

AWS General Immersion Day



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 - Launch a web server instance**
 - Deploy auto scaling web service
 - Check web service and test
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Language


English


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Launch a web server instance

- This chapter starts with the default Amazon Linux instance and lets you automatically configure the Apache/PHP Web server during initial step.

Launch instance and connect to web service

1. In the AWS console search bar, type **EC2**  and select it. Then click **EC2 Dashboard** at the top of the left menu. Press the **Launch instance** button and select **Launch instance** from the menu.



New EC2 Experience

Tell us what you think

EC2 Dashboard

EC2 Global View

Events

Tags

Limits

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Instances New

Instance Types

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Spot Requests

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Reserved Instances New

Dedicated Hosts

Capacity Reservations

Images

AMIs New

AMI Catalog

Elastic Block Store

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Resources


EC2 Global view

Refresh

Settings

You are using the following Amazon EC2 resources in the Asia Pacific (Seoul) Region:

Instances (running)	0	Dedicated Hosts	0
Elastic IPs	2	Instances	0
Key pairs	1	Load balancers	0
Placement groups	0	Security groups	2
Snapshots	0	Volumes	0



Easily size, configure, and deploy Microsoft SQL Server Always On availability groups on AWS using the AWS Launch Wizard for SQL Server. [Learn more](#)

Close

Launch instance

To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

Launch Instance

Migrate a server

Note: Your instances will launch in the Asia Pacific (Seoul) Region

2. In **Name**, put the value **Web server for custom AMI**. And check the default setting in Amazon Machine Image below.

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Launch an instance

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags

Name

Web server for custom AMI

Add additional tags

▼ Application and OS Images (Amazon Machine Image)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Quick Start

Amazon Linux

Ubuntu

Windows

Red Hat

SUSE Linux

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type

Free tier eligible

ami-02de72c5dc79358c9 (64-bit (x86)) / ami-0d0bd26f0eac17adc (64-bit (Arm))

Virtualization: hvm ENA enabled: true Root device type: ebs

Description

Amazon Linux 2 Kernel 5.10 AMI 2.0.20220406.1 x86_64 HVM gp2

Architecture

AMI ID

64-bit (x86)

ami-02de72c5dc79358c9

Key	Value
Name	Web server for custom AMI

3. Select t2.micro in Instance Type.

▼ Instance type

Instance type

t2.micro

Free tier eligible

Family: t2 1 vCPU 1 GiB Memory

On-Demand Linux pricing: 0.0144 USD per Hour

On-Demand Windows pricing: 0.019 USD per Hour

Compare instance types

https://catalog.us-east-1.prod.workshops.aws/workshops/f3a3e2bd-e1d5-49de-b8e6-dac361842e76/en-US/advanced-modules/compute/launching

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4. For **Key pair**, choose **Proceed without a key pair**.

▼ **Key pair (login)** [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

Proceed without a key pair (Not recommended)Default value

Create new key pair

5. Click the **Edit** button in **Network settings** to set the space where EC2 will be located.

▼ **Network settings**

Edit

Network

vpc-001467cc76c919802

Subnet

No preference (Default subnet in any availability zone)

Auto-assign public IP

Enable

Security groups (Firewall) [Info](#)

We'll create a new security group called 'launch-wizard-1' with the following rules:

☒ Allow SSH traffic from

Helps you connect to your instance

Anywhere0.0.0.0/0

☐ Allow HTTPS traffic from the internet

To set up an endpoint, for example when creating a web server

☐ Allow HTTP traffic from the internet

To set up an endpoint, for example when creating a web server

⚠ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

And choose the **VPC-Lab-vpc** created in the previous lab, and for the subnet, choose **public subnet**. **Auto-assign public IP** is set to **Enable**.

▼ **Network settings**

VPC - *required* [Info](#)

vpc-0f3b44b0920786c58 (VPC-Lab-vpc)10.0.0.0/16

Subnet [Info](#)

subnet-0b5707dfb81ff3bf1VPC-Lab-subnet-public1-ap-northeast-2a

VPC: vpc-0f3b44b0920786c58Owner: 3679968884070Availability Zone: ap-northeast-2aIP addresses available: 250

Auto-assign public IP [Info](#)

Enable

Key	Value
VPC	Select VPC which tag is attached VPC-Lab
Subnet	Select VPC-Lab-subnet-public1-ap-northeast-2a
Auto-assign Public IP	Enable

6. Right below it, create **Security groups** to act as a network firewall. Security groups will specify the protocols and addresses you want to allow in your firewall policy. For the security group you are

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rule and set **HTTP** to **Type**. Also allow TCP/80 for Web Service by specifying it. Select **My IP** in the source.

