

Quick Guide – Launching an EC2 instance

Objective

This guide has been written to help you understand how to launch an EC2 instance via the AWS console.

Background

EC2 instances are virtual machines. In order to launch an EC2 instance, you must have a valid IAM user account that you can use to log into the AWS Console. It is also advisable to have prepared an EC2 Key Pair in advance.

Note. If you are unsure how to create an EC2 keypair, see the guide **Generating and EC2 key pair** for detailed steps.

Further reading

Should you require any further information, please refer to the following resource:

<http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/launching-instance.html>

Note: If you find that some of the screen shots or steps are out of date, **please report them to your trainer.**

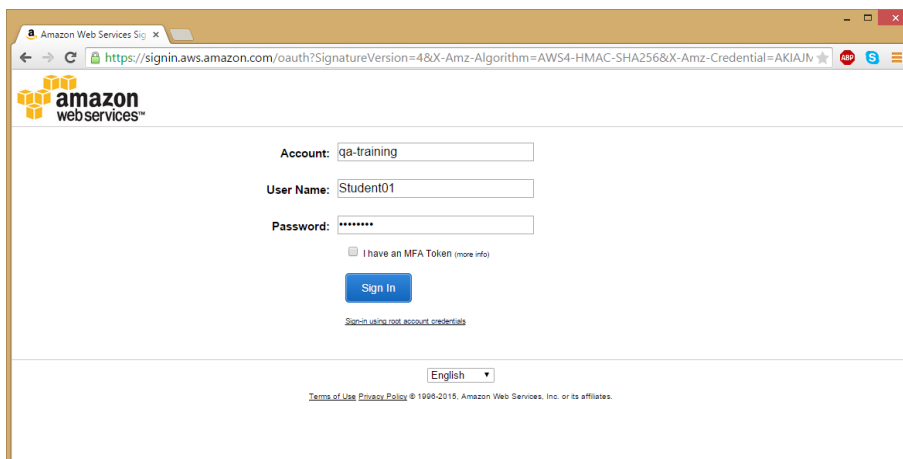
Stage 1 : Log into the AWS Console

- 1 Navigate to the AWS Console using the following URL:

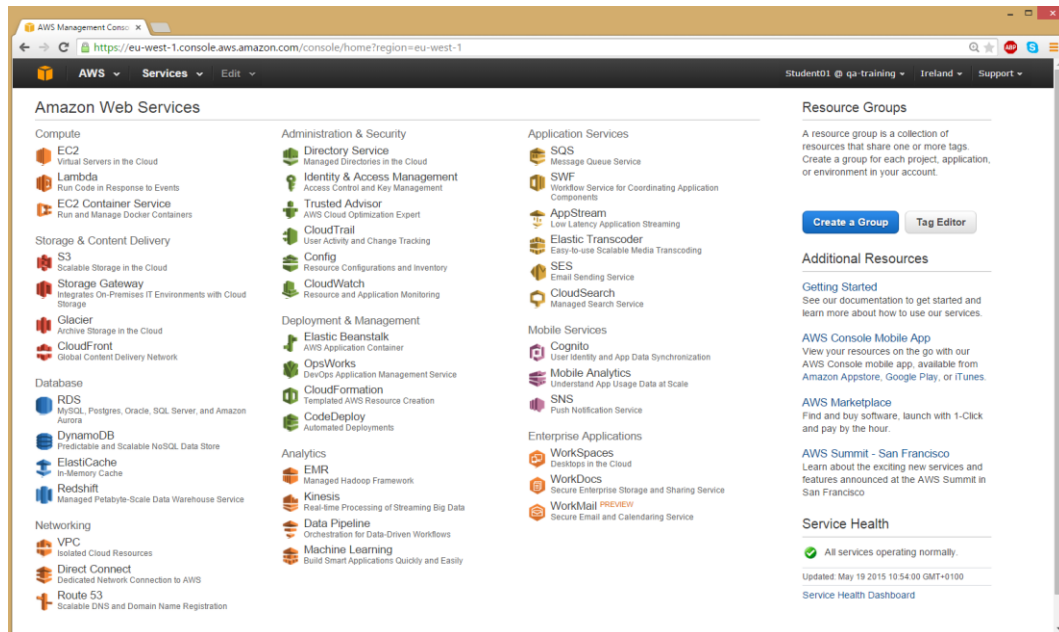
<https://qa-training.signin.aws.amazon.com/console>

