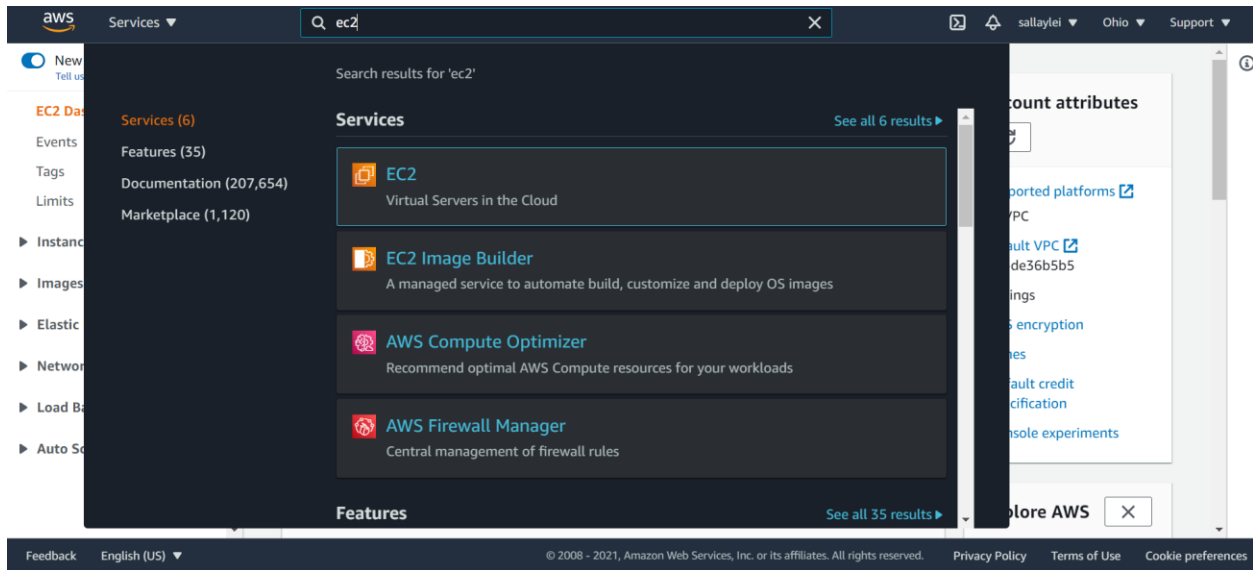


EC2 Exercise 1.1: Host a Static Webpage Part 1

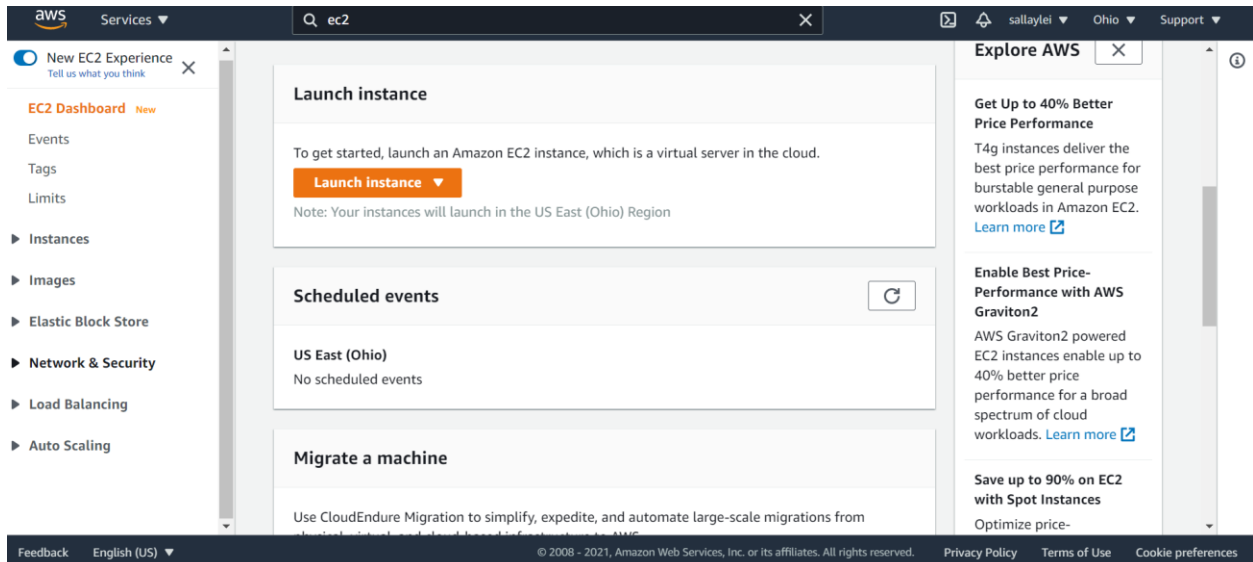
Launch an EC2 instance:

Get EC2 ready

- Create an AWS account with the link below if you haven't
- <https://aws.amazon.com/>
- Sign into the AWS console and search for "EC2"



- Navigate to the EC2 dashboard and click "Launch Instance"



1. Choose AMI

- Choose a free-tier eligible Linux option (Amazon Linux 2 AMI, SSD Volume Type) and click “Select”

Step 1: Choose an Amazon Machine Image (AMI)

Search for an AMI by entering a search term e.g. "Windows"

Search by Systems Manager parameter

Quick Start

My AMIs

AWS Marketplace

Community AMIs

☒ Free tier only

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-09246ddb00c7c4fef (64-bit x86) / ami-0f10e11691c9ab660 (64-bit Arm)

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is approaching end of life on December 31, 2020 and has been removed from this wizard.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

macOS Big Sur 11.2.1 - ami-003fa9ca816bcc80d

The macOS Big Sur AMI is an EBS-backed, AWS-supported image. This AMI includes the AWS Command Line Interface, Command Line Tools for Xcode, Amazon SSM Agent, and Homebrew. The AWS Homebrew Tap includes the latest versions of multiple AWS packages included in the AMI.

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2. Choose instance type

- Choose the option marked as free tier eligible. Click next to configure instance details

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance families Current generation Show/Hide Columns

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, -, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes

Cancel Previous Review and Launch Next: Configure Instance Details

3. Configure instance

- In this step, you will accept all of the default options, so no need to choose anything here. Click next to add storage.

The screenshot shows the 'Step 3: Configure Instance Details' page in the AWS Management Console. The page has a top navigation bar with the AWS logo, 'Services' dropdown, a search bar, and user information. Below the navigation bar is a progress bar with seven steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance (active), 4. Add Storage, 5. Add Tags, 6. Configure Security Group, and 7. Review. The main content area is titled 'Step 3: Configure Instance Details' and includes a sub-header 'Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.' The form contains several sections: 'Number of instances' (set to 1), 'Purchasing option' (checkbox for 'Request Spot instances' is unchecked), 'Network' (dropdown set to 'vpc-de36b5b5 (default)' with a 'Create new VPC' link), 'Subnet' (dropdown set to 'No preference (default subnet in any Availability Zone)' with a 'Create new subnet' link), 'Auto-assign Public IP' (dropdown set to 'Use subnet setting (Enable)'), 'Placement group' (checkbox for 'Add instance to placement group' is unchecked), 'Capacity Reservation' (dropdown set to 'Open'), and 'Domain join directory' (dropdown set to 'No directory'). At the bottom right are buttons for 'Cancel', 'Previous', 'Review and Launch', and 'Next: Add Storage'. The footer contains 'Feedback', 'English (US)', copyright information, and links for 'Privacy Policy', 'Terms of Use', and 'Cookie preferences'.

4. Add storage

- We will accept the default options again. Click next to add tags.

The screenshot shows the 'Step 4: Add Storage' page in the AWS Management Console. The top navigation bar and progress bar are identical to the previous step. The main content area is titled 'Step 4: Add Storage' and includes a sub-header 'Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.' Below this is a table with columns: 'Volume Type', 'Device', 'Snapshot', 'Size (GiB)', 'Volume Type', 'IOPS', 'Throughput (MB/s)', 'Delete on Termination', and 'Encryption'. The first row shows the 'Root' volume with device '/dev/xvda', snapshot 'snap-0c3da5a1694c1eb68', size '8', volume type 'General Purpose SSD (gp2)', IOPS '100 / 3000', throughput 'N/A', 'Delete on Termination' checked, and encryption 'Not Encrypt'. Below the table is an 'Add New Volume' button. A blue box contains a note: 'Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.' At the bottom right are buttons for 'Cancel', 'Previous', 'Review and Launch', and 'Next: Add Tags'. The footer is identical to the previous step.

5. Add Tags

- Click Add Tag— enter “name” for the key and “WebServer” for the value.
- Click Next to Configure the Security Group

Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. A copy of a tag can be applied to volumes, instances or both. Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key	Value	Instances	Volumes	Network Interfaces
name	WebServer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

[Add another tag](#) (Up to 50 tags maximum)

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Security Group](#)

6. Configure security group

- Select “Create a new security group”
- Keep the SSH rule that is already listed
- Click “add rule”. Select HTTP for the type and keep everything else as it is
- Click review and launch

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group ☐ Select an existing security group

Security group name: launch-wizard-1

Description: launch-wizard-1 created 2021-02-28T20:34:52.190-08:00

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
HTTP	TCP	80	Custom 0.0.0.0, :/0	e.g. SSH for Admin Desktop

[Add Rule](#)

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Security Group](#)

7. Review

- Ignore the security warning and click Launch

aws Services Search for services, features, marketplace products, and docs [Alt+S] sallaylei Ohio Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

Improve your instances' security. Your security group, launch-wizard-1, is open to the world.

Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details [Edit AMI](#)

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-09246ddb00c7c4fef

Free tier eligible Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is a...

Root Device Type: ebs Virtualization type: hvm

Instance Type [Edit instance type](#)

t2.micro

[Cancel](#) [Previous](#) [Launch](#)

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- A pop-up window will appear, select 'Create a new key pair'
- Give the Key Pair a name — 'ec2-key-pair'
- Click Download Key Pair
- Click Launch Instances

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

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AMI Details [Edit AMI](#)

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-09246ddb00c7c4fef

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Root Device Type: ebs Virtualization type: hvm

Instance Type [Edit instance type](#)

t2.micro

Security Groups [Edit security groups](#)

launch-wizard-1


Type	Protocol	Port Range	Source	Description
SSH	TCP	22	0.0.0.0/0	
HTTP	TCP	80	0.0.0.0/0	
HTTPS	TCP	443	0.0.0.0/0	


[Cancel](#) [Previous](#) [Launch](#)

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




ec2-key-pair.pem [Show all](#)

- Click View Instance to navigate back to the EC2 dashboard

 Services ▾


 Search for services, features, marketplace products, and docs

[Alt+S]


us-east-1 ▾ Ohio ▾ Support ▾

Launch Status



Your instances are now launching

The following instance launches have been initiated: i-0b6a73d6c58d0bc51 [View launch log](#)



Get notified of estimated charges

Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.

Click **View Instances** to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. [Find out](#) how to connect to your instances.

▾ Here are some helpful resources to get you started

- [How to connect to your Linux instance](#)
- [Learn about AWS Free Usage Tier](#)

- [Amazon EC2: User Guide](#)
- [Amazon EC2: Discussion Forum](#)

While your instances are launching you can also

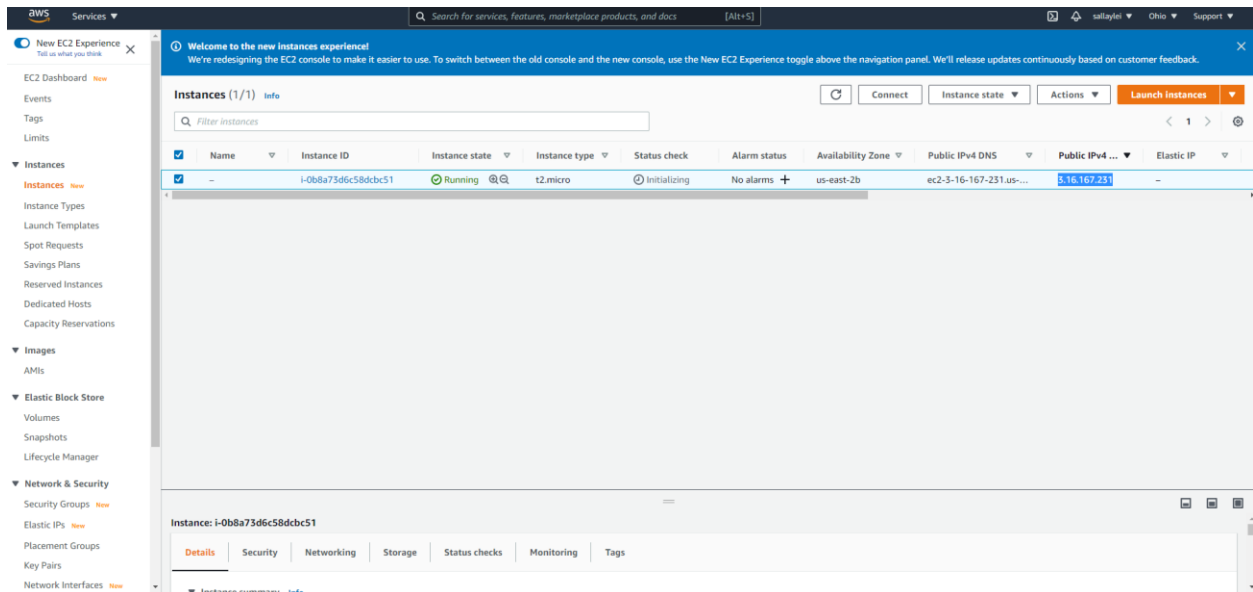
- [Create status check alarms](#) to be notified when these instances fail status checks. (Additional charges may apply)
- [Create and attach additional EBS volumes](#) (Additional charges may apply)
- [Manage security groups](#)

