Shravani Anil Patil **D15A:38**

Advanced DevOps Experiment-1

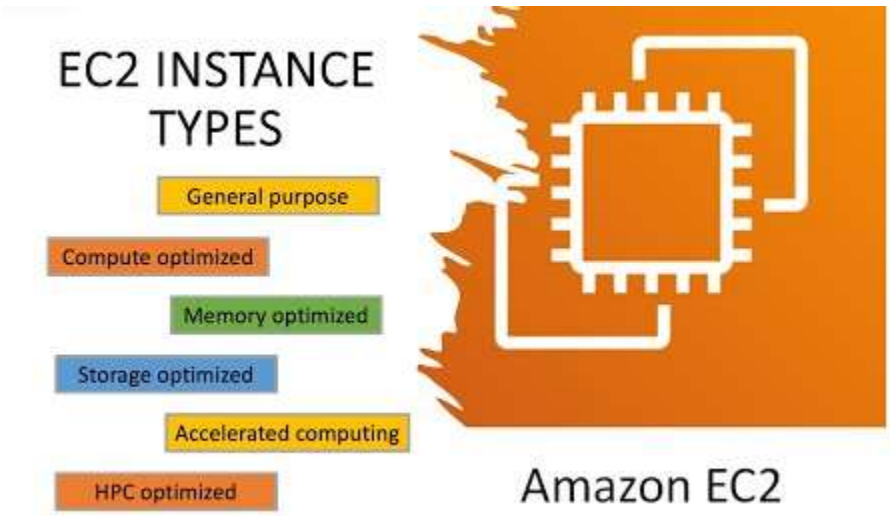
Aim: Using AWS CodePipeline, deploy Sample Application on EC2 instance using AWS CodeDeploy.

Theory:-

Amazon Elastic Compute Cloud (Amazon EC2) offers flexible, on-demand computing capacity in the Amazon Web Services (AWS) Cloud, enabling faster development and deployment of applications without the need for upfront hardware investments. EC2 allows you to launch and manage virtual servers based on your workload needs. You can adjust security settings, configure networking, and manage storage efficiently.

EC2's scalable nature lets you easily increase capacity (scale up) to handle compute-intensive tasks such as data analysis, seasonal traffic spikes, or resource-heavy applications. Conversely, when demand decreases, you can reduce capacity (scale down), ensuring cost-effective resource management.

Each EC2 instance is a virtual server, and the instance type you select determines the combination of compute, memory, network, and storage resources available. This flexibility ensures you can tailor your environment to meet specific performance and cost requirements. For further details, refer to the Amazon EC2 Instance Types Guide.



Key Features of Amazon EC2

Amazon EC2 offers a range of powerful features to enhance your cloud computing experience:

Instances: Virtual servers that you can configure and launch to meet your application needs.

Amazon Machine Images(AMIs): Preconfigured templates containing the necessary components for your server, such as the operating system and additional software.

Instance Types: A variety of configurations offering different combinations of CPU, memory, storage, networking capacity, and graphics hardware, allowing you to choose the best fit for your workloads.

Amazon EBS Volumes: Persistent storage solutions using Amazon Elastic Block Store (Amazon EBS) that provide durable storage for your data.

