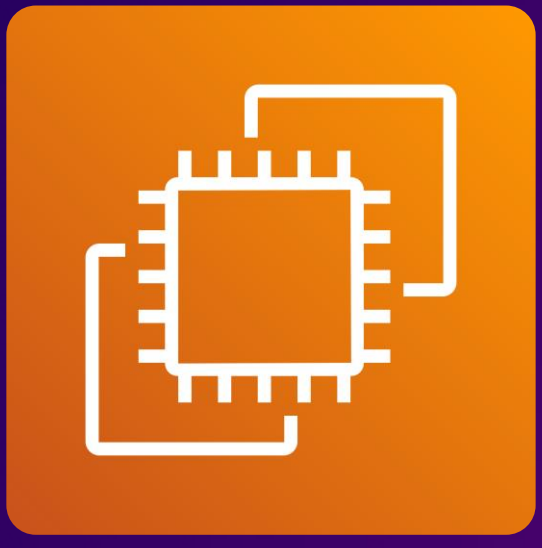
AWS re:Start LAB

Introduction to Amazon EC2



WEEK 1

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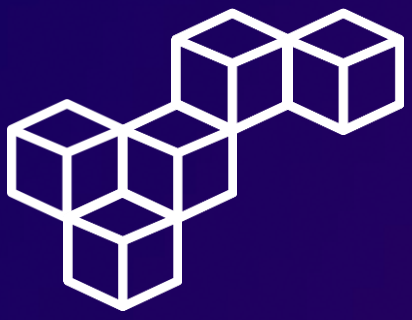


Overview

Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides secure, resizable compute capacity in the cloud. It is designed to make web-scale cloud computing easier for developers.

Through Amazon EC2, users can deploy and manage virtual machines (VMs) on AWS infrastructure, including support for both Microsoft Windows and Linux environments. These VMs are categorized into various instance types, each offering different combinations of CPU, memory, storage, and networking capacity.

Additionally, Amazon EC2 offers flexible pricing models that allow users to pay only for the compute resources they use, making it an efficient and cost-effective solution for running applications in the cloud.

Topics covered

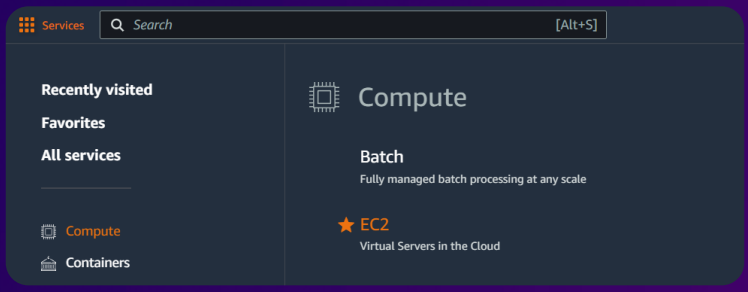
- Launch a web server with termination protection enabled
- Monitor Your EC2 instance
- Modify the security group that your web server is using to allow HTTP access
- Resize your Amazon EC2 instance to scale
- Test termination protection
- Terminate your EC2 instance

Task 1

Launching your EC2 instance

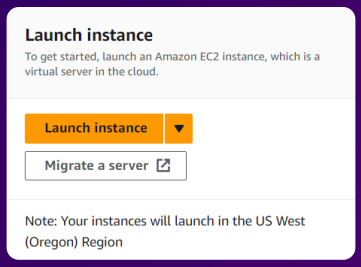
Step 1: Open the Amazon EC2 console

In the AWS Management Console on the **Services** menu, choose EC2.



Step 2: Launch an instance using the Launch Instance Wizard

In the **EC2 Dashboard** page select Launch Instance.



