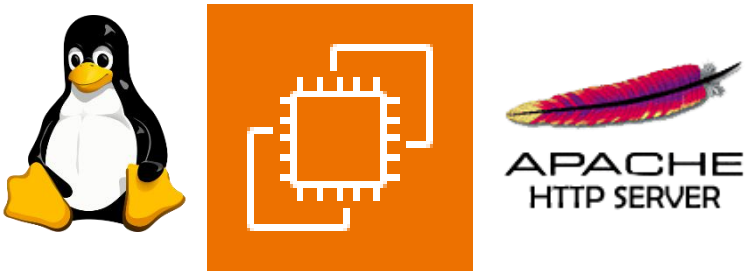
AWS Solution Architect Training with
AWS Cloud Practitioner Global Certification Training

Trainer: Aravindraj.G- Nminds Academy

Configure SFTP to Linux Web Server in AWS



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Objective

EC2 (Elastic Compute Cloud) is a core service provided by Amazon Web Services (AWS) that enables users to rent virtual servers in the cloud to run applications, store data, or handle computational workloads.

Use Cases for EC2 Linux Instances:

- Web and Application Hosting: Run Apache web servers or other Linux-based web applications in the cloud.
- Database Servers: Host SQL Server databases with EC2 Linux instances, using SSH or EC2 for more control.
- Remote Desktop Applications: Set up SSH (Remote Desktop Services) for remote access to Linux desktops in the cloud.
- Development and Testing: Create development environments with linux OS to test php,MySql or other Linux-based applications.

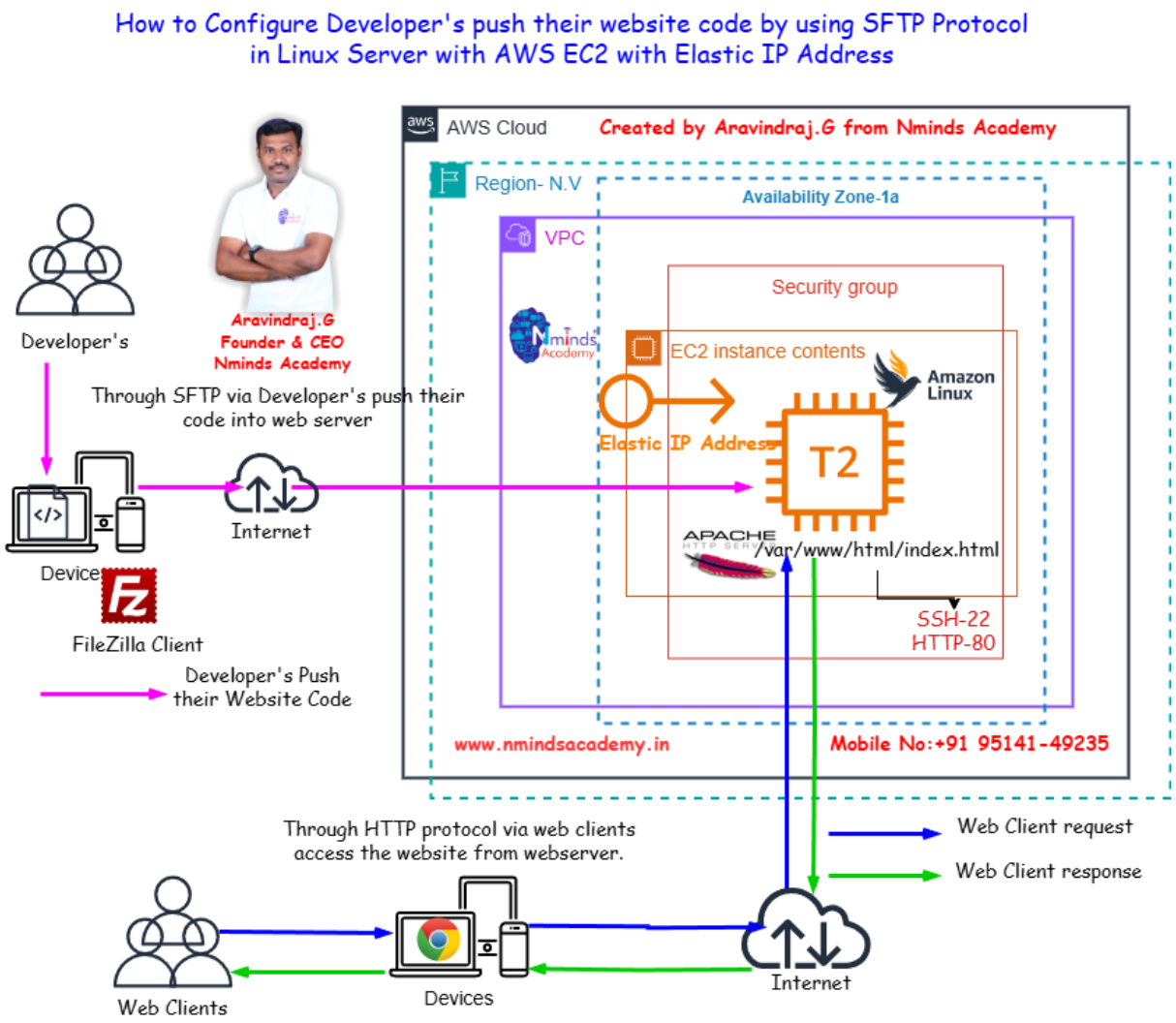
SFTP- Secure File Transfer Protocol

SFTP (Secure File Transfer Protocol) is a secure network protocol that allows users to transfer files over a secure, encrypted connection. It is a more secure alternative to FTP (File Transfer Protocol) and is commonly used to upload, download, and manage files on remote servers.

Here are the key uses and advantages of SFTP:

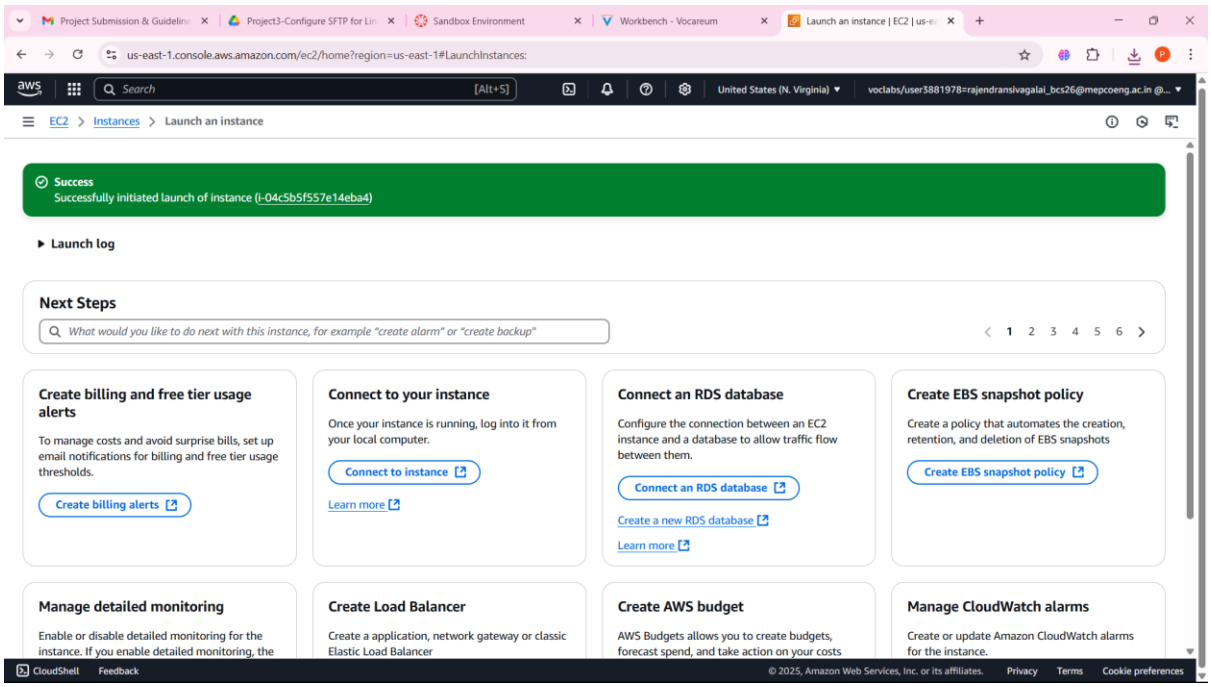
1. File Transfer: SFTP allows secure transfer of files between a local and a remote computer over a network. It ensures that the data is encrypted during transmission, protecting it from eavesdropping or tampering.
2. File Management: Besides transferring files, SFTP also allows users to perform file management tasks such as renaming, deleting, and moving files on the remote server.
3. Secure Authentication: SFTP uses SSH (Secure Shell) for authentication, which provides a stronger level of security compared to FTP's traditional username/password system. It often supports public key authentication, adding an extra layer of security.
4. Encryption: The main advantage of SFTP over FTP is encryption. All data sent over SFTP is encrypted, ensuring that sensitive information (like passwords and files) is protected during transmission.
5. Firewall-Friendly: SFTP operates over a single port (usually port 22), making it easier to use behind firewalls and NAT (Network Address Translation) devices compared to FTP, which uses multiple ports.

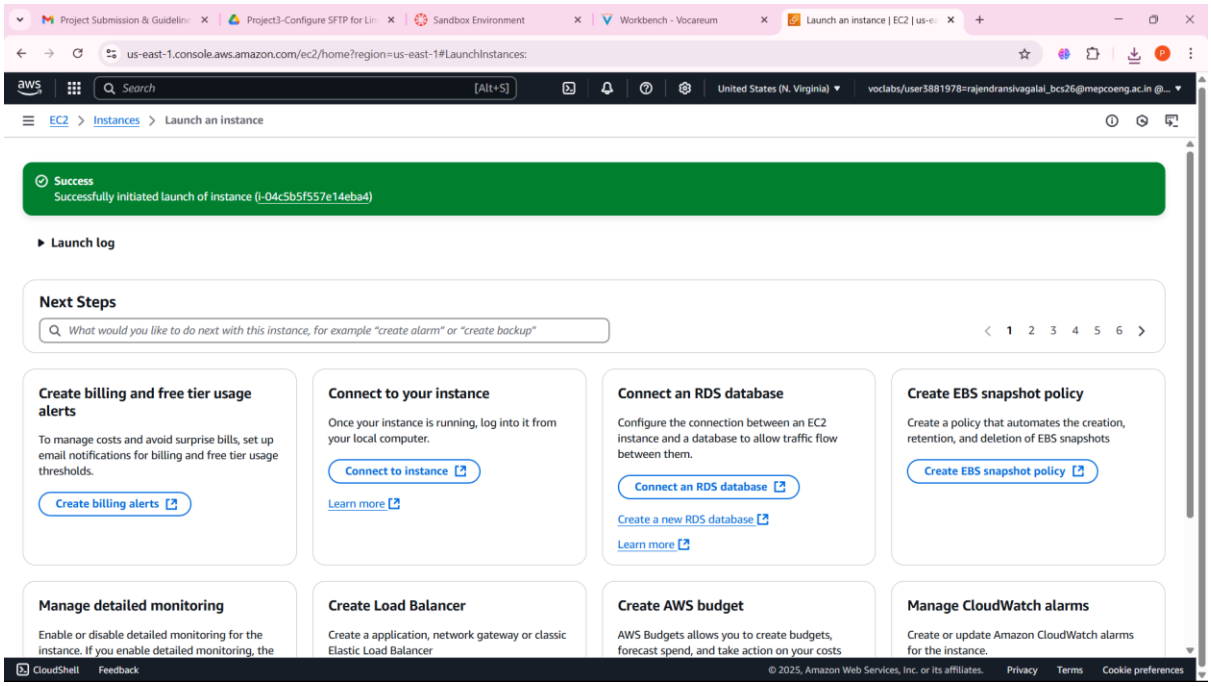
Topology


How to Configure Developer's push their website code by using SFTP Protocol
in Linux Server with AWS EC2 with Elastic IP Address
AWS Cloud
Created by Aravindraj.G from Nminds Academy
Region- N.V
Availability Zone-1a
VPC
Security group
EC2 instance contents
Amazon Linux
Elastic IP Address
T2
APACHE
/var/www/html/index.html
SSH-22
HTTP-80
Developer's
Aravindraj.G
Founder & CEO
Nminds Academy
Through SFTP via Developer's push their code into web server
Internet
Device
FileZilla Client
Developer's Push their Website Code
www.nmindsacademy.in
Mobile No:+91 95141-49235
Through HTTP protocol via web clients access the website from webserver.
Web Client request
Web Client response
Web Clients
Devices
Internet

