

Brainhack ATL 2019

- Using AWS

1. Each user will receive an email with the steps to follow for login.
The email contains the sign-in URL and your username.
 - a. **Sign In URL:** <https://teamname.signin.aws.amazon.com/console>
 - b. **Username:** <<username>>
2. You'll receive your password and a CSV file containing your credentials for programmatic access of AWS services in the next email. This is an autogenerated password and you need to change your password upon login.
3. On consecutive logins, if you see a screen like the one below, type your Team Name in the text box and you'll be redirected to the original login page where you can use your username and password.



Sign in ⓘ

Email address of your AWS account

Or to sign in as an IAM user, enter your [account ID](#) or [account alias](#) instead.

Next

New to AWS?

Create a new AWS account



AWS Accounts Include
12 Months of Free Tier Access

Including use of Amazon EC2,
Amazon S3, and Amazon DynamoDB

Visit aws.amazon.com/free for full offer terms

About Amazon.com Sign In

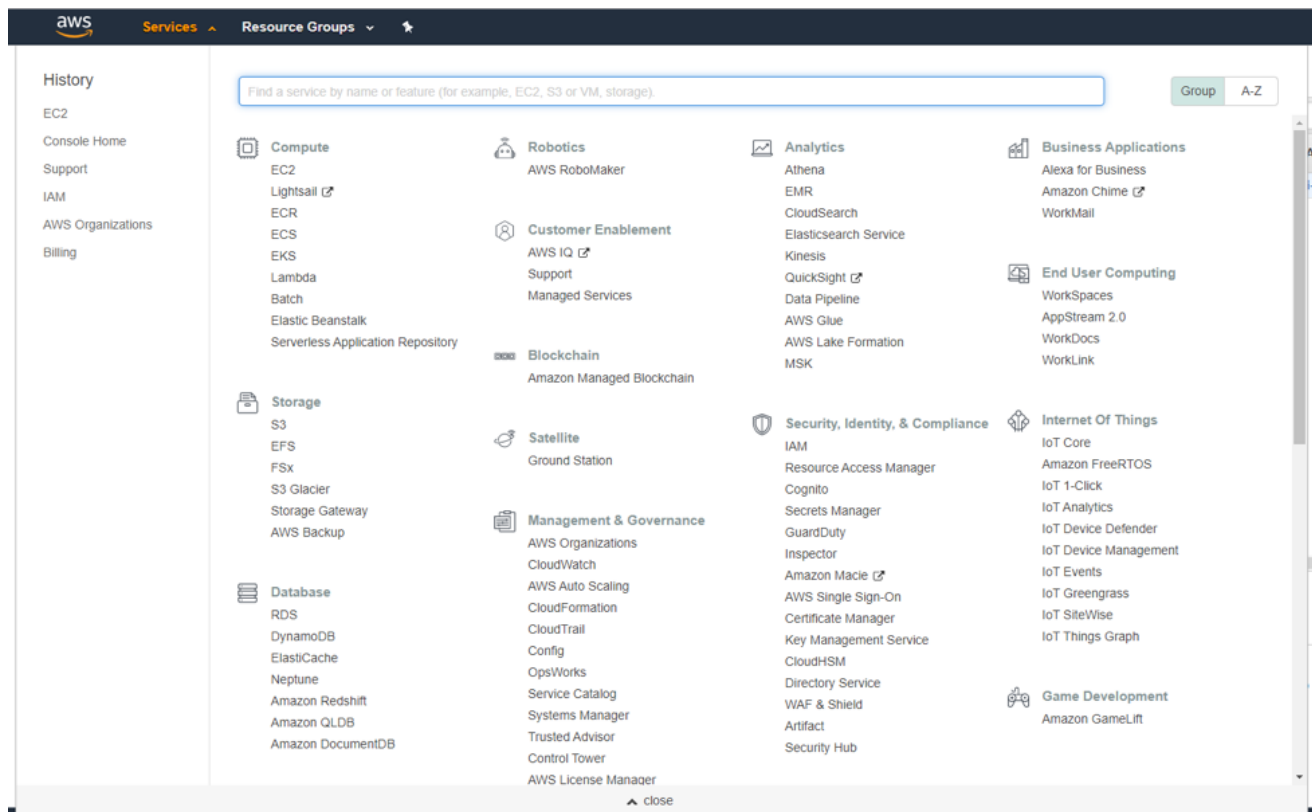
Amazon Web Services uses information from your Amazon.com account to identify you and allow access to Amazon Web Services. Your use of this site is governed by our [Terms of Use](#) and [Privacy Policy](#) linked below. Your use of Amazon Web Services products and services is governed by the [AWS Customer Agreement](#) linked below unless you have entered into a separate agreement with Amazon Web Services or an AWS Value Added Reseller to purchase these products and services. The AWS Customer Agreement was updated on March 31, 2017. For more information about these updates, see [Recent Changes](#).



