

AWS Create RHEL 8 Elastic Compute Instance

In this tutorial, we will be creating an [AWS Elastic Compute \(EC2\)](#) instance with Ubuntu 20 as the operating system.

Prerequisites

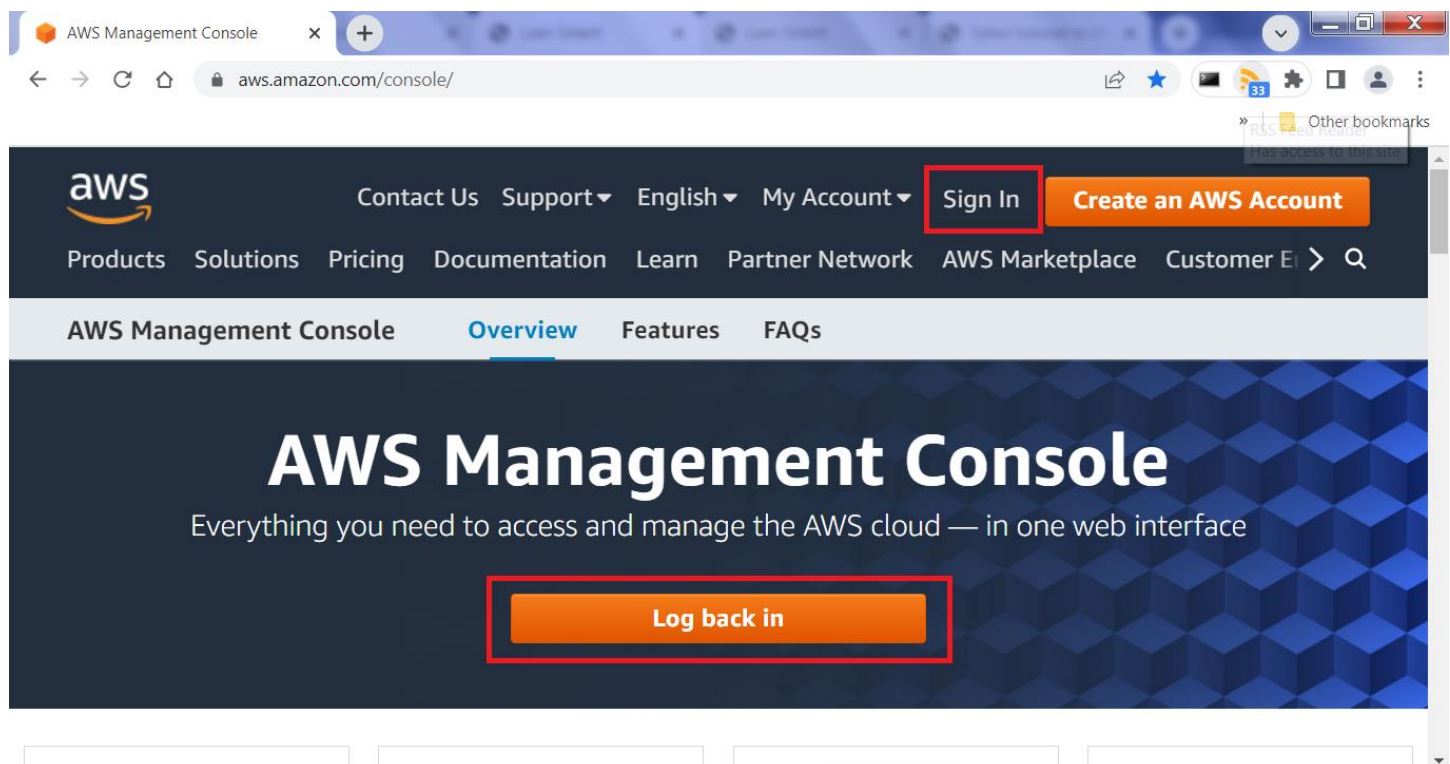
- an AWS Free Tier account
- internet access

If you do not have an AWS account, you can access my **AWS Create Free Tier Account** tutorial [here](#).

Steps to complete tutorial:

- [Update Virtual Private Cloud \(VPC\)](#)
- [Create RHEL 8 EC2 Instance](#)
- [Connect to RHEL 8](#)

To begin, go to the following website, <https://aws.amazon.com/console/> and log in to the console.

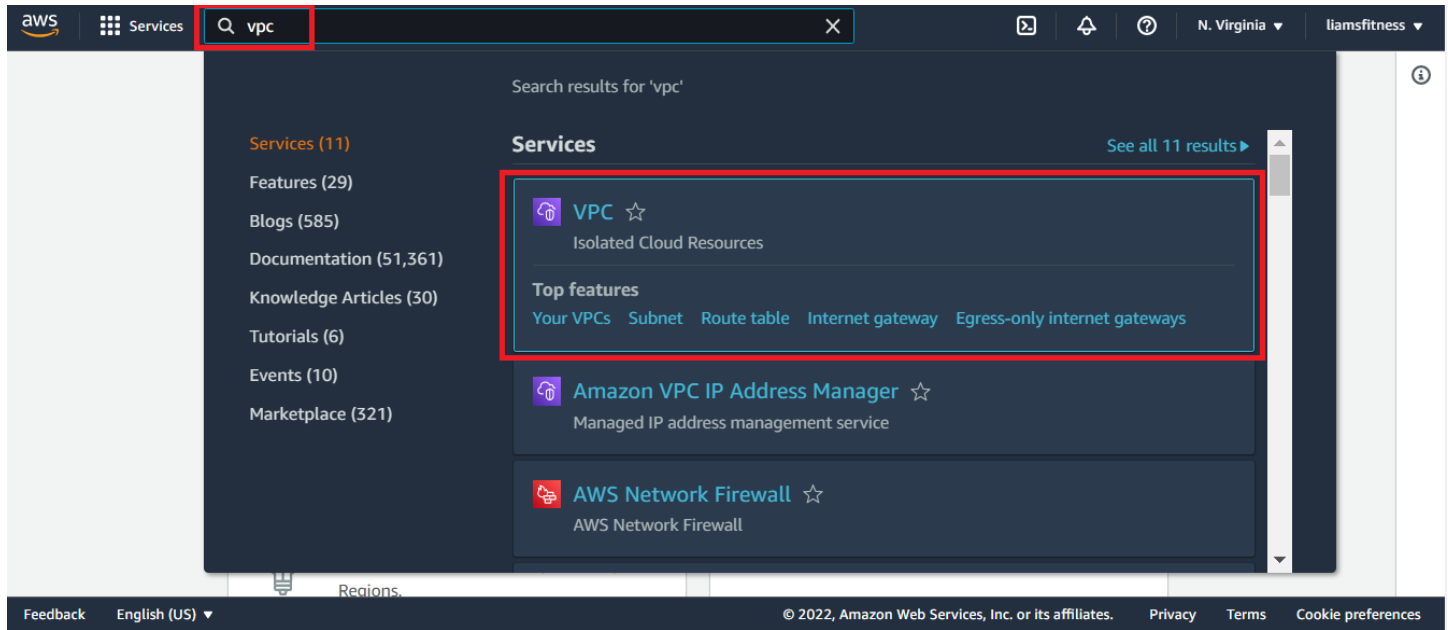


If you've already completed my [AWS Create Ubuntu 20 Elastic Compute Instance](#) tutorial, you skip this step and go directly to [Create RHEL 8 EC2 instance](#).