View Instances

EC2 Exercise 1.1: Host a Static Webpage Part 2

SSH into the EC2 instance and Install a Web Server

- You can your new instance listed on the EC2 dashboard. Wait until the Instance State is 'running'
- Selecting the instance (click the button next to the instance) displays information about the instance below. In this area, you will see the public IPv4 IP address of your instance.
- If you are on Mac, copy it and use it in the next step where you do ssh -i



If you are on Windows, please scroll down until you see **Windows**

If you are on **Mac**, please follow the step below:

- First, save the downloaded key-pair .pem file to a directory of your choice
- Navigate to the terminal and do the command below to change the permission
- `chmod 400 <path_to_key_pair_file>`
- Then, do the command below
- `ssh -i <path_to_key_pair_file> ec2-user@<public_ip_from_dashboard>`
- Type yes to continue. (At this point, your terminal is now interacting directly with your EC2 instance (aka your “virtual laptop”) — rather than your physical machine)

Then, elevate your privilege by doing the command below:

- `sudo su`

Then, Update all of the packages on the instance by doing the command below:

- `yum update -y`

Then, install an apache webserver by doing the command below:

- `yum install httpd -y`

Then, Start the webserver by doing the command below:

- `service httpd start`

Then, Configure the web server to restart if it gets stopped by doing the command below:

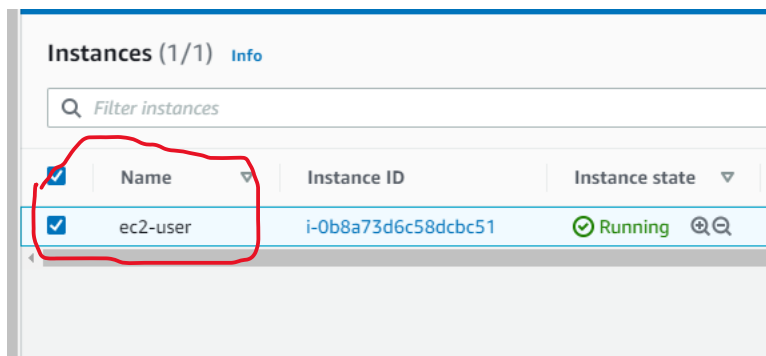
- `chkconfig httpd on`

Add a static HTML file to be served:

- By default, the apache web server will display the index.html file found in `/var/www/html` directory in the root path of your website.
1. Navigate to the directory:
 - `cd /var/www/html`
 2. Manually create an index.html file in this directory
 - `nano index.html`
 3. Add valid html to the file
 - `<html><body>My first EC2 instance</body></html>`
 - To exit the nano editor `ctrl+X`, then type *Y* for yes, then press *Enter*
 4. Make sure that the file has content by doing the command below:
 - `cat index.html`
- ❖ Navigate back to the EC2 dashboard in the AWS console and copy the **Public DNS(IPV4)** of your instance into your clipboard. Paste that address into your browser. If all went well, you will see the html that you just created! (This will take some time, refresh the page a couple times if you don't see the html content.) (You can see the final result in the end of this document.)
 - ❖ To clean up, navigate to the EC2 dashboard, select your instance, and click on Actions. Select Instance State → Terminate. Confirm that you want to terminate, and you're done. This will automatically kick you out of the SSH session in your terminal.

Windows-please follow the steps below:

- <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/putty.html>
- Click into the above link and follow the instructions only on “Convert your private key using **PuTTYgen**” and “Connect to your Linux instance”
- In the “Connect to your Linux instance” part where you need to enter **<my-instance-user-name>@<my-instance-public-dns-name>**, you can put **ec2-user** for **<my-instance-user-name>**, but remember to go back to the EC2 dashboard and put ec2-user for the **Name** as well.



After you successfully SSH into the ec2 instance, please do the following:

Elevate your privilege by doing the command below:

- `sudo su`

Then, Update all of the packages on the instance by doing the command below:

- `yum update -y`

Then, install an apache webserver by doing the command below:

- `yum install httpd -y`

Then, Start the webserver by doing the command below:

- `service httpd start`

Then, Configure the web server to restart if it gets stopped by doing the command below:

- `chkconfig httpd on`

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 - To exit the nano editor `ctrl+X`, then type `Y` for yes, then press `Enter`
 8. Make sure that the file has content by doing the command below:
 - `cat index.html`
- ❖ Navigate back to the EC2 dashboard in the AWS console and copy the **Public DNS(IPV4)** of your instance into your clipboard. Paste that address into your browser. If all went well, you will see the html that you just created! (This will take some time, refresh the page a couple times if you don't see the html content.) (You can see the final result in the end of this document.)
 - ❖ To clean up, navigate to the EC2 dashboard, select your instance, and click on Actions. Select Instance State → Terminate. Confirm that you want to terminate, and you're done. This will automatically kick you out of the SSH session in your terminal.

The final result should be the same as below:

