S3 buckets for seamless data transfer.

The integration of FileZilla with AWS S3 provides a powerful yet straightforward method for users who prefer a visual approach to uploading, downloading, and organizing their data. This is particularly beneficial for users who might find command-line interactions with AWS services challenging or time-consuming. By using FileZilla, users can perform operations such as drag-and-drop uploads, file deletions, and directory management, all within a GUI environment.

This document will guide users through the setup process for connecting FileZilla with AWS S3, including configuring AWS credentials, establishing a connection, and using FileZilla to perform basic file management tasks on S3. It highlights the advantages of this approach and provides best practices for ensuring secure and efficient

Flow Chart:



AWS Figures:

The screenshot shows the AWS Transfer Family home page. On the left, a sidebar menu includes 'Servers', 'Connectors', 'AS2 Trading Partners' (with sub-options 'Certificates', 'Profiles', 'Workflows'), 'Feature Spotlight', 'What's New', 'Documentation', and 'About servers'. The main content area features a large heading 'AWS Transfer Family' with the subtext 'fully managed SFTP, AS2, FTPS, and FTP service'. A call-to-action button 'Create server' is visible. To the right, a 'Pricing' section states: 'With AWS Transfer Family, you only pay for the resources you use. You will be billed for each hour based on the'. At the bottom, there's a navigation bar with 'CloudShell', 'Feedback', and links to '© 2024, Amazon Web Services, Inc. or its affiliates.', 'Privacy', 'Terms', and 'Cookie preferences'. The status bar at the bottom right shows 'ENG IN 16:14 08-08-2024'.

The screenshot shows the 'Create server' wizard, Step 1: 'Choose protocols'. The left sidebar lists steps: 'Step 1 Choose protocols' (underlined), 'Step 2 Choose an identity provider', 'Step 3 Choose an endpoint' (underlined), 'Step 4 Choose a domain', 'Step 5 Configure additional details', and 'Step 6 Review and create'. The main content area is titled 'Choose an endpoint' and contains an 'Endpoint configuration' section. It includes 'Endpoint type' options: 'Publicly accessible' (selected) and 'VPC hosted'. There's also a 'Custom hostname' dropdown set to 'None' and a 'FIPS Enabled' checkbox which is unchecked. The bottom navigation bar and status bar are identical to the previous screenshot.

Choose a domain

Domain
Choose the AWS Storage Service to store and access your data over the selected protocols

- Amazon S3**
Store and access your files as Amazon S3 Objects over the selected protocols
- Amazon EFS** Info
Store and access files in your EFS File System over the selected protocols

Cancel Previous Next

Choose protocols

Select the protocols you want to enable Info
Choose one or more file transfer protocols over which clients can connect to your server's endpoint

- SFTP (SSH File Transfer Protocol)** - file transfer over Secure Shell
- AS2 (Applicability Statement 2)** - messaging protocol for exchanging business-to-business data Info
- FTPS (File Transfer Protocol Secure)** - file transfer protocol with TLS encryption
- FTP (File Transfer Protocol)** - unencrypted file transfer protocol

Cancel Next

AWS

Screenshot of the AWS Transfer Family 'Create server' wizard, Step 1: Choose a domain. The page title is 'Choose a domain'. It shows two options: 'Amazon S3' (selected) and 'Amazon EFS'. The 'Amazon S3' option is described as 'Store and access your files as Amazon S3 Objects over the selected protocols'. The 'Amazon EFS' option is described as 'Store and access files in your EFS File System over the selected protocols'. Navigation buttons at the bottom include 'Cancel', 'Previous', and 'Next'.

Screenshot of the AWS Transfer Family 'Create server' wizard, Step 5: Configure additional details. The page title is 'Configure additional details'. It shows two sections: 'Logging' and 'Logging role'. In the 'Logging' section, there are two radio buttons: 'Create a new log group' (selected) and 'Choose an existing log group'. Below these are dropdown menus for 'Choose an existing log group' and a 'Create log group' button. In the 'Logging role' section, there are two radio buttons: 'Create a new role' (selected) and 'Choose an existing role'. A note below states: 'Logging role is only required when selecting a workflow in the Managed workflows section below.' Navigation buttons at the bottom include 'Cancel', 'Previous', and 'Next'.

The screenshot shows the AWS Transfer Family 'Review and create' wizard. The left sidebar lists steps from 1 to 6. Step 1 is 'Choose protocols'. The main panel shows 'Protocol options' and a list of 'Protocols' with 'SFTP' selected. An 'Edit' button is in the top right corner.