Brainhack ATL 2019

- Using AWS

4. After login, you can see your AWS Console. Feel free to explore the different Services provided by AWS they are **AWESOME**. You can find all the services here. Some businesses run their whole workload just of few services.



5. Please refer to the guide linked below from AWS on EC2 instances. You do not need to create new IAM users. An IAM user is created for you upon joining a team.

Guide: <https://tinyurl.com/y9x4ysu3>



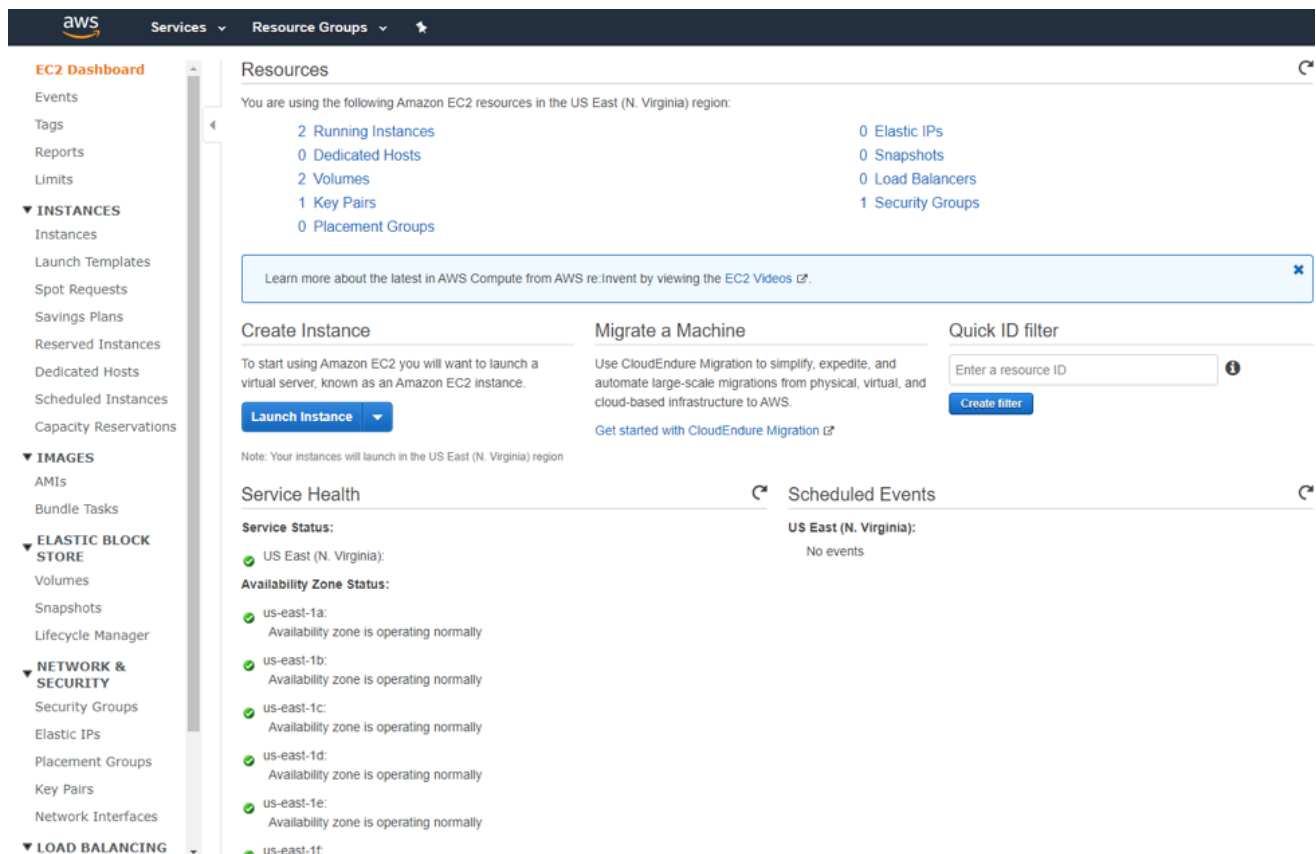
Brainhack ATL 2019

- Using AWS

6. By default, with your team account, each user (you) are assigned an Administrator role. This gives you access to (almost) everything on the team account. You can start creating EC2 instances.

7. Go to EC2 service under the compute section of the services. Alternatively, you can search for services on the search bar.

8. This will take to EC2 dashboard which looks like this.



The screenshot displays the AWS Management Console's EC2 Dashboard. The top navigation bar includes the AWS logo, 'Services', 'Resource Groups', and a star icon. The left-hand navigation pane is expanded to show the 'EC2 Dashboard' and lists various categories: INSTANCES, IMAGES, ELASTIC BLOCK STORE, NETWORK & SECURITY, and LOAD BALANCING. The main content area, titled 'Resources', shows the current region as 'US East (N. Virginia)' and lists available resources: 2 Running Instances, 0 Elastic IPs, 0 Dedicated Hosts, 0 Snapshots, 2 Volumes, 0 Load Balancers, 1 Key Pairs, 1 Security Groups, and 0 Placement Groups. Below this, there are sections for 'Create Instance', 'Migrate a Machine', and 'Quick ID filter'. The 'Service Health' section indicates that the service is operational across all availability zones in the region. The 'Scheduled Events' section shows no events.