Firewall (security groups)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Create security group

Select existing security group

Security group name - required

Immersion Day - Web Server

This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and _-:/()#,@!+=&{}~*~*

Description - required Info

Immersion Day - Web Server

Inbound security groups rules

▼ Security group rule 1 (TCP, 22, 0.0.0.0/0)

Remove

Type Info

ssh

Protocol Info

TCP

Port range Info

22

Source type Info

Anywhere

Source Info

Add CIDR, prefix list or security group

0.0.0.0/0

Description - optional Info

e.g. SSH for admin desktop

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Add security group rule

▶ Advanced network configuration

▼ Security group rule 1 (TCP, 22, 0.0.0.0/0)

Remove

Type Info

ssh

Protocol Info

TCP

Port range Info

22

Source type Info

Anywhere

Source Info

Add CIDR, prefix list or security group

0.0.0.0/0

Description - optional Info

e.g. SSH for admin desktop

▼ Security group rule 2 (TCP, 80, 0.0.0.0/0)

Remove

Type Info

HTTP

Protocol Info

TCP

Port range Info

80

Source type Info

Custom

Source Info

Add CIDR, prefix list or security group

0.0.0.0/0

Description - optional Info

e.g. SSH for admin desktop

Privacy policy

Terms of use

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▼ Configure storage [Info](#)

Advanced

1x GiB Root volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage

Add new volume

0 x File systems

[Edit](#)

▶ Advanced details [Info](#)



Expand this tab

User data [Info](#)

```
#!/bin/sh

# Install a LAMP stack
amazon-linux-extras install -y lamp-mariadb10.2-php7.2 php7.2
yum -y install httpd php-mbstring

# Start the web server
chkconfig httpd on
systemctl start httpd

# Install the web pages for our lab
if [ ! -f /var/www/html/immersion-day-app-php7.tar.gz ]; then
  cd /var/www/html
  wget https://aws-joozero.s3.ap-northeast-2.amazonaws.com/immersion-day-app-php7.tar.gz
  tar xvfz immersion-day-app-php7.tar.gz
fi

# Install the AWS SDK for PHP
if [ ! -f /var/www/html/aws.zip ]; then
  cd /var/www/html
  mkdir vendor
  cd vendor
  wget https://docs.aws.amazon.com/aws-sdk-php/v3/download/aws.zip
  unzip aws.zip
fi

# Update existing packages
yum -y update
```

```
#!/bin/sh

# Install a LAMP stack
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  cd /var/www/html
  wget https://aws-joozero.s3.ap-northeast-2.amazonaws.com/immersion-day-app-php7.tar.gz
  tar xvfz immersion-day-app-php7.tar.gz
fi
```

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```
# Install the AWS SDK for PHP
if [ ! -f /var/www/html/aws.zip ]; then
    cd /var/www/html
    mkdir vendor
    cd vendor
    wget https://docs.aws.amazon.com/aws-sdk-php/v3/download/aws.zip
    unzip aws.zip
fi

