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**30143862**

**MS4S21 – Assessment 2**

### Create a VPC – 30143862-datasafe-vpc

- VPC > Create VPC → Choose “VPC and more”
- Name : 30143862-datasafe-vpc
- IPv4 CIDR block: 10.0.0.0/16

The screenshot shows the AWS VPC creation process. On the left, the 'Create VPC' configuration pane includes fields for:

- VPC settings:** Resources to create:  VPC and more.
- Name tag auto-generation:**  Auto-generate, value: 30143862-datasafe-vpc.
- IPv4 CIDR block:** 10.0.0.0/16 (65,536 IPs).
- IPv6 CIDR block:**  No IPv6 CIDR block.
- Tenancy:** Default.
- Number of Availability Zones (AZs):** 1 (selected).
- Number of public subnets:** 3.

The right pane, titled 'Preview', shows the resulting VPC structure:

- VPC:** 30143862-datasafe-vpc-vpc (Your AWS virtual network).
- Subnets (3):** us-east-1a (3 subnets: 30143862-datasafe-vpc-subnet-1, 30143862-datasafe-vpc-subnet-2, 30143862-datasafe-vpc-subnet-3).
- Route tables (3):** 30143862-datasafe-vpc-rtb-public, 30143862-datasafe-vpc-rtb-private1, 30143862-datasafe-vpc-rtb-private2.

- Enable DNS hostnames and resolution
- Create 1 public subnet and 2 private subnets

**VPC > Your VPCs > Create VPC**

**Number of public subnets:** 1

**Number of private subnets:** 2

**NAT gateways (S):** 1 per AZ

**VPC endpoints:** S5 Gateway

**DNS options:** Enable DNS hostnames, Enable DNS resolution

**Additional tags:** Add new tag

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**Create VPC workflow**

**Success**

**Details**

- Create VPC: [vpc-0faf6538a29ba66e4](#)
- Create DNS hostnames
- Enable DNS resolution
- Verifying VPC creation: [vpc-0faf6538a29ba66e4](#)
- Create S3 endpoint: [vpc-0f41a05fd0fb2d291](#)
- Create subnet: [subnet-0ff82d1a42b9aa6a](#)
- Create subnet: [subnet-0a896ba965649ec7c](#)
- Create subnet: [subnet-0c21408939b0261df](#)
- Create internet gateway: [igw-029ba7594cd0beefb](#)
- Attach internet gateway to the VPC
- Create route table: [rtb-08eb5597059d23c9](#)
- Create route
- Associate route table
- Allocate elastic IP: [eipalloc-0cb3dbd84af87b6c5](#)
- Create NAT gateway: [nat-0129feb8e4083eeb8](#)
- Wait for NAT Gateways to activate
- Create route table: [rtb-0b05f8ead26601aaa](#)
- Create route
- Associate route table
- Create route table: [rtb-0e227e9b6abb25225](#)
- Create route
- Associate route table
- Verifying route table creation
- Associate S3 endpoint with private subnet route tables: [vpc-0f41a06fd0fb2d291](#)

**View VPC**

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## Subnets

The public subnet is for the web server. Private subnets can be used for internal services later.

The screenshot shows the AWS VPC console with the URL <https://us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#EditRouteTableSubnetAssociations>. The page title is "Edit subnet associations".  
Available subnets (1/3):  
- Subnet ID: subnet-00f82d1a42bf9aa6a, IPv4 CIDR: 10.0.0.0/20, Route table ID: rtb-08eab3597059d23c9 / 30143862-...  
- Subnet ID: subnet-0c21408939b0261df, IPv4 CIDR: 10.0.144.0/20, Route table ID: rtb-0e227e9b6abb25225 / 30143862-...  
- Subnet ID: subnet-0896ba965649ec7c, IPv4 CIDR: 10.0.128.0/20, Route table ID: rtb-0b05f8ead26601aaa / 30143862-...  
Selected subnets:  
- subnet-00f82d1a42bf9aa6a / 30143862-datasafe-vpc-subnet-public1-us-east-1a  
Buttons: Cancel, Save associations

## Launch EC2 in Public Subnet

The screenshot shows the AWS EC2 console with the URL <https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances>. The page title is "Launch an instance".  
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: 30143862-datasafe-web-instance  
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.  
Amazon Machine Image (AMI)  
Amazon Linux 2023 AMI  
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.  
Amazon Linux 2023 AMI 2023.7.20250512.0 x86\_64 HVM kernel-6.1  
Architecture: x86\_64, Boot mode: uefi, AMI ID: ami-0953476d60561c955, Publish Date: 2023-05-09, Username: ec2-user  
Summary  
Number of instances: 1  
Software Image (AMI): Amazon Linux 2023 AMI 2023.7.2...  
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 of opening an AWS account, you get 750 hours per month of t2.micro instance usage (or t3.micro where t2.micro isn't available) when used with free tier AMIs, 750 hours per month of public IPv4 address usage, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.  
Buttons: Cancel, Launch Instance, Preview code

