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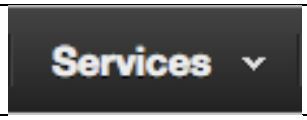
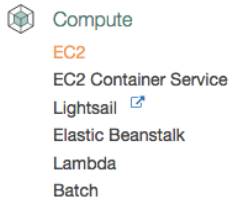
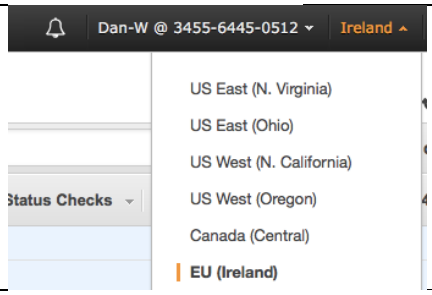
# Training Materials

Log in here using the username and password provided in the workshop

https://345564450512.signin.aws.amazon.com/console

To change your Identity and Access Management (IAM) password, click the drop down by your username, then My Security Credentials.

## Connecting to EC2

| | |
|---|---|
| Go to the Services Drop-Down |  |
| Select EC2 |  |
| Make sure you are in the EU-West region (Ireland) using the drop-down in the top right corner of the screen. |  |
| Under Create Instance select<br>Launch Instance |  |
| Create Amazon Linux AMI (Free Tier Eligible) |  |
| Select General Purpose t2.micro |  |
| Configure instance details |  |
| | |

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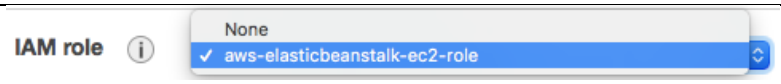
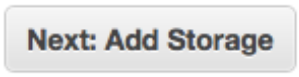
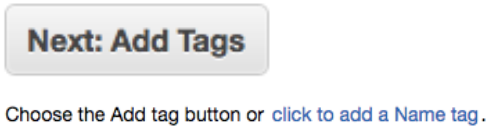
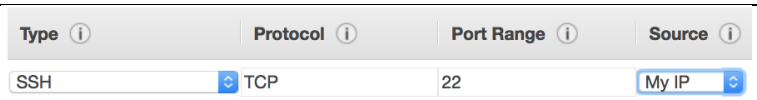
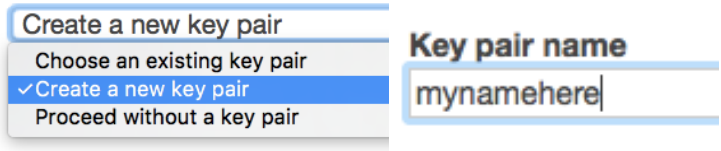
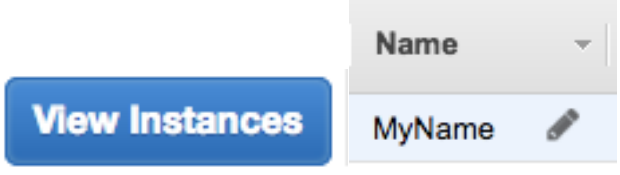
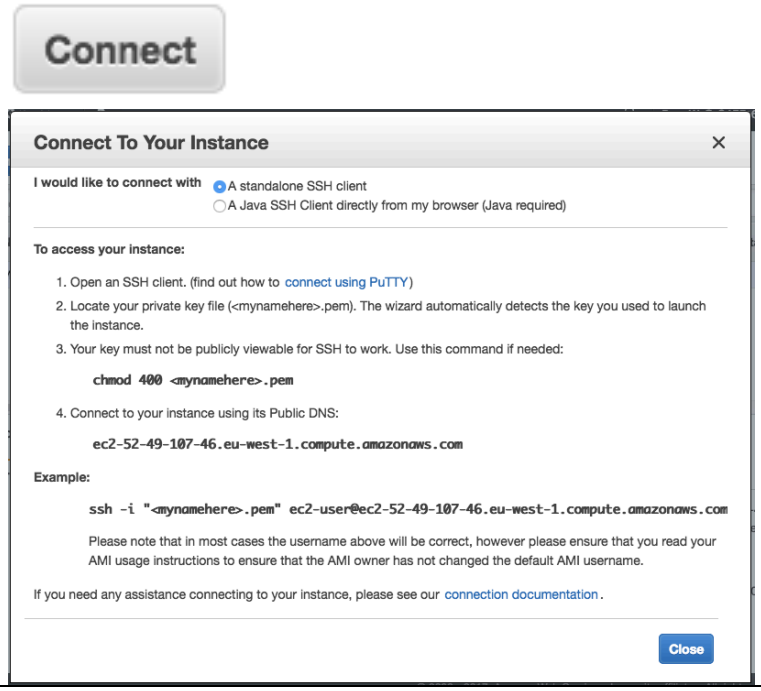
| | |
|---|---|
| Select the aws-elasticbeanstalk-ec2-role.<br><br>Roles encapsulate permissions (the ability to access, view or modify parameters) within AWS. They can be applied to EC2 instances, AWS users or groups of users. |  |
| Add storage – defaults are fine. |  |
| Add Tags<br>Add a name tag with your name, for identification of your instance. |  |
| Move on to security groups |  |
| Edit Security groups - Allow SSH, Source: My IP |  |
| Review and Launch |  |
| Launch |  |
| Create a new Key Pair, give it your name, press Download and save to your machine (mynamehere.pem) |  |
| Save this keypair somewhere easy to get to. We suggest a new folder in your home directory called "Key" | Mac/Linux<br>`$ mkdir Key`<br>`$ mv Downloads/mynamehere.pem Key/mynamehere.pem` |
| Launch your instance |  |
| Click View Instances.<br><br>Lots of instances will be launching at the same time – use the name tags to find yours. |  |