# Update existing packages
yum -y update
```

User Data is a user-defined initialization script that is executed when the first instance is created.

- 8. Information indicating that the instance creation is in progress is displayed on the screen. You can view the list of EC2 instances by selecting **View Instances** in the lower right corner.
- 9. After the instance configuration is complete, you can check the Availability Zone in which the instance is running, and externally accessible IP and DNS information.

- 10. Wait for the instance's **Instance state** result to be **Running**. Open a new web browser tab and enter the **Public DNS or IPv4 Public IP** of your EC2 instance in the URL address field. If the page is displayed as shown below, the web server instance is configured normally.

If you are using the Chrome web browser, when you attach the **Public IPv4 DNS** value to the web browser, if it does not run, https may be automatically added in front of the DNS value, so it may not run. Therefore, it is recommended to enter http://.

LOAD TEST	RDS
Meta-Data	Value
InstanceId	i-0f9c0154bbc266ca9
Availability Zone	ap-northeast-2c

Current CPU Load: 1%

Access the web service

https://catalog.us-east-1.prod.workshops.aws/workshops/f3a3e2bd-e1d5-49de-b8e6-dac361842e76/en-US/advanced-modules/compute/launching 6/10

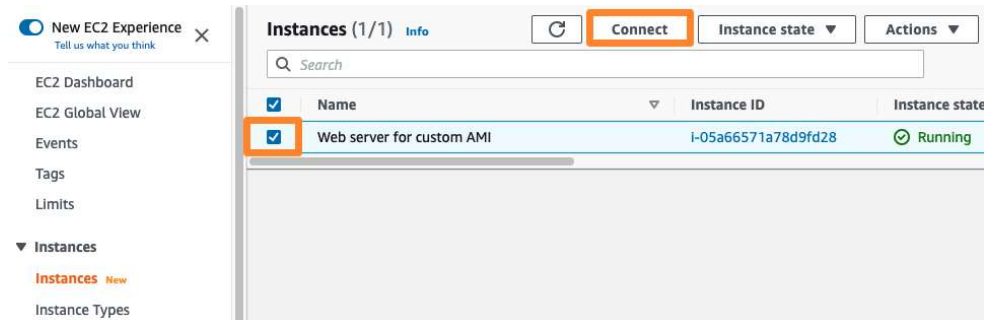
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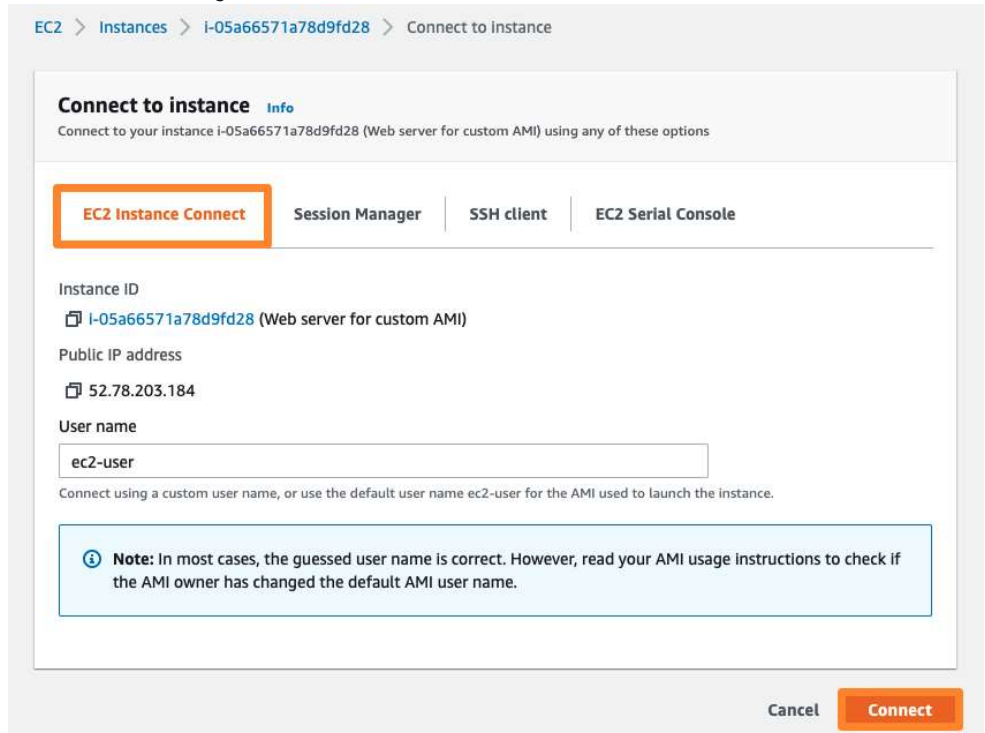
Content preferences

Language

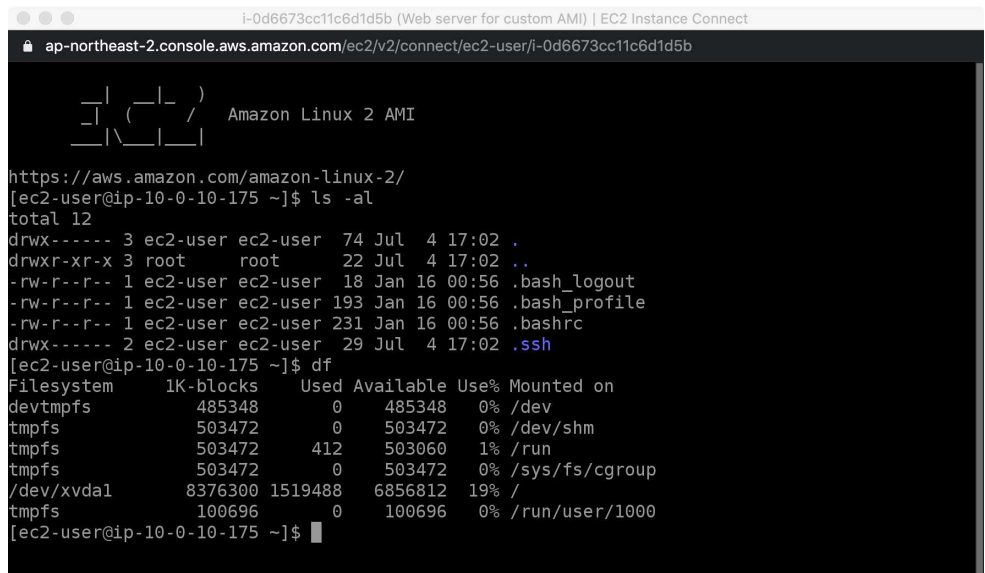
1. Go to the EC2 instance console. Select the instance you want to connect to and click the **Connect** button in the center.



2. In the **Connect your instance** window, select the EC2 Instance Connect tab, then click the **Connect** button in the lower right corner.



3. After a while, you can use the browser-based SSH console as shown below. Just close the window after the CLI test.



i-0d6673cc11c6d1d5b (Web server for custom AMI)

Public IPs: 13.125.200.220 Private IPs: 10.0.10.175

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Connect to the Linux instance using Session Manager

You must click the **Access your Linux instance using Session Manager** link below to proceed with the exercise.