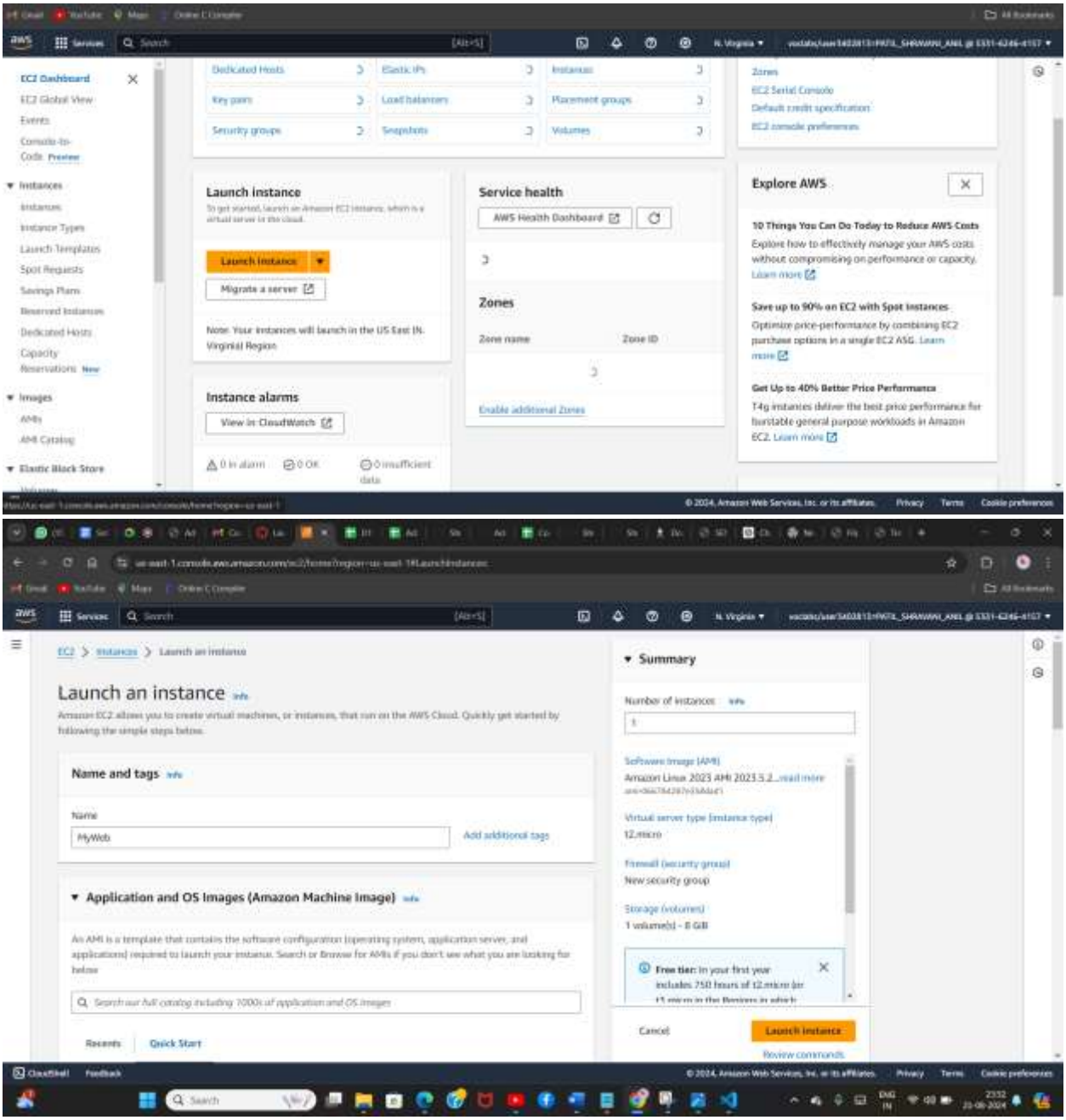
Instance Store Volumes: Temporary storage that offers high-performance local storage for your instance, deleted automatically when the instance is stopped, hibernated, or terminated.

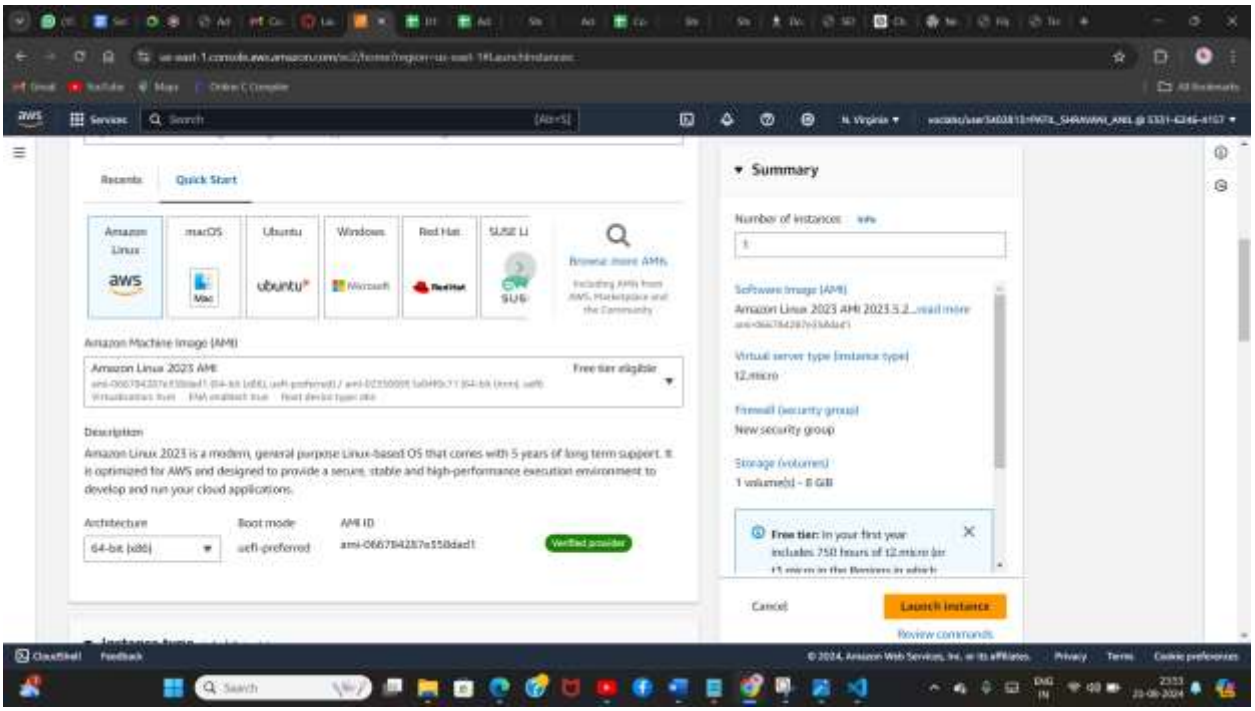
Key Pairs: Secure login credentials for your instances, with AWS storing the public key and you keeping the private key in a secure location.