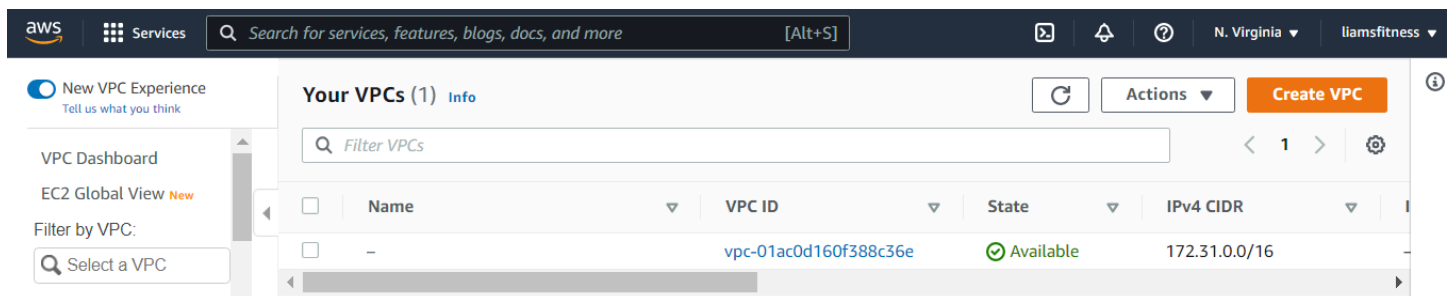
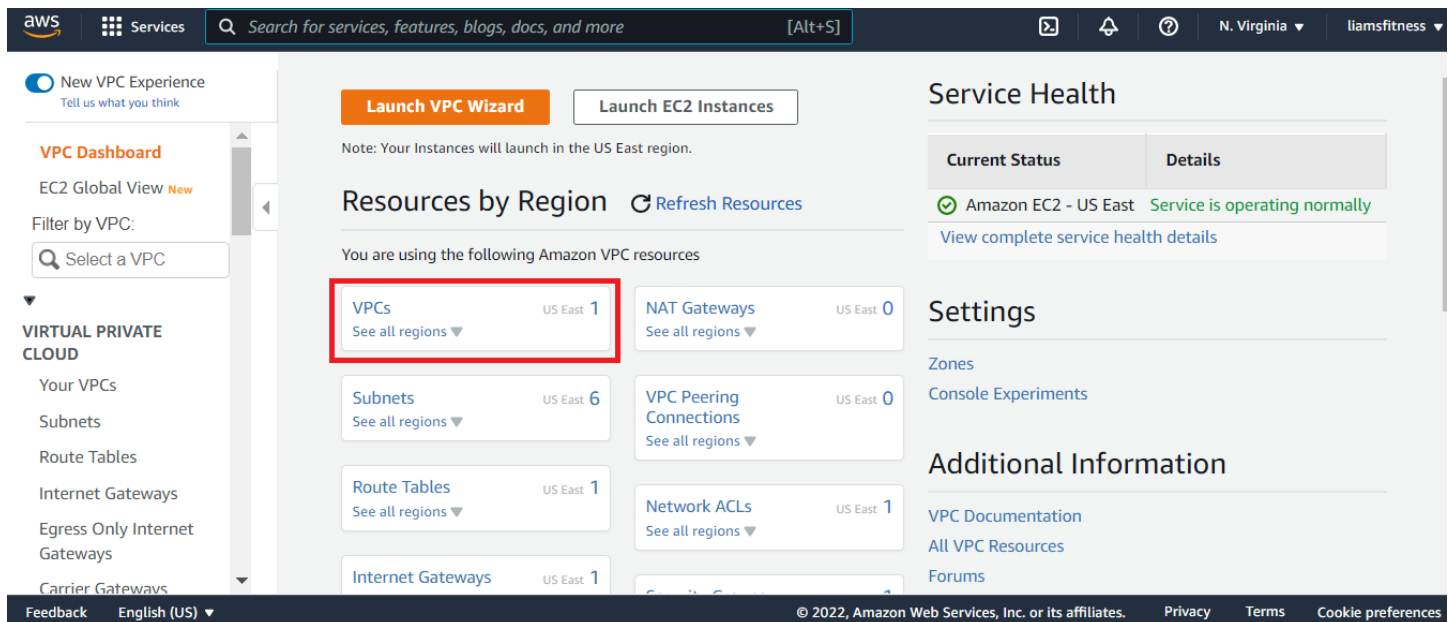
Before we create the EC2 instance, we will configure our default [VPC \(Virtual Private Cloud\)](#) so that it will be easier to work with moving forward. The VPC will allow us to launch resources in an isolated virtual network.

Update Virtual Private Cloud (VPC)

Once logged in, enter VPC in the search bar and select **VPC** Isolated Cloud Resources.



On the VPC Dashboard, select **VPCs**



Let's set the name to **vpc_default** and click **save**.

The screenshot shows the AWS VPC console interface. On the left sidebar, under 'VIRTUAL PRIVATE CLOUD', 'Your VPCs' is selected. The main panel displays 'Your VPCs (1/1)' with a table containing one VPC: vpc-01ac0d160f388c36e, which is in an 'Available' state with an IPv4 CIDR of 172.31.0.0/16. An 'Edit Name' modal is open, showing the current name 'vpc-01ac0d160f388c36e' and the new name 'vpc_default' entered in the text field. The 'Save' button in the modal is highlighted with a red box.

Now, on the left hand side of the screen click **Subnets**

The screenshot shows the AWS VPC console interface. On the left sidebar, under 'VIRTUAL PRIVATE CLOUD', 'Subnets' is selected and highlighted with a red box. The main panel displays 'Subnets (1/6)' with a table showing three subnets created for the VPC vpc-01ac0d160f388c36e. The subnets are all in an 'Available' state.

Name	Subnet ID	State	VPC	IPv4 CIDR
-	subnet-0096efb1b7740b3da	Available	vpc-01ac0d160f388c36e vpc...	172.31.0.0/20
-	subnet-0c2a65ce598b60ea3	Available	vpc-01ac0d160f388c36e vpc...	172.31.48.0/20
-	subnet-0c9fa28ee05faa645	Available	vpc-01ac0d160f388c36e vpc...	172.31.80.0/20

Once the subnet list page appears, notice that 6 subnets have already been created for us.

The screenshot shows the AWS VPC console interface. On the left sidebar, under 'VIRTUAL PRIVATE CLOUD', 'Subnets' is selected and highlighted with a red box. The main panel displays 'Subnets (1/6)' with a table showing three subnets created for the VPC vpc-01ac0d160f388c36e. The subnets are all in an 'Available' state.

Name	Subnet ID	State	VPC	IPv4 CIDR
-	subnet-0096efb1b7740b3da	Available	vpc-01ac0d160f388c36e vpc...	172.31.0.0/20
-	subnet-0c2a65ce598b60ea3	Available	vpc-01ac0d160f388c36e vpc...	172.31.48.0/20
-	subnet-0c9fa28ee05faa645	Available	vpc-01ac0d160f388c36e vpc...	172.31.80.0/20

Set the name of the first subnet to **subnet_default** and click **save**. Also note that the CIDR IPv4 subnet is 172.31.0.0/20.