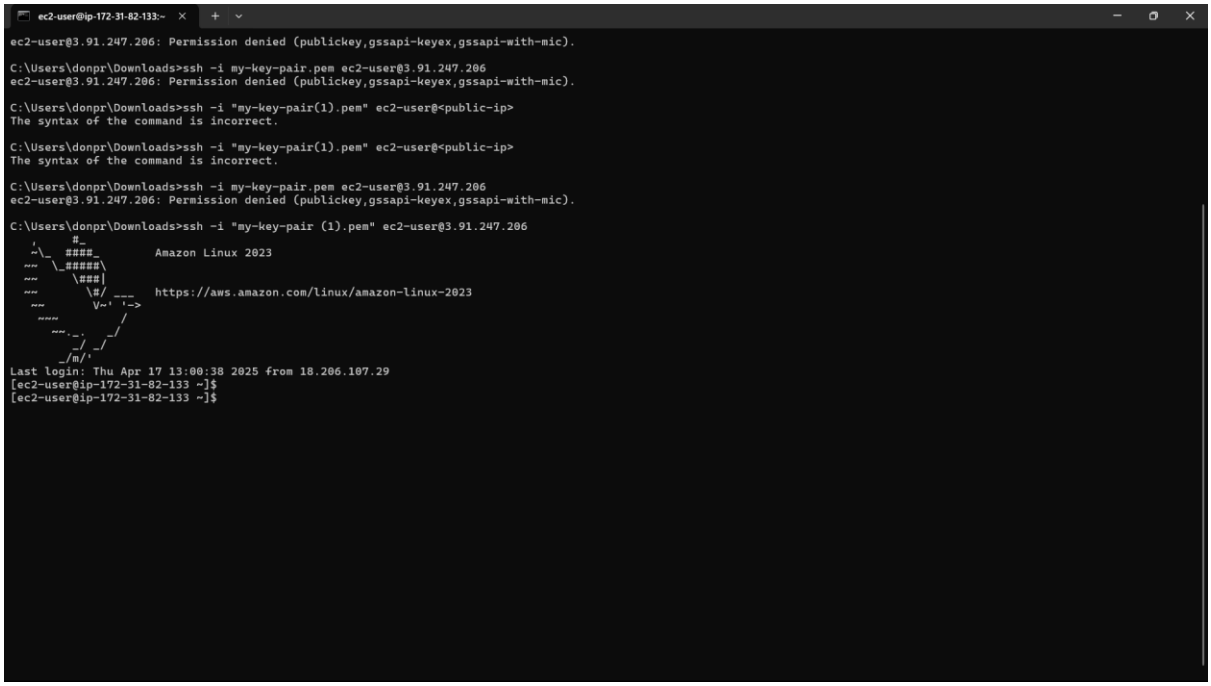
Execution Tasks:

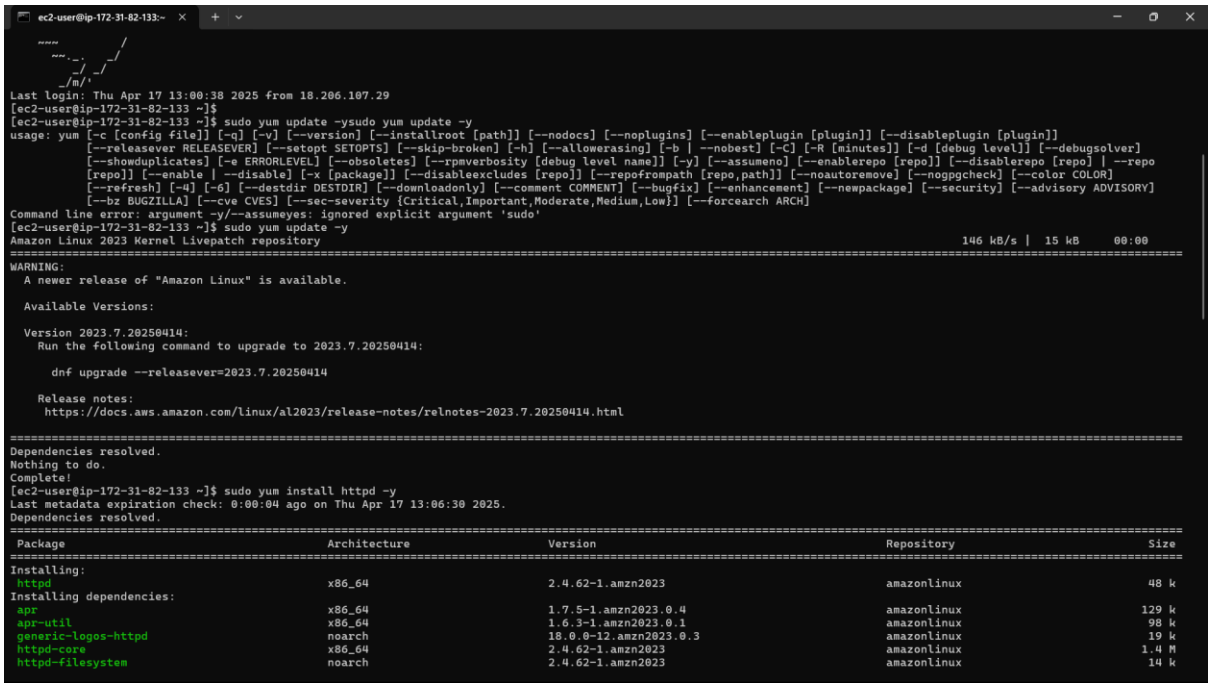
Step 1:Launch a Linux EC2 Instance

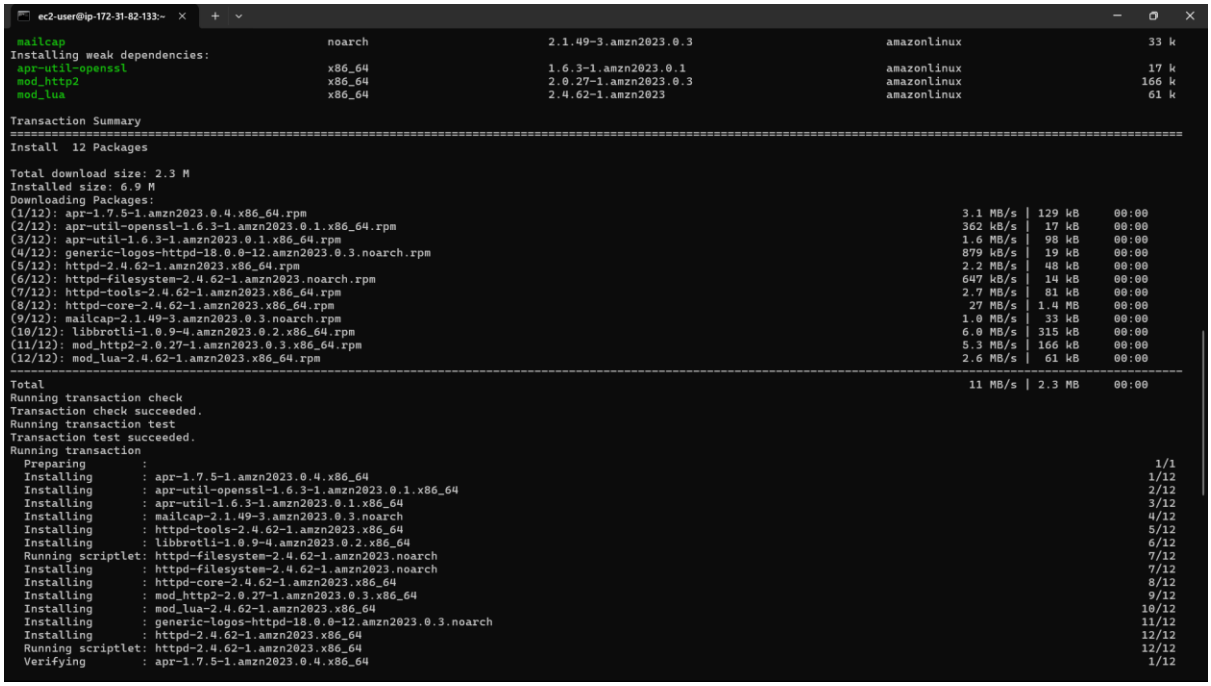




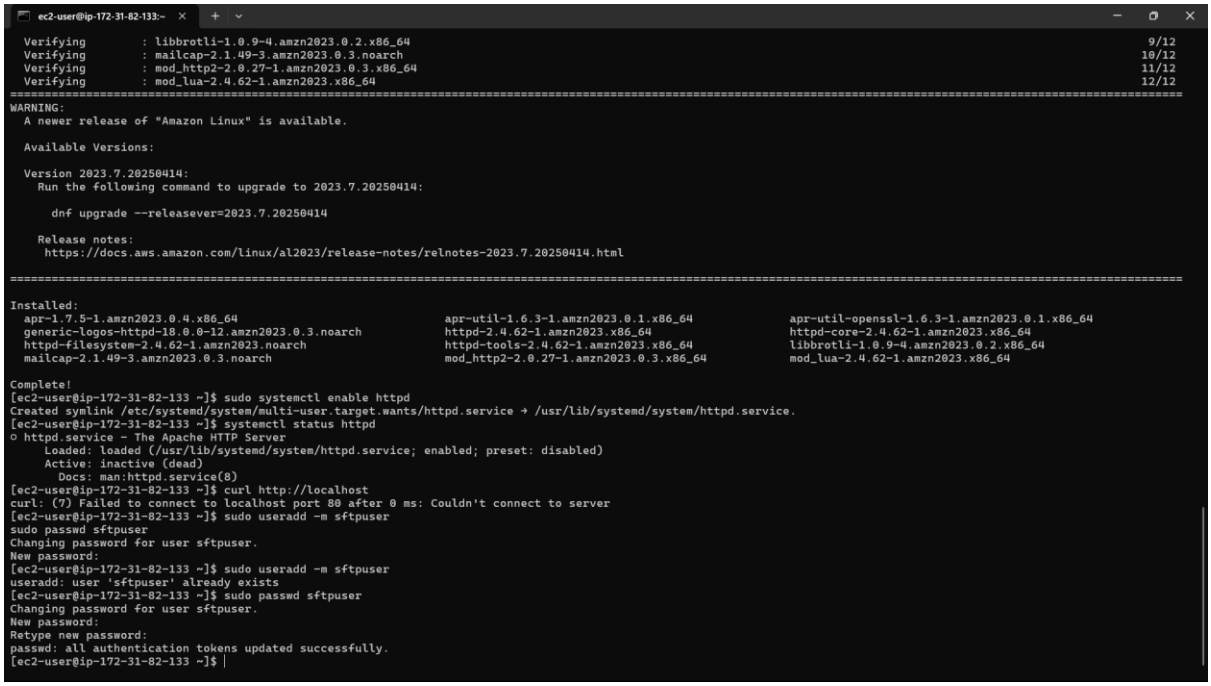
Step 2: Install Apache Web Server

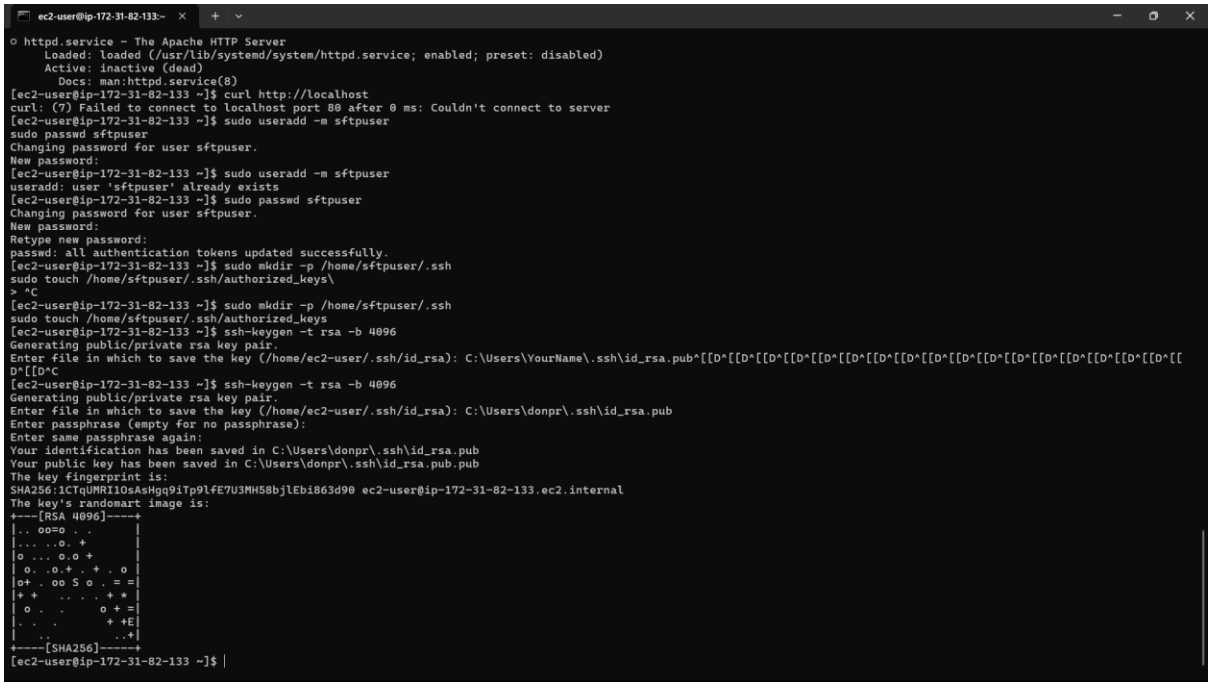

ec2-user@ip-172-31-82-133:~
ec2-user@3.91.247.206: Permission denied (publickey,gssapi-keyex,gssapi-with-mic).
C:\Users\donpr\Downloads>ssh -i my-key-pair.pem ec2-user@3.91.247.206
ec2-user@3.91.247.206: Permission denied (publickey,gssapi-keyex,gssapi-with-mic).
C:\Users\donpr\Downloads>ssh -i "my-key-pair(1).pem" ec2-user@<public-ip>
The syntax of the command is incorrect.
C:\Users\donpr\Downloads>ssh -i "my-key-pair(1).pem" ec2-user@<public-ip>
The syntax of the command is incorrect.
C:\Users\donpr\Downloads>ssh -i my-key-pair.pem ec2-user@3.91.247.206
ec2-user@3.91.247.206: Permission denied (publickey,gssapi-keyex,gssapi-with-mic).
C:\Users\donpr\Downloads>ssh -i "my-key-pair (1).pem" ec2-user@3.91.247.206
Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023
Last login: Thu Apr 17 13:00:38 2025 from 18.206.107.29
[ec2-user@ip-172-31-82-133 ~]$
[ec2-user@ip-172-31-82-133 ~]$

