Static Website Hosting in AWS

Intern Project

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Acknowledgement

The opportunity I had with APSSDC in learning AWS was a great chance for learning and professional development. I consider myself as a lucky individual as I was provided with an opportunity to be a part of it. During this course I have done my utmost efforts and it would not be possible without the corporation of APSSDC

I would like to express my deepest gratitude to my project coordinator MR. Ramakrishna Cheeli, technical skill trainer at APSSDC to enable me to complete this project. I would also like to thank all the trainers that helped me in learning the concepts and guiding me throughout the course.

I will strive to use my knowledge and gained skills in the best possible way.

Project Description

Aim of the project is host a static website using the EC2 instance. For this project I have taken a sample website which is hosted publicly using the Amazons S3 service, so it can be accessed from anywhere in the world on different devices and web browsers. EC2 provides us with a virtual server with different capacities. It enables to scale up or down and handle traffic. The user has to rent the virtual server to deploy the applications.

The website is hosted using Amazon Machine Image (AMI) which has an operating system, Amazon Linux Server, Elastic IP, Security groups to control traffic, VPC to let us use multiple layers of security including network access control lists and security groups that help control access to EC2 instances each subnet.

AWS Services used

EC2

Amazon EC2 instance is a virtual server in Amazon's Elastic Compute Cloud for running applications on the AWS. It offers many options that enables us to build and run virtually any application. EC2 instance can be used to launch as many or as few virtual servers as needed, configure security and networking, and manage storage. It can particularly serve unlimited set of virtual machines (VMs). Amazon provides with different types of instances with different configurations of CPU, memory, storage and networking resources as per user's requirements.

EC2 allows to build applications to automate scaling according to changing needs and peak periods, makes it simple to deploy virtual to manage storage, lowering the need to invest in hardware and helping streamline development process.

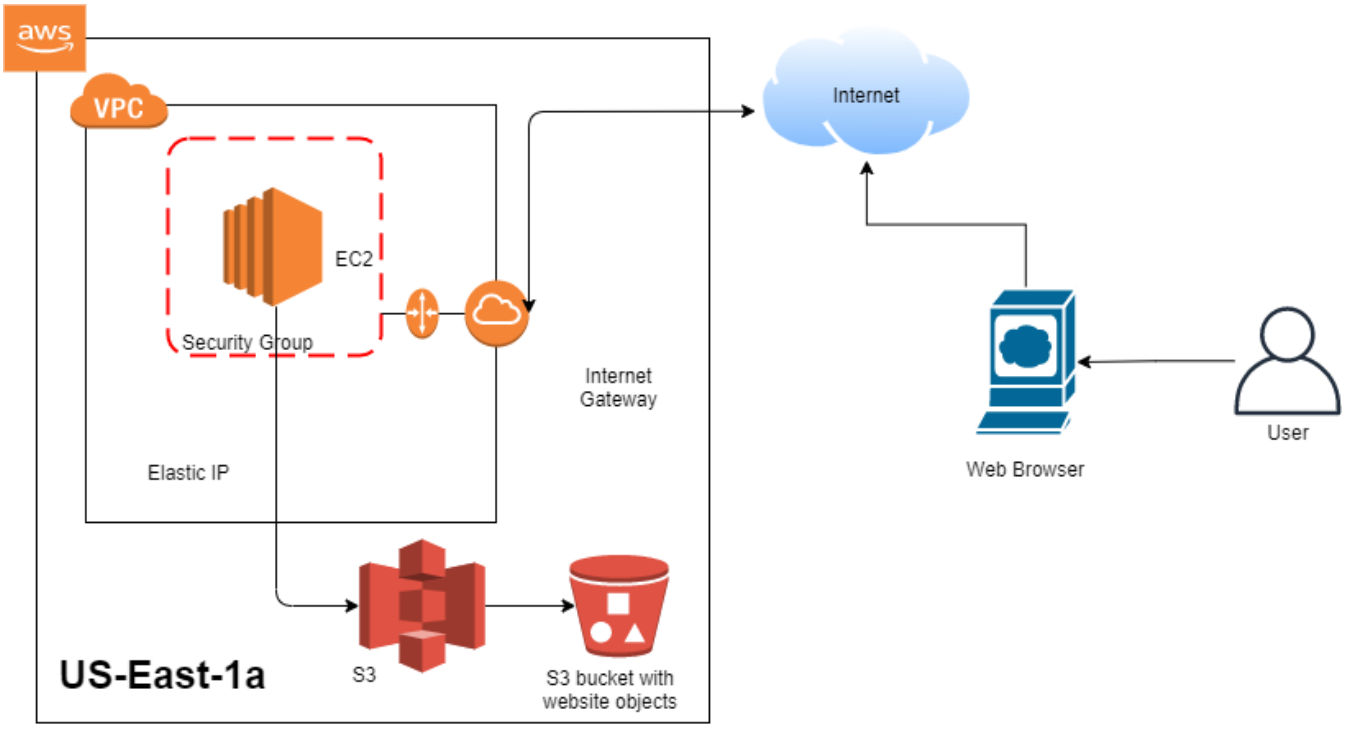
To host a website using EC2, we need to create and configure an EC2 instance in the AWS management console

Amazon S3

Amazon Simple Storage Service is a storage for the internet. It has a simple web service interface which is scalable and has a high-speed web passed cloud storage service, which is built for storing and recovering any amount of data from anywhere on the web. This service aims to maximize benefits of scale and to pass those benefits on to developers.

