

Dec, 2022

AWS

BUILD YOUR
VPC AND
LAUNCH A WEB
SERVER

Task 1: Create Your VPC

In this task, you will use the *VPC and more* option in the VPC console to create multiple resources, including a *VPC*, an *Internet Gateway*, a *public subnet* and a *private subnet* in a single *Availability Zone*, two *route tables*, and a *NAT Gateway*.

Configured the VPC details in the VPC settings panel

Create VPC [Info](#)

A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Amazon EC2 instances. Mouse over a resource to highlight the related resources.

VPC settings

Resources to create [Info](#)
Create only the VPC resource or the VPC and other networking resources.

VPC only VPC and more

Name tag auto-generation [Info](#)
Enter a value for the Name tag. This value will be used to auto-generate Name tags for all resources in the VPC.

Auto-generate

IPv4 CIDR block [Info](#)
Determine the starting IP and the size of your VPC using CIDR notation.

65,536 IPs

IPv6 CIDR block [Info](#)

No IPv6 CIDR block
 Amazon-provided IPv6 CIDR block

Tenancy [Info](#)

Number of Availability Zones (AZs) [Info](#)
Choose the number of AZs in which to provision subnets. We recommend at least two AZs for high availability.

Preview

Introducing the new create VPC experience
We've designed the new create VPC experience to make it easier to use. Now you can visualize

- New: Edit the name tag of individual resources. Uncheck "Auto-generate" and set each name tag. Let us know what you think.

VPC [Show details](#)
Your AWS virtual network

VPC without Name tag

Subnets (4)
Subnets within this VPC

- us-east-1a**
 - subnet-public1-us-east-1a
 - subnet-private1-us-east-1a
- us-east-1b**
 - subnet-public2-us-east-1b
 - subnet-private2-us-east-1b

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VPC settings

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Auto-generate

1ab

IPv4 CIDR block [Info](#)

Determine the starting IP and the size of your VPC using CIDR notation.

10.0.0.0/16

65,536 IPs

IPv6 CIDR block [Info](#)

No IPv6 CIDR block

Amazon-provided IPv6 CIDR block

Tenancy [Info](#)

Default

Number of Availability Zones (AZs) [Info](#)

Choose the number of AZs in which to provision subnets. We recommend at least two AZs for high availability.

1

2

3

Number of public subnets [Info](#)

The number of public subnets to add to your VPC. Use public subnets for web applications that need to be publicly accessible over the internet.

0	1
---	----------

Number of private subnets [Info](#)

The number of private subnets to add to your VPC. Use private subnets to secure backend resources that don't need public access.

0	1	2
---	----------	---

▼ **Customize subnets CIDR blocks**

Public subnet CIDR block in us-east-1a

10.0.0.0/24	256 IPs
-------------	---------

Private subnet CIDR block in us-east-1a

10.0.1.0/24	256 IPs
-------------	---------

NAT gateways (\$) [Info](#)

Choose the number of Availability Zones (AZs) in which to create NAT gateways. Note that there is a charge for each NAT gateway

None	In 1 AZ	1 per AZ
------	----------------	----------

VPC endpoints [Info](#)

Endpoints can help reduce NAT gateway charges and improve security by accessing S3 directly from the VPC. By default, full access policy is used. You can customize this policy at any time.

None	S3 Gateway
-------------	------------

DNS options [Info](#)

Added a public subnet

Task 2: Create Additional Subnets

In this task, you will create two additional subnets for the VPC in a second Availability Zone. Having subnets in multiple Availability Zones within a VPC is useful for deploying solutions that provide *High Availability*.

After creating a VPC as you have already done, you can still configure it further, for example, by adding more **subnets**. Each subnet you create resides entirely within one Availability Zone.

Edit subnet associations

Change which subnets are associated with this route table.