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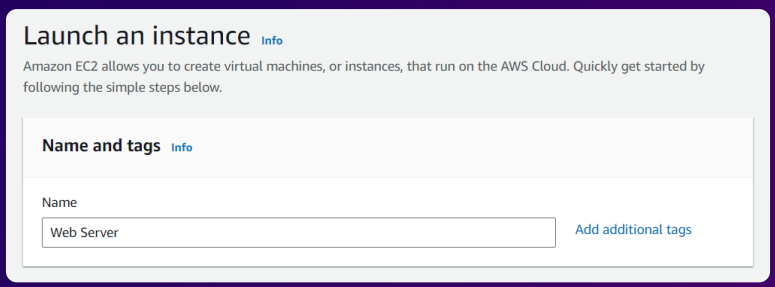
Task 1

Launching your EC2 instance

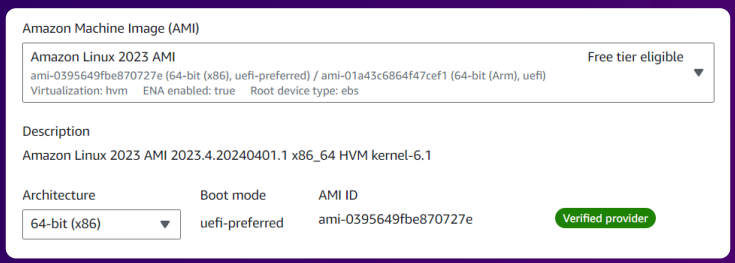
Step 3: Naming your EC2 instance

In the **Name and tags** pane, enter Web Server as the instance **Name**.



Step 4: Choosing an Amazon Machine Image (AMI)

Under **AMI Machine Image (AMI)**, select the Amazon Linux 2023 AMI image, which includes the OS setup configuration.



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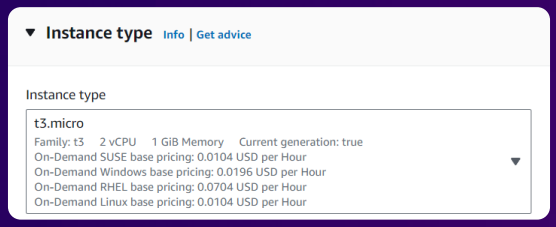
Task 1

Launching your EC2 instance

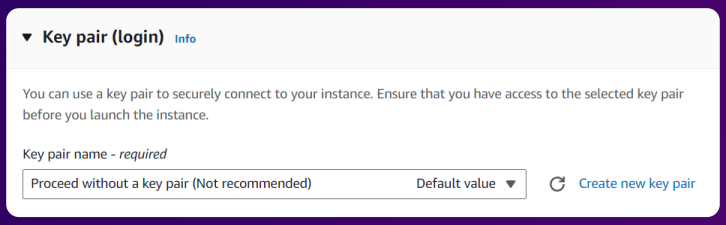
Step 5: Choosing an instance type

In the **Instance type** pane, select a t3.micro instance. This instance type has 2 virtual CPU and 1 GiB of memory.



Step 6: Configuring a key pair

In the **Key pair (login)** pane, select Proceed without a key pair (Not recommended). In this lab, we do not log in to the instance, so we do not require a key pair.



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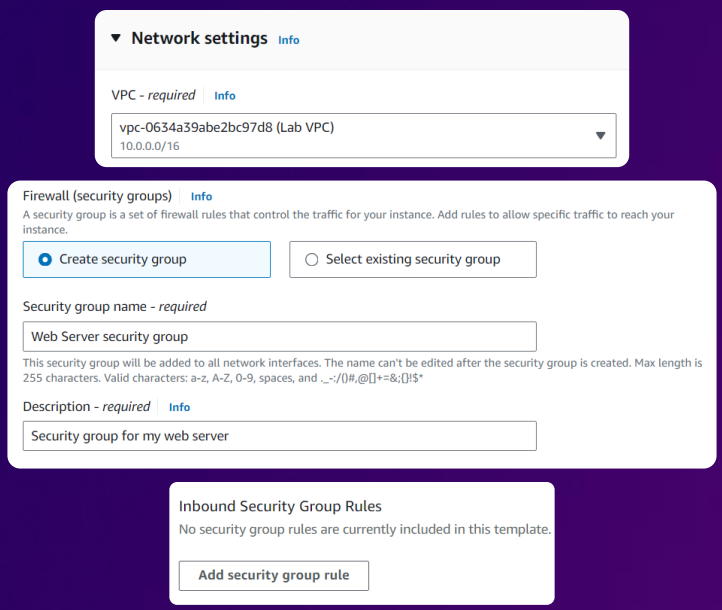
Task 1