The screenshot shows the AWS Management Console interface. On the left, the 'VIRTUAL PRIVATE CLOUD' section is expanded, showing 'Subnets'. The main panel displays a table of subnets. The first subnet, 'subnet-0096efb1b7740b3da', is selected. An 'Edit Name' modal is open, showing the current name and a text input field where 'subnet_default' has been entered. The 'Save' button in the modal is highlighted with a red box. The table below shows three subnets with their respective IDs, states, VPCs, and IPv4 CIDR blocks.

Name	Subnet ID	State	VPC	IPv4 CIDR
subnet_default	subnet-0096efb1b7740b3da	Available	vpc-01ac0d160f388c36e vpc...	172.31.0.0/20
-	subnet-0c2a65ce598b60ea3	Available	vpc-01ac0d160f388c36e vpc...	172.31.48.0/20
-	subnet-0c9fa28ee05faa645	Available	vpc-01ac0d160f388c36e vpc...	172.31.80.0/20

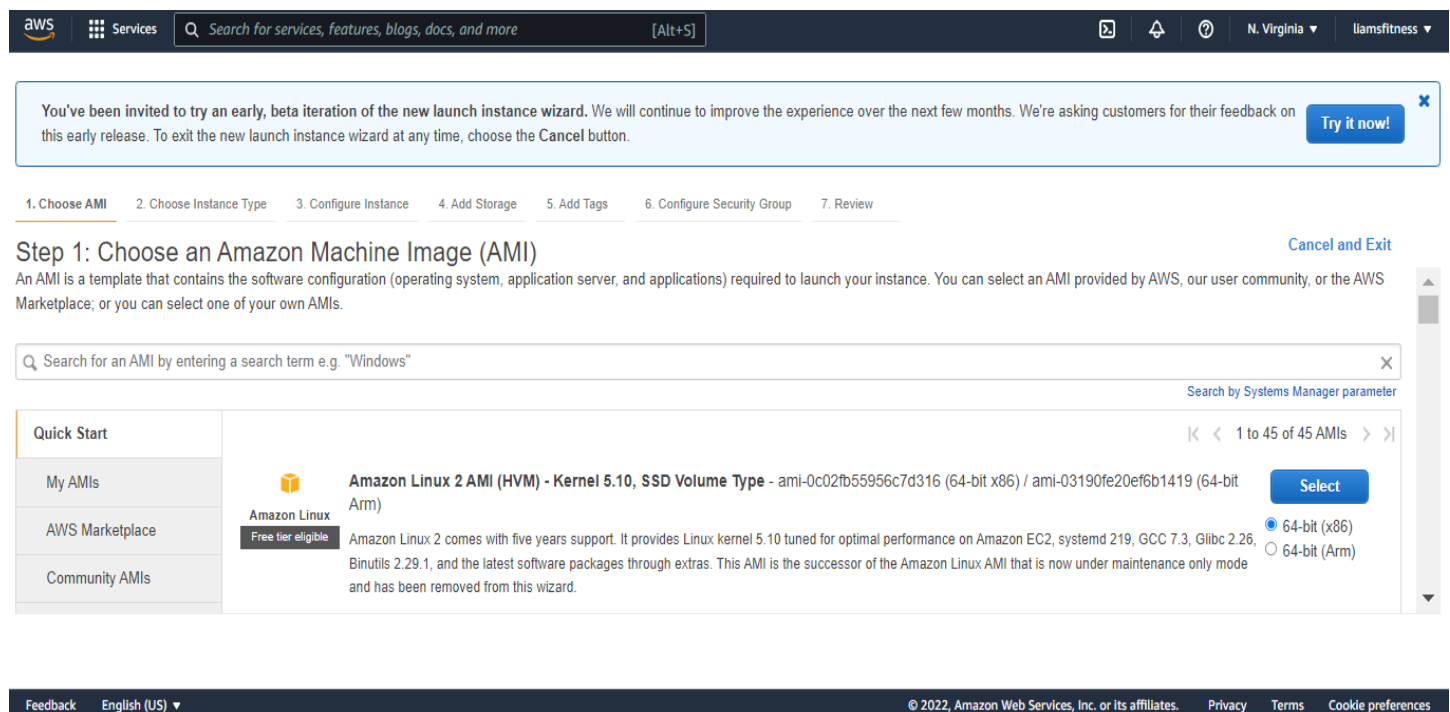
Create RHEL 8 EC2 Instance

Now we can proceed to create our instance, enter **EC2** in the search bar and select the 1st EC2 listing.

The screenshot shows the AWS Management Console search results for 'EC2'. The search bar at the top contains 'EC2'. Below the search bar, a list of services is displayed. The 'EC2' service is highlighted with a red box. The 'EC2' service listing includes the text 'Virtual Servers in the Cloud' and 'Top features' with links to 'Dashboard', 'Launch templates', 'Instances', 'Spot Instance requests', and 'Savings plans'.

Service	Description	Top features
EC2	Virtual Servers in the Cloud	Dashboard, Launch templates, Instances, Spot Instance requests, Savings plans

From the EC2 dashboard, click **Instances** (all links will work, your choice).



Scroll down the page until you locate **Red Hat Enterprise Linux 8** and click the **Select** button next to the listing.

Services [Alt+S] N. Virginia liamsfitness

You've been invited to try an early, beta iteration of the new launch instance wizard. We will continue to improve the experience over the next few months. We're asking customers for their feedback on this early release. To exit the new launch instance wizard at any time, choose the **Cancel** button. [Try it now!](#)

1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Add Tags6. Configure Security Group7. Review

Step 1: Choose an Amazon Machine Image (AMI)

[Launch a database using RDS](#)

Red Hat Enterprise Linux 8 (HVM), SSD Volume Type - ami-0b0af3577fe5e3532 (64-bit x86) / ami-01fc429821bf1f4b4 (64-bit Arm)
Free tier eligible Red Hat Enterprise Linux version 8 (HVM), EBS General Purpose (SSD) Volume Type
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select
☒ 64-bit (x86)
☐ 64-bit (Arm)

SUSE Linux Enterprise Server 15 SP3 (HVM), SSD Volume Type - ami-08895422b5f3aa64a (64-bit)
Select

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In the second step, we choose the instance type. Since we want a free instance, select **t2.micro** and click "Next: Configure Instance Details".

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1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Add Tags6. Configure Security Group7. Review

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
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes

[Cancel](#) [Previous](#) [Review and Launch](#) **Next: Configure Instance Details**

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The third step allows us to select the VPC (**vpc_default**) and subnet (**subnet_default**) that we named earlier. After making those changes, click **Next: Add Storage**.

Step 3: Configure Instance Details
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.