Log in with the following credentials:

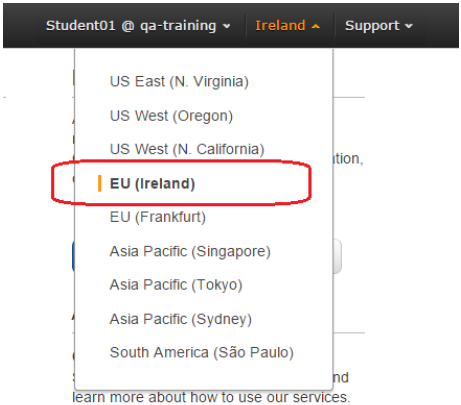
User Name	StudentXX (where XX is your student number)
Password	Pa\$\$w0rd



2 You will now see the AWS Console.

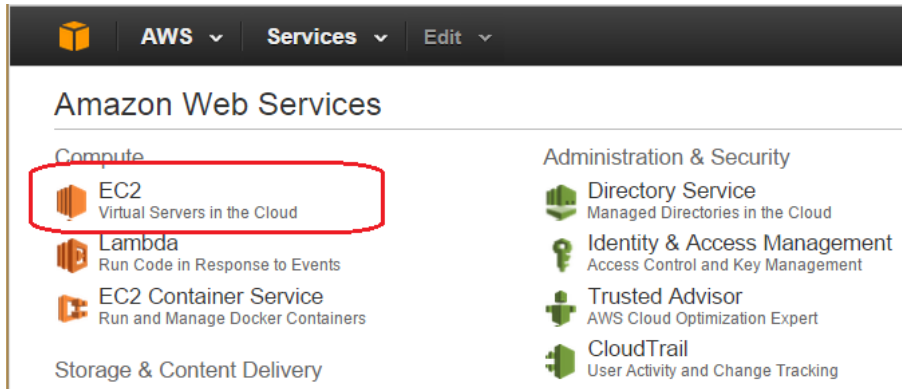


Stage 2 – Choose your region

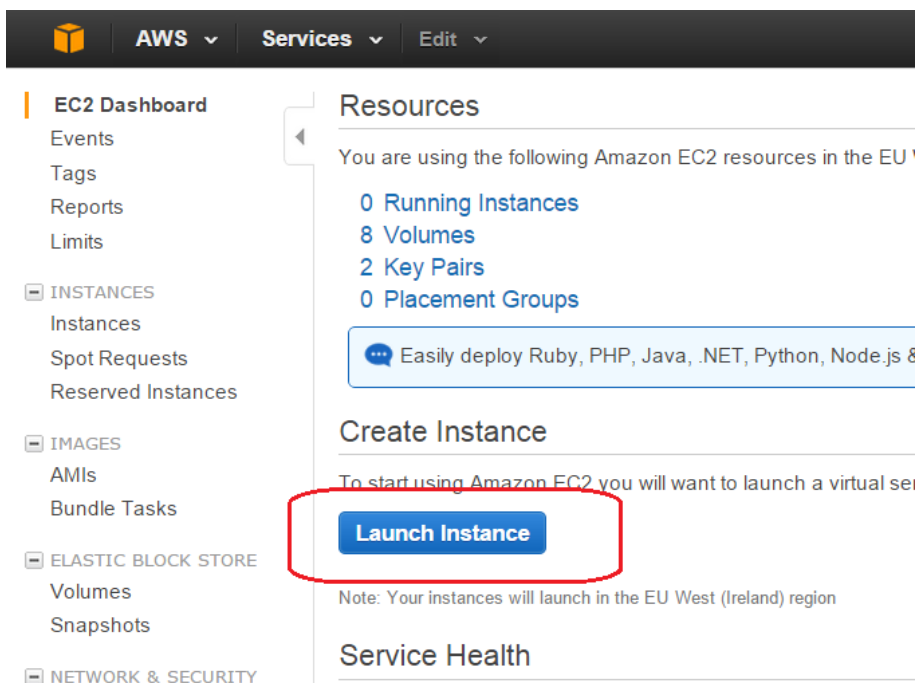
3	<p>When you launch EC2 instances, they are situated in regions which are situated around the world.</p> <p>Your choice of region might depend its proximity to your location. It might be a matter of compliance. i.e. your assets must be deployed in the European Union.</p> <p>For more information regarding AWS Regions, please read the following: http://aws.amazon.com/about-aws/global-infrastructure/</p>
4	<p>Select your preferred region from the Region list in the top right hand corner of the screen.</p>  <p>The screenshot shows the AWS Management Console header with the user 'Student01 @ qa-training' and the current region 'Ireland'. A dropdown menu is open, displaying a list of AWS regions. The 'EU (Ireland)' option is highlighted with a red rectangle. The list includes: US East (N. Virginia), US West (Oregon), US West (N. California), EU (Ireland), EU (Frankfurt), Asia Pacific (Singapore), Asia Pacific (Tokyo), Asia Pacific (Sydney), and South America (São Paulo).</p>