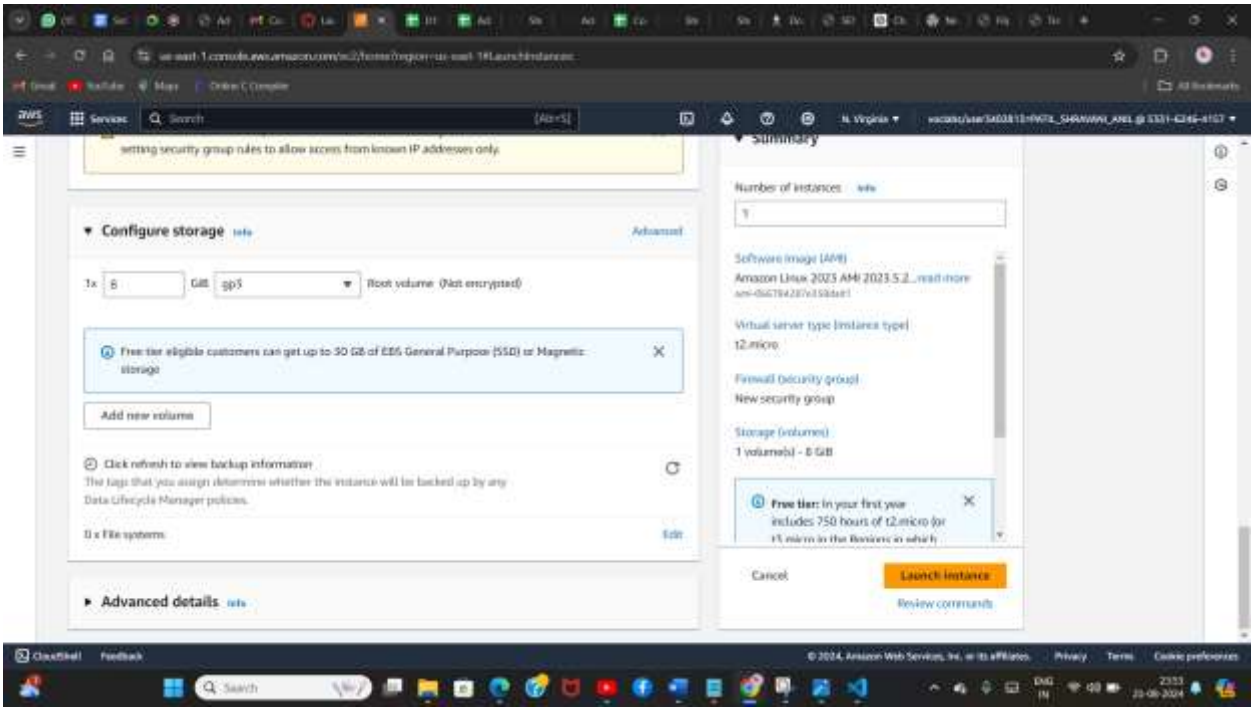
Security Groups: Virtual firewalls that enable you to control inbound and outbound traffic by specifying allowed protocols, ports, and IP ranges.

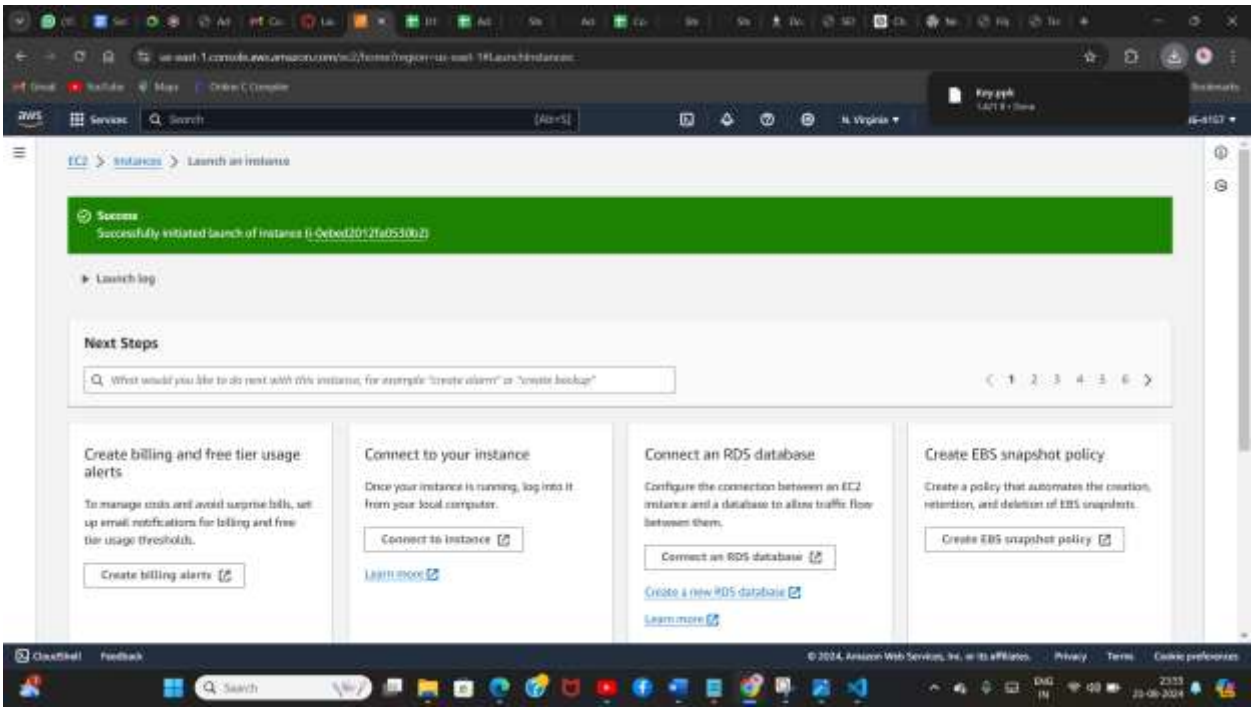
PCI DSS Compliance: Amazon EC2 supports the secure processing, storage, and transmission of credit card data, adhering to the Payment Card Industry Data Security Standard (PCI DSS). For further details and to request the AWS PCI Compliance Package, refer to the PCI DSS Level 1 guidelines.