Available subnets (2/4)

Filter subnet associations

< 1 > ⚙

<input type="checkbox"/>	Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
<input checked="" type="checkbox"/>	lab-subnet-public2	subnet-011fb3d2cc0309b05	10.0.2.0/24	-	Main (rtb-0bbc452f1bc0270ba)
<input type="checkbox"/>	lab-subnet-private2	subnet-0867c0a99e5e98327	10.0.3.0/24	-	rtb-0b0530b3df9fe52f4 / 1ab-rtb-private1-us-east-1a
<input checked="" type="checkbox"/>	1ab-subnet-public1-us-east-1a	subnet-078ce6ee494b1647e	10.0.0.0/24	-	rtb-094f04686f14c2c4f / 1ab-rtb-pu
<input type="checkbox"/>	1ab-subnet-private1-us-east-1a	subnet-0cca0321b2b46afdb	10.0.1.0/24	-	rtb-0b0530b3df9fe52f4 / 1ab-rtb-private1-us-east-1a

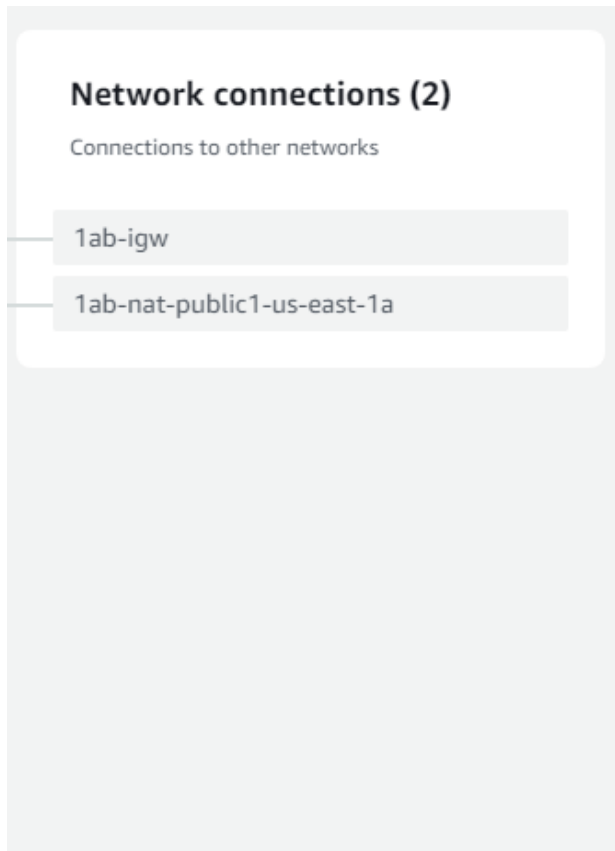
Selected subnets

subnet-011fb3d2cc0309b05 / lab-subnet-public2 X

subnet-078ce6ee494b1647e / 1ab-subnet-public1-us-east-1a X

Cancel

Save associations



Create VPC workflow



Creating VPC Resources



Thank you for using the new create VPC experience. Let us know what you think.

✔ Success

▼ Details

- ✔ Create VPC: [vpc-07d1a3df587650a15](#)
- ✔ Enable DNS hostnames
- ✔ Enable DNS resolution
- ✔ Verifying VPC creation: [vpc-07d1a3df587650a15](#)
- ✔ Create subnet: [subnet-078ce6ee494b1647e](#)
- ✔ Create subnet: [subnet-0cca0321b2b46afdb](#)
- ✔ Create internet gateway: [igw-0f33052a7216f34fe](#)
- ✔ Attach internet gateway to the VPC
- ✔ Create route table: [rtb-094f04686f14c2c4f](#)
- ✔ Create route
- ✔ Associate route table
- ✔ Allocate elastic IP: [eipalloc-022aab85f0f440037](#)
- ✔ Create NAT gateway: [nat-0d112966303cfac6b](#)
- ✔ Wait NAT Gateways to activate
- ✔ Create route table: [rtb-0b0530b3df9fe52f4](#)
- ✔ Create route
- ✔ Associate route table
- ✔ Verifying route table creation

[View VPC](#)

Task 3: Create a VPC Security Group

In this task, you will create a VPC security group, which acts as a virtual firewall. When you launch an instance, you associate one or more security groups with the instance. You can add rules to each security group that allow traffic to or from its associated instances.

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.

Basic details

Security group name [Info](#)

Name cannot be edited after creation.

Description [Info](#)

VPC [Info](#)

Inbound rules [Info](#)

Type [Info](#)

Protocol [Info](#)

Port range [Info](#)

Source [Info](#)

Description - optional [Info](#)

Task 4: Launch a Web Server Instance

In this task, you will launch an Amazon EC2 instance into the new VPC. You will configure the instance to act as a web server.