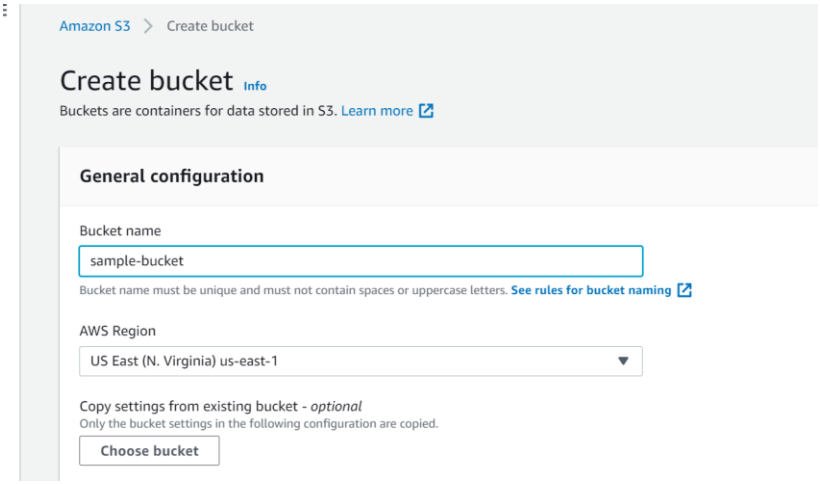
It can be used by small businesses or large enterprises. S3 service scalability, availability, security, and performance makes it suitable for a variety of data storage cases. Data storage, backup, archiving, hosting (images, videos, and music files), and website hosting are few common use cases.

Architecture

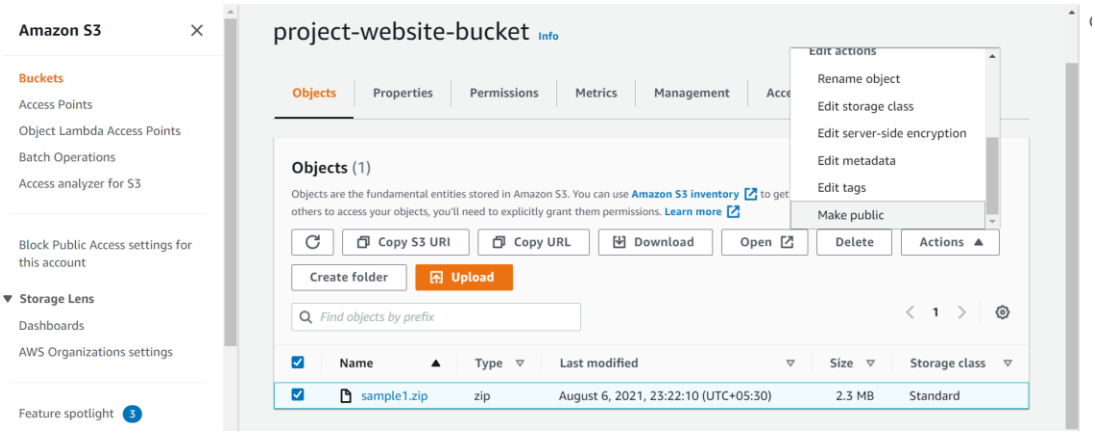


Procedure

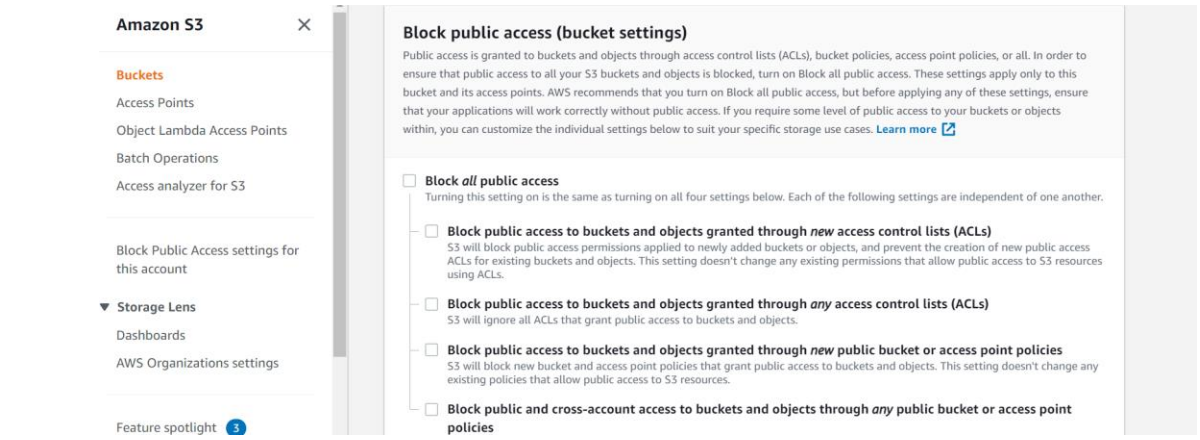
1. Login to the AWS account and search for S3 service. Click on the create bucket option and create a bucket of any name. Choose a region to deploy the AWS resources.