Number of instances: 1 [Launch into Auto Scaling Group](#)

Purchasing option: ☐ Request Spot instances

Network: vpc-01ac0d160f388c36e | vpc_default (default) [Create new VPC](#)

Subnet: subnet-0096efb1b7740b3da | subnet_default | Default [Create new subnet](#)
4091 IP Addresses available

Auto-assign Public IP: Use subnet setting (Enable)

Hostname type: Use subnet setting (IP name)

DNS Hostname: ☒ Enable IP name IPv4 (A record) DNS requests
☒ Enable resource-based IPv4 (A record) DNS requests
☐ Enable resource-based IPv6 (AAAA record) DNS requests

[Cancel](#) [Previous](#) [Review and Launch](#) **Next: Add Storage**

The fourth step allows us to set the storage size and add volumes if we wish. The root volume of 8GB is enough for Ubuntu 20. In a future tutorial, I will be demonstrating disk partitioning, as well as, LVM management, so I will also add 3 additional volumes. Click **Add New Volume**

Step 4: Add Storage
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.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/sda1	snap-0f7a6eae6d90437c4	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Add New Volume

After clicking the **Add New Volume** button, I set the size to 1GB and checked **Delete on Termination**.

Step 4: Add Storage
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.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/sda1	snap-03a3ad00558b4d17c	10	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted
EBS	/dev/sdb	Search (case-insensit	1	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Add New Volume

I repeated these steps 3 times total. After setting the storage, click **Next: Add Tags**.

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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 4: Add Storage

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Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/sda1	snap-03a3ad00558b4d17c	10	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypt
EBS	/dev/sdb	Search (case-insensit	1	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypt
EBS	/dev/sdc	Search (case-insensit	1	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypt
EBS	/dev/sdd	Search (case-insensit	1	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypt

Add New Volume

Cancel Previous Review and Launch **Next: Add Tags**

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*****Note:** There is a 30GB max volume size for all your instances combined throughout the month. If you go over it, you will pay the cost.

The fifth step allows us to tag our instance. Tagging helps categorize our resources. We will add a name tag.

To do this click the **click to add a Name tag** link and set the name to whatever you desire.

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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 (128 characters maximum)	Value (256 characters maximum)	Instances	Volumes	Network Interfaces
------------------------------	--------------------------------	-----------	---------	--------------------

This resource currently has no tags

Choose the Add tag button or **click to add a Name tag.**

Make sure your [IAM policy](#) includes permissions to create tags.

Add Tag (Up to 50 tags maximum)

Once finished, click **Next: Configure Security Group**.

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1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

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6. Configure Security Group

7. Review

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A copy of a tag can be applied to volumes, instances or both.
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Key	Value	Instances	Volumes	Network Interfaces
Name	rh8_vm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

Cancel

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Review and Launch

Next: Configure Security Group

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In the sixth step, before launching, we will create a security group named **security-group1**. Note that only port 22 is open and that we are only allowing SSH connections to our instance. I also provided a small description, **Limit access to instance**. After you've set the security group details, click **Review and Launch**.

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1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Add Tags

6. Configure Security Group

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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:

security-group1

Description:

Limit access to instance

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

[Add Rule](#)

Warning

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.

Cancel

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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

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, security-group2, 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

Red Hat Enterprise Linux 8 (HVM), SSD Volume Type - ami-0b0af3577fe5e3532

Free tier eligible

Red Hat Enterprise Linux version 8 (HVM), EBS General Purpose (SSD) Volume Type
Root Device Type: ebs Virtualization type: hvm

▼ Instance Type

Edit instance type

Cancel

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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

Please review your instance launch details. You can go back to any step.

⚠️

Improve your instances' security. Your instances may be accessible from any IP address. You can also open additional ports in your security groups.

▼

AMI Details

🔔

Free tier eligible

Ubuntu Server 20.04 LTS (HVM), SSD Volume for Ubuntu Server 20.04 LTS (HVM),EBS General Purpose

Root Device Type: ebs Virtualization type: hvm

▼

Instance Type

Instance Type	ECUs	vCPUs
t2.micro	-	1

Select an existing key pair or create a new key pair

×

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance. Amazon EC2 supports ED25519 and RSA key pair types.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Choose an existing key pair

▼

Select a key pair

No key pairs found

▼

⚠️

No key pairs found

You don't have any key pairs. Please create a new key pair by selecting the **Create a new key pair** option above to continue.