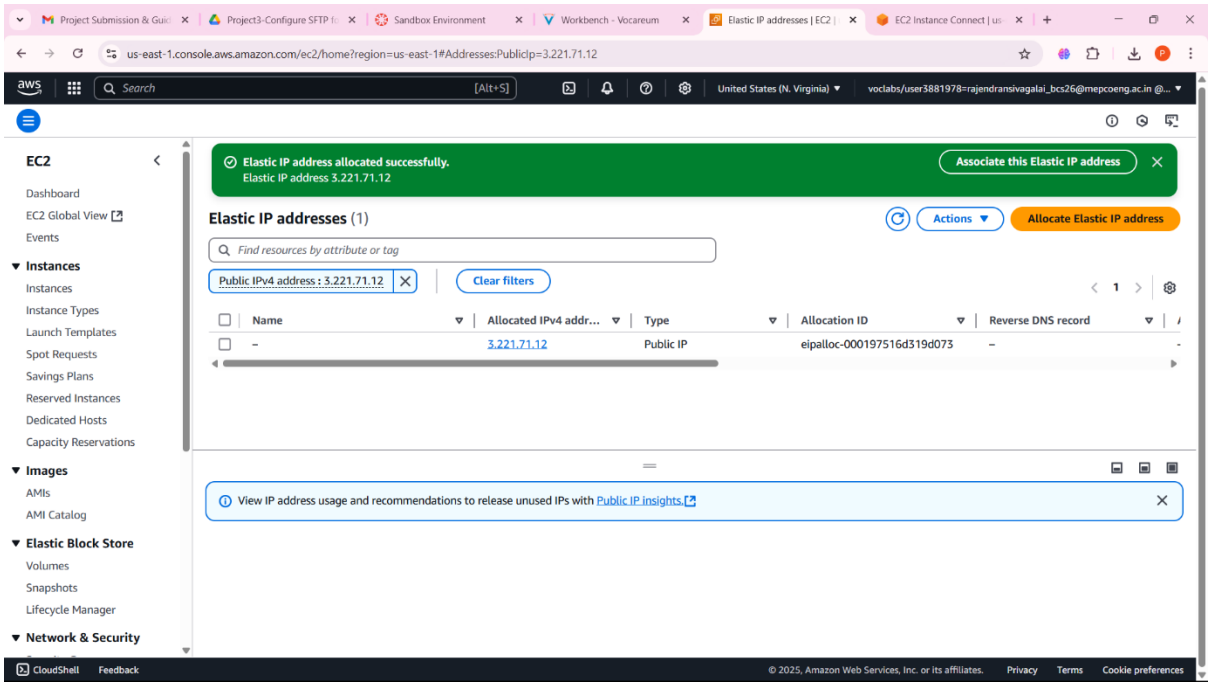

ec2-user@ip-172-31-82-133:~
Last login: Thu Apr 17 13:00:38 2025 from 18.206.107.29
[ec2-user@ip-172-31-82-133 ~]$
[ec2-user@ip-172-31-82-133 ~]$ sudo yum update -ysudo yum update -y
usage: yum [-c [config file]] [-q] [-v] [--version] [--installroot [path]] [--nodocs] [--noplugins] [--enableplugin [plugin]] [--disableplugin [plugin]]
[--releasever RELEASEVER] [--setopt SETOPTS] [--skip-broken] [-h] [--allowerasing] [-b | --nobest] [-C] [-R [minutes]] [-d [debug level]] [--debugsolver]
[--showduplicates] [-e ERRORLEVEL] [--obsoletes] [--rpmverbosity [debug level name]] [-y] [--assumeno] [--enablerepo [repo]] [--disablerepo [repo] | --repo
[repo]] [--enable | --disable] [-x [package]] [--disableexcludes [repo]] [--repofrompath [repo,path]] [--noautoremove] [--nogpgcheck] [--color COLOR]
[--refresh] [-4] [-6] [--destdir DESTDIR] [--downloadonly] [--comment COMMENT] [--bugfix] [--enhancement] [--newpackage] [--security] [--advisory ADVISORY]
[--bz BUGZILLA] [--cve CVES] [--sec-severity {Critical,Important,Moderate,Medium,Low}] [--forcearch ARCH]
Command line error: argument -y/--assumeyes: ignored explicit argument 'sudo'
[ec2-user@ip-172-31-82-133 ~]$ sudo yum update -y
Amazon Linux 2023 Kernel Livepatch repository
146 kB/s | 15 kB 00:00
WARNING:
A newer release of "Amazon Linux" is available.
Available Versions:
Version 2023.7.20250414:
Run the following command to upgrade to 2023.7.20250414:
dnf upgrade --releasever=2023.7.20250414
Release notes:
https://docs.aws.amazon.com/linux/al2023/release-notes/relnotes-2023.7.20250414.html
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-172-31-82-133 ~]$ sudo yum install httpd -y
Last metadata expiration check: 0:00:04 ago on Thu Apr 17 13:06:30 2025.
Dependencies resolved.
Package Architecture Version Repository Size
Installing:
httpd x86_64 2.4.62-1.amzn2023 amazonlinux 48 k
Installing dependencies:
apr x86_64 1.7.5-1.amzn2023.0.4 amazonlinux 129 k
apr-util x86_64 1.6.3-1.amzn2023.0.1 amazonlinux 98 k
generic-logos-httpd noarch 18.0.0-12.amzn2023.0.3 amazonlinux 19 k
httpd-core x86_64 2.4.62-1.amzn2023 amazonlinux 1.4 M
httpd-filesystem noarch 2.4.62-1.amzn2023 amazonlinux 14 k



Step 3:Configure SFTP with OpenSSH




ec2-user@ip-172-31-82-133:~
○ httpd.service - The Apache HTTP Server
Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
Active: inactive (dead)
Docs: man:httpd.service(8)
[ec2-user@ip-172-31-82-133 ~]$ curl http://localhost
curl: (7) Failed to connect to localhost port 80 after 0 ms: Couldn't connect to server
[ec2-user@ip-172-31-82-133 ~]$ sudo useradd -m sftpuser
sudo passwd sftpuser
Changing password for user sftpuser.
New password:
[ec2-user@ip-172-31-82-133 ~]$ sudo useradd -m sftpuser
useradd: user 'sftpuser' already exists
[ec2-user@ip-172-31-82-133 ~]$ sudo passwd sftpuser
Changing password for user sftpuser.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[ec2-user@ip-172-31-82-133 ~]$ sudo mkdir -p /home/sftpuser/.ssh
sudo touch /home/sftpuser/.ssh/authorized_keys\
> ^C
[ec2-user@ip-172-31-82-133 ~]$ sudo mkdir -p /home/sftpuser/.ssh
sudo touch /home/sftpuser/.ssh/authorized_keys
[ec2-user@ip-172-31-82-133 ~]$ ssh-keygen -t rsa -b 4096
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ec2-user/.ssh/id_rsa): C:\Users\YourName\.ssh\id_rsa.pub^[[D^[[D^[[D