In the database lab to be followed, connect to RDS using the IAM role granted to the web server. Therefore, refer to [Accessing Linux instance using Session Manager](#) to assign IAM role to EC2 instance grant.



Create a custom AMI

In the AWS EC2 console, you can create an Custom AMI to meet your needs. This can then be used for future EC2 instance creation. In this page, let's create an AMI using the web server instance that we built earlier.

1. In the EC2 console, select the instance that we made earlier in this lab, and click **Actions > Image and templates > Create Image**.
2. In the Create Image console, type as shown below and press **Create image** to create the custom image.

EC2 > Instances > i-05a66571a78d9fd28 > Create image

Create image Info

An image (also referred to as an AMI) defines the programs and settings that are applied when you launch an EC2 instance. You can create an image from the configuration of an existing instance.

Instance ID
 i-05a66571a78d9fd28 (Web server for custom AMI)

Image name

Maximum 127 characters. Can't be modified after creation.

Image description - optional

Maximum 255 characters

No reboot
☐ Enable

Instance volumes

Volume type	Device	Snapshot	Size	Volume type	IOPS	Throughput	Delete on termination	Encrypted
EBS	/dev/x...	Create new snapshot fr...	8	EBS General Purpose SS...	100		<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable

During the image creation process, Amazon EC2 creates a snapshot of each of the above volumes.

Tags - optional
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

☒ Tag image and snapshots together
Tag the image and the snapshots with the same tag.

☐ Tag image and snapshots separately
Tag the image and the snapshots with different tags.

No tags associated with the resource.

You can add 50 more tags.

KEY	VALUE
Image name	Web Server v1
Image description	LAMP web server AMI

3. Verify in the console that the image creation request in completed.

4. In the left navigation panel, Click the **AMIs** button located under **IMAGES**. You can see that the **Status** of the AMI that you just created. It will show either **Pending** or **Available**.

Amazon Machine Images (AMIs) (1/1) Info

Owned by me ☒ Click

<input checked="" type="checkbox"/>	Name	AMI ID	AMI name	Source
<input checked="" type="checkbox"/>	-	ami-04c4c711d8e144dbe	Web Server v1	/Web