Cancel

Launch Instances

Edit AMI

Edit instance type

Network Performance

Low to Moderate

Cancel

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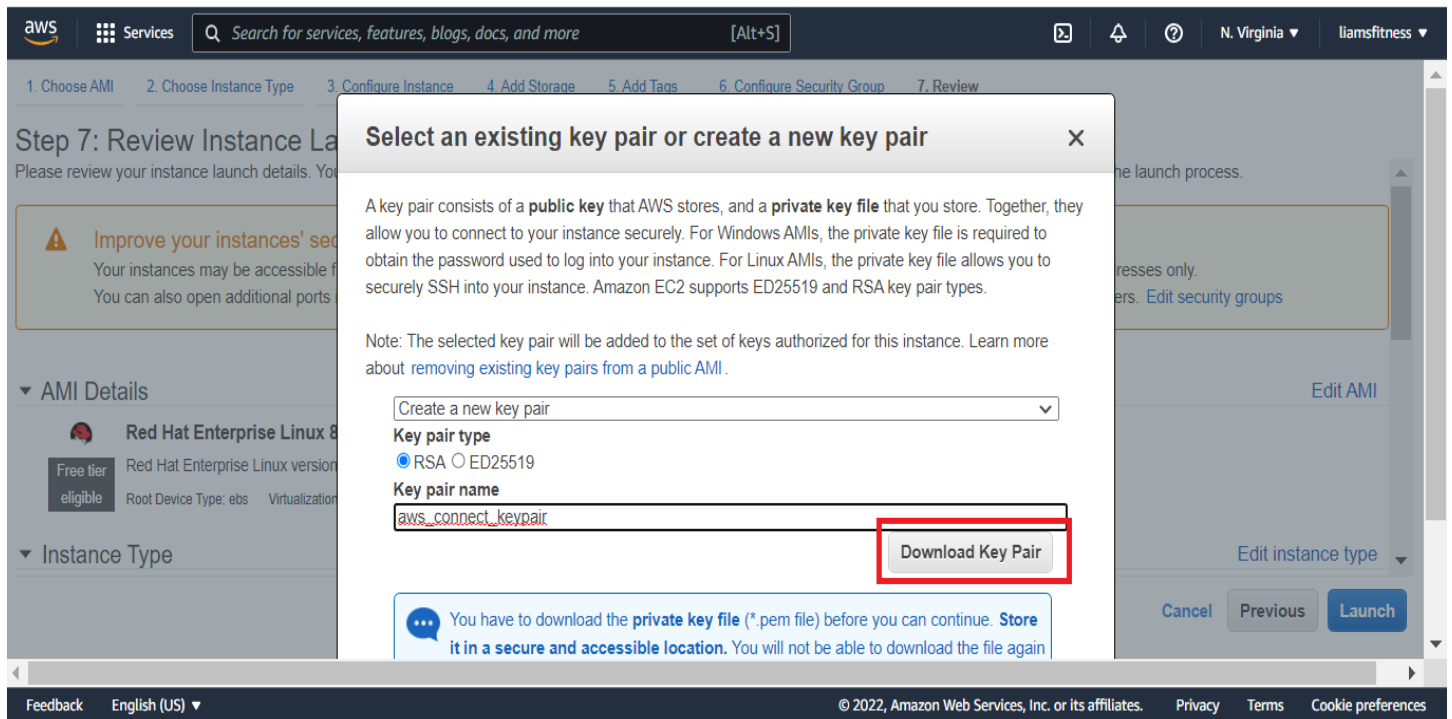
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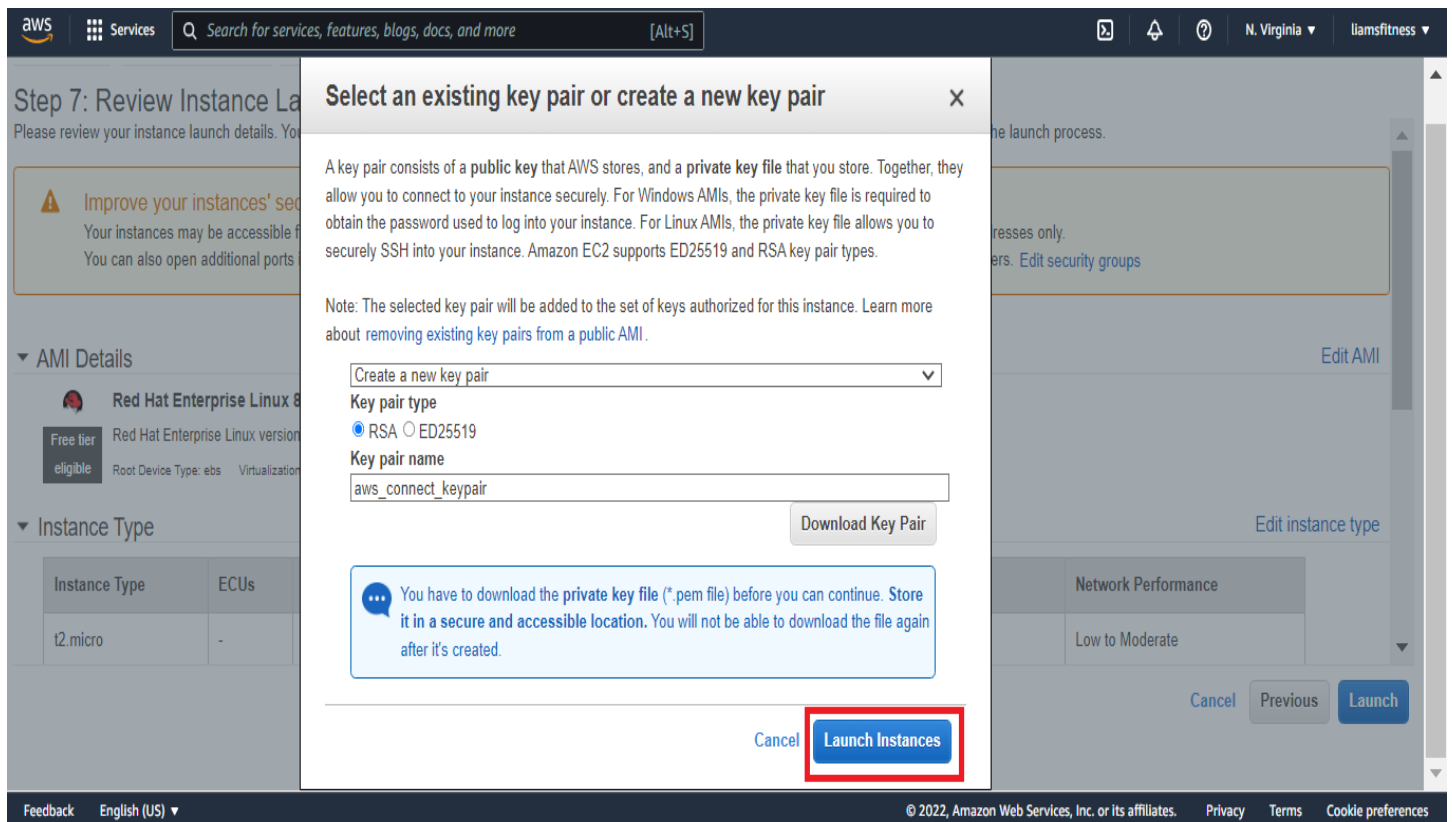
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Ensure **Create a new key pair** is selected. Also, ensure that **Key pair type** is set to **RSA**. Then, give it a name (**aws_connection**). Finally, click **Download Key Pair** and save it somewhere on your PC.



After you download the key pair (which will be named **aws_connect_keypair.pem**), you will be able to click **Launch Instances** to bring up the RHEL 8 instance.



As you can see, it can take up to a minute, or two, for the instance to be brought up.

The screenshot shows the AWS Management Console interface. At the top, there's a navigation bar with the AWS logo, 'Services' link, a search bar containing 'Search for services, features, blogs, docs, and more', and a language dropdown set to 'N. Virginia'. Below the navigation bar, the 'Launch Status' section is displayed. It features a green notification box stating 'Your instances are now launching' with a link to 'View launch log'. Below this is a blue information box about estimated charges. Further down, there's a section titled 'How to connect to your instances' with instructions and a link to 'View Instances'. At the bottom, there are links to 'Amazon EC2: User Guide' and 'Amazon EC2: Discussion Forum'.

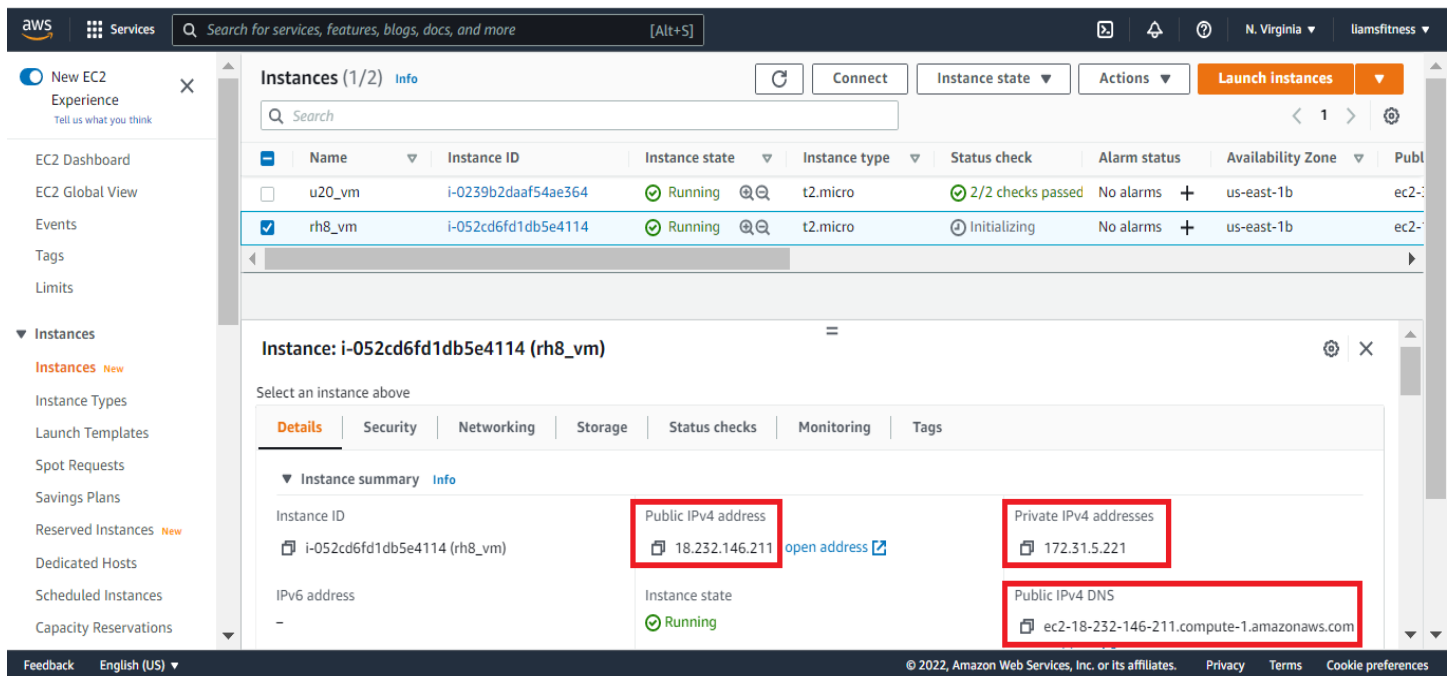
Now, you can click on **Services** at the top left of the screen and then select **EC2** under **Recently visited**.