Launching your EC2 instance

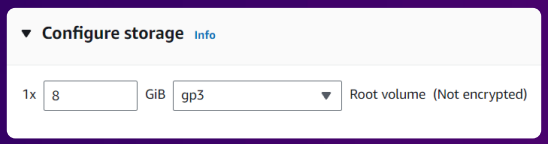
Step 7: Configuring the network settings

In the **Network settings** pane, for **VPC - required** select Lab VPC, configure the **Security Group** Web Server security group and remove the **Inbound security groups rules**.



Step 8: Adding storage

In the **Configure storage** pane, select a 8 GiB disk volume.



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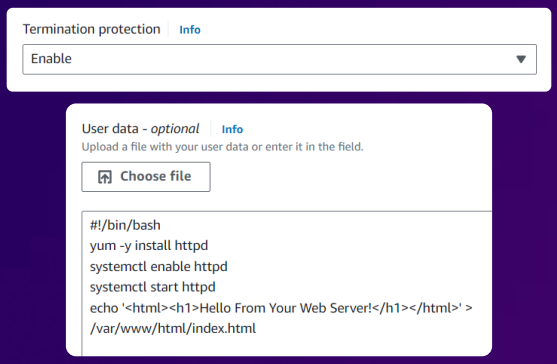
Task 1

Launching your EC2 instance

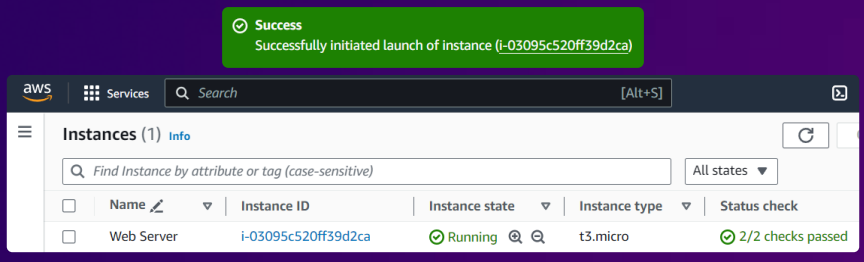
Step 9: Configuring advanced details

In the **Advanced details** pane, enable **Termination protection** and enter a script into the **User data** text box to execute upon instance startup.



Step 10: Launching an EC2 instance

The instance is now running and the 2 status checks passed.



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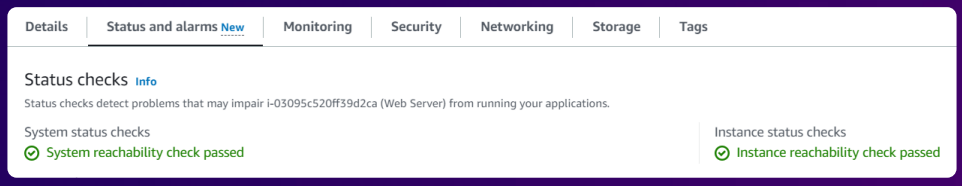
Task 2