| | |
|---|---|
| click Connect and a window should open |   |

## Instructions for Mac / Linux

| | |
|---|---|
| open terminal<br>navigate to your key folder | `$ cd Key` |
| make your private key private by modifying its permissions. | `$ chmod 400 Name.pem` |
| to avoid having to type the long name over and over, copy it from the connection window set a variable in bash. | Example:<br>`ssh -i "mynamehere.pem" ec2-user@ec2-52-209-161-135.eu-west-1.compute.amazonaws.com`<br><br>`$ instance=ec2-user@ec2-ip-ip-ip.ip.location.compute. amazonaws.com`<br><br>refer to this variable later using `$instance` |
| Connect to your instance and type yes to allow the connection. | `$ ssh -i "Name.pem" $instance`<br>`Are you sure you want to continue connecting (yes/no)? yes` |
| You should now be on the machine.<br><br>Terminal should show: | `[ec2-user@ip-ip-ip-ip ~]$` |

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## Transferring files from an Amazon S3 Bucket to your instance

| | |
|---|---|
| Create a text file in your home directory and use a new terminal window to transfer it to your instance using scp (Mac) | `$ scp –i Key/myname.pem newFile.txt $instance:~` |
| As an alternative, we can transfer files from an Amazon S3 bucket to the instance using Amazon's s3 copy command.<br><br>Our bucket is called "ngcm1" | `[ec2-user@ip-ip-ip-ip ~]$ aws s3 ls s3://ngcm1`<br><br>`[ec2-user@ip-ip-ip-ip ~]$ aws s3 cp s3://ngcm1/testFile.txt testFile.txt` |
| in your terminal window for the instance, check that it's been transferred. | `[ec2-user@ip-ip-ip-ip ~]$ ls` |
| Code can be run on the instance in the same way<br><br>Transfer "sim.py" to the instance from the S3 bucket and run it | `[ec2-user@ip-ip-ip-ip ~]$  python sim.py` |
| Use scp to transfer the output of the simulation out.csv onto your local machine. | `$ scp –i Key/myname.pem $instance:~/out.csv out.csv` |

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# Windows Instructions (with PuTTY)

Use the following instructions from Amazon to convert your .pem key file into a .ppk file, then connect to your running instance over SSH. Move the .ppk file to the new directory called “Key” you created earlier.

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/putty.html?icmpid=docs_ec2_console

## Transferring files from an Amazon S3 Bucket to your instance

| | |
|---|---|
| Use notepad to create an example text file. From the command prompt, transfer it to your instance using `pscp` (installed with PuTTY) | `C:\Users\Name\Key> pscp –i name.ppk newFile.txt ec2-user@ec2…….amazonaws.com:newFile.txt` |
| As an alternative, we can transfer files from an Amazon S3 bucket to the instance using Amazon’s s3 copy command.<br><br>Our bucket is called “ngcm1” | From the instance:<br>`[ec2-user@ip-ip-ip-ip ~]$ aws s3 ls s3://ngcm1`<br><br>`[ec2-user@ip-ip-ip-ip ~]$ aws s3 cp s3://ngcm1/testFile.txt testFile.txt` |
| in your terminal window for the instance, check that it's been transferred. | `[ec2-user@ip-ip-ip-ip ~]$ ls` |
| Code can be run on the instance in the same way<br><br>Transfer “sim.py” to the instance from the S3 bucket and run it | `[ec2-user@ip-ip-ip-ip ~]$  python sim.py` |
| Use `pscp` to transfer the output of the simulation out.csv onto your local machine using the command prompt. | Windows (PuTTY)<br>`> pscp –i <path to Key> ec2-user@ec2…….amazonaws.com:out.csv out.csv` |

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## A very simple web hosting example with EC2…

We are going to repurpose our running instances to host a static webpage. The free tier allows 24/7 running of a single t2.micro amazon instance for 12 months (750 hours / month free).

Step by step guidance is not provided for this section. We are here to help, the detailed instructions above should give you a good start, and AWS has many rollover information points and comprehensive documentation.

- In the management console, set up your instance to allow access from internet traffic over port 8000.
- Transfer the entire contents of the Web subdirectory on the ngcm1 S3 bucket onto the instance. (hint: aws s3 help)
- navigate to this folder on the instance and launch a web server
  $ python -m SimpleHTTPServer 8000 &
- In a web browser, navigate to the instance's public URL, and specify port 8000 to view your website.

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If you like the look of Amazon Web Services and would like to explore the further capabilities of the platform, you can apply for a student account which includes $40 of free credit.

https://aws.amazon.com/education/awseducate/

Apply for a student account, follow the prompts and explore Amazon Web Services for yourself.