Stage 3 – Launch an EC2 instance

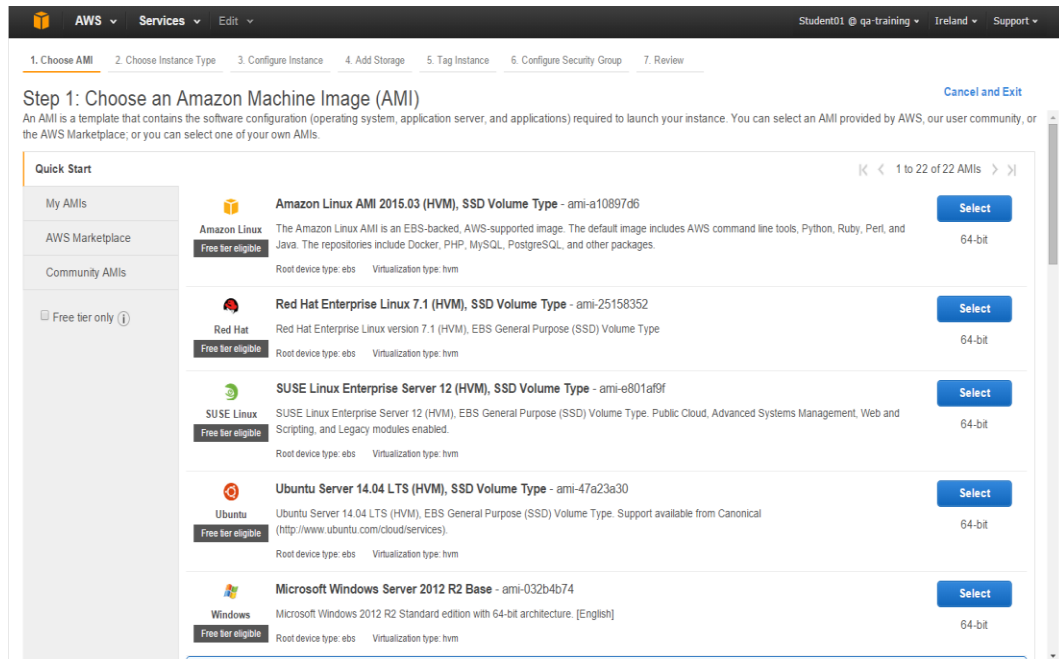
- 5 Click on the EC2 link in the top left hand corner of the screen.



- 6 In the EC2 Dashboard, click the **Launch** Instance button.

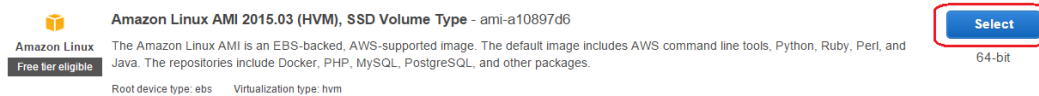


- 7 You will now be presented with a list of Amazon Machine Images – AMIs.

