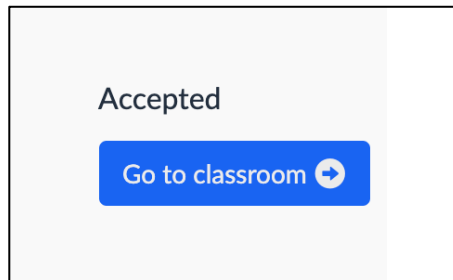
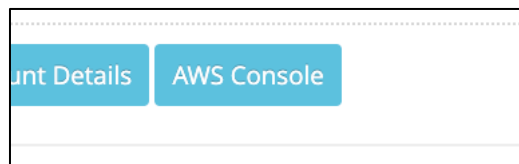


# Setting Up AWS for COMP420 - mysql

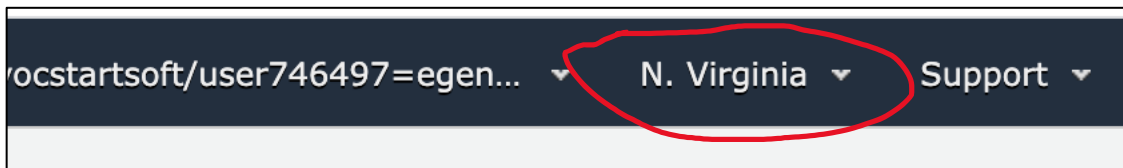
1. Sign up for AWS Educate using the link in the email you were sent
  - a. If you didn't receive it please let me know
2. Accept the classroom invite and go into the classroom



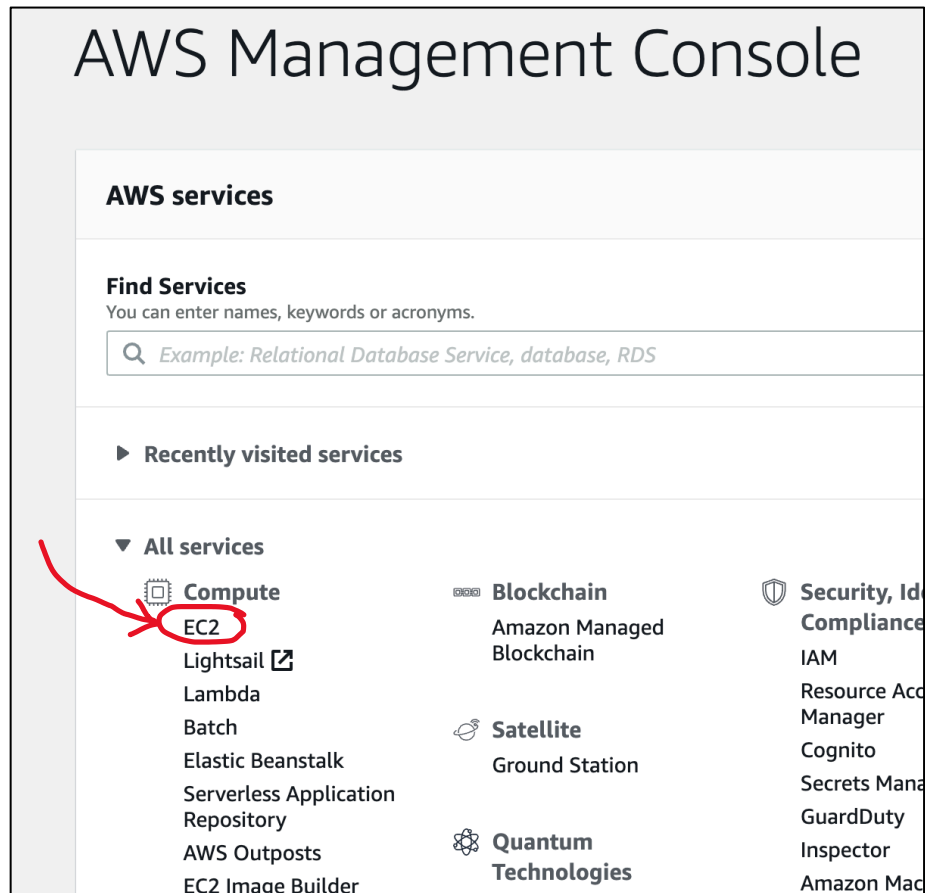
3. Select the AWS Console button



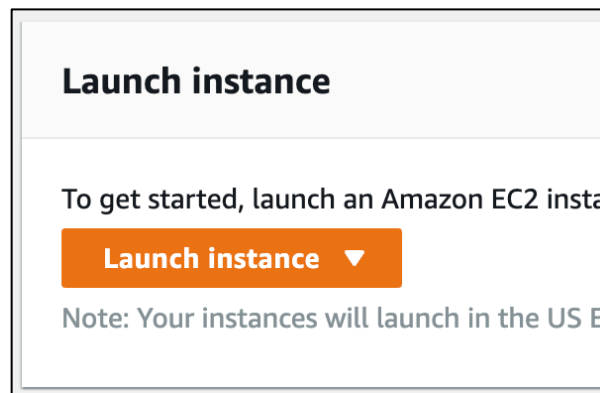
4. Make sure you are using "us-east-1", which is listed in the header as "N. Virginia".