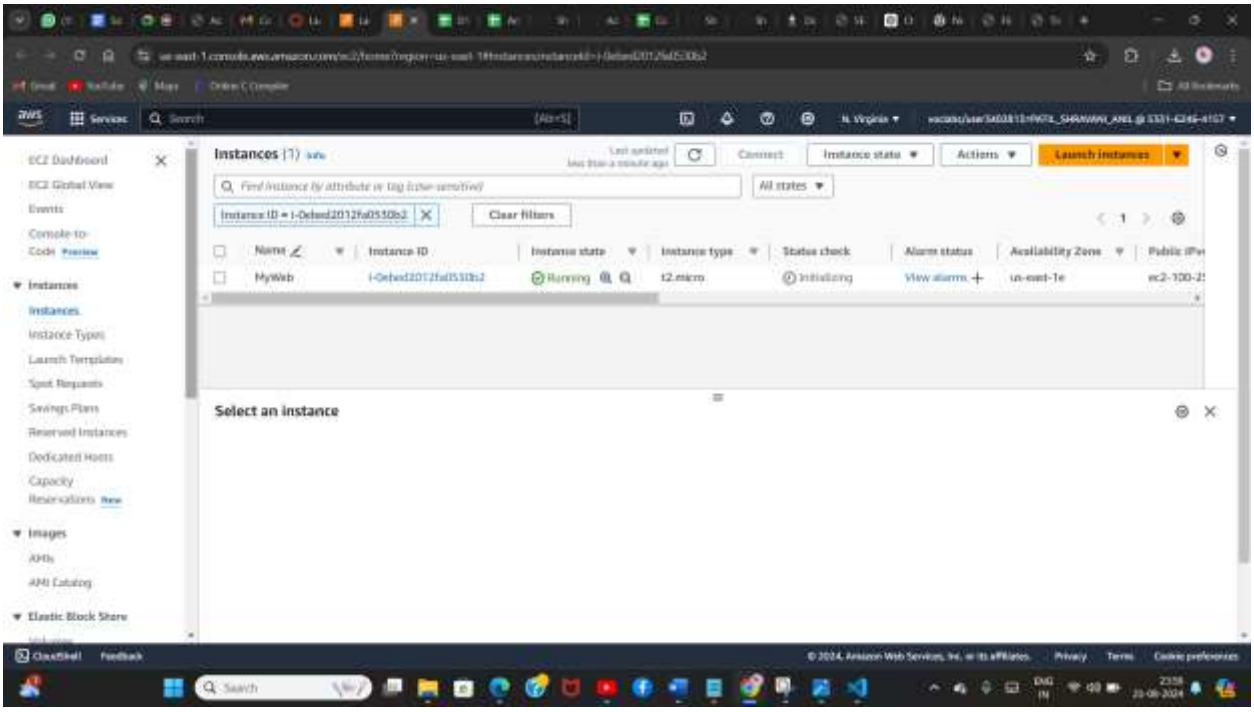
These features provide a robust and secure foundation for deploying, managing, and scaling applications in the cloud Implementation:-