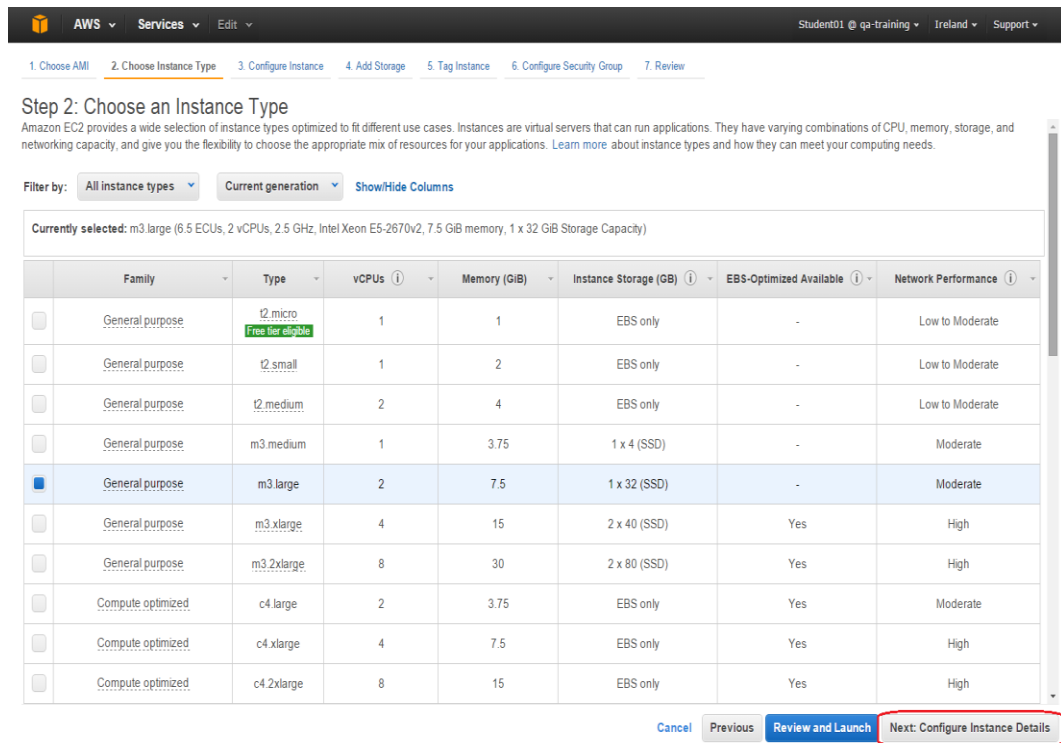


These are a series of prebuilt images, with the operating system already installed.

- 8 Click the **Select** button alongside the desired AMI. In this example we have chosen the **Amazon Linux AMI**.



- 9 The next step is to choose the **Instance Type**. This dictates the resources available to the instance. Such as the number of virtual cores (vCPUs) and Memory.



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 types Current generation Show/Hide Columns

Currently selected: m3.large (6.5 ECUs, 2 vCPUs, 2.5 GHz, Intel Xeon E5-2670v2, 7.5 GiB memory, 1 x 32 GiB Storage Capacity)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GiB)	EBS-Optimized Available	Network Performance
<input type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	m3.medium	1	3.75	1 x 4 (SSD)	-	Moderate
<input checked="" type="checkbox"/>	General purpose	m3.large	2	7.5	1 x 32 (SSD)	-	Moderate
<input type="checkbox"/>	General purpose	m3.xlarge	4	15	2 x 40 (SSD)	Yes	High
<input type="checkbox"/>	General purpose	m3.2xlarge	8	30	2 x 80 (SSD)	Yes	High
<input type="checkbox"/>	Compute optimized	c4.large	2	3.75	EBS only	Yes	Moderate
<input type="checkbox"/>	Compute optimized	c4.xlarge	4	7.5	EBS only	Yes	High
<input type="checkbox"/>	Compute optimized	c4.2xlarge	8	15	EBS only	Yes	High

Cancel Previous **Review and Launch** **Next: Configure Instance Details**

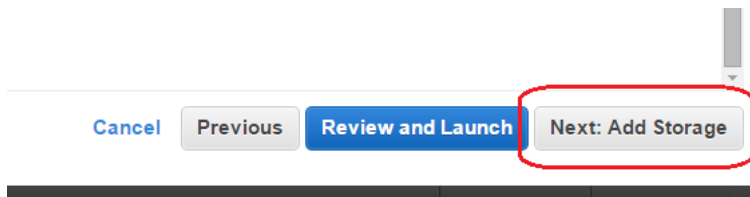
Note. Once you have selected your desired Instance Type (e.g. m3.large), you should click the **Next: Configure Instance Details** button to proceed.