Elastic IP address allocated successfully.
Elastic IP address 3.221.71.12
Associate this Elastic IP address
Elastic IP addresses (1)
Actions
Allocate Elastic IP address
Find resources by attribute or tag
Public IPv4 address : 3.221.71.12
Clear filters
Name
Allocated IPv4 addr...
Type
Allocation ID
Reverse DNS record
3.221.71.12
Public IP
eipalloc-000197516d319d073
View IP address usage and recommendations to release unused IPs with Public IP insights.
EC2
Dashboard
EC2 Global View
Events
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
CloudShell
Feedback
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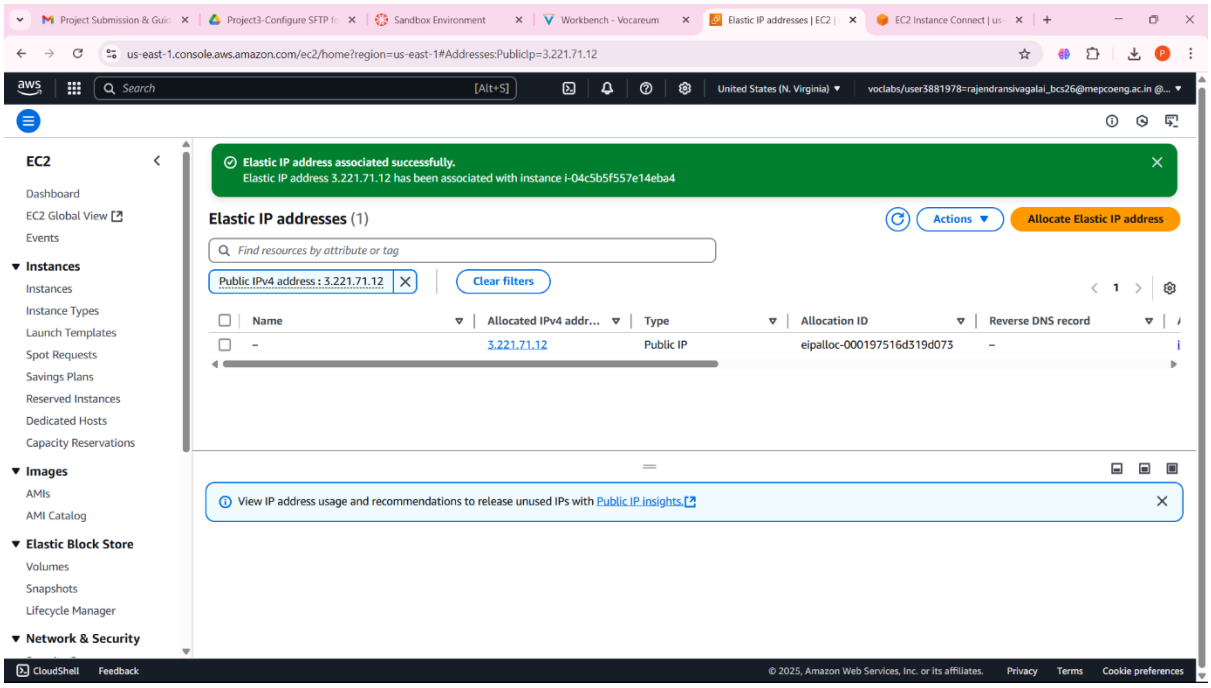
Elastic IP address associated successfully.
Elastic IP address 3.221.71.12 has been associated with instance i-04c5b5f557e14eba4
Elastic IP addresses (1)
Actions
Allocate Elastic IP address
Find resources by attribute or tag
Public IPv4 address : 3.221.71.12
Clear filters
Name
Allocated IPv4 addr...
Type
Allocation ID