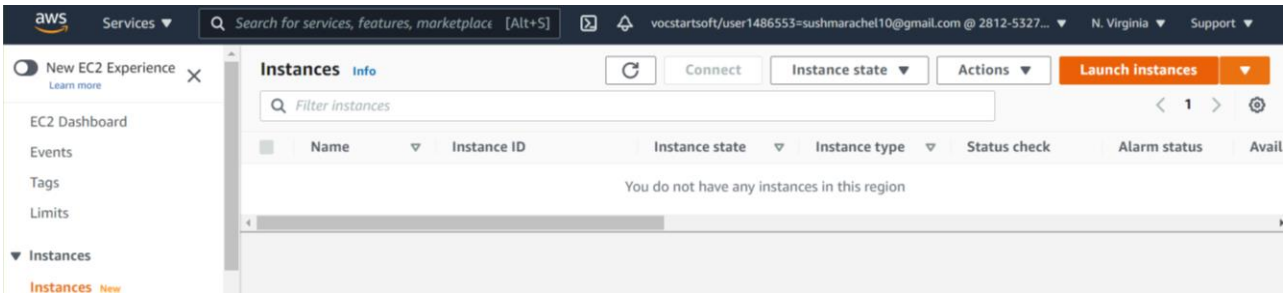
2. Upload the .zip folder containing the website files into the bucket.



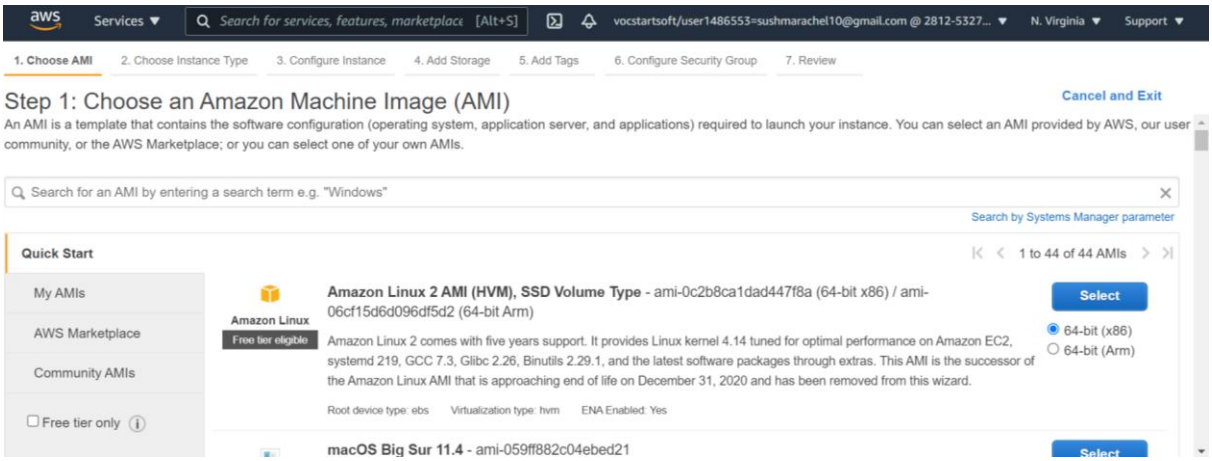
3. Go to bucket permissions and edit block access. Deselect block all public access. Then go to object actions and make the objects public.



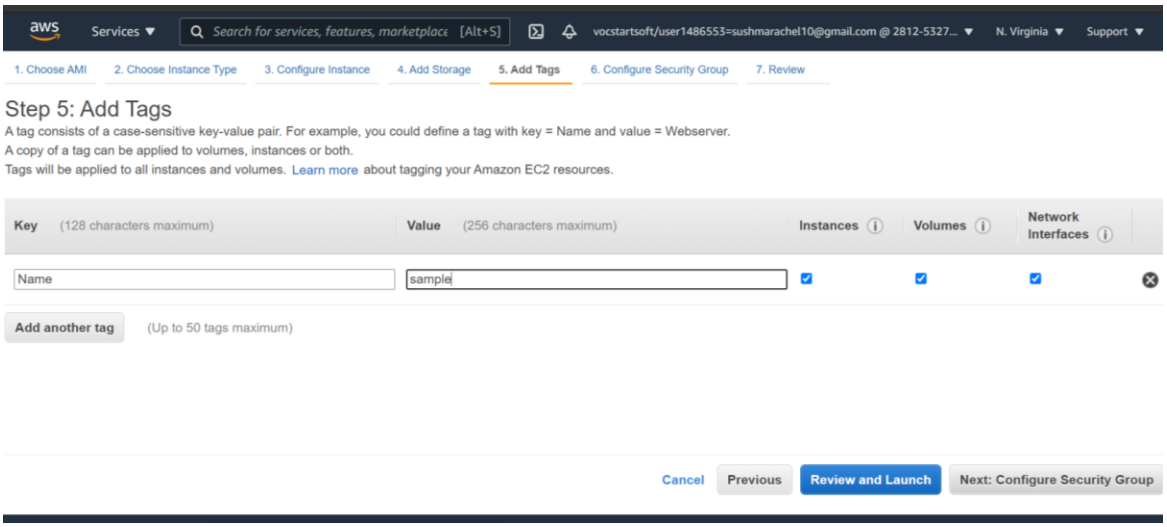
4. Search for EC2 in AWS services. In EC2 dashboard select Instances and then select launch instances.