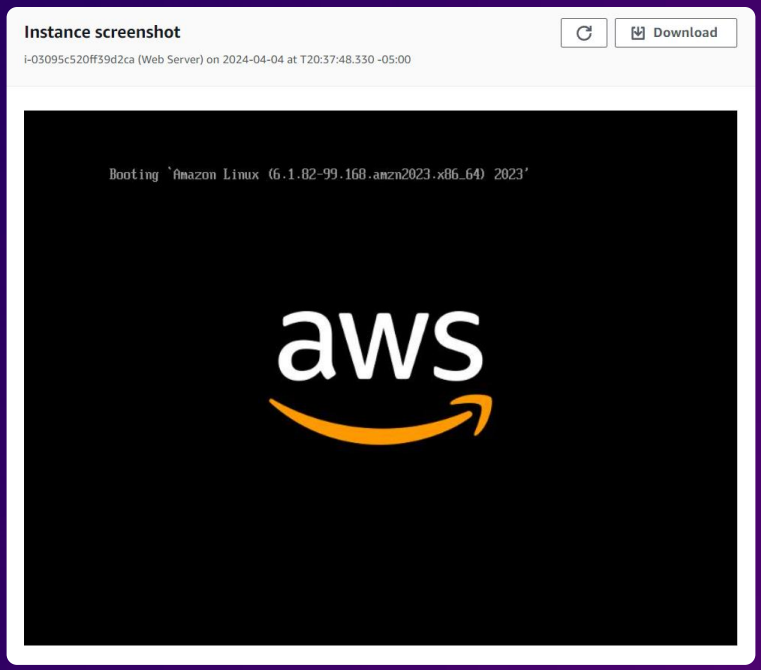
Monitor Your Instance

With instance status monitoring, you can quickly determine whether Amazon EC2 has detected any problems that might prevent your instances from running applications.

Both the System reachability and Instance reachability checks have passed.



Additionally, you can capture a screenshot of your instance and view it as an image. This provides visibility as to the status of the instance, and allows for quicker troubleshooting.



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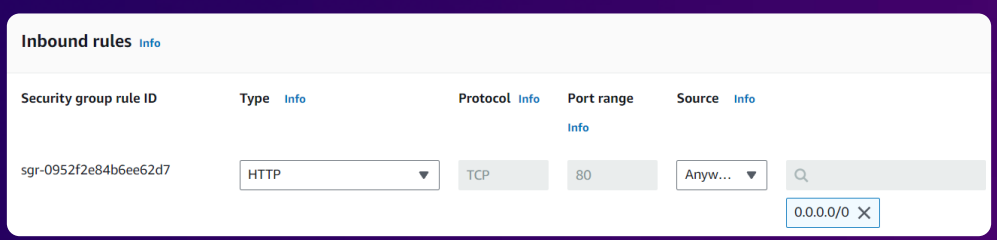
Task 3

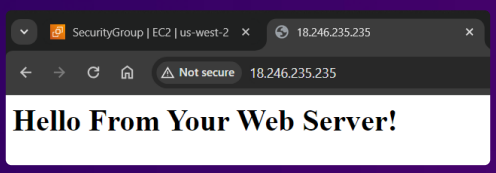
Update Your Security Group and Access the Web Server

Create an **Inbound rule** for the security group to permit web traffic on port 80 into your Amazon EC2 Instance. Configure the rule with the following settings:

- Type: HTTP.
- Source: Anywhere-IPv4.



Open a new tab in your web browser, paste the **Public IPv4 address** of your instance, then press Enter. You should see the message Hello From Your Web Server!



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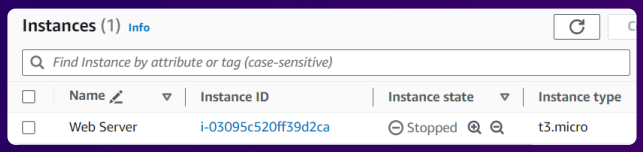
Task 4

Resize Your Instance: Instance Type and EBS Volume

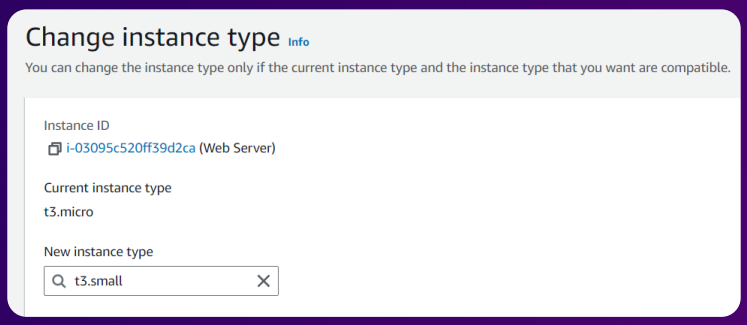
Step 1: Stop Your Instance

Before you can resize an instance, you must stop it.



Step 2: Change The Instance Type

Select a t3.small instance. This instance type has twice as much memory as a t3.micro instance.