- 10 This next screen (**Configure Instance Details**) contains several options. They include the network (VPC, and Subnet) that you want to launch your instance(s) into.

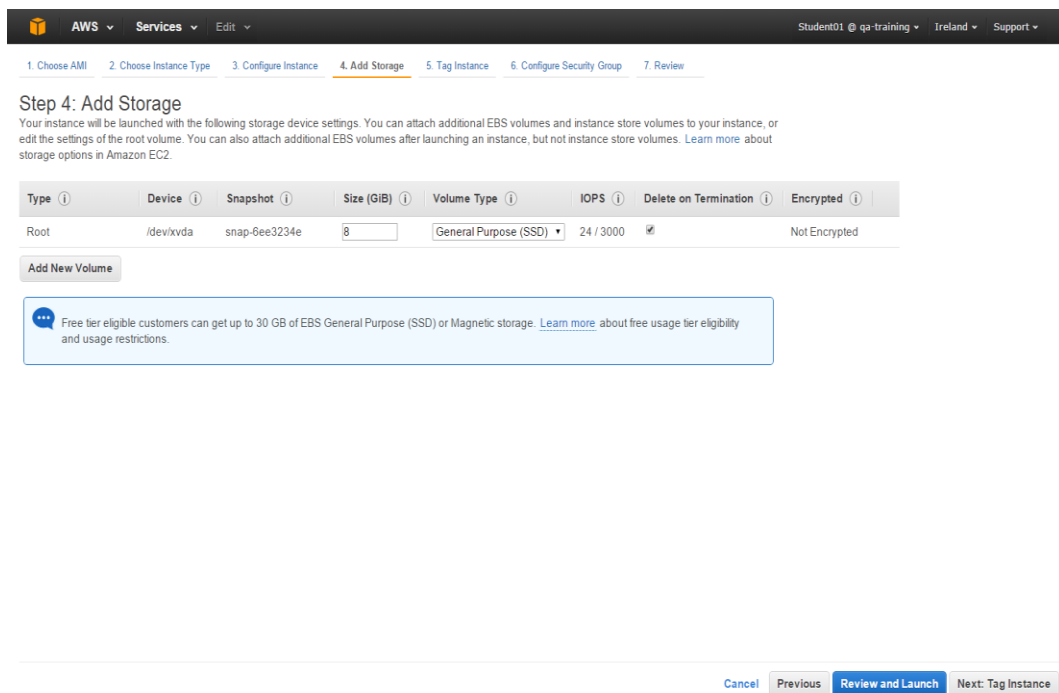
- 11 Perhaps the most interesting option on this screen is hidden away at the bottom. Expand the **Advanced Details** link at the bottom of the screen.

As you can see, it reveals a field for **User data**. The User data field permits you to pass a script to the launching instance that will be executed as it boots up. This script could be a bash script (for Linux) or Powershell (for Windows). Passing scripts to launching instances in this way is known as **Bootstrapping**.

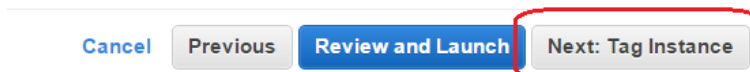
- 12 Once you have finished on the **Configure Instance Details** screen, you should click the **Next: Add Storage** button to proceed.



- 13 The **Add Storage** screen allows you to change the size of your instance's boot partition and add additional volumes. A single boot partition is sufficient for most server roles.



- 14 Once you have finished on the **Add Storage** screen, you should click the **Next: Tag Instance** button to proceed.