Or, you can enter **EC2** in the search bar to access your running instance (both methods work).

The image consists of two side-by-side screenshots of the AWS Management Console. The left screenshot shows the 'Console Home' page with the 'Services' link highlighted in the top navigation bar. In the 'Recently visited' section, the 'EC2' service is highlighted with a red box. The right screenshot shows the 'Launch instance wizard' page with the search bar containing 'ec2' highlighted. In the 'Services' list on the right, the 'EC2' service is highlighted with a red box.

Ensure your new instance is selected (**rh8_vm**), then on the **Details** tab, note the value for **Public IPv4 DNS**.

I usually keep the instance's name, public IP, private IP and public IPv4 DNS stored for easy access. We will need some of this information to connect to the instance.



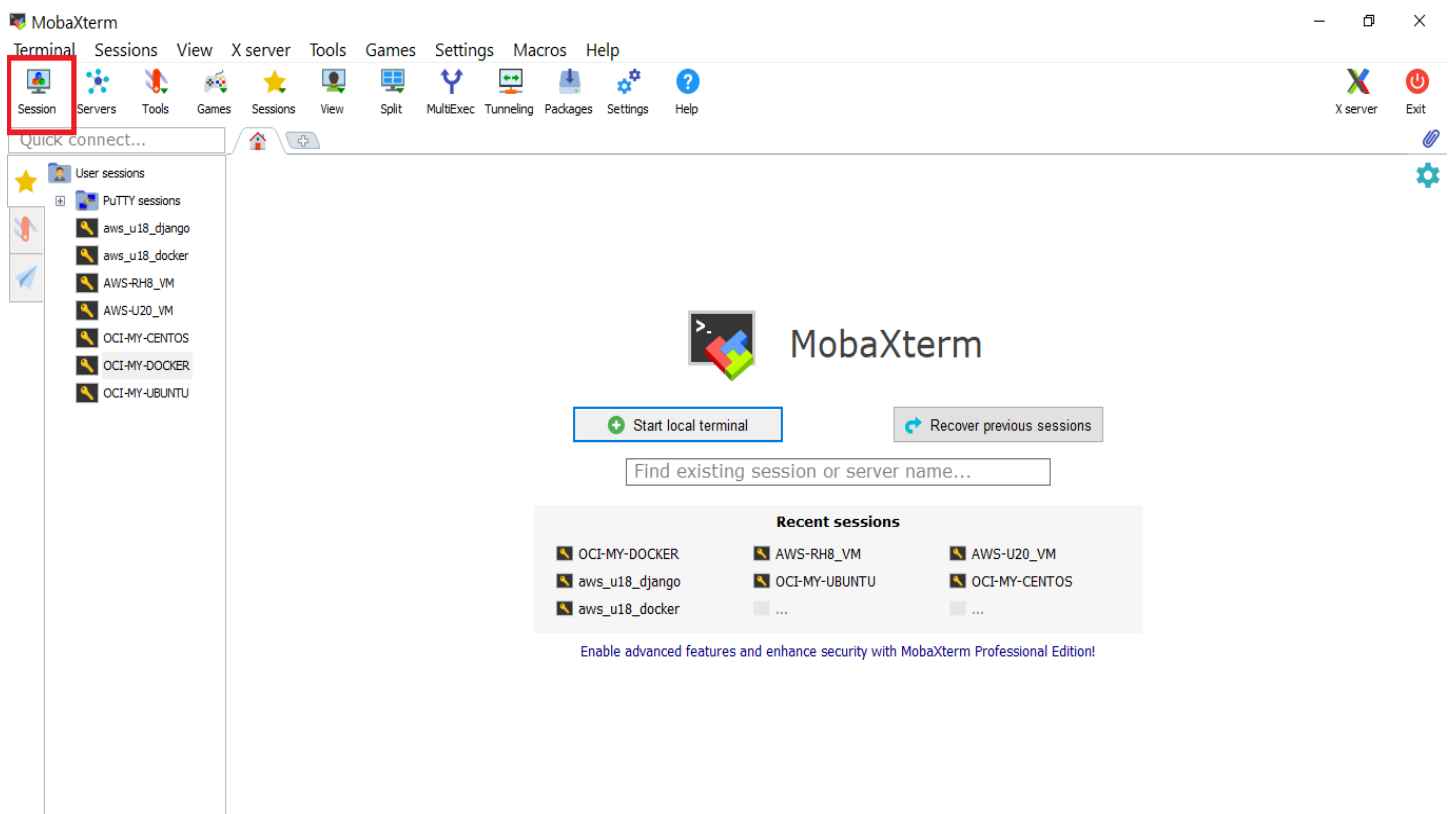
The screenshot shows the AWS Management Console interface. On the left, the 'Instances' section is expanded, showing a list of instances. The instance 'rh8_vm' with ID 'i-052cd6fd1db5e4114' is selected. The 'Details' tab is active, displaying the instance's configuration. Key information is highlighted with red boxes:

- Public IPv4 address:** 18.232.146.211
- Private IPv4 addresses:** 172.31.5.221
- Public IPv4 DNS:** ec2-18-232-146-211.compute-1.amazonaws.com

The instance is in the 'Running' state, using the 't2.micro' instance type, and is located in the 'us-east-1b' availability zone.