5. Select the EC2 service from the AWS Management Console options



6. Select Launch Instance



7. Choose an AMI
  - a. Select the first one (make sure it says “Free tier eligible”)

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

### Step 1: Choose an Amazon Machine Image (AMI)

Cancel and Exit

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

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

1 to 40 of 40 AMIs

**Amazon Linux 2 AMI (HVM), SSD Volume Type** - ami-02354e95b39ca8de (64-bit x86) / ami-0c5bf07e510b75b11 (64-bit Arm)

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.

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

64-bit (x86) 64-bit (Arm)

Select

8. Choose the Instance Type
  - a. Select the “Free tier eligible” option (usually t2.micro)
  - b. Choose the “Next: Configure Instance Details” button

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. 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 types Current generation Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes

Next: Configure Instance Details

## 9. Configure the Instance

- Leave all the options as defaults, except for the “User Data” text box.
- Put the following text exactly as you see it into the “User Data” text box. Note: this is a **one-time** bash script that gets run the first time the instance is started. It is intended to setup the instance for your particular needs (in this case to use phpMyAdmin with mysql). Copy this script from SettingUpAWSforCOMP420.txt.
- Choose the “Next: Add Storage” button

```
#!/bin/bash
yum update -y
amazon-linux-extras install -y lamp-mariadb10.2-php7.2 php7.2
yum install -y httpd mariadb-server
systemctl start httpd
systemctl enable httpd
usermod -a -G apache ec2-user
chown -R ec2-user:apache /var/www
chmod 2775 /var/www
find /var/www -type d -exec chmod 2775 {} \;
find /var/www -type f -exec chmod 0664 {} \;
echo "<?php phpinfo(); ?>" > /var/www/html/phpinfo.php
systemctl start mariadb
systemctl enable mariadb
mysql -e "UPDATE mysql.user SET Password = PASSWORD('comp420') WHERE User = 'root'" -u root
mysql -e "GRANT ALL ON *.* to root@ '%' IDENTIFIED BY 'comp420';" -u root
mysql -e "DROP DATABASE test" -u root
mysql -e "FLUSH PRIVILEGES" -u root
yum install -y php-mysqlnd
systemctl restart httpd
systemctl restart php-fpm
cd /var/www/html
wget https://files.phpmyadmin.net/phpMyAdmin/4.9.5/phpMyAdmin-4.9.5-all-languages.tar.gz
mkdir phpMyAdmin
tar -xvzf phpMyAdmin-4.9.5-all-languages.tar.gz -C phpMyAdmin --strip-components 1
rm phpMyAdmin-4.9.5-all-languages.tar.gz
cd phpMyAdmin
cp config.sample.inc.php config.inc.php
COOKIE_AUTH=`tr -dc 'a-zA-Z0-9' < /dev/urandom | head -c 32`; echo `
sed -i "17s/'/'/'$COOKIE_AUTH'/" config.inc.php
mkdir tmp && chmod 777 tmp
```

Advanced Details

Metadata accessible ☒ Enabled

Metadata version ☐ V1 and V2 (token optional)

Metadata token response hop limit ☐ 1

User data ☒ As text ☐ As file ☐ Input is already base64 encoded

```
#!/bin/bash
yum update -y
amazon-linux-extras install -y lamp-mariadb10.2-php7.2 php7.2
yum install -y httpd mariadb-server
systemctl start httpd
systemctl enable httpd
usermod -a -G apache ec2-user
chown -R ec2-user:apache /var/www
chmod 2775 /var/www
find /var/www -type d -exec chmod 2775 {} \;
find /var/www -type f -exec chmod 0664 {} \;
echo "<?php phpinfo(); ?>" > /var/www/html/phpinfo.php
systemctl start mariadb
systemctl enable mariadb
mysql -e "UPDATE mysql.user SET Password = PASSWORD('comp420') WHERE User = 'root'" -u root
mysql -e "GRANT ALL ON *.* to root@ '%' IDENTIFIED BY 'comp420';" -u root
```



10. Continue past the Add Storage without changing anything
  - a. Choose the “Next: Add Tags” button

### 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 <small>i</small>	Device <small>i</small>	Snapshot <small>i</small>	Size (GiB) <small>i</small>	Volume Type <small>i</small>	IOPS <small>i</small>	Throughput (MB/s) <small>i</small>	Delete on Termination <small>i</small>	Encryption <small>i</small>
Root	/dev/xvda	snap-06d919bfecd8496a	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

[Add New Volume](#)

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.