Reverse DNS record
3.221.71.12
Public IP
eipalloc-000197516d319d073
View IP address usage and recommendations to release unused IPs with Public IP insights.
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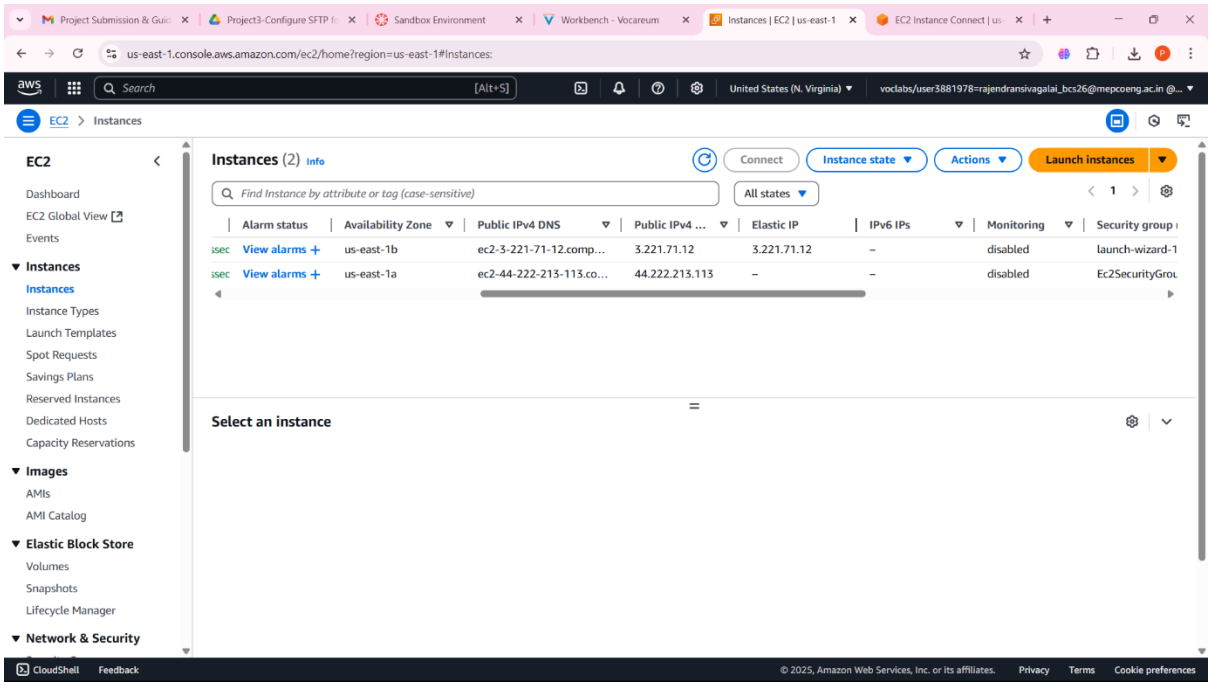
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:
EC2 > Instances
Instances (2) Info
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Alarm status
Availability Zone
Public IPv4 DNS
Public IPv4 ...
Elastic IP
IPv6 IPs
Monitoring
Security group
View alarms
us-east-1b
ec2-3-221-71-12.comp...
3.221.71.12
3.221.71.12
disabled
launch-wizard-1
View alarms
us-east-1a
ec2-44-222-213-113.co...
44.222.213.113
disabled
Ec2SecurityGrou
Select an instance
EC2
Dashboard
EC2 Global View
Events
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
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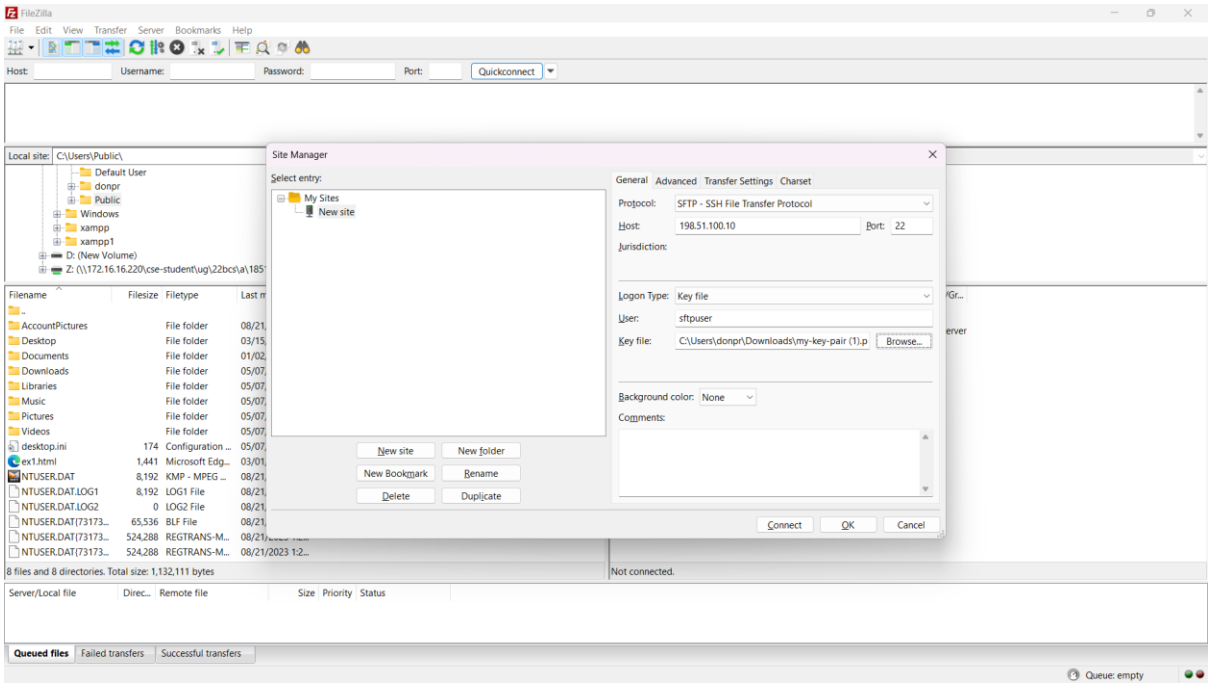
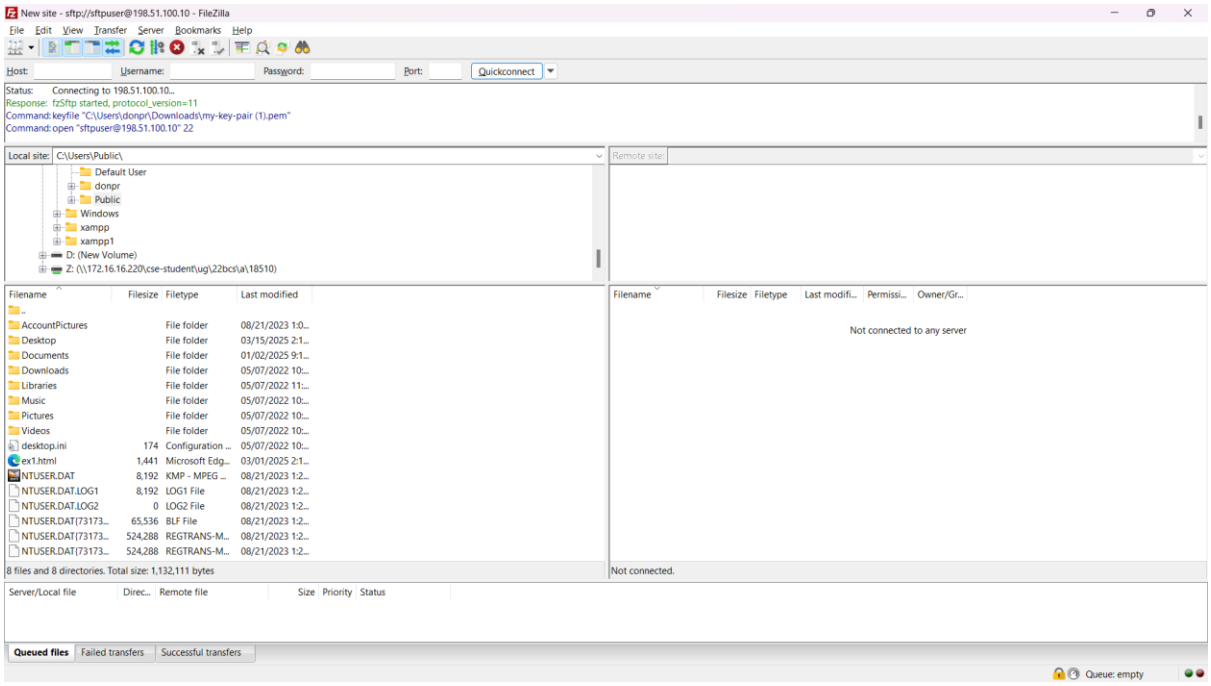
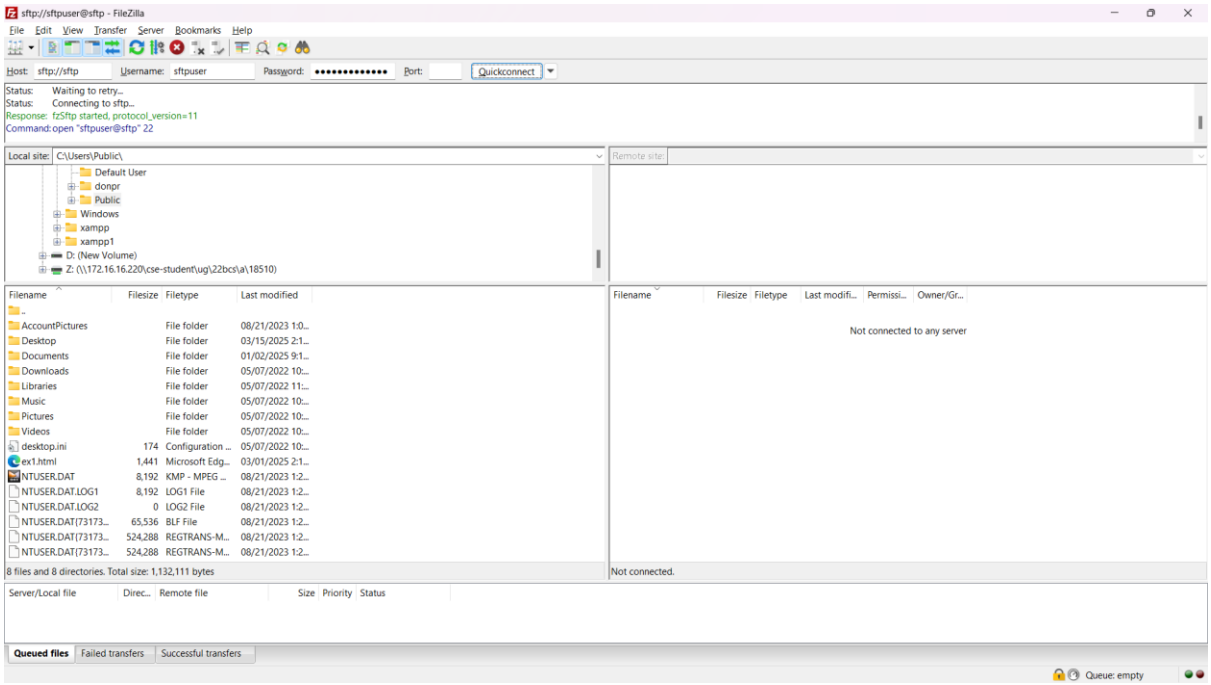