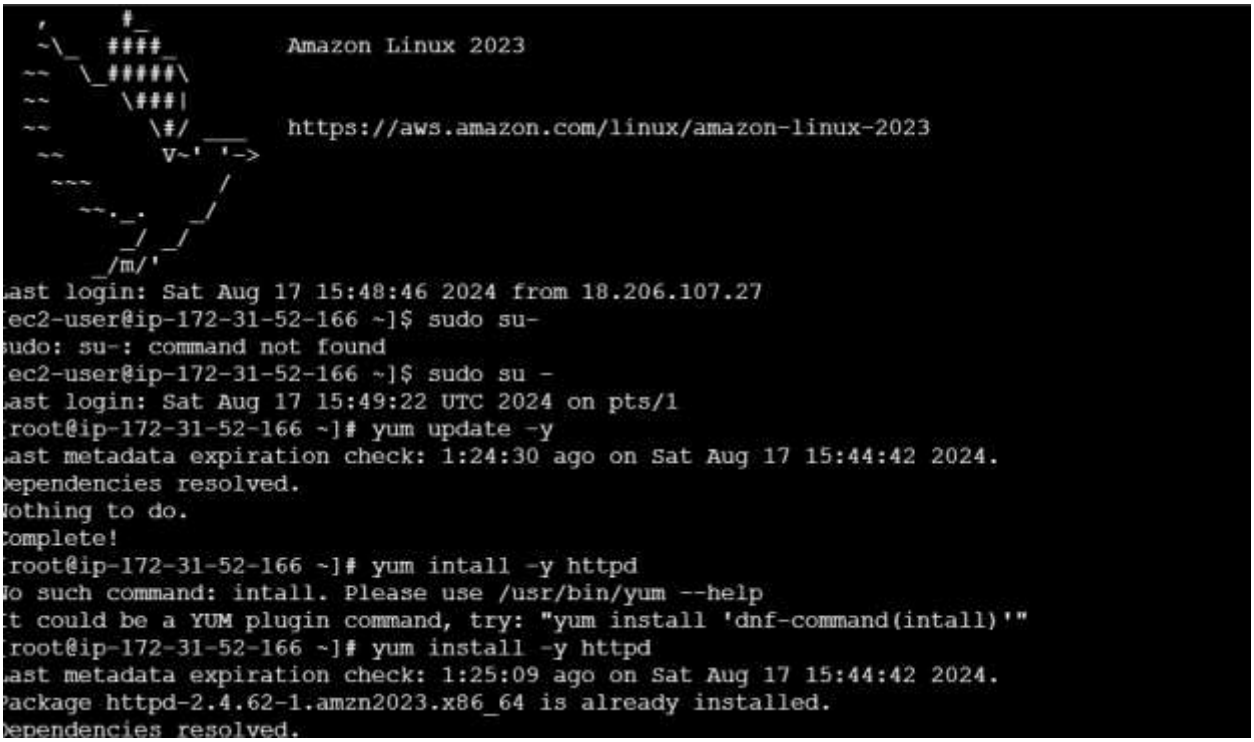



Recents
Quick Start
Amazon Linux
macOS
Ubuntu
Windows
Red Hat
SUSE Li
Browse more AMIs
Including AMIs from AWS, Marketplace and the Community
Amazon Machine Image (AMI)
Amazon Linux 2023 AMI
Free tier eligible
Description
Amazon Linux 2023 is a modern, general purpose Linux-based OS that comes with 5 years of long term support. It is optimized for AWS and designed to provide a secure, stable and high-performance execution environment to develop and run your cloud applications.
Architecture
64-bit (x86)
Boot mode
uefi-preferred
AMI ID
ami-066784287e358dad1
Verified provider
Summary
Number of instances
1
Software Image (AMI)
Amazon Linux 2023 AMI 2023.5.2...read more
Virtual server type (instance type)
t2.micro
Firewall (security group)
New security group
Storage (volumes)
1 volume(s) - 8 GiB
Free tier: In your first year includes 750 hours of t2.micro (or
Cancel
Launch instance
Review commands


setting security group rules to allow access from known IP addresses only.
Configure storage
Advanced
1x
8
GiB
gp3
Root volume (Not encrypted)
Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage
Add new volume
Click refresh to view backup information
The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.
0 x File systems
Edit
Advanced details
Summary
Number of instances
1
Software Image (AMI)
Amazon Linux 2023 AMI 2023.5.2...read more
Virtual server type (instance type)
t2.micro
Firewall (security group)
New security group
Storage (volumes)
1 volume(s) - 8 GiB
Free tier: In your first year includes 750 hours of t2.micro (or
Cancel
Launch instance
Review commands


EC2 > Instances > Launch an instance
Success
Successfully initiated launch of instance (i-0ebed2012fa0530b2)
Launch log
Next Steps
Create billing and free tier usage alerts
To manage costs and avoid surprise bills, set up email notifications for billing and free tier usage thresholds.
Create billing alerts
Connect to your instance
Once your instance is running, log into it from your local computer.
Connect to instance
Learn more
Connect an RDS database
Configure the connection between an EC2 instance and a database to allow traffic flow between them.
Connect an RDS database
Create a new RDS database
Learn more
Create EBS snapshot policy
Create a policy that automates the creation, retention, and deletion of EBS snapshots.
Create EBS snapshot policy