Step 1: Protocol(s)

Protocol options

Protocols

- SFTP

Step 2: Identity provider

Identity provider options

Identity provider type

- Service managed

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The screenshot shows the AWS Transfer Family 'Review and create' wizard. The left sidebar lists steps from 1 to 6. Step 2 is 'Choose an identity provider'. The main panel shows 'Identity provider options' and 'Identity provider type' set to 'Service managed'. An 'Edit' button is in the top right corner.

Step 2: Identity provider

Identity provider options

Identity provider type

- Service managed

Step 3: Endpoint

Endpoint options

Endpoint type

- Public

FIPS Enabled

- No

Step 4: Domain

Domain options

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AWS

The screenshot shows the AWS Transfer for S3 console. The user is in the 'Create new transfer' wizard, specifically on Step 4: Domain and Step 5: Additional details.

Step 4: Domain

- Domain options:
 - Domain: Amazon S3

Step 5: Additional details

- Additional options:
 - Logging role: -
 - Log group: Auto-generated log group

At the bottom, there is a toolbar with icons for CloudShell, Feedback, and various system status indicators like temperature (32°), battery, and network.

The screenshot shows the AWS Transfer for S3 console. The user is in the 'Create new transfer' wizard, specifically on the 'Ignore' and 'Storage' sections.

Ignore

- TLS session resumption
-
- Passive IP
-

Storage options

- Optimized directories: ENABLED

Display banners

- Pre-authentication display banner
-
- Post-authentication display banner
-

At the bottom, there is a toolbar with icons for CloudShell, Feedback, and various system status indicators like temperature (32°), battery, and network.

AWS

The screenshot shows the AWS Transfer Family service in the AWS Management Console. The left sidebar has options like Servers, Connectors, AS2 Trading Partners, Certificates, Profiles, Workflows, Feature Spotlight, What's New, Documentation, and About servers. The main content area displays a table titled "Servers (1)". The table has columns: Name..., Hostname, Server ID, State, Service managed us..., and Endpoint type. One row is present with values: -, s-b63f3b21e1054a1ab, Starting, No users, and Public. A blue info icon in the top right corner says "No users added" with the message "One or more servers using Service Managed authentication has no users created. Add users to enable access." Buttons for Actions, Add user, and Create server are at the top right of the table.

The screenshot shows the AWS Identity and Access Management (IAM) service in the AWS Management Console. The left sidebar has sections for Identity and Access Management (IAM), Access management (User groups, Users, Roles, Policies, Identity providers, Account settings), and Access reports (Access Analyzer). The main content area shows the "transfer" role under the "transfer" section. The "Summary" tab is selected, showing details like Creation date (August 08, 2024, 16:27 (UTC+05:30)), ARN (arn:aws:iam::851725357502:role/transfer), Last activity (-), and Maximum session duration (1 hour). Below the summary is a "Permissions" tab, which is currently active, showing a "Permissions policies" section with a "Info" link, "Simulate" button, "Remove" button, and "Add permissions" dropdown. Other tabs include Trust relationships, Tags, Access Advisor, and Revoke sessions.

AWS

The screenshot shows the AWS Transfer Family console with the URL ap-south-1.console.aws.amazon.com/transfer/home?region=ap-south-1#/servers. The left sidebar includes links for Servers, Connectors, AS2 Trading Partners, Certificates, Profiles, Workflows, Feature Spotlight, What's New, and Documentation. The main content area displays a table titled 'Servers (1)'. The table has columns for Name..., Hostname, Server ID, State, Service managed us..., and Endpoint type. One row is present, showing a Name... of '-', Hostname of '-', Server ID of 's-b63f3b21e1054a1ab', State of 'Online', Service managed users of 'No users', and Endpoint type of 'Public'. A message at the top states 'No users added' with the note 'One or more servers using Service Managed authentication has no users created. Add users to enable access.' A 'Create server' button is located in the top right of the table area.

The screenshot shows the 'Add user' page in the AWS Transfer Family console, with the URL ap-south-1.console.aws.amazon.com/transfer/home?region=ap-south-1#/servers/s-b63f3b21e1054a1ab/add. The left sidebar shows the 'Servers' section. The main form has fields for 'Username' (set to 'pavan'), 'Role Info' (set to 'transfer'), 'Policy Info' (set to 'None'), and 'Home directory' (set to 'Choose an S3 bucket'). The bottom navigation bar includes CloudShell, Feedback, and a set of icons for various AWS services.