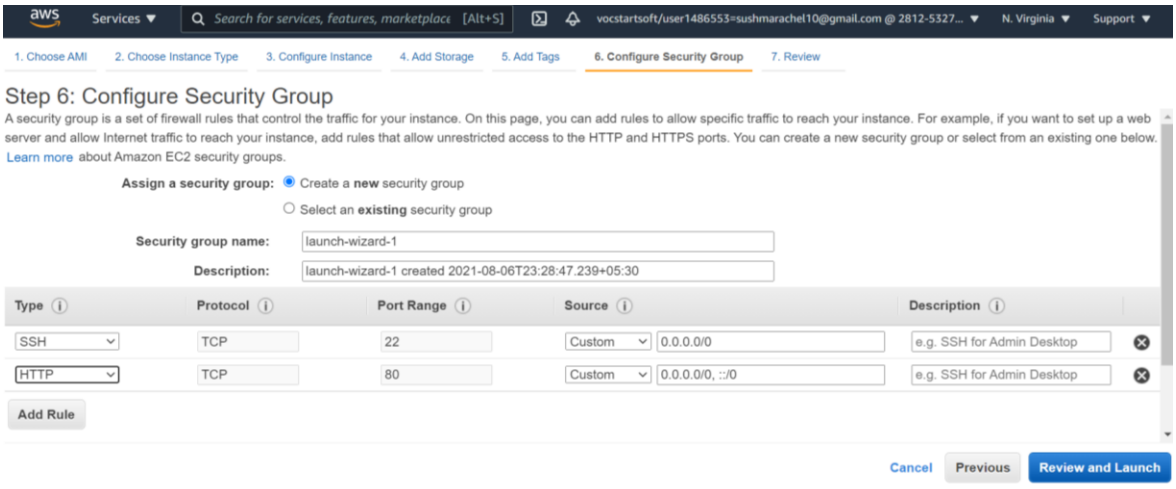


5. Select Amazon Linux 2AMI SSD Volume Type of 64-bit (x86) [AMI]

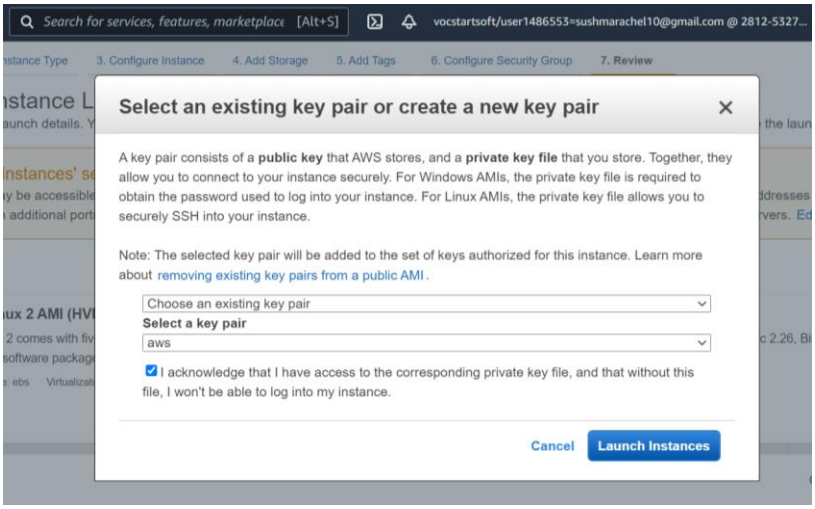


6. Choose t2 micro as instance type. Leave the Configure Instance Details and add storage to default. Add a name tag and value. Then in Configure security group select create a new security group add rule HTTP and review and launch and then launch.