Resources

You are using the following Amazon EC2 resources in the US East (N. Virginia) region:

- 2 Running Instances
- 0 Elastic IPs
- 0 Dedicated Hosts
- 0 Snapshots
- 2 Volumes
- 0 Load Balancers
- 1 Key Pairs
- 1 Security Groups
- 0 Placement Groups

Learn more about the latest in AWS Compute from AWS re:Invent by viewing the EC2 Videos.

Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

Launch Instance

Migrate a Machine

Use CloudEndure Migration to simplify, expedite, and automate large-scale migrations from physical, virtual, and cloud-based infrastructure to AWS.

Quick ID filter

Enter a resource ID

Create filter

Service Health

Service Status:

- US East (N. Virginia):

Availability Zone Status:

- us-east-1a: Availability zone is operating normally
- us-east-1b: Availability zone is operating normally
- us-east-1c: Availability zone is operating normally
- us-east-1d: Availability zone is operating normally
- us-east-1e: Availability zone is operating normally
- us-east-1f: Availability zone is operating normally

Scheduled Events

US East (N. Virginia):

No events

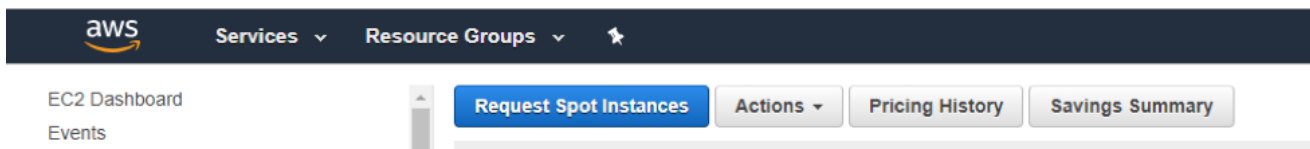


Brainhack ATL 2019

- Using AWS

LAUNCHING A SPOT INSTANCE

1. For BrainHack ATL, we'll be using only spot instances. Please refrain from launching on demand instances.
2. On the left panel under the Instances tab, select Spot Requests.
3. Click on the Request Spot Instances.



