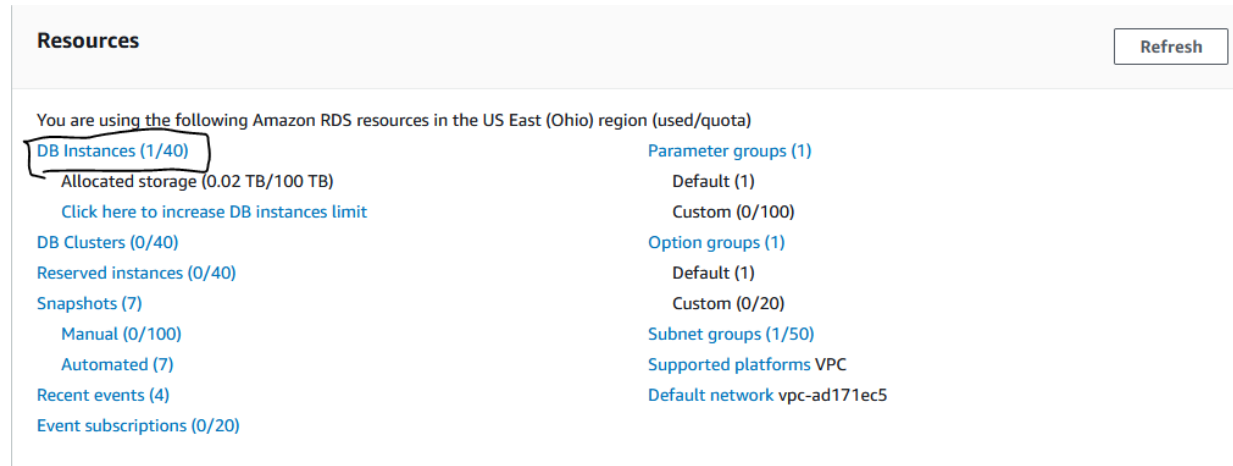


AWS Documentation

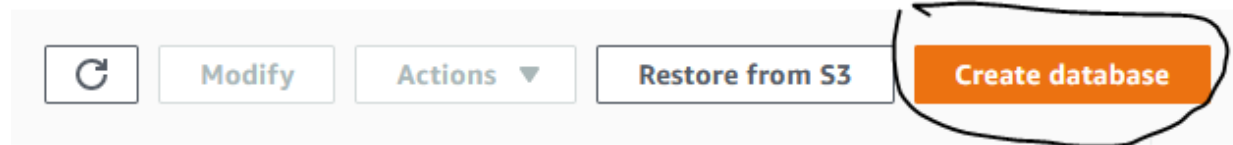
Hosting the Database

To host the MySQL database on the cloud, we use an RDS instance.

1. Navigate to the AWS RDS site to begin creating the instance
 - a. <https://us-east-2.console.aws.amazon.com/rds/home>
2. Select the DB instances to begin creating the instance



- a.
3. Select the Create Database button



- a.
4. Select MySQL, the desired tier (ours is free), set the username/password, and all the basic details for the chosen tier.
 - a. Use the default subnet group and VPC if given, otherwise create one (below)
 5. Create the database and wait for it to provision
 6. Connect to the database using a tool like MySQL workbench
 - a. Create a connection using the “+” symbol



- b.
- c. Enter the desired connection name, the hostname (the endpoint on the AWS RDS instance), as well as the username and password
 - d. Connect to the server
 - e. Copy and Paste the code from the Schema.sql file into a query to create the database

```

1  -- Create initial database
2  • CREATE DATABASE IF NOT EXISTS wmsinventory CHARACTER SET utf8 COLLATE utf8_unicode_ci;
3
4  USE wmsinventory;
5
6  -- Drop Tables if Existing
7  DROP TABLE IF EXISTS Containers;
8  • DROP TABLE IF EXISTS CategorizedBy;
9  • DROP TABLE IF EXISTS ContainedBy;
10 DROP TABLE IF EXISTS Users;
11 DROP TABLE IF EXISTS Parts;
12 DROP TABLE IF EXISTS Categories;
13
14 -- Create Category table
15 • CREATE TABLE Categories (
16     categoryID int UNIQUE NOT NULL AUTO_INCREMENT PRIMARY KEY,
17     name varchar(255) UNIQUE NOT NULL
18 );
19
20 -- Create Part table
21 • CREATE TABLE Parts (
22     partID int UNIQUE NOT NULL AUTO_INCREMENT PRIMARY KEY,
23     name varchar(255) NOT NULL

```

f.