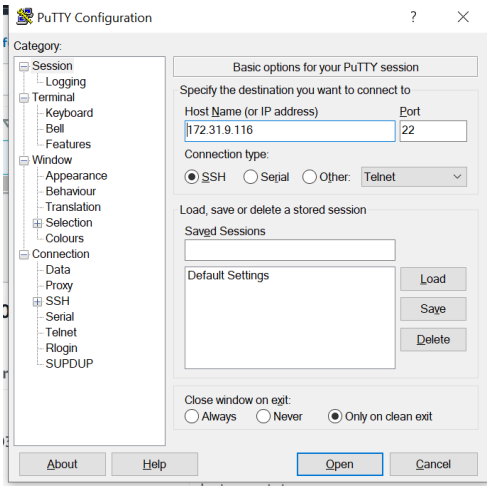


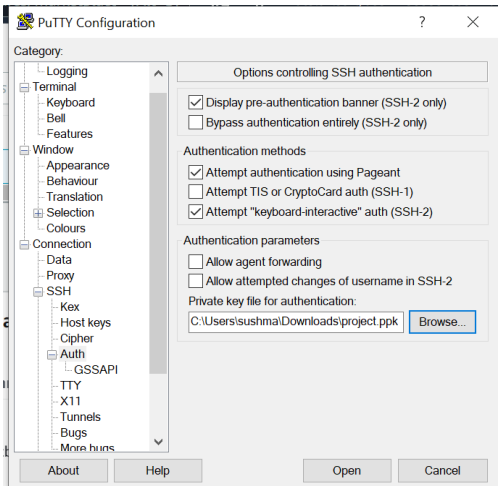


7. Choose an existing key pair or create a new key pair. If created a new keypair convert the downloaded PEM file to .ppk file using puttygen.exe.

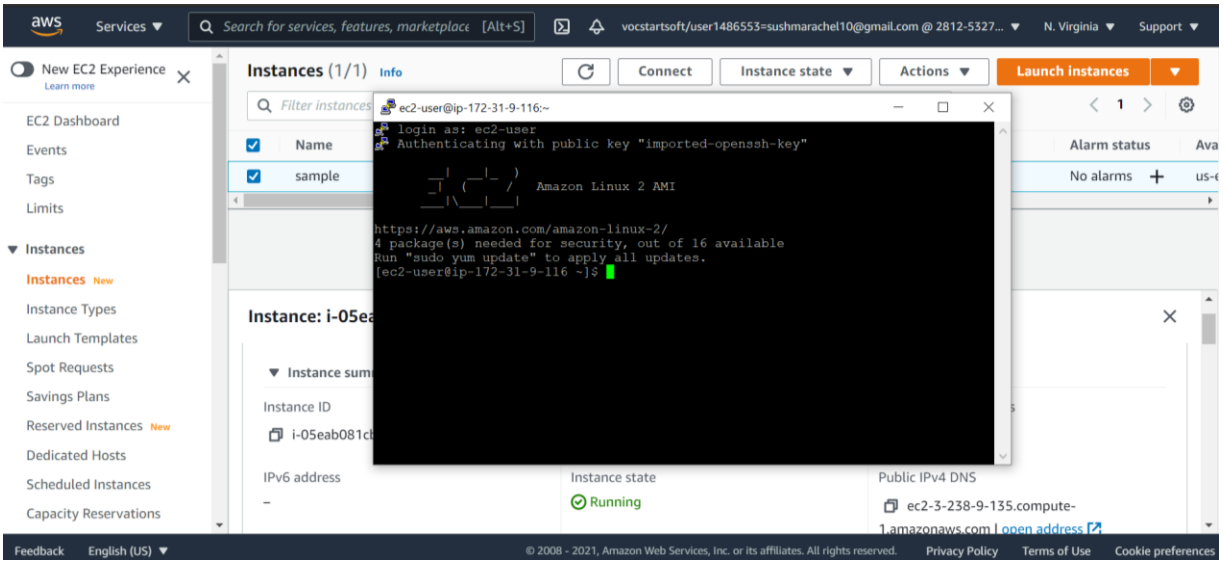


8. Open Putty.exe. In Host Name paste the public IPv4 address that is copied from the created instance. In SSH go to Auth and then browse the .ppk file in the private key file for authentication section. Change Appearances if required and then open.





