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AMAZON ELASTIC COMPUTE CLOUD (EC2)

A Practical Guide to Launching and Configuring Your First EC2 Instance

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INTRODUCTION TO AMAZON EC2

Imagine having a magical key to a never-ending supply of powerful, scalable virtual machines. These virtual machines, known as instances, can be configured up in minutes to tackle everything from web hosting to data analysis. Think of having a powerful computer that can grow and shrink in size based on your needs—sounds pretty magical, right?

Amazon EC2 (Elastic Compute Cloud) is a service from Amazon Web Services (AWS) that lets you rent virtual servers in the cloud. It allows you to run applications, scale resources as needed, and only pay for the computing power you use. EC2 gives you flexibility in managing your infrastructure, offering different types of instances for various workloads.

LAUNCHING EC2 INSTANCE

To create an AWS Free Tier account, simply sign up for AWS using your email, provide billing details (no charges for 12 months with 750 hrs./Month) and you'll automatically gain access to the AWS Management Console. From there, you can launch free-tier eligible services like EC2, S3, and more.

01 Create AWS Free Tier Account

In the AWS Management Console, go to the Services menu and choose EC2 >> select EC2 Dashboard >> Launch Instance.

02 Launching EC2 Instance

- Naming the Instance: Provide a unique name for your EC2 instance for easy management.
- Choosing the AMI: Select a pre-configured Amazon Machine Image (AMI), like Amazon Linux or Windows, to define the operating system.
- Selecting Instance Type: Choose an instance type (e.g., t2.micro) based on your needs. For Free Tier, t2.micro is eligible for 750 hours per month for free.

To configure Key pair under Key Pair, choose Create a new key pair.

03 Configuring Key Pair

- Enter a name for the key pair and click Download Key Pair to save the .pem file if you are using Linux or windows 10 & 11.
- Download .ppk to use with putty.
- This key pair is used for secure SSH access to your EC2 instance.

LAUNCHING EC2 INSTANCE : *CONT*

04 Setting Up Networking

Setting Up Networking in EC2 involves configuring how your instance connects to the internet and other resources. Key options include:

- VPC (Virtual Private Cloud) – Defines your network environment.
- Subnet – Specifies the IP range within the VPC.
- Security Groups – Acts as a firewall to allow or restrict traffic.
- Elastic IP – Assigns a static public IP to your instance.
- Auto-assign Public IP – Enables internet access for your instance.

05 Resizing storage

Configuring Storage: When launching an EC2 instance, you can specify storage options like EBS (Elastic Block Store) for persistent storage or Instance Store for temporary storage. You can adjust size, type (e.g., SSD, HDD), and encryption settings.

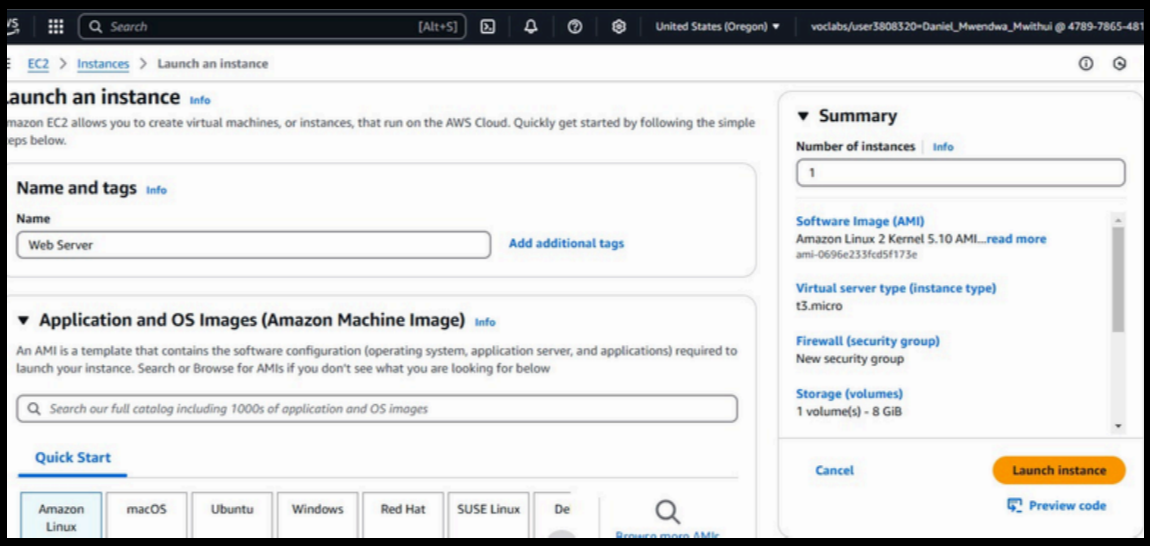
Enabling Termination Protection: This prevents accidental deletion of your instance. You can enable it during instance creation or later by modifying the instance settings in the EC2 console under Instance Settings > Change Termination Protection.