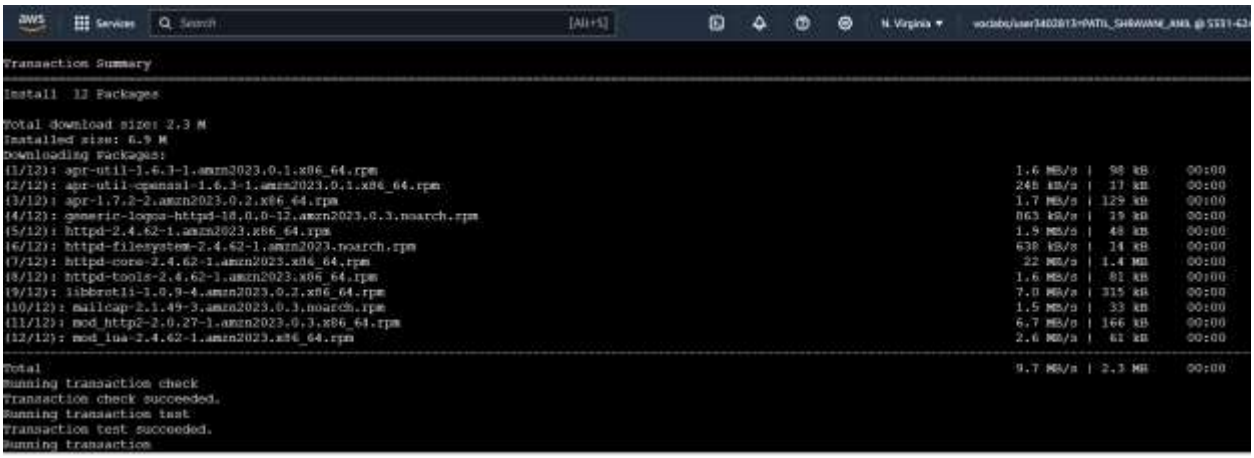

Instances (1)
Launch instances
Clear filters
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
MyWeb
i-0ebed2012fa0530b2
Running
t2.micro
Initializing
View alarms
us-east-1e
Select an instance


Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023
ast login: Sat Aug 17 15:48:46 2024 from 18.206.107.27
ec2-user@ip-172-31-52-166 ~]$ sudo su-
udo: su-: command not found
ec2-user@ip-172-31-52-166 ~]$ sudo su -
ast login: Sat Aug 17 15:49:22 UTC 2024 on pts/1
root@ip-172-31-52-166 ~]# yum update -y
ast metadata expiration check: 1:24:30 ago on Sat Aug 17 15:44:42 2024.
ependencies resolved.
othing to do.
omplete!
root@ip-172-31-52-166 ~]# yum intall -y httpd
o such command: intall. Please use /usr/bin/yum --help
t could be a YUM plugin command, try: "yum install 'dnf-command(intall)'"
root@ip-172-31-52-166 ~]# yum install -y httpd
ast metadata expiration check: 1:25:09 ago on Sat Aug 17 15:44:42 2024.
ackage httpd-2.4.62-1.amzn2023.x86_64 is already installed.
ependencies resolved.

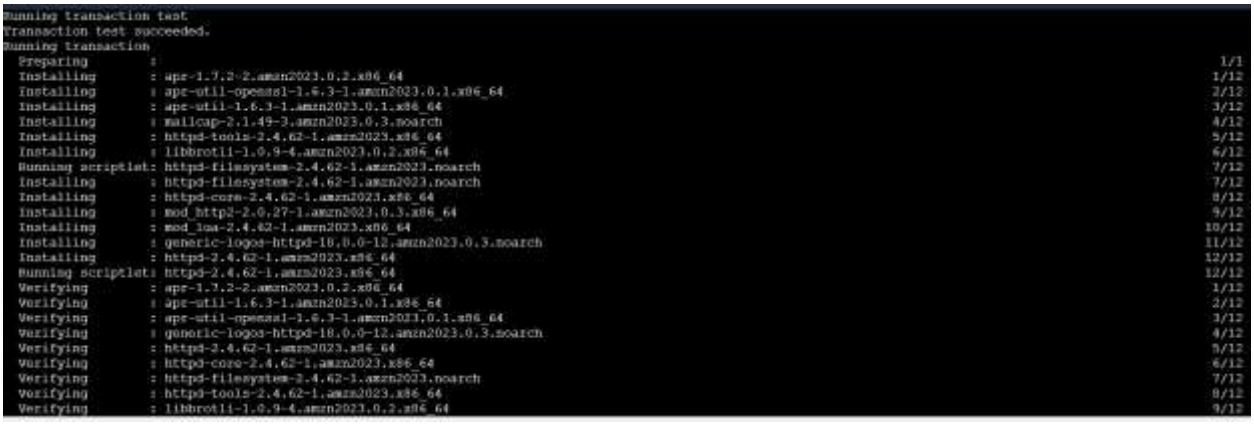
aws | Services | Search

```
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-34-11 ~]# yum install -y httpd
Last metadata expiration check: 0:02:58 ago on Sat Aug 17 17:14:1
Dependencies resolved.
================================================================
 Package                                        Architecture
================================================================
Installing:
 httpd                                          x86_64
Installing dependencies:
 apr                                            x86_64
 apr-util                                       x86_64
 generic-logos-httpd                            noarch
 httpd-core                                     x86_64
 httpd-filesystem                               noarch
 httpd-tools                                    x86_64
 libbrotli                                      x86_64
 mailcap                                        noarch
Installing weak dependencies:
 apr-util-openssl                               x86_64
 mod_http2                                      x86_64
 mod_lua                                        x86_64

Transaction Summary
================================================================
```