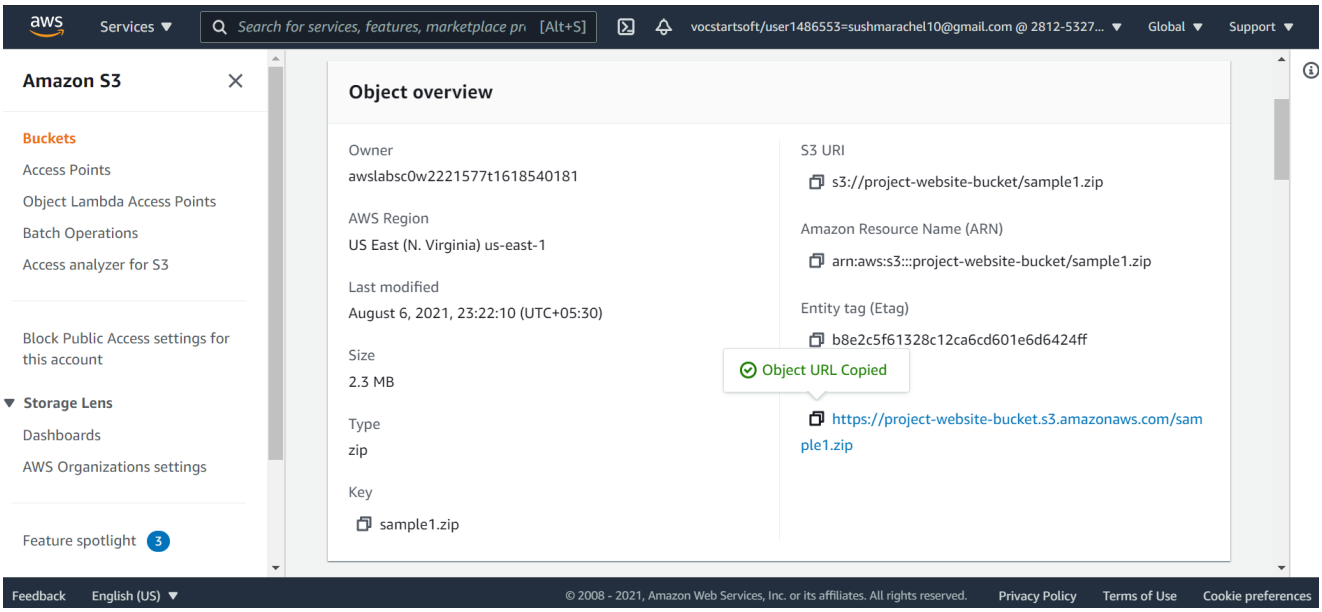
9. Then the command prompt appears on the screen. Login as ec2-user.