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

11. Add Tags and then choose “Next: Configure Security Group” button.
  - a. Using the “Add Tag” button, add the following three tags:
    - i. “Course” -> “COMP420”
    - ii. “Name” -> “mysql”
    - iii. “Semester” -> “Fall 2020”

[Add Tag](#) (Up to 50 tags)

Key (128 characters maximum)	Value (256 characters maximum)	Instances <small>i</small>	Volumes <small>i</small>	
Course	COMP420	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="X"/>
Name	mysql	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="X"/>
Semester	Fall 2020	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="X"/>

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

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

## 12. Configure a new security group

- Set Security group name to "mysql security group"
- Set Description to "allow 22, 80, 443, and 3306 for mysql access"
- Add three rules and set the "Type" column to "HTTP", "HTTPS", and "MYSQL/Aurora". Also change the Source column for the new entries to "Anywhere".
- Choose "Review and Launch" button

**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:**

**Description:**


Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
HTTP	TCP	80	Anywhere 0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop
HTTPS	TCP	443	Anywhere 0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop
MYSQL/Aurora	TCP	3306	Anywhere 0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop

### 13. Launch the instance

- Choose the “Launch” button (this will darken the background and show a large message box requesting that you create a key pair)


#### 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, mysql security group, 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



**Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-02354e95b39ca8dec**  

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.  
Root Device Type: ebs    Virtualization type: hvm

[Edit AMI](#)

▼ Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

[Edit instance type](#)

▶ Security Groups

[Edit security groups](#)

▶ Instance Details

[Edit instance details](#)

▶ Storage

[Edit storage](#)

▶ Tags

[Edit tags](#)