AWS

Screenshot of the AWS IAM User creation page. The user is being created with the following details:

- Home directory:** tfbucket12
- Login name:** pavan
- SSH public keys:** An empty text area labeled "Enter SSH public key".
- Tags:** No tags are present.

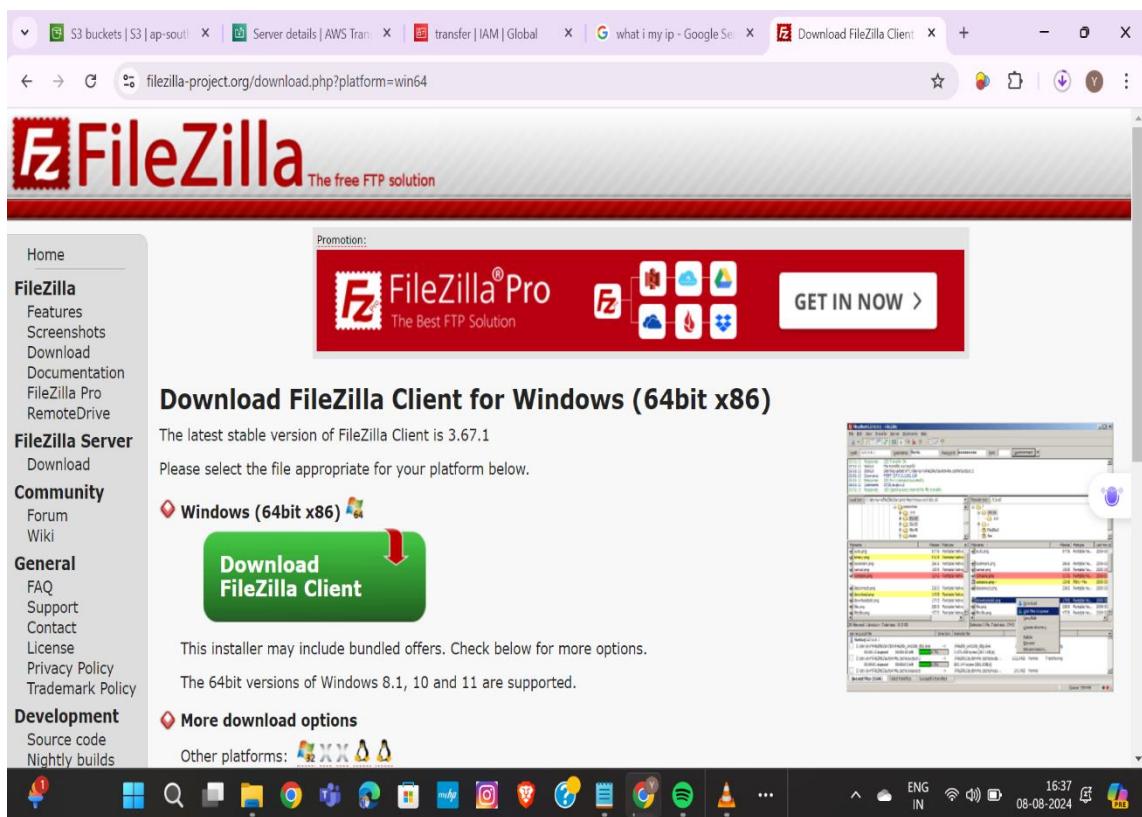
The browser toolbar at the top shows multiple tabs including "S3 buckets | S3 | ap-south-1", "Add user | AWS Transfer Family", "transfer | IAM | Global", and "what i my ip - Google Search". The bottom navigation bar includes "CloudShell", "Feedback", and various AWS service icons.

Screenshot of the AWS IAM User creation page showing the SSH public key has been pasted into the input field:

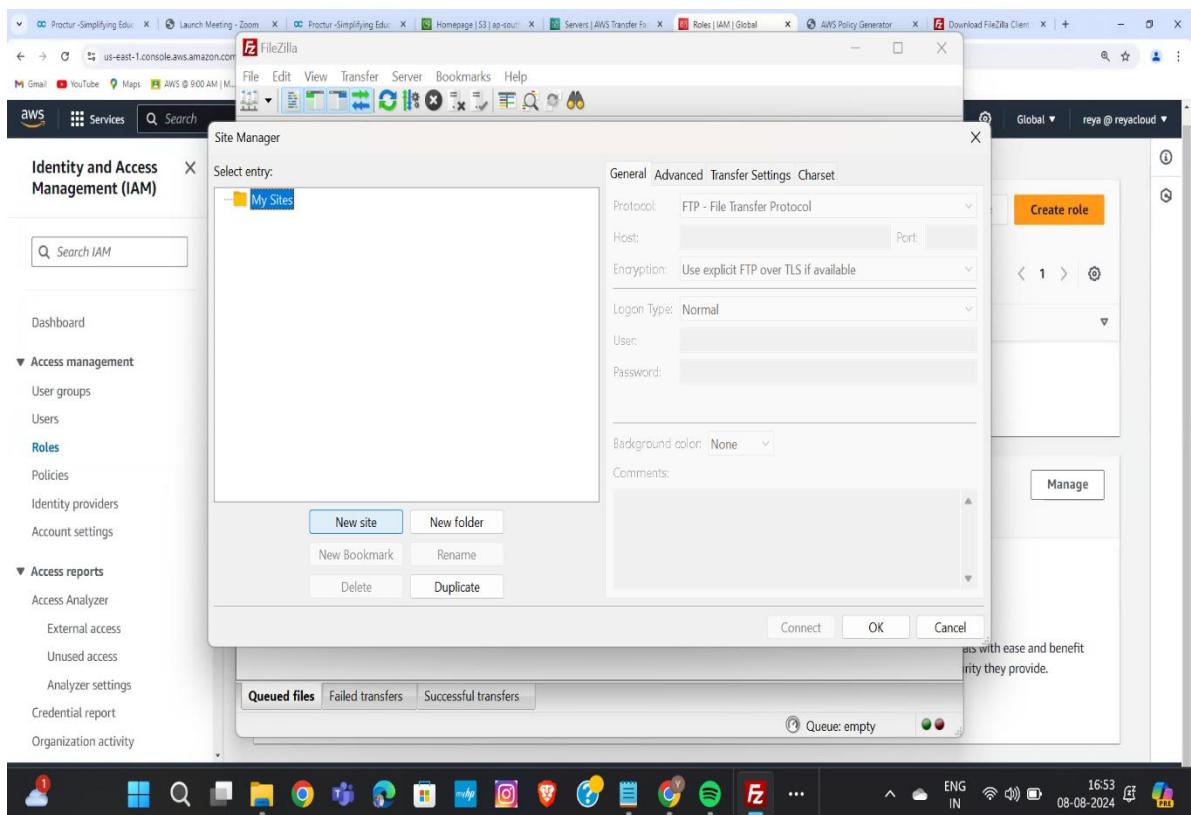
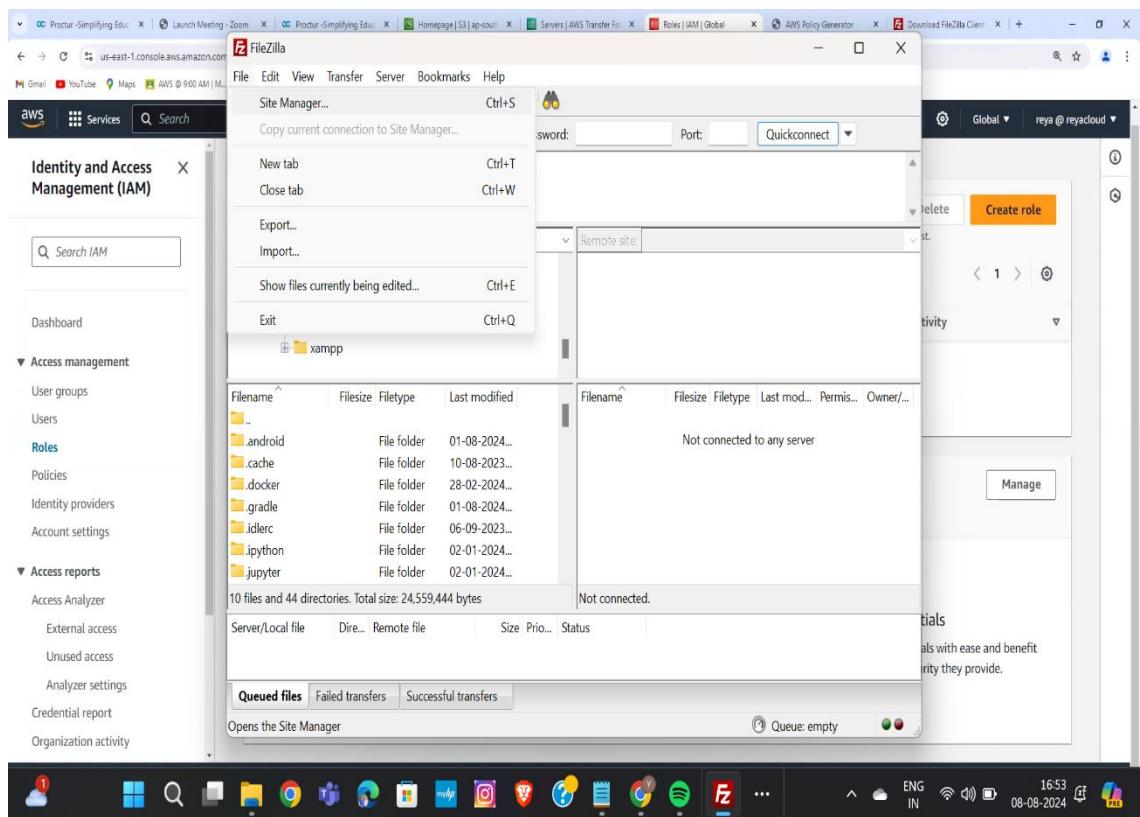
```
A63kazf7itNgZBpAlwlvmtelue1rl7t6wJgmyH/+FSNZJ/yUiv/6dsT26yhENQAHqOVC  
H3rx6HRrlZnVwZPaRlmP5NLc/Yo66yU9jMukf8koxTegOd/d/t14T6R49D2QonHX  
WplxCpobcDHJg3Rppph2djsXQsysGMtdFEgkxsMAQx rsa-key-20240808
```