4. Use Flexible Workloads Option.

[EC2](#) > [Spot Requests](#) > Request Spot Instances

Request Spot Instances

Tell us your application or task need

To help us identify the most appropriate compute capacity for your job, select the closest match for your application or task need.

☐ **Load balancing workloads**

Launch instances of the same size, in any Availability Zone.
Good for running web services.

☒ **Flexible workloads**

Launch instances of any size, in any Availability Zone.
Good for running batch and CI/CD jobs.

Configure your instances



Brainhack ATL 2019

- Using AWS

LAUNCHING A SPOT INSTANCE

5. Next step is to configure your instance. Your screen looks like this for configuring an Instance.

Configure your instances

Use a launch template to quickly set instance launch parameters (you can still modify some parameters). Improve your access to Spot capacity by including multiple Availability Zones.

Launch template

None (Default version) [Create launch template](#)

AMI [?](#)

Amazon Linux 2 AMI (HVM), SSD Volume Type (ami-009d6802948d06e52) [Search for AMI](#)

Minimum compute unit ☐ as specs ☒ as an instance type

c3.large (2 vCPU, 3.75 GiB 2 x 16 SSD) [Change instance type](#)

Network [?](#)

vpc-efbbee95 (172.31.0.0/16) (default) [Create new VPC](#)

Availability Zone [?](#)

No preference (balance across all Availability Zones)

Key pair name [?](#)

(optional) [Create new key pair](#)

[Additional configurations](#) Modify or use the default values

- Leave the Launch Template as **None**. If you're familiar with templates, please use this to launch your AMI
- For the AMI please use the default AWS AMI or Ubuntu if you have a preference. **(Ideally, I want to provide users with pre-installed software so that they need not install all by themselves. I'm working on it. This Part will change)**
- For **Minimum Compute Unit**, you've the option to select **as specs** or **as an instance type**. Select as instance type and click **change instance type** to see all the available instance types. You can filter Instance types based on your need. Please keep in mind the price of each instance type, you may want to check the **dollar limit** on each team.



Brainhack ATL 2019

- Using AWS

LAUNCHING A SPOT INSTANCE

Select instance types

☐ Supports dedicated tenancy

Instance type	vCPUs	Memory (GiB)	Storage (GB)	Network	Spot price	Spot savings
All instance types	1	(Any)	(Any)	Any network		
All instance types	1	2	EBS only	Up to 10 Gigabit	\$0.0084	67%
Micro instances	2	4	EBS only	Up to 10 Gigabit	\$0.0168	67%
General purpose	4	8	EBS only	Up to 10 Gigabit	\$0.0373	63%
Compute optimized	8	16	EBS only	Up to 10 Gigabit	\$0.0671	67%
FPGA instances	16	32	EBS only	Up to 10 Gigabit	\$0.172	58%
GPU graphics	16	32	EBS only	Up to 10 Gigabit	\$0.1343	67%
GPU instances	2	3.75	2 x 16 SSD	Moderate	\$0.0294	72%
GPU compute	4	7.5	2 x 40 SSD	Moderate	\$0.0588	72%
Memory optimized	8	15	2 x 80 SSD	High	\$0.1327	68%
Storage optimized	16	30	2 x 160 SSD	High	\$0.2697	68%

Cancel Select

d. Unless you're familiar with Networking please use the defaults for Network and Availability Zone.

e. For **Key pair name**, select the keypair that you have created already. If this is the first instance that you're creating, or you've lost or do not have access to your previous KeyPair, click on **create new KeyPair**.