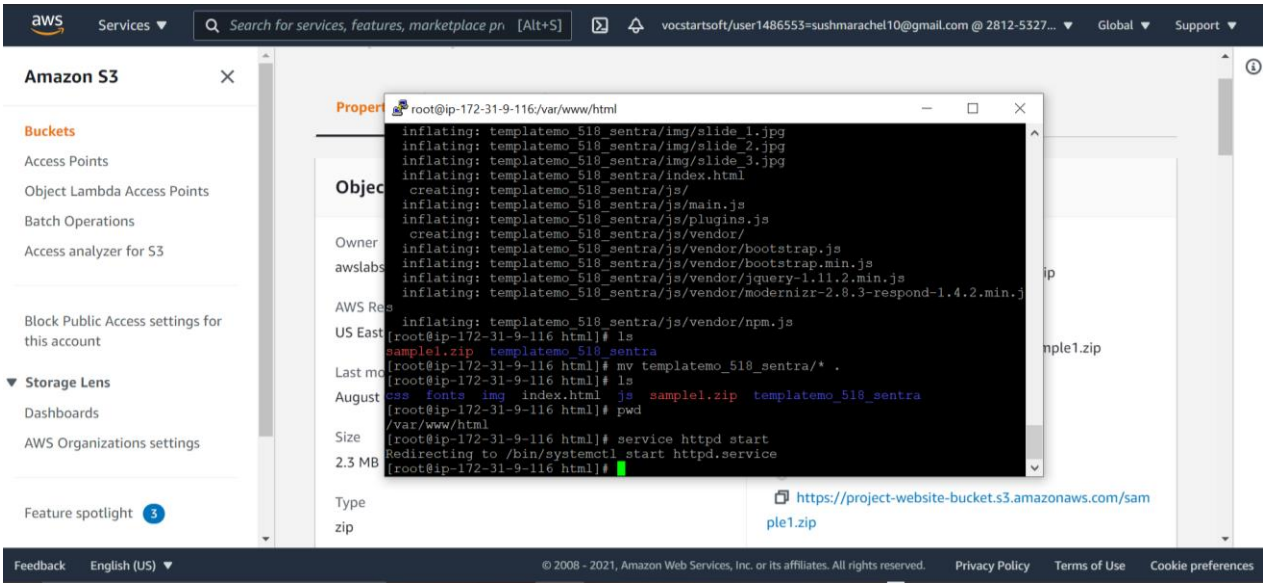


10. Then enter the following linux commands

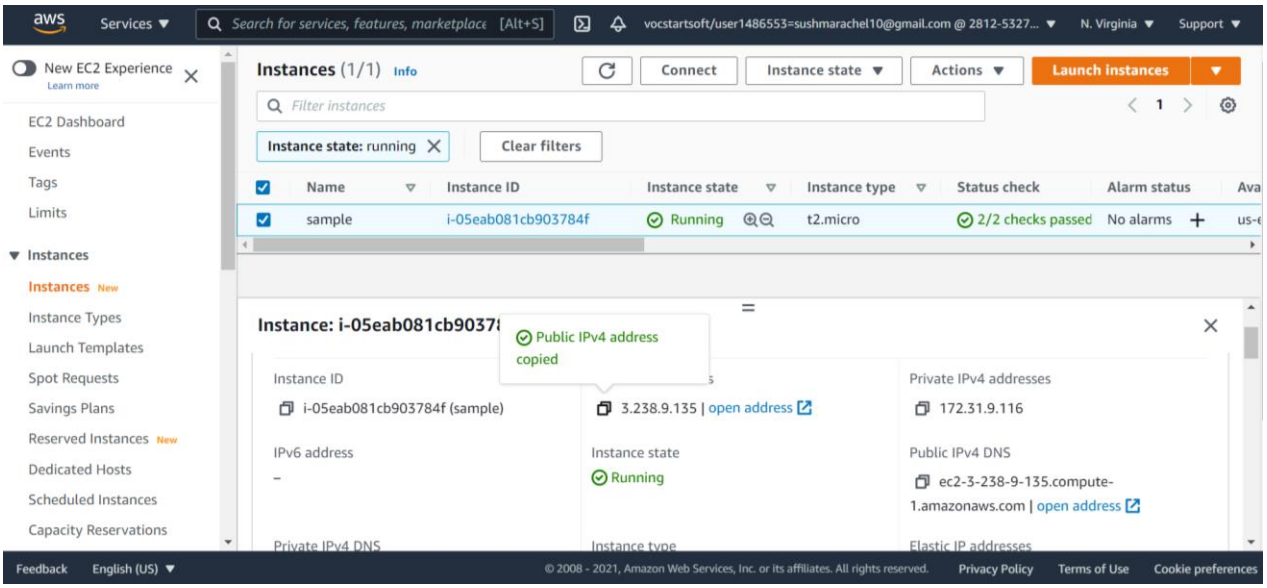
- sudo su — it allows to run programs as another user
- yum update -y — Updates packages to latest version
- yum install httpd -y — Installs packages

- pwd — to know the directory
- cd /var/www/html — change to html directory
- ls — list the files (we don't find any files)
- wget Object_URL — Downloads files from that URL
- ls — It shows the .zip file
- unzip folder_name.zip — Unzip to access the files
- ls — Now we find the unzipped folder
- mv folder_name/* . — Move the unzipped folder
- ls — All the files within the folder (html, css, etc,.)
- pwd — Prints the working directory
- service httpd start — To start our apache