The "Tags" section remains empty. The "Add tag" button is visible, along with a note stating "You can add up to 50 more tag(s)".

The browser toolbar and bottom navigation bar are identical to the first screenshot.



AWS



AWS

The screenshot shows the AWS S3 console interface. On the left, there's a sidebar with options like Buckets, Access Grants, Access Points, Object Lambda Access Points, Multi-Region Access Points, Batch Operations, and IAM Access Analyzer for S3. Below that, it shows Block Public Access settings for this account and Storage Lens options. The main area is titled 'Objects (2) info' and lists two files:

Name	Type	Last modified	Size	Storage class
01-07-2024(1).png	png	August 8, 2024, 16:55:41 (UTC+05:30)	1.1 MB	Standard
02-07-2024(1).png	png	August 8, 2024, 16:55:45 (UTC+05:30)	598.4 KB	Standard

The screenshot shows the FileZilla interface. The local site is set to C:\Users\sreerama\Desktop\study\AWS SCRRENSHOTS\ and the remote site is set to /tfbucket12. The left pane shows a folder structure with 'study' containing 'aws', 'AWS SCRRENSHOTS', 'FEE&DETAILS', 'JAVA', and 'JS'. The right pane shows the contents of the S3 bucket, which includes a folder 'tfbucket12' containing a file 'pavan'. Both panes have tables listing files by name, filesize, filetype, and last modified date.

Filename	Filesize	Filetype	Last modified
01-07-2024(1)... 1,200... PNG File	03-07-2024...		
01-07-2024(2)... 957,324 PNG File	03-07-2024...		
01-07-2024(3)... 705,507 PNG File	03-07-2024...		
02-07-2024(1)... 612,810 PNG File	03-07-2024...		
02-07-2024(2)... 221,068 JPG File	04-07-2024...		
02-07-2024(3)... 132,331 JPG File	04-07-2024...		
02-07-2024(4)... 202,142 JPG File	04-07-2024...		
03-06-2024(INT... 1,118... PNG File	28-07-2024...		
03-07-2024(1)... 931,115 PNG File	04-07-2024...		
03-07-2024(2)... 872,952 PNG File	04-07-2024...		

Selected 1 file. Total size: 221,068 bytes

Filename	Filesize	Filetype	Last mod...	Permis...	Owner/...
01-07-2024(... 1,200... PNG File	08-08-20...	-rwxr--r--	--		
pavan	File fol...	01-01-19...	drwxr--r--	--	

1 file and 1 directory. Total size: 1,200,267 bytes

Conclusion:

Integrating FileZilla with AWS S3 provides a practical and efficient way to manage cloud storage for both technical and non-technical users. Through FileZilla's intuitive graphical interface, users can upload, download, and organize files in AWS S3 with ease, eliminating the need for complex command-line operations. This approach is particularly beneficial for transferring large files and managing directories in a visual manner, making it accessible for those who may not be familiar with AWS's command-line tools or API interactions.

Web Links:

- <https://docs.aws.amazon.com/AmazonS3/latest/userguide/transfer-files-to-s3-using-filezilla.html/>
- <https://www.filezilla.org/>
- <https://blog.knoldus.com/how-to-use-filezilla-with-amazon-s3/>