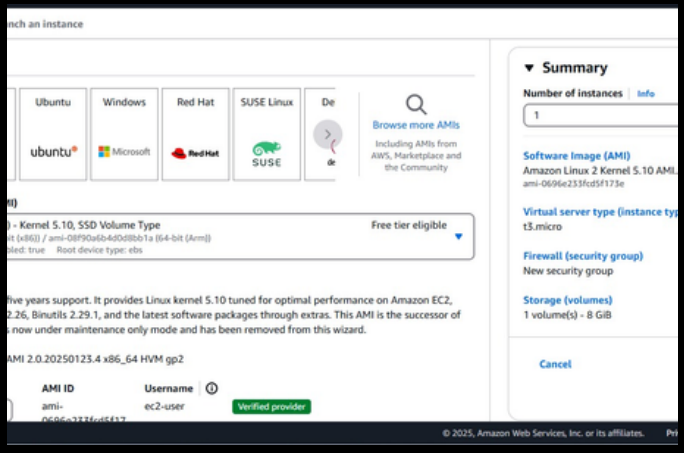
06 Adding User Data

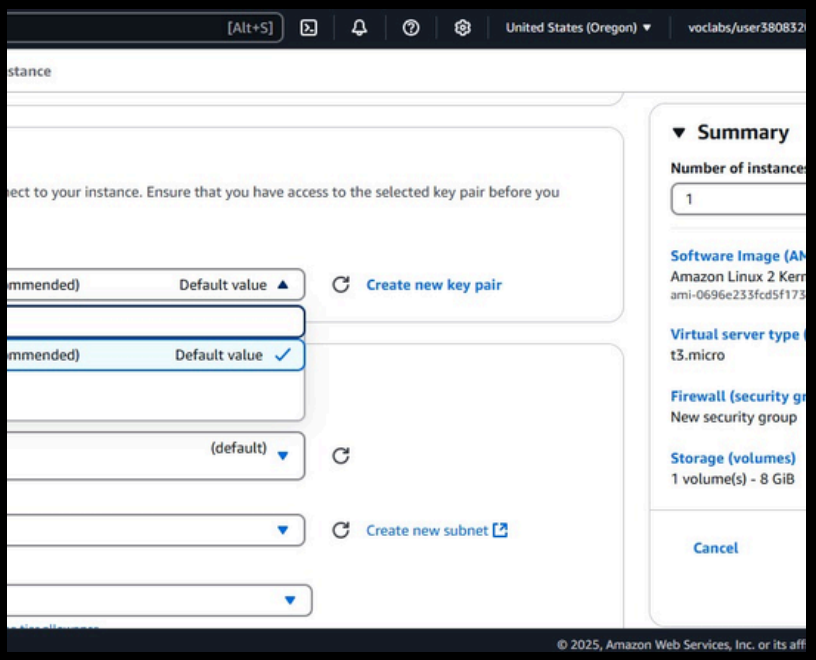
Adding a User Data Script: User Data scripts allow you to run commands automatically when the instance starts. You can add a script during instance creation under Advanced Details > User Data to install software, update packages, or configure settings.

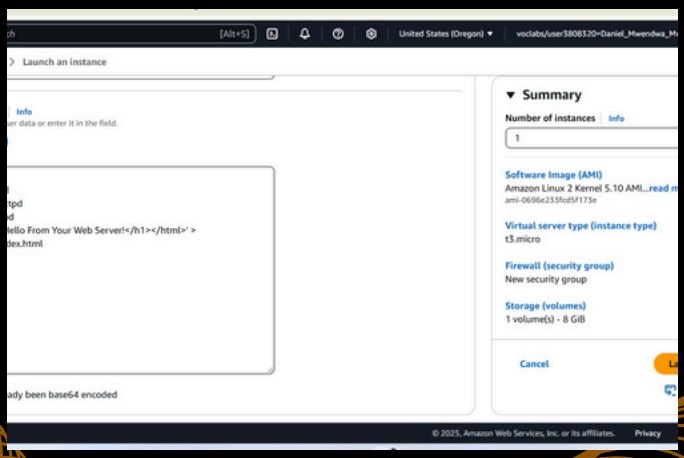
Launching the Instance: After configuring all settings, click Launch Instance. AWS will provision the instance, and you can monitor its status in the EC2 Dashboard.

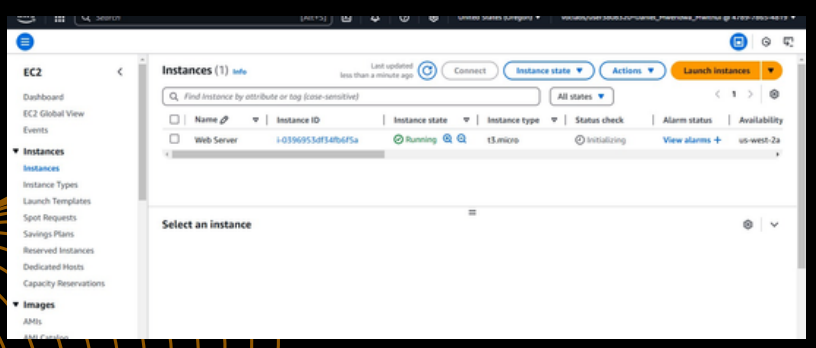
PRACTICAL SCREENSHOTS











CONCLUSION

In summary, launching an Amazon EC2 instance involves selecting the right AMI, configuring instance settings, setting up networking and storage, and securing access with a key pair. Additional features like User Data scripts and termination protection enhance automation and security. Once launched, you can easily connect to your instance and start using it. With AWS EC2, you get scalable, flexible, and on-demand computing power to meet your needs.