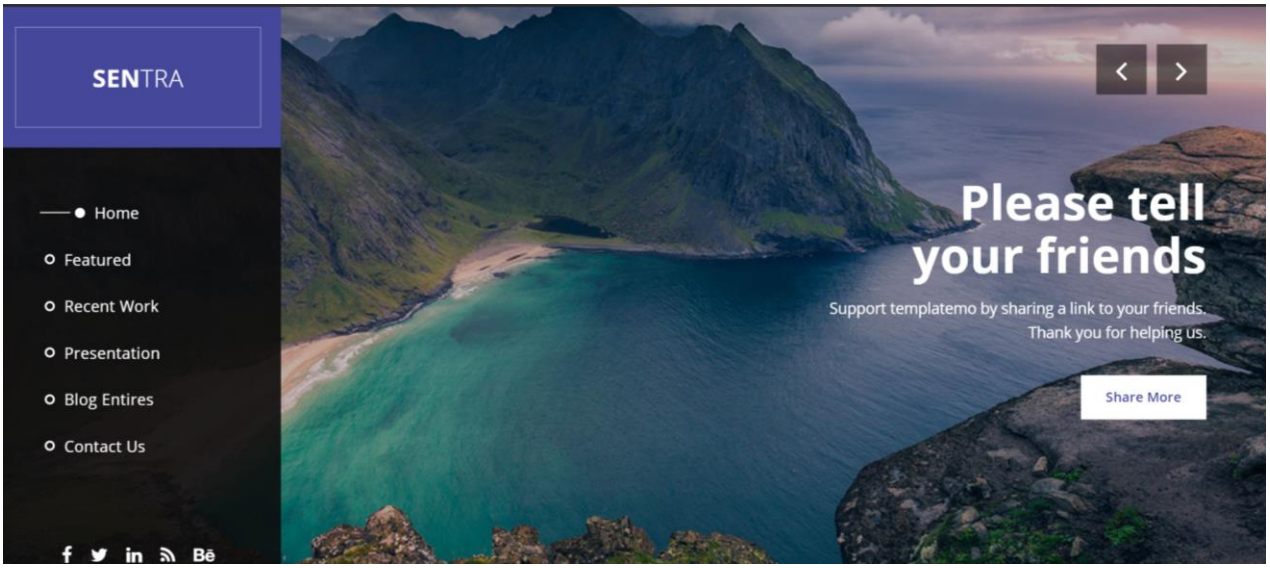




11. Then go to the EC2 instance, copy the Public IPv4 Address and paste it in a new tab.



Output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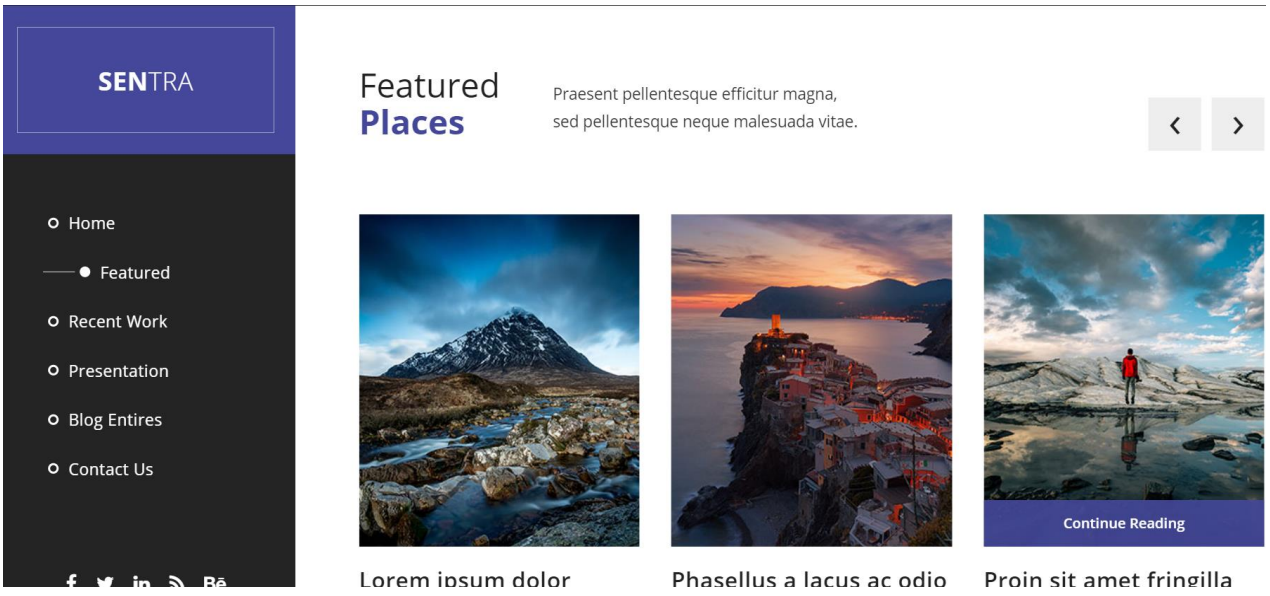
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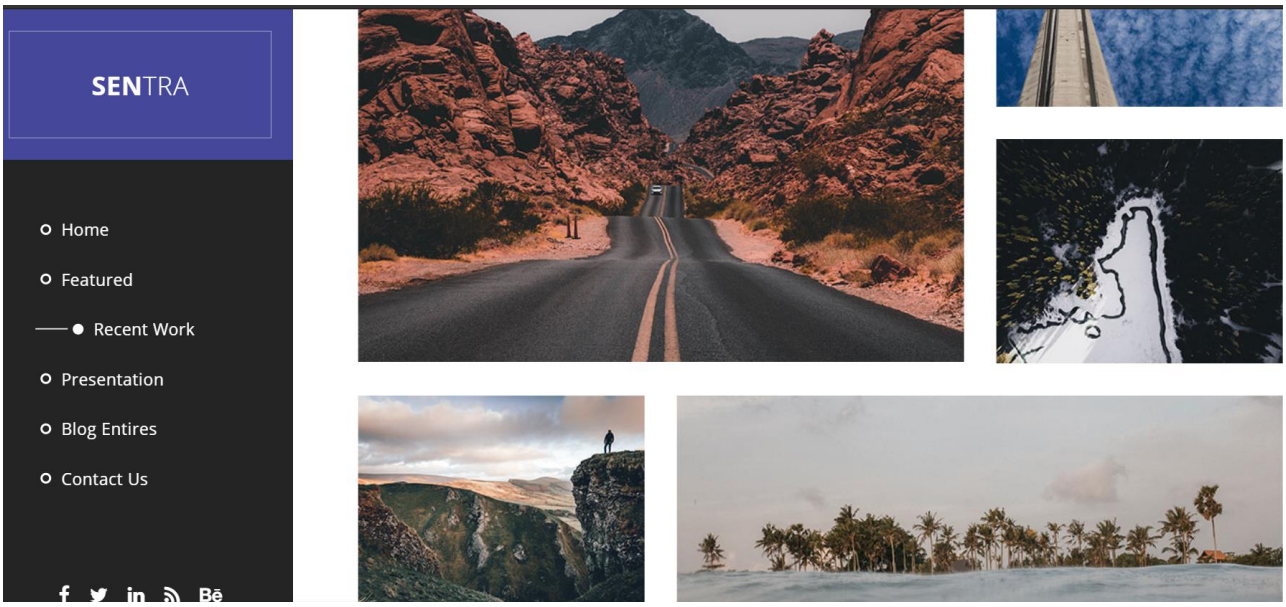

References

AWS account - https://aws.amazon.com/education/awseducate/

Sample Website - https://www.free-css.com/free-css-templates/page258/sentra