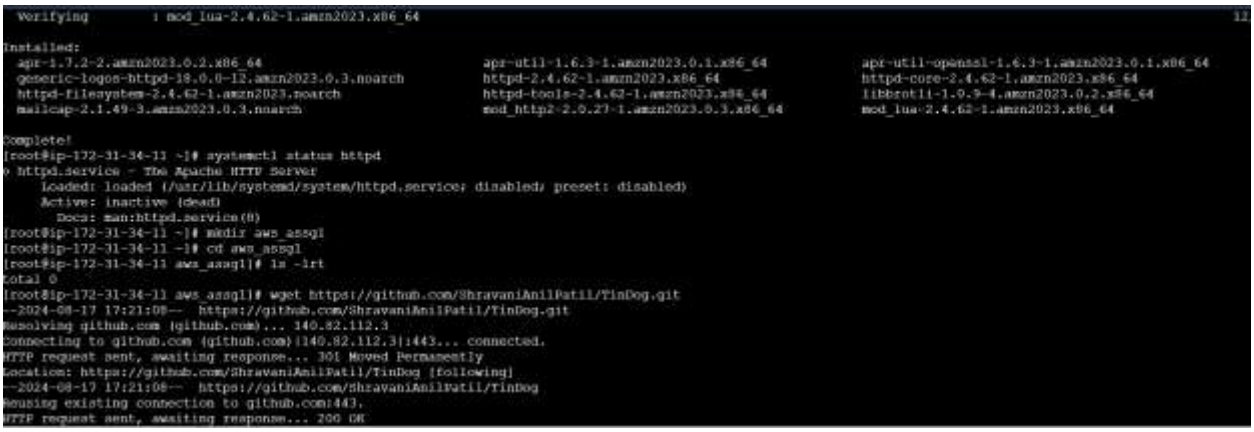
i-0868fcbf7b775cb51 (MyProject)