FileZilla
Site Manager
Select entry:
My Sites
New site
General
Advanced
Transfer Settings
Charset
Protocol:
SFTP - SSH File Transfer Protocol
Host:
198.51.100.10
Port:
22
Logon Type:
Key file
User:
sftpuser
Key file:
C:\Users\donpr\Downloads\my-key-pair (1).p
Browse...
Background color:
None
Comments:
New site
New folder
New Bookmark
Rename
Delete
Duplicate
Connect
OK
Cancel
Not connected.
Queued files
Failed transfers
Successful transfers


New site - sftp://sftpuser@198.51.100.10 - FileZilla
File Edit View Transfer Server Bookmarks Help
Host: Username: Password: Port: Quickconnect
Status: Connecting to 198.51.100.10...
Response: fzSftp started, protocol_version=11
Command: keyfile "C:\Users\donpr\Downloads\my-key-pair (1).pem"
Command: open "sftpuser@198.51.100.10" 22
Local site: C:\Users\Public\
Default User
donpr
Public
Windows
xampp
xampp1
D: (New Volume)
Z: (\\172.16.16.220\cse-student\ug\22bcs\a\18510)
Remote site:
Filename Filesize Filetype Last modified
AccountPictures File folder 08/21/2023 1:0...
Desktop File folder 03/15/2025 2:1...
Documents File folder 01/02/2025 9:1...
Downloads File folder 05/07/2022 10:...
Libraries File folder 05/07/2022 11:...
Music File folder 05/07/2022 10:...
Pictures File folder 05/07/2022 10:...
Videos File folder 05/07/2022 10:...
desktop.ini 174 Configuration ... 05/07/2022 10:...
ex1.html 1,441 Microsoft Edg... 03/01/2025 2:1...
NTUSER.DAT 8,192 KMP - MPEG ... 08/21/2023 1:2...
NTUSER.DAT.LOG1 8,192 LOG1 File 08/21/2023 1:2...
NTUSER.DAT.LOG2 0 LOG2 File 08/21/2023 1:2...
NTUSER.DAT{73173... 65,536 BLF File 08/21/2023 1:2...
NTUSER.DAT{73173... 524,288 REGTRANS-M... 08/21/2023 1:2...
NTUSER.DAT{73173... 524,288 REGTRANS-M... 08/21/2023 1:2...
Filename Filesize Filetype Last modifi... Permissi... Owner/Gr...
Not connected to any server
8 files and 8 directories. Total size: 1,132,111 bytes
Not connected.
Server/Local file Direc... Remote file Size Priority Status
Queued files Failed transfers Successful transfers
Queue: empty


sftp://sftpuser@sftp - FileZilla
File Edit View Transfer Server Bookmarks Help
Host: sftp://sftp Username: sftpuser Password: •••••••••••••• Port: Quickconnect
Status: Waiting to retry...
Status: Connecting to sftp...
Response: fzSftp started, protocol_version=11
Command: open "sftpuser@sftp" 22
Local site: C:\Users\Public\
Default User
donpr
Public
Windows
xampp
xampp1
D: (New Volume)
Z: (\\172.16.16.220\cse-student\ug\22bcs\a\18510)
Remote site:
Filename Filesize Filetype Last modified
AccountPictures File folder 08/21/2023 1:0...
Desktop File folder 03/15/2025 2:1...
Documents File folder 01/02/2025 9:1...
Downloads File folder 05/07/2022 10:...
Libraries File folder 05/07/2022 11:...
Music File folder 05/07/2022 10:...
Pictures File folder 05/07/2022 10:...
Videos File folder 05/07/2022 10:...
desktop.ini 174 Configuration ... 05/07/2022 10:...
ex1.html 1,441 Microsoft Edg... 03/01/2025 2:1...
NTUSER.DAT 8,192 KMP - MPEG ... 08/21/2023 1:2...
NTUSER.DAT.LOG1 8,192 LOG1 File 08/21/2023 1:2...
NTUSER.DAT.LOG2 0 LOG2 File 08/21/2023 1:2...
NTUSER.DAT{73173... 65,536 BLF File 08/21/2023 1:2...
NTUSER.DAT{73173... 524,288 REGTRANS-M... 08/21/2023 1:2...
NTUSER.DAT{73173... 524,288 REGTRANS-M... 08/21/2023 1:2...
Filename Filesize Filetype Last modifi... Permissi... Owner/Gr...
Not connected to any server
8 files and 8 directories. Total size: 1,132,111 bytes
Not connected.
Server/Local file Direc... Remote file Size Priority Status
Queued files Failed transfers Successful transfers
Queue: empty