Refer to **Creating New Key Pair** section. If you've created your keypair and cannot find in the drop-down list, click on the refresh button.

f. Click on Additional Configurations



Brainhack ATL 2019

- Using AWS

LAUNCHING A SPOT INSTANCE

Additional configurations Modify or use the default values

EBS volumes ⓘ

Device ⓘ	Snapshot	Size (GiB)	Volume type	IOPS	Delete ⓘ	Encrypt
Root: /dev/xvda	snap-05c184ed39d0ecd7b	8	General Purpose (SSD)		<input checked="" type="checkbox"/>	Not Encrypted

No additional EBS volumes configured

g. Change the Size of the volume to appropriate size. For example, 200 GiB. You can modify this size once per every 6 hours after the instance is launched.

h. You can enable EBS-Optimized if it makes any difference for your application.

[+ Add new volume](#)

EBS-optimized ⓘ

☐ Launch EBS-optimized instances

Instance store ⓘ

☐ Attach at launch

Monitoring ⓘ

☐ Enable CloudWatch detailed monitoring

Tenancy ⓘ

Default - run a shared hardware instance

Security groups ⓘ

☒ default

[Create new security group](#)

Auto-assign IPv4 public IP ⓘ

Use subnet setting (Enable)

IAM instance profile ⓘ

(optional)

[Create new IAM profile](#)



Brainhack ATL 2019

- Using AWS

LAUNCHING A SPOT INSTANCE

- i. For **Instance Store**, **Monitoring**, and **Tenancy** leave the default values.
- j. Under **security groups**, select the **default**
- k. For **IAM Instance Profile**, you can leave it as optional or you can create an IAM policy for this instance. Please refer to this guide linked below from AWS.

Guide: <https://tinyurl.com/yyzj3p5u>

- l. Under the Instance Tags, please make sure you have a tag called `team_name` with value as your team name as shown below

Instance tags ⓘ

Key	Value
team_name	bha_team01

+ Add new tag

- 6. Next step is to select the number of instances you'll need. **For BrainHack ATL, we'll limit ourselves to less than 5.** Also, select **Maintain Target Capacity**.

Tell us how much capacity you need

Set your total target capacity (number of instances or vCPUs) to launch. If you specified a launch template, you can allocate part of the target capacity as On-Demand. The number of On-Demand instances always

Total target capacity ⓘ

1 instances

Optional On-Demand portion [Learn more](#) ⓘ

0 instances

Only requests that specify a launch template are eligible for On-Demand

☒ Maintain target capacity

Interruption behavior ⓘ

Terminate

- 7. Under the **Fleet Recommendations**, unselect **Apply Recommendations**

- 8. Then, **Select Instance Types** button and select the Instance type that you've selected in the **step 5.C**.



Brainhack ATL 2019 - Using AWS

LAUNCHING A SPOT INSTANCE

9. Leave the rest as default and click the Launch Button at the end of the page

Your fleet request at a glance

Total target capacity 1 instances (maintain capacity)	Instance configuration Custom 2 vCPU, 3 GiB (min) 6 Availability Zones	Fleet strength Strong 6 instance pools	Estimated price ~\$0.045/hr at target capacity 70% savings compared to On-Demand
--	---	---	---

[JSON config](#) [Cancel](#) [Launch](#)

Previous version of Request Spot Instances

9. Leave the rest as default and click the Launch Button at the end of the page

10. If successful, this should take you to the page showing your Spot Requests.

EC2 Dashboard
Events
Tags
Reports
Limits

INSTANCES
Instances

Request Spot Instances Actions Pricing History Savings Summary

Request type: all State: all Search by keyword

Request Id	Request type	Instance type	State	Capacity	Status	Persistence	Created	Max price
sf-207422ac-aa84-...	fleet	g4dn.2xlarge.t3...	active	1 of 1	fulfilled	request	3 hours ago	\$0.752
sf-d44299dc-e1de-...	fleet	t3a.medium,t3...	active	1 of 1	fulfilled	request	12 days ago	\$0.0928

11. When you click on the **Instances** on the left panel, you should see your running instances.

[Launch Instance](#) [Connect](#) [Actions](#)

Filter by tags and attributes or search by keyword

	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Put
<input type="checkbox"/>	Codalab Inst...	i-0c2f0a81ec7f43d91	t3a.medium	us-east-1a	running	2/2 checks ...	None	ec2
<input type="checkbox"/>	BrainHackATL	i-0f5d1e50d59b66065	t3.2xlarge	us-east-1c	running	2/2 checks ...	None	ec2