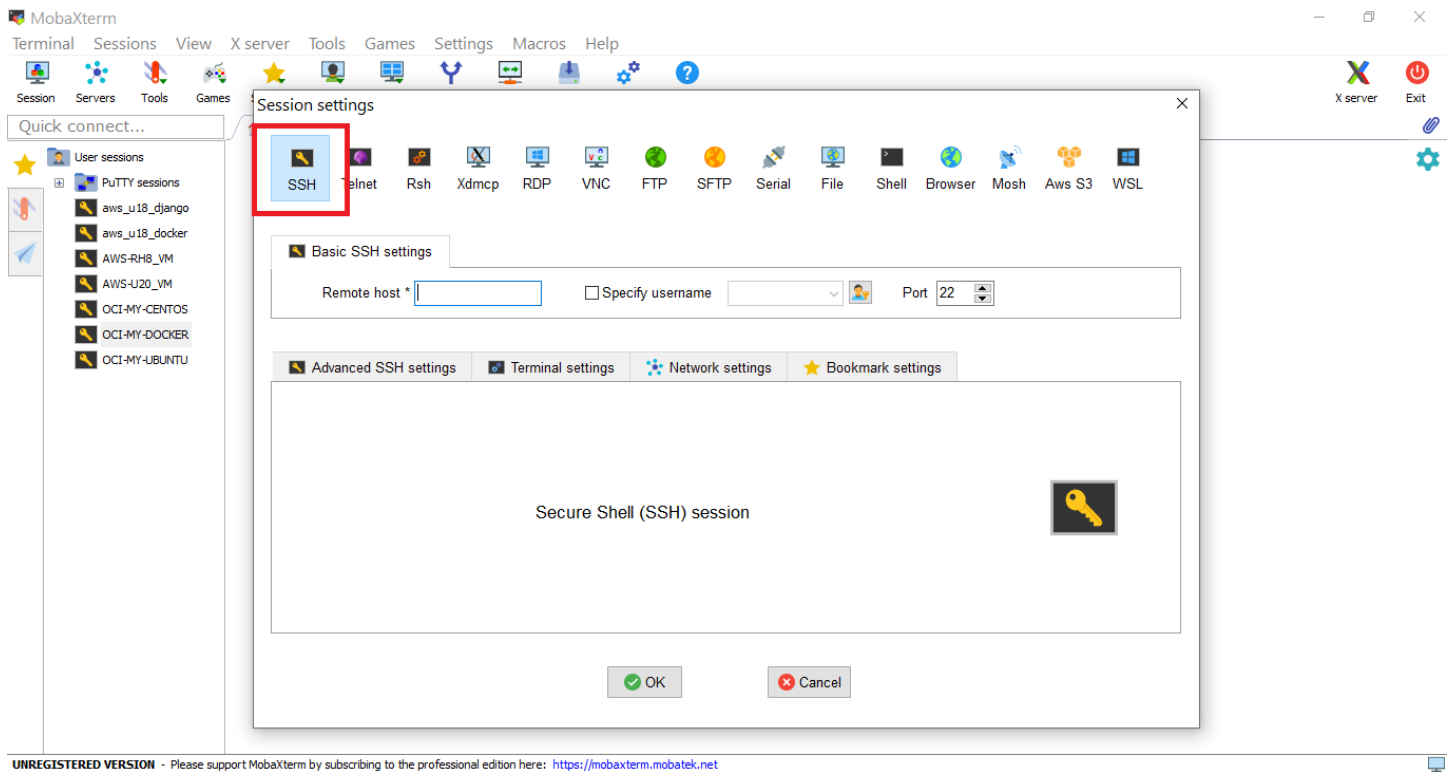
Connect to RHEL 8

Now you will need an SSH client to connect to your instance. I am on Windows 10 and have installed [GitBash](#) which includes an SSH client. If you do not want to install GitBash, I also use [MobaXterm Portable](#) and I find it to be a great tool and easy to use. Using **MobaXterm**, I would first create a session by clicking the **Session** button in the top left corner:



The screenshot shows the MobaXterm application window. The 'Session' button in the top left corner is highlighted with a red box. The interface includes a menu bar (Terminal, Sessions, View, X server, Tools, Games, Settings, Macros, Help) and a toolbar with icons for Session, Servers, Tools, Games, Sessions, View, Split, MultiExec, Tunneling, Packages, Settings, and Help. The main area displays the MobaXterm logo and buttons for 'Start local terminal' and 'Recover previous sessions'. Below these, there is a search bar for existing sessions and a list of recent sessions, including 'OCI-MY-DOCKER', 'AWS-RH8_VM', 'AWS-U20_VM', 'aws_u18_django', 'OCI-MY-UBUNTU', and 'OCI-MY-CENTOS'.

Followed by clicking the **SSH** button.