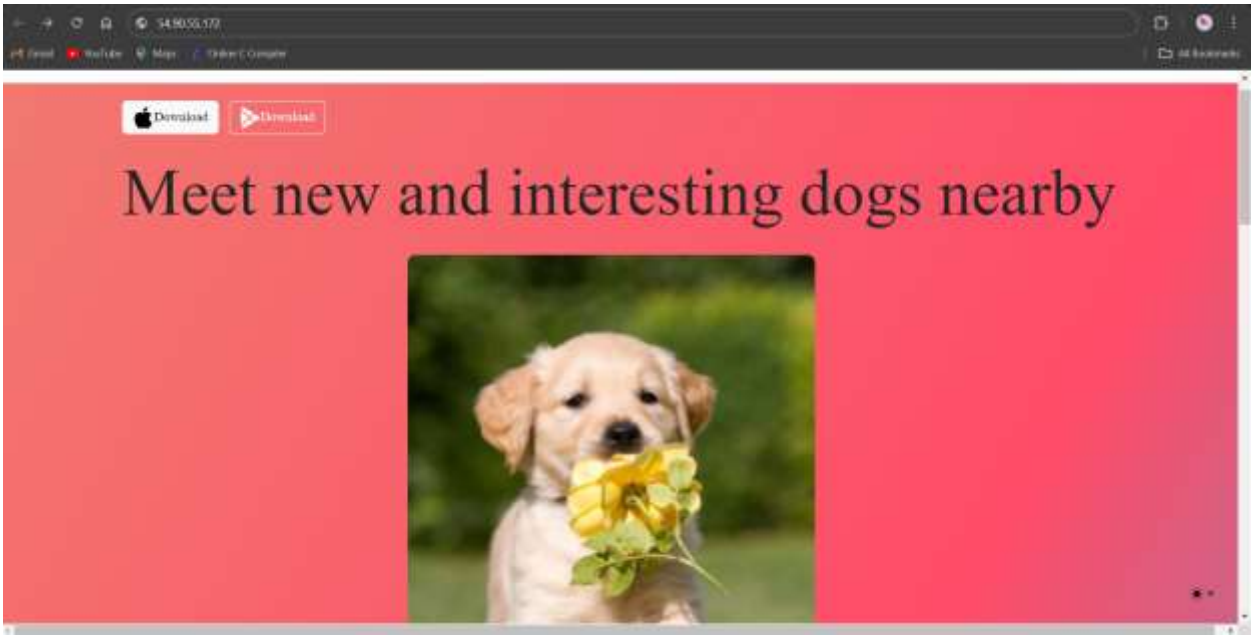
```
Transaction Summary
--------------------------------------------------------------------------------
Install  12 Packages

Total download size: 2.3 M
Installed size: 6.9 M
Downloading Packages:
(1/12): apr-util-1.6.3-1.amzn2023.0.1.x86_64.rpm                 1.6 MB/s |  98 kB     00:00
(2/12): apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64.rpm         245 kB/s |  17 kB     00:00
(3/12): apr-1.7.2-2.amzn2023.0.2.x86_64.rpm                      1.7 MB/s | 129 kB     00:00
(4/12): generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch.rpm    863 kB/s |  19 kB     00:00
(5/12): httpd-2.4.62-1.amzn2023.x86_64.rpm                       1.9 MB/s |  48 kB     00:00
(6/12): httpd-filesystem-2.4.62-1.amzn2023.noarch.rpm            630 kB/s |  14 kB     00:00
(7/12): httpd-core-2.4.62-1.amzn2023.x86_64.rpm                   22 MB/s | 1.4 MB     00:00
(8/12): httpd-tools-2.4.62-1.amzn2023.x86_64.rpm                 1.6 MB/s |  81 kB     00:00
(9/12): libbrotli-1.0.9-4.amzn2023.0.2.x86_64.rpm                7.0 MB/s | 315 kB     00:00
(10/12): mailcap-2.1.49-3.amzn2023.0.3.noarch.rpm                1.5 MB/s |  33 kB     00:00
(11/12): mod_http2-2.0.27-1.amzn2023.0.3.x86_64.rpm              6.7 MB/s | 166 kB     00:00
(12/12): mod_lua-2.4.62-1.amzn2023.x86_64.rpm                    2.6 MB/s |  61 kB     00:00
--------------------------------------------------------------------------------
Total                                                            9.7 MB/s | 2.3 MB     00:00
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
```



```
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing        :                                                        1/1
  Installing       : apr-1.7.2-2.amzn2023.0.2.x86_64                        1/12
  Installing       : apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64           2/12
  Installing       : apr-util-1.6.3-1.amzn2023.0.1.x86_64                   3/12
  Installing       : mailcap-2.1.49-3.amzn2023.0.3.noarch                   4/12
  Installing       : httpd-tools-2.4.62-1.amzn2023.x86_64                   5/12
  Installing       : libbrotli-1.0.9-4.amzn2023.0.2.x86_64                  6/12
  Running scriptlet: httpd-filesystem-2.4.62-1.amzn2023.noarch              7/12
  Installing       : httpd-filesystem-2.4.62-1.amzn2023.noarch              7/12
  Installing       : httpd-core-2.4.62-1.amzn2023.x86_64                    8/12
  Installing       : mod_http2-2.0.27-1.amzn2023.0.3.x86_64                 9/12
  Installing       : mod_lua-2.4.62-1.amzn2023.x86_64                      10/12
  Installing       : generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch     11/12
  Installing       : httpd-2.4.62-1.amzn2023.x86_64                        12/12
  Running scriptlet: httpd-2.4.62-1.amzn2023.x86_64                        12/12
  Verifying        : apr-1.7.2-2.amzn2023.0.2.x86_64                        1/12
  Verifying        : apr-util-1.6.3-1.amzn2023.0.1.x86_64                   2/12
  Verifying        : apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64           3/12
  Verifying        : generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch      4/12
  Verifying        : httpd-2.4.62-1.amzn2023.x86_64                         5/12
  Verifying        : httpd-core-2.4.62-1.amzn2023.x86_64                    6/12
  Verifying        : httpd-filesystem-2.4.62-1.amzn2023.noarch              7/12
  Verifying        : httpd-tools-2.4.62-1.amzn2023.x86_64                   8/12
  Verifying        : libbrotli-1.0.9-4.amzn2023.0.2.x86_64                  9/12
```



```
  Verifying        : mod_lua-2.4.62-1.amzn2023.x86_64                      12/12

Installed:
  apr-1.7.2-2.amzn2023.0.2.x86_64                apr-util-1.6.3-1.amzn2023.0.1.x86_64          apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64
  generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch  httpd-2.4.62-1.amzn2023.x86_64            httpd-core-2.4.62-1.amzn2023.x86_64
  httpd-filesystem-2.4.62-1.amzn2023.noarch      httpd-tools-2.4.62-1.amzn2023.x86_64          libbrotli-1.0.9-4.amzn2023.0.2.x86_64
  mailcap-2.1.49-3.amzn2023.0.3.noarch           mod_http2-2.0.27-1.amzn2023.0.3.x86_64        mod_lua-2.4.62-1.amzn2023.x86_64

Complete!
[root@ip-172-31-34-11 ~]# systemctl status httpd
○ httpd.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
     Active: inactive (dead)
       Docs: man:httpd.service(8)
[root@ip-172-31-34-11 ~]# mkdir aws_assgl
[root@ip-172-31-34-11 ~]# cd aws_assgl
[root@ip-172-31-34-11 aws_assgl]# ls -lrt
total 0
[root@ip-172-31-34-11 aws_assgl]# wget https://github.com/ShravaniAnilPatil/TinDog.git
--2024-08-17 17:21:08--  https://github.com/ShravaniAnilPatil/TinDog.git
Resolving github.com (github.com)... 140.82.112.3
Connecting to github.com (github.com)|140.82.112.3|:443... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: https://github.com/ShravaniAnilPatil/TinDog [following]
--2024-08-17 17:21:08--  https://github.com/ShravaniAnilPatil/TinDog
Reusing existing connection to github.com:443.
HTTP request sent, awaiting response... 200 OK
```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Meet new and interesting dogs nearby