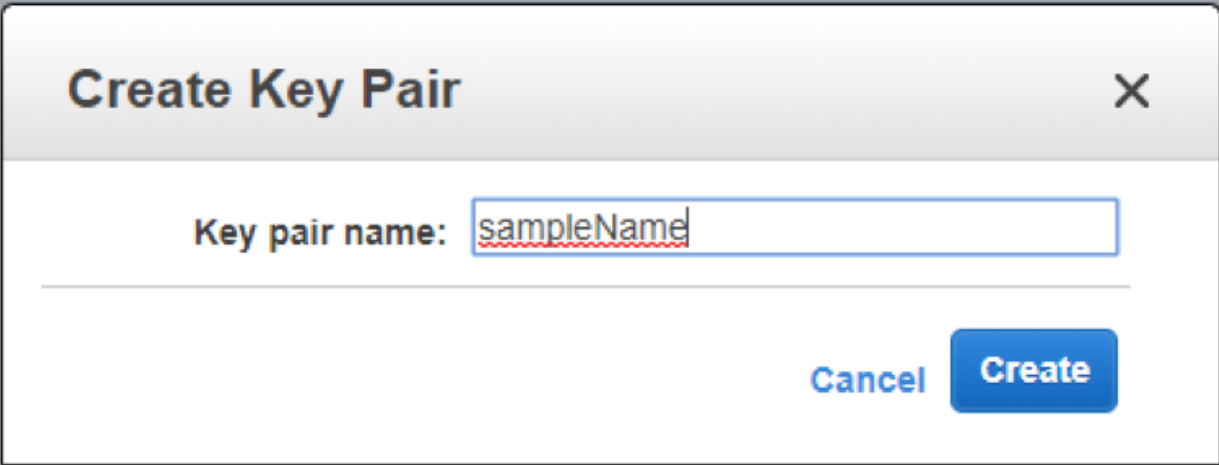
Brainhack ATL 2019

- Using AWS

12. Once you see the **Status Checks** as **2/2 Checks Passed**, you are ready to **Connect to the Instance**.

CREATING NEW KEYPAIR

1. **(Skip this step if you're following from step 5.E)** To create a new KeyPair, go to EC2 Dashboard, from the left panel under the Network & Security click on the Key Pairs.
2. Select Create Key Pair and give any name.



The screenshot shows a modal dialog titled "Create Key Pair". Inside the dialog, there is a text input field labeled "Key pair name:" which contains the text "sampleName". Below the input field, there are two buttons: "Cancel" and "Create". The "Create" button is highlighted in blue.

3. Click **Create**. This will download a **.PEM file**. Save this file for Connecting to the Instance.



Brainhack ATL 2019

- Using AWS

CONNECTING TO INSTANCES

1. From the EC2 dashboard, select your Instance you want to Connect and on the Top Menu click **Connect**. Follow the Instructions provided. **For Example,**

Connect To Your Instance



I would like to connect with

- ☒ A standalone SSH client
- ☐ EC2 Instance Connect (browser-based SSH connection)
- ☐ A Java SSH Client directly from my browser (Java required)

To access your instance:

1. Open an SSH client. (find out how to [connect using PuTTY](#))
2. Locate your private key file (Codalab.pem). The wizard automatically detects the key you used to launch the instance.
3. Your key must not be publicly viewable for SSH to work. Use this command if needed:

```
chmod 400 Codalab.pem
```

4. Connect to your instance using its Public DNS:

```
ec2-100-25-255-202.compute-1.amazonaws.com
```

Example:

```
ssh -i "Codalab.pem" ec2-user@ec2-100-25-255-202.compute-1.amazonaws.com
```

Please note that in most cases the username above will be correct, however please ensure that you read your AMI usage instructions to ensure that the AMI owner has not changed the default AMI username.

If you need any assistance connecting to your instance, please see our [connection documentation](#).

Close