**Launch AWS Academy Learn** | **Launch an instance | EC2 | us-east-1**

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances:

**EC2 > Instances > Launch an instance**

**Instance type**

**t2.micro** Family: t2 1 vCPU 1 GiB Memory Current generation: true Free tier eligible  
On-Demand Windows base pricing: 0.0162 USD per Hour On-Demand Ubuntu Pro base pricing: 0.0154 USD per Hour  
On-Demand SUSE base pricing: 0.0116 USD per Hour On-Demand RHEL base pricing: 0.026 USD per Hour  
On-Demand Linux base pricing: 0.0116 USD per Hour

All generations Compare instance types

**Additional costs apply for AMIs with pre-installed software**

**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** 30143862-ec2-key Create new key pair

**Network settings** Info

**VPC - required** Info  
vpc-0faf6538a29ba66e4 (30143862-datasafe-vpc-vpc)  
10.0.0.0/16

**Subnet** Info  
subnet-00f82d1a42bf9aa6a 30143862-datasafe-vpc-subnet-public1-us-east-1a  
VPC: vpc-0faf6538a29ba66e4 Owner: 242567921539 Availability Zone: us-east-1a  
Zone type: Availability Zone IP addresses available: 4090 CIDR: 10.0.0.0/20

**Create new subnet**

**Auto-assign public IP** Info  
Enable Additional charges apply when outside of free tier allowance

**Firewall (security group)** Info  
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** datasafe-web-sg

**Cancel** **Launch instance** **Preview code**

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**Launch AWS Academy Learn** | **Launch an instance | EC2 | us-east-1**

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances:

**EC2 > Instances > Launch an instance**

**Create security group** Select existing security group

**Security group name - required** datasafe-web-sg

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  
launch-wizard-4 created 2025-05-28T23:32:05.269Z

**Inbound Security Group Rules**

**Security group rule 1 (TCP, 80, 0.0.0.0/0)** Remove

Type Info Protocol Info Port range Info  
HTTP TCP 80

Source type Info Source Info Description - optional Info  
Anywhere Add CIDR, prefix list or security group e.g. SSH for admin desktop  
0.0.0.0/0

**Security group rule 2 (TCP, 22, 31.120.44.9/32)** Remove

Type Info Protocol Info Port range Info  
ssh TCP 22

Source type Info Name Info Description - optional Info  
My IP Add CIDR, prefix list or security group e.g. SSH for admin desktop  
31.120.44.9/32

⚠️ 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**

**Cancel** **Launch instance** **Preview code**

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The screenshot shows the AWS Launch Instances page. At the top, there are two tabs: "Launch AWS Academy Learner" and "Launch an instance | EC2". The main content area has a green header bar indicating a "Success" message: "Successfully initiated launch of instance (i-0eca29fc1b97ee490)". Below this, a "Launch log" section is shown. The main body is titled "Next Steps" and contains eight cards:

- 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. Includes a "Create billing alerts" button.
- Connect to your instance**: Once your instance is running, log into it from your local computer. Includes a "Connect to instance" button and a "Learn more" link.
- Connect an RDS database**: Configure the connection between an EC2 instance and a database to allow traffic flow between them. Includes a "Connect an RDS database" button and a "Create a new RDS database" link.
- Create EBS snapshot policy**: Create a policy that automates the creation, retention, and deletion of EBS snapshots. Includes a "Create EBS snapshot policy" button.
- Manage detailed monitoring**: Enable or disable detailed monitoring for the instance. If you enable detailed monitoring, the Amazon EC2 console displays monitoring graphs with a 1-minute period. Includes a "Manage detailed monitoring" button.
- Create Load Balancer**: Create a application, network gateway or classic Elastic Load Balancer. Includes a "Create Load Balancer" button.
- Create AWS budget**: AWS Budgets allows you to create budgets, forecast spend, and take action on your costs and usage from a single location. Includes a "Create AWS budget" button.
- Manage CloudWatch alarms**: Create or update Amazon CloudWatch alarms for the instance. Includes a "Manage CloudWatch alarms" button.

At the bottom right, there is a "View all instances" button.

## Connect to EC2 via SSH

# Install Apache and Host the Web Page

## Validate in Browser



A Virtual Private Cloud (30143862-datasafe-vpc) was created with one public and two private subnets. An EC2 instance was launched in the public subnet and successfully configured to run a web server using Apache. The instance hosted a web page that displayed a custom message. The web page was publicly accessible, confirming a successful deployment.