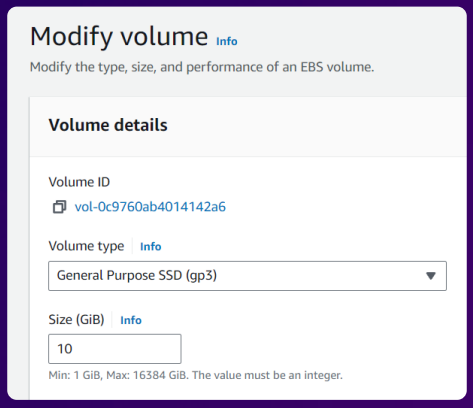
aws re/start

Task 4

Resize Your Instance: Instance Type and EBS Volume

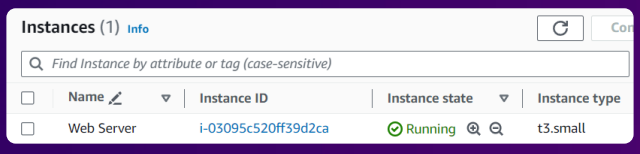
Step 3: Resize the EBS Volume

Increase the size of the root disk volume from 8 GiB to 10 GiB.



Step 4: Start the Resized Instance

Start the instance again. It will now have more memory and more disk space.

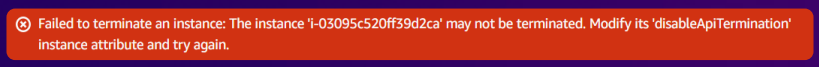


aws re/start

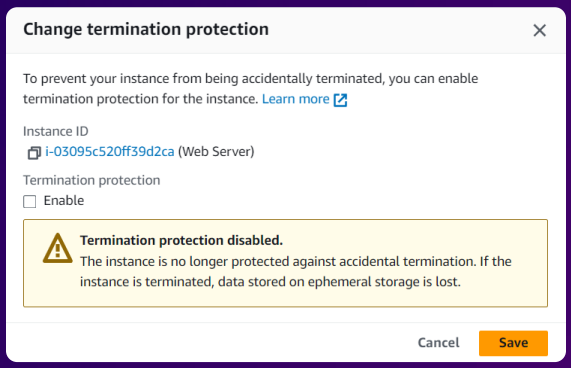
Task 5

Test Termination Protection

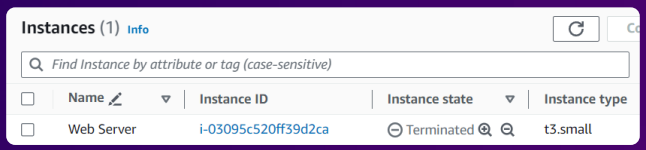
If you attempt to terminate the instance, a red error message pops up at the top that says: Failed to terminate an instance: The instance may not be terminated. This is because it has **termination protection** enabled.



Turn off **termination protection** before terminating the instance.



Terminate the instance.



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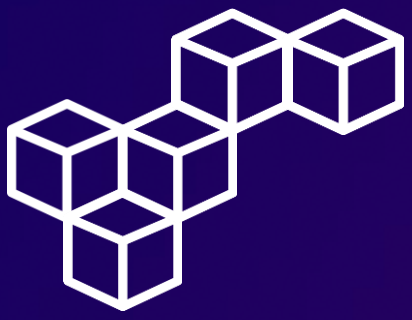

Conclusions

Launching your EC2 instance
The launch instance wizard enables you to quickly launch an instance with customizable parameters tailored to various use cases for optimal performance.

Monitoring your instance
Monitoring instances using AWS's diverse tools is essential to ensure instance reachability and early identification of issues for troubleshooting purposes.

Security Groups
A security group functions as a firewall, restricting the network traffic allowed in and out of an instance, enhancing security.

Resizing your Instance
You can modify multiple parameters of your instance, such as instance type, disk space, security groups, network settings, and more, as your computing requirements evolve.

Terminating your Instance
Termination protection prevents instances from being unintentionally terminated. Terminating an instance causes both the instance itself and its attached storage volume to be shut down, effectively ceasing cost consumption.

aws re/start

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