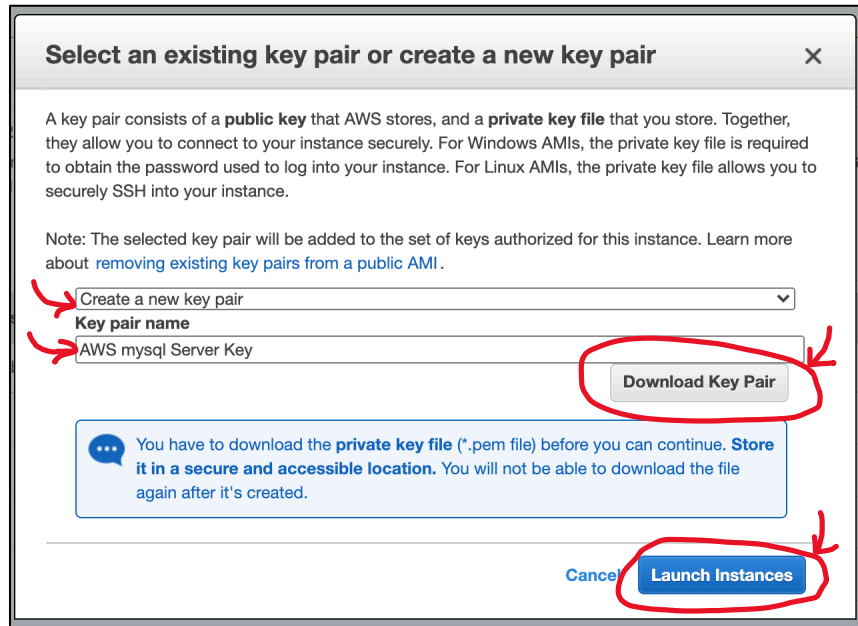
Cancel

Previous

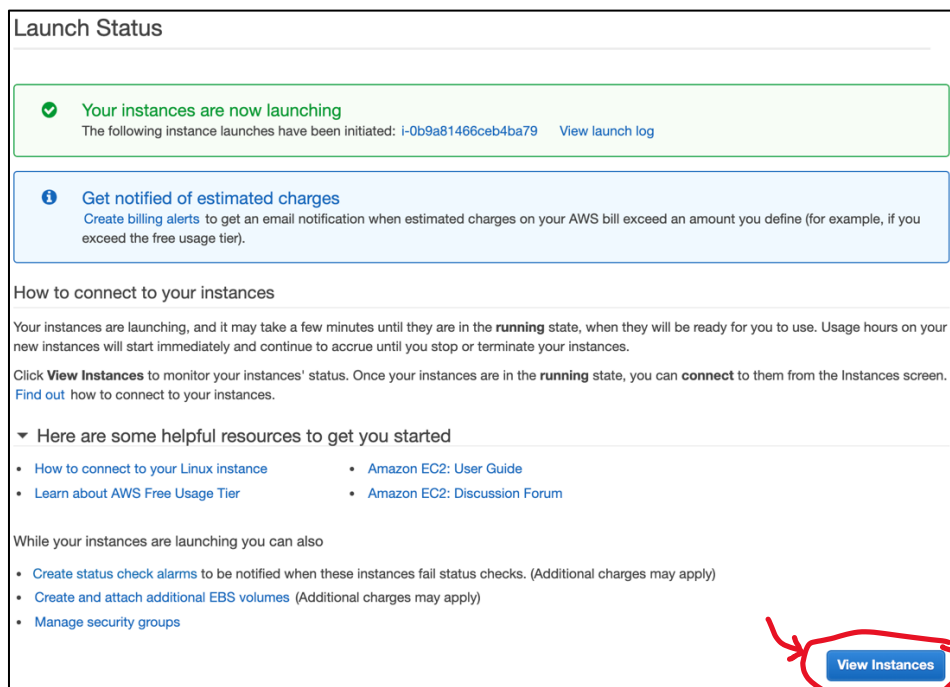
Launch

#### 14. Create a new Key pair

- In the message box, select “Create a new key pair”
- Set Key pair name to “AWS mysql Server Key”
- Choose “Download Key Pair” and save the AWSmysqlServerKey.pem file somewhere safe where you will not lose it.
- Choose “Launch Instances”





#### 15. Choose the “View Instances” button on the “Launch Status” page.





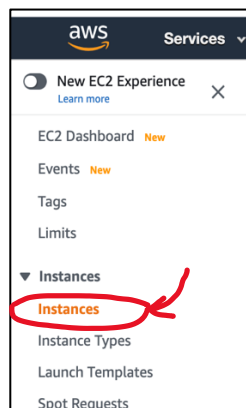
## 16. Wait for your instance to be created



- Look at your instances and wait for “pending” to turn to “running”

mysql	i-04c5e1467dfe10e11	t2.micro	us-east-1e	 pending	Initializing	None	ec2-34-224-83-236.com..
mysql	i-04c5e1467dfe10e11	t2.micro	us-east-1e	 running	Initializing	None	ec2-34-224-83-236.com..

## 17. Test the running mysql server

- Wait a few minutes for your virtual machine to finish launching and running its script.
- Find your public DNS entry (web address) by selecting “Instances” under the EC2 navigation menu.
- Select the “mysql” instance from the list and highlight it. In the section below, you will find your specific “Public DNS (IPv4)” and “IPv4 Public IP”.
- Copy and paste the “Public DNS (IPv4)” information into a web browser page and make sure they are all working (note that the links are case sensitive):
  - <yourPublicDNS> (will show the Test Page from apache)
  - <yourPublicDNS>/phpinfo.php (will show the PHP info page)
  - <yourPublicDNS>/phpMyAdmin (will show the phpMyAdmin page login with username “root” and password “comp420”)



mysql	i-03419291c962b5860	t2.micro	us-east-1e	 running	2/2 checks ...	None	ec2-54-90-15-133.comp...
mysql	i-03419291c962b5860	t2.micro	us-east-1e	 running	2/2 checks ...	None	ec2-54-90-15-133.comp...

Instance: i-03419291c962b5860 (mysql)		Public DNS: ec2-54-90-15-133.compute-1.amazonaws.com	
Description	Status Checks	Monitoring	Tags
Instance ID	i-03419291c962b5860		
Instance state	running		
Instance type	t2.micro		
Finding	You may not have permission to access AWS Compute Optimizer.		
Private DNS	ip-172-31-61-24.ec2.internal		
Private IPs	172.31.61.24		
Secondary private IPs			
VPC ID	vpc-fa584e80		
Public DNS (IPv4)	ec2-54-90-15-133.compute-1.amazonaws.com		
IPv4 Public IP	54.90.15.133		
IPv6 IPs	-		
Elastic IPs			
Availability zone	us-east-1e		
Security groups	mysql security group, view inbound rules, view outbound rules		
Scheduled events	No scheduled events		
AMI ID	amzn2-ami-hvm-2.0.20200722.0-x86_64-gp2		