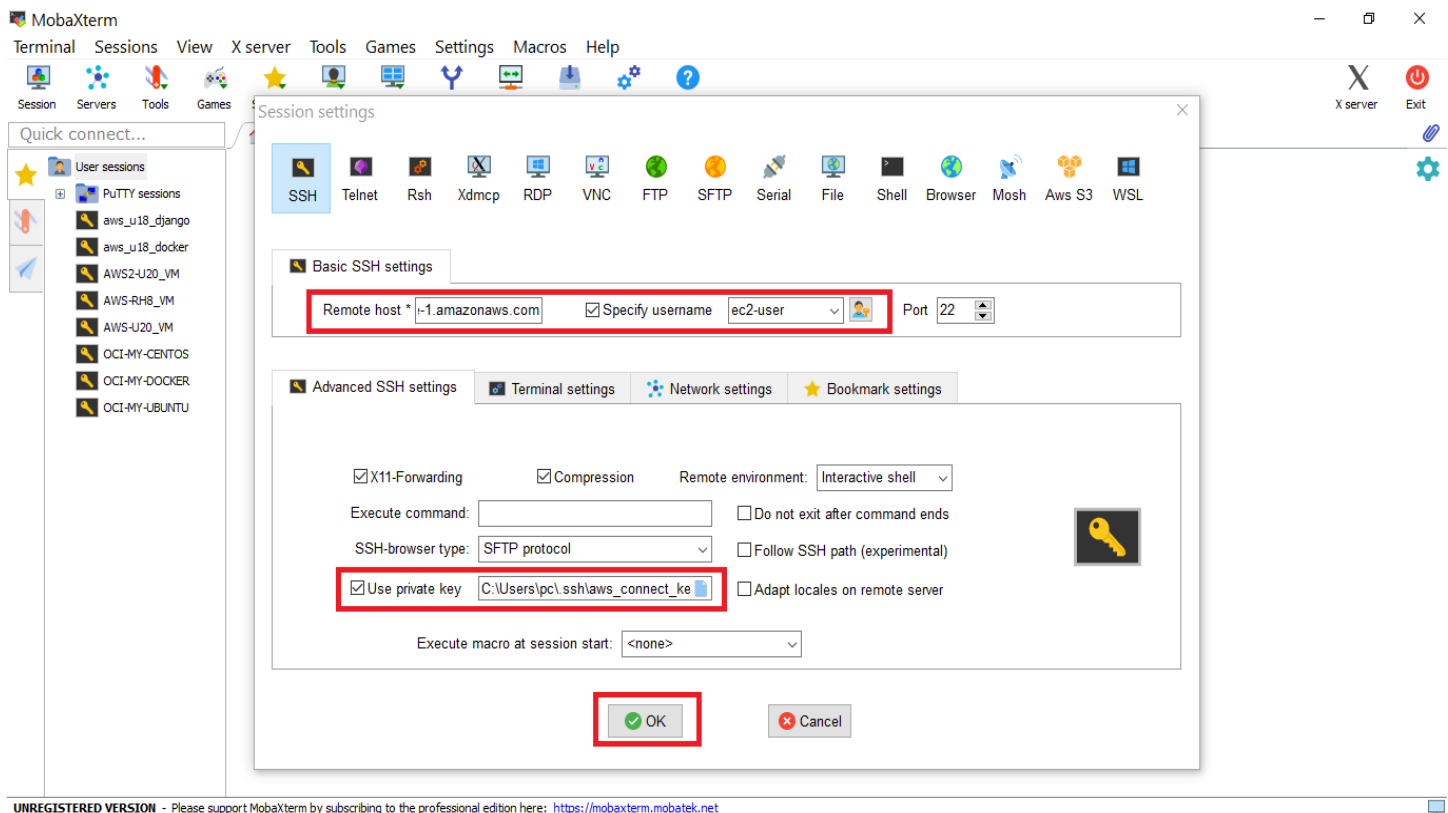


For **Remote host**:, enter your **Public IPv4 DNS** from your instance's **Details** tab.

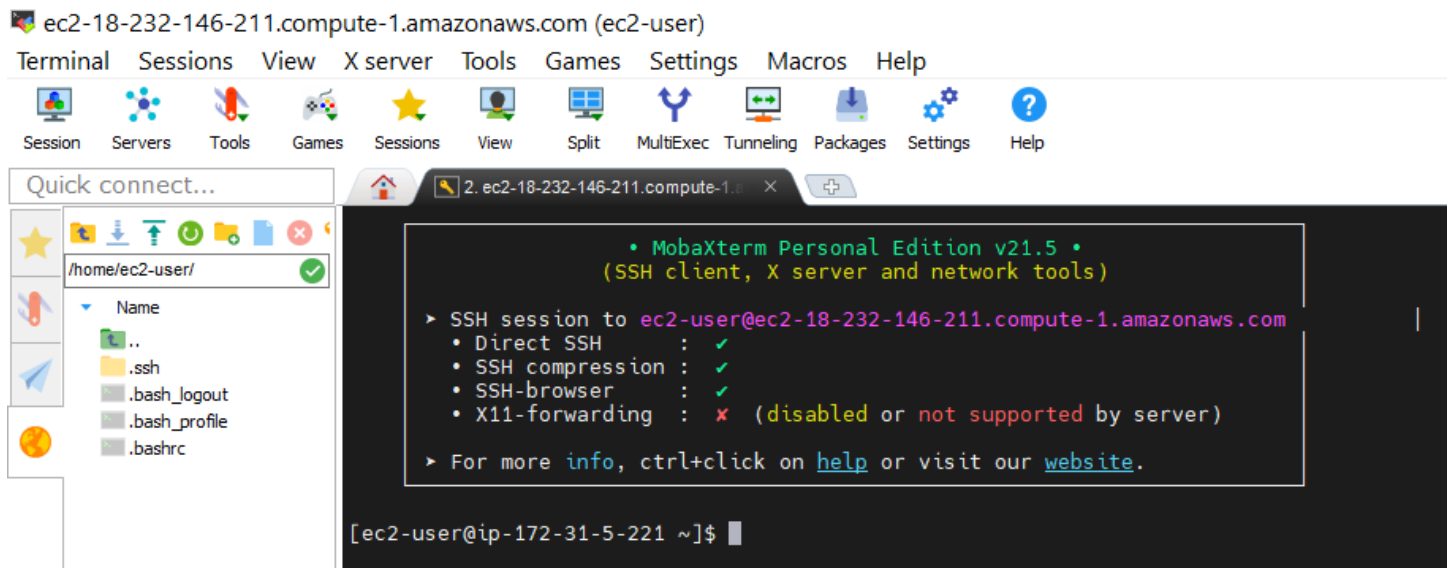
Also specify the username of **ec2-user**. That is the default username for every RHEL instance created on AWS.

Then, under **Advanced SSH Settings** select the key that you downloaded earlier (**aws_connect_keypair.pem**).

Finally, click **OK**.



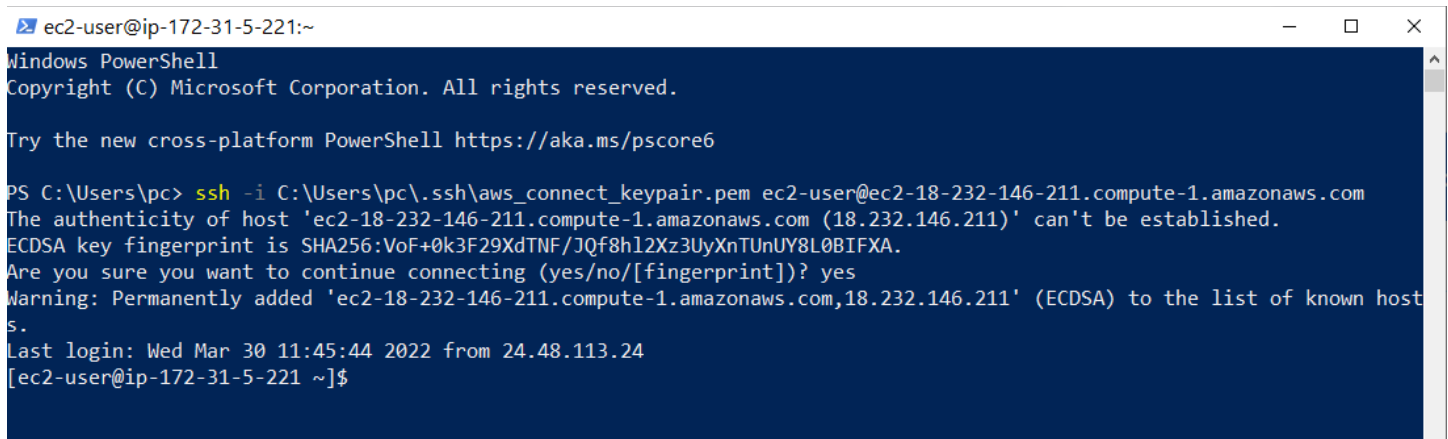
Your session should open to your newly created EC2 instance running RHEL 8.



If you installed [GitBash](#), you can open either PowerShell or a Windows command prompt. Then, from the command line, enter the following (**NOTE**: make sure you enter **your** connection details):

```
ssh -i /path/my-key-pair.pem my-instance-user-name@my-instance-public-dns-name
```

```
ssh -i C:\Users\pc\.ssh\aws_connection.pem ec2-user@ec2-3-231-211-145.compute-1.amazonaws.com
```



I hope you've enjoyed this tutorial.

Please note that the free tier allows for 750 hours per month of Amazon EC2. You can create many EC2 instances but beware of the limit. If you go over that limit, you will pay the cost. My advice to you is to shutdown your instance/s after you've done your work.

I have another tutorial where I demonstrate the creation of an **Ubuntu 20** EC2 (Elastic Compute Cloud) instance.

If you're interested in a **deb** based **Ubuntu 20** EC2 instance installation, you can access the tutorial [here](#).

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