- 15 On the **Tag Instance** screen, you can define up to 10 tags for your instance.
- Tags are very useful for identifying your instance if you have several instances running. By default you are offered a tag of Name.
- Tags such as **Environment** or **Cost Centre** could be useful to manage costs or perhaps identify those instances that can be terminated at the end of the week, e.g. **Environment = R&D**

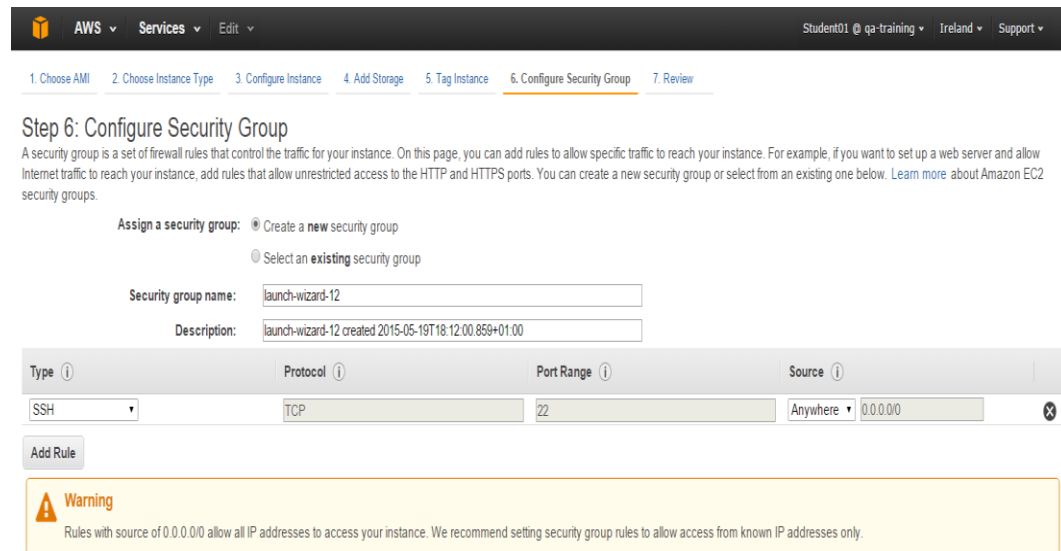
Note. Although the **Name** tag is offered, you are free to define any tags that you like.

- 16 Once you have finished on the **Tag Instance** screen, you should click the **Next: Configure Security Group** button to proceed.

17 The **Configure Security Group** screen requires some careful thought.

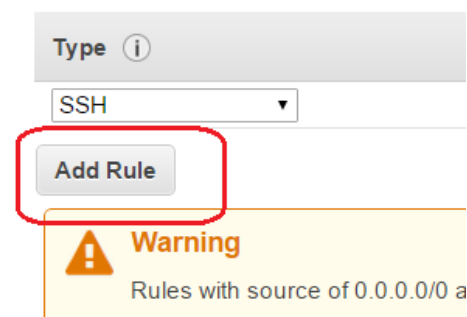
A security group is a set of firewall rules for your instance(s).

By default, you are offered a security group with a single rule permitting **SSH** traffic via port **22**. This is ideal for connecting to your remote instance for maintenance.



If you need to allow traffic via any other ports e.g. ports **80** and **443** for web traffic, you should add more rules.

18 To add more rules, you should click the **Add Rule** button.



- 19 You can then select the desired rule type e.g. HTTP, HTTPS etc.

The screenshot shows the 'Add Rule' section of the AWS Security Groups configuration. The 'Type' dropdown menu is open, and 'HTTP' is selected, highlighted with a red rectangle. The 'Protocol' dropdown is set to 'TCP'. The 'Port Range' is set to '22'. Below the dropdowns is an 'Add Rule' button and a yellow warning banner.

- 20 Once you have finished on the **Configure Security Group** screen, you should click the **Review and Launch** button to proceed.