AMI ID: ami-04c4c711d8e144dbe

Details	Permissions	Storage	Tags
<p>AMI ID</p> <p>ami-04c4c711d8e144dbe</p> <p>AMI name</p> <p>Web Server v1</p> <p>Root device name</p> <p>/dev/xvda</p>	<p>Image type</p> <p>machine</p> <p>Owner account ID</p> <p>Architecture</p> <p>x86_64</p> <p>Status</p> <p>Pending</p>	<p>Platform details</p> <p>Linux/UNIX</p> <p>Usage operation</p> <p>RunInstances</p> <p>Virtualization type</p> <p>hvm</p>	<p>Root device type</p> <p>EBS</p>

Terminate the instance

- ③ Custom AMI (Golden Image) creation has been completed for the auto scaling by using the EC2 instance you just created. Therefore, the EC2 instance currently running is no longer needed, so let's try to terminate it. (In [Deploy auto scaling web service](#), we will use custom AMI to create a new web server.)

1. In the left navigation panel of the EC2 dashboard, select **Instances**. Then select the instance that should be deleted. From there, click **Instance state** -> **Terminate instance**.

Instances (1/1) Info

Connect Instance state Actions Launch instances

Search

<input checked="" type="checkbox"/>	Name	Instance ID
<input checked="" type="checkbox"/>	Web server for cu	I-05a66571a78d9fd28

Stop instance
Start instance
Reboot instance
Hibernate instance
Terminate instance

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2. When the alert message appears, click **Terminate** to delete.

Terminate instance?

⚠

On an EBS-backed instance, the default action is for the root EBS volume to be deleted when the instance is terminated. Storage on any local drives will be lost.

Are you sure you want to terminate these instances?

📄

i-05a66571a78d9fd28 (Web server for custom AMI)

To confirm that you want to terminate the instances, choose the terminate button below. Terminating the instance cannot be undone.

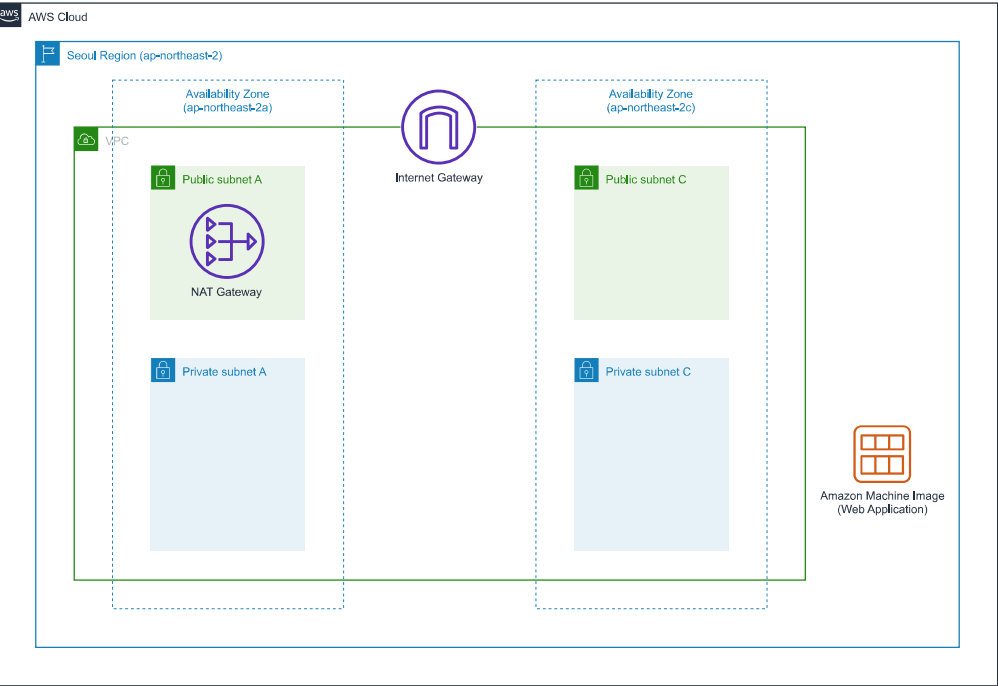
Cancel

Terminate

3. The instance status changes to **Shutting down**. After that, the instance status turned to **terminated**. The instance deletion is complete. You may see the instance for a short period of time for deletion logging.

Architecture Configured So Far

If you mark the resources that have been configured so far in conceptual terms, it is same with the picture below.



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