Launch an instance [Info](#)

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 [Info](#)

Name

[Add additional tags](#)

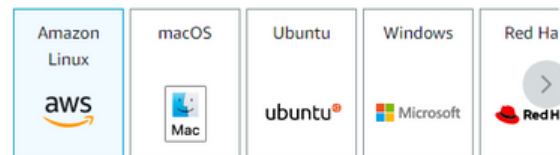
▼ Application and OS Images (Amazon Machine Image) [Info](#)

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

Recents

Quick Start



[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
ami-0b5eea76982371e91 (64-bit (x86)) / ami-03a45a5ac837f33b7 (64-bit (Arm))

Free tier eligible

Launch an instance [Info](#)

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 [Info](#)

Name

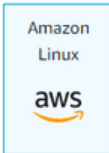
[Add additional tags](#)

Application and OS Images (Amazon Machine Image) [Info](#)


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Recents | **Quick Start**



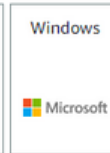
Amazon Linux




macOS




Ubuntu



Windows



Red Ha



[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
ami-0b5eea76982371e91 (64-bit (x86)) / ami-03a45a5ac837f33b7 (64-bit (Arm))

Free tier eligible

Description

Amazon Linux 2 Kernel 5.10 AMI 2.0.20221210.1 x86_64 HVM gp2

Architecture

64-bit (x86)

AMI ID

ami-0b5eea76982371e91

Verified provider

Instance type [Info](#)

Instance type

t2.micro

Free tier eligible

Family: t2 1 vCPU 1 GiB Memory

On-Demand Linux pricing: 0.0116 USD per Hour

On-Demand Windows pricing: 0.0162 USD per Hour

[Compare instance types](#)

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*

vockey

[Create new key pair](#)

Network settings [Info](#)

VPC - *required* [Info](#)

User data [Info](#)

```
#!/bin/bash
# Install Apache Web Server and PHP
yum install -y httpd mysql php
# Download Lab files
wget https://aws-tc-largeobjects.s3.us-west-2.amazonaws.com/CUR-TF-100-
ACCLFO-2-9026/2-lab2-vpc/s3/lab-app.zip
unzip lab-app.zip -d /var/www/html/
# Turn on web server
chkconfig httpd on
service httpd start
```

Configured a script to run on the instance

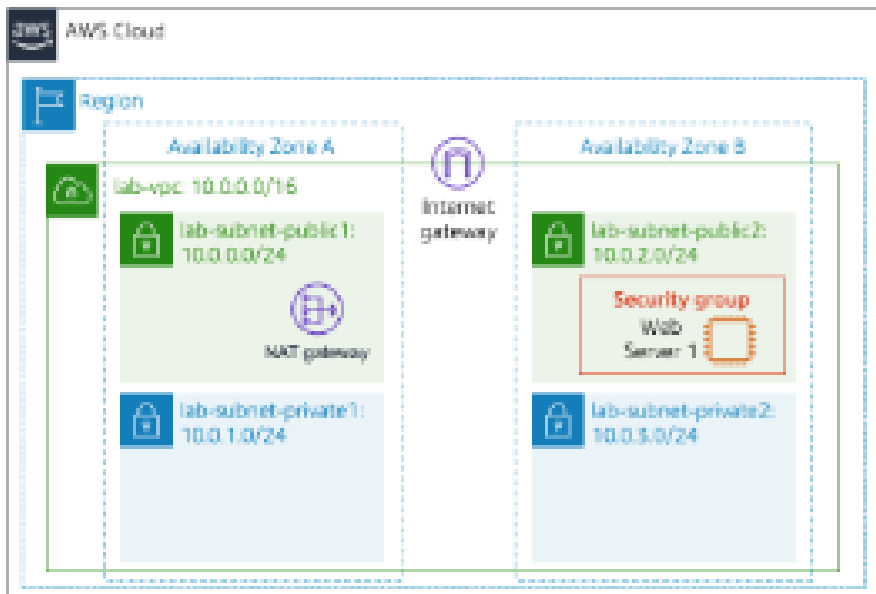
EC2 > Instances > Launch an instance



Success

Successfully initiated launch of instance (i-02d34f0bf7527621d)

▶ [Launch log](#)



Public Route Table

Destination	Target
10.0.0.0/16	local
0.0.0.0/0	Internet gateway

Private Route Tables

Destination	Target
10.0.0.0/16	local
0.0.0.0/0	NAT gateway