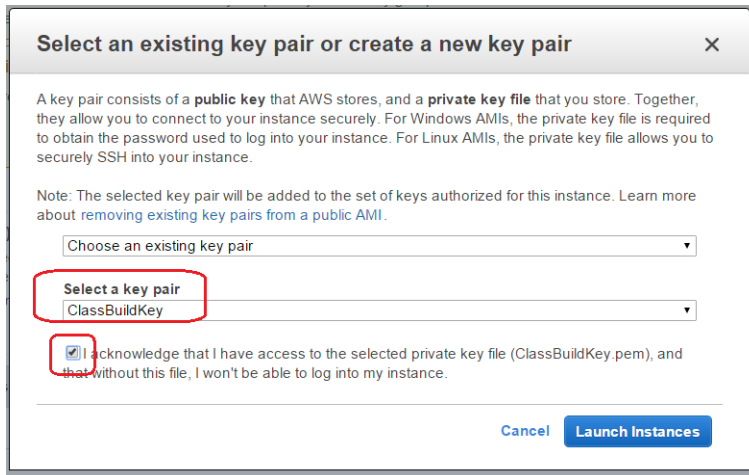
The screenshot shows the bottom of the 'Configure Security Group' screen. There are three buttons: 'Cancel' (blue text), 'Previous' (grey button), and 'Review and Launch' (blue button). The 'Review and Launch' button is highlighted with a red rectangle. Below the buttons is a footer with 'All rights reserved', 'Privacy Policy', and 'Terms of Use'.

- 21 The **Review and Launch** screen is simply a screen where you can review your options.

If you are happy to proceed, simply click the **Launch** button

The screenshot shows the bottom of the 'Review and Launch' screen. There are three buttons: 'Cancel' (blue text), 'Previous' (grey button), and 'Launch' (blue button). The 'Launch' button is highlighted with a red rectangle.

- 22 The final step is to select a Key Pair to associate with your launching instance then acknowledge your understanding that if you lose your key, you will not be able to log into your instance.



Select an existing key pair or create a new key pair X

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.

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 ▼

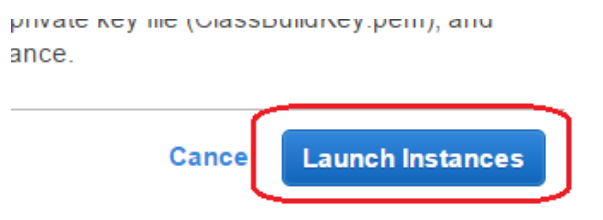
Select a key pair
ClassBuildKey ▼

☒ I acknowledge that I have access to the selected private key file (ClassBuildKey.pem), and that without this file, I won't be able to log into my instance.

Cancel Launch Instances

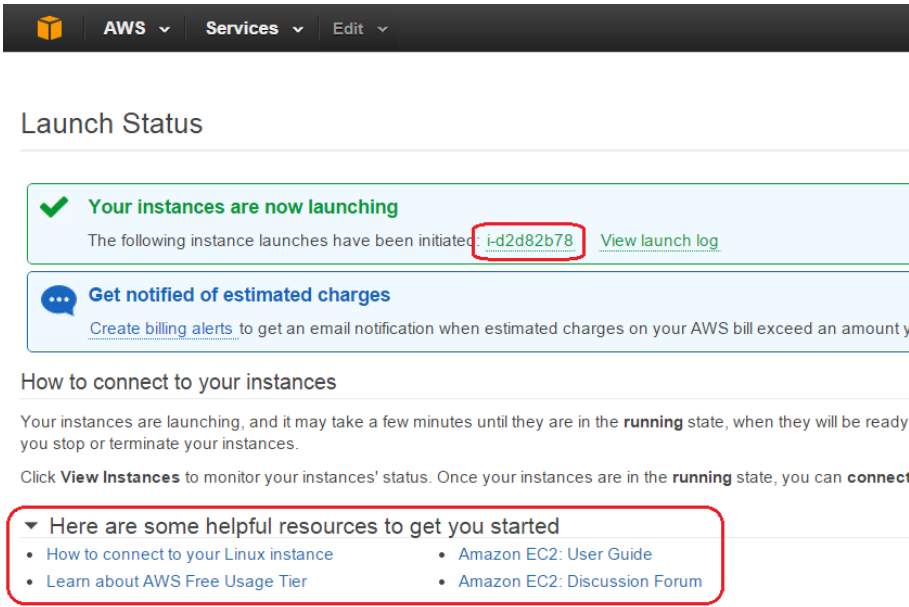
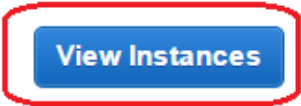
Note. It is possible to create a key pair 'on the fly' at this point but that would suggest that you were 'winging it'. If you are unsure how to create an EC2 keypair, see the guide **Generating and EC2 key pair** for detailed steps.

- 23 Finally, click the **Launch Instances** button to proceed.



private key file (ClassBuildKey.pem), and
ance.

Cancel Launch Instances

24	<p>You will be presented with the Launch Status screen which will provide you with the ID of your launching instance as well as some useful links.</p> 
25	<p>To view your launching instance(s), click on the View Instances button.</p> 

26 Locate your launching instance in the **Instances** screen.

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 St
<input type="checkbox"/>	Chef Workstation	i-d0880890	m3.medium	eu-west-1c	stopped		None
<input type="checkbox"/>	puppet master (ubun...	i-544dcbb0	m3.large	eu-west-1c	stopped		None
<input type="checkbox"/>	Web Server	i-d2d82b78	m3.large	eu-west-1c	running	Initializing	None
<input type="checkbox"/>	role demo	i-7f30c6d5	m3.large	eu-west-1c	stopped		None
<input type="checkbox"/>	puppet agent (ubuntu)	i-8484ed60	m3.medium	eu-west-1c	stopped		None
<input type="checkbox"/>	GATEWAY-01	i-8cbc2f68	m3.xlarge	eu-west-1c	stopped		None

Note. Your instance will have a status of Initialising for a couple of minutes while it boots up. (Windows instances take longer than Linux)

27 Eventually, the status of your instance should change to 2/2 checks passed.

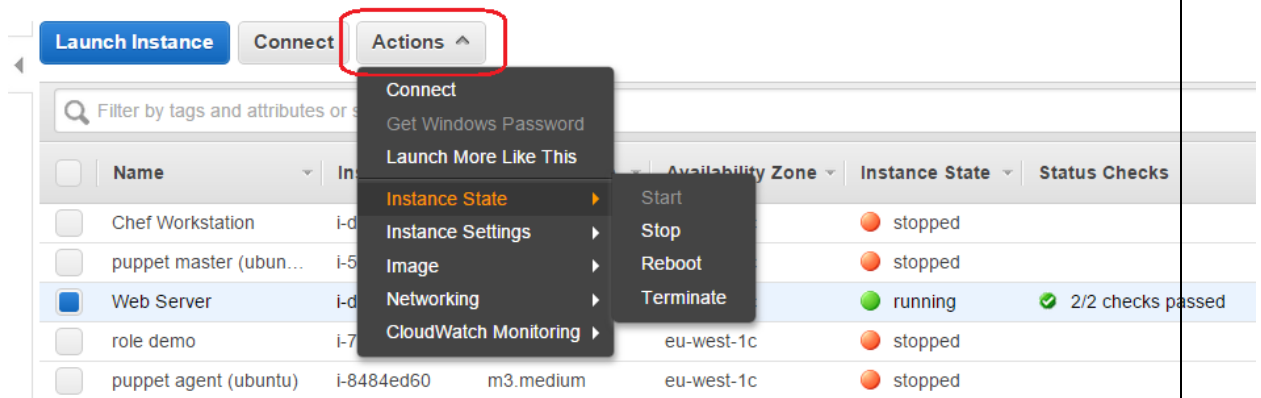
<input type="checkbox"/>	puppet master (ubun...	i-544dcbb0	m3.large	eu-west-1c	stopped	
<input type="checkbox"/>	Web Server	i-d2d82b78	m3.large	eu-west-1c	running	2/2 checks passed
<input type="checkbox"/>	role demo	i-7f30c6d5	m3.large	eu-west-1c	stopped	

28 Congratulations, you have successfully launched an EC2 instance.

One more thing

29 When you have finished with your instance, you can either **Stop** or **Terminate** it.

If you **Stop** an instance, you can Start it again another time with no loss of data. If you **Terminate** it, you lose all of the data on the boot partition. If you need another instance, you would need to launch a replacement.



Remember: If you find that some of the screen shots or steps are out of date, **please report them to your trainer.**