- g. Copy and Paste the SampleData.sql file contents to the query to insert sample data if desired

```

1  • USE wmsinventory;
2
3  -- Insert Example Categories
4  • INSERT INTO Categories (name) VALUES ("Power Tools");
5  • INSERT INTO Categories (name) VALUES ("Hardware");
6  • INSERT INTO Categories (name) VALUES ("Paint");
7  • INSERT INTO Categories (name) VALUES ("Building Supplies");
8
9  -- Insert Example Parts
10 • INSERT INTO Parts (name) VALUES ("Screw A");
11 • INSERT INTO Parts (name) VALUES ("Screw B");
12 • INSERT INTO Parts (name) VALUES ("Power Drill");
13 • INSERT INTO Parts (name) VALUES ("Black Spray Paint");
14
15 -- Assign parts with categories
16 • INSERT INTO CategorizedBy (partID, categoryID) VALUES (1, 2);
17 • INSERT INTO CategorizedBy (partID, categoryID) VALUES (2, 2);
18 • INSERT INTO CategorizedBy (partID, categoryID) VALUES (1, 4);
19 • INSERT INTO CategorizedBy (partID, categoryID) VALUES (2, 4);
20 • INSERT INTO CategorizedBy (partID, categoryID) VALUES (3, 1);
21 • INSERT INTO CategorizedBy (partID, categoryID) VALUES (4, 3);
22 • INSERT INTO CategorizedBy (partID, categoryID) VALUES (4, 4);
23
24 -- Sample Containers

```

h.

Hosting an EC2 instance

We use one EC2 instance to host both the back and front end applications

1. Navigate to the EC2 to create an instance

- a. <https://us-east-2.console.aws.amazon.com/ec2/v2/home>
2. Select the instances to begin creating the instance

Resources

You are using the following Amazon EC2 resources in the US East (Ohio) Region:

Instances (running)	4	Dedicated Hosts	0	Elastic IPs	3
Instances	4	Key pairs	4	Load balancers	0
Placement groups	0	Security groups	6	Snapshots	0
Volumes	4				

Easily size, configure, and deploy Microsoft SQL Server Always On availability groups on AWS using the AWS Launch Wizard for SQL Server. [Learn more](#)

- a.
3. Then click the “Launch Instance” button and select the Ubuntu Server 20.04 for the instance

Ubuntu Server 20.04 LTS (HVM), SSD Volume Type - ami-0a91cd140a1fc148a (64-bit x86) / ami-0742a572c2ce45ebf (64-bit Arm)

Free tier eligible

Ubuntu Server 20.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>). Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

- a.
4. Click through the next section tabs in the bottom right, adding any tags you desire until you get to “Configure Security Group”

Cancel **Previous** **Review and Launch** **Next: Configure Security Group**

- a.
5. In the Security Groups, you may select a previous group or select create a new group

Assign a security group: ☐ Create a new security group ☒ Select an existing security group

- a.
- b. We will create a new group and add the appropriate rules down below
6. The instance should up and launch after a few minutes

Set the VPC group up

Set a custom URL and Elastic IP

Connecting to the EC2 instance and running services

Once you have created the instance, you should be able to ssh into it and pull the code to run the front and backend

1. Select your running instance under the instances tab once more

Name ▾	Instance ID	Instance state ▾
Dev_BoGL_Box	i-0fbce1f34b726ed73	✓ Running 🔍
Where's_My_...	i-0fbd7db85b696a2b0	✓ Running 🔍
ACTIVE_B... 📄	i-0741d49ea9336041b	✓ Running 🔍
Old_41B_Bo...	i-01b9ad96db4261c77	✓ Running 🔍

- a.
2. From the dashboard, select the “Connect” tab on the top right and go to “SSH client”

EC2 Instance Connect
Session Manager
SSH client

Instance ID

📄 [i-0fbd7db85b696a2b0 \(Where's_My_Stuff\)](#)

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is wmsKey.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.


```
📄 chmod 400 wmsKey.pem
```
4. Connect to your instance using its Public DNS:


```
📄 ec2-3-20-14-145.us-east-2.compute.amazonaws.com
```

Example:

```
📄 ssh -i "wmsKey.pem" ubuntu@ec2-3-20-14-145.us-east-2.compute.amazonaws.com
```

- a.
3. You will need to open a command prompt such as Git Bash and navigate to the directory which stores your .pem private key file

```
wmsKey.pem  wmsKey.ppk
Michael@MichaelsPC MINGW64 /d/Users/Documents/Senior Project
```

- a.
4. You will then run the command given on the SSH client page to ssh into your instance

```

Michael@MichaelSPC MINGW64 /d:/users/Documents/Senior Project
$ ssh -i "wmsKey.pem" ubuntu@ec2-3-20-14-145.us-east-2.compute
.amazonaws.com
Welcome to Ubuntu 20.04.1 LTS (GNU/Linux 5.4.0-1029-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Sat Feb  6 02:21:22 UTC 2021

System load:  0.0                       Processes:            114
Usage of /:   36.6% of 7.69GB           Users logged in:      0
Memory usage: 76%                       IPv4 address for eth0: 172.3
1.33.161
Swap usage:   0%

 * Introducing self-healing high availability clusters in MicroK8s.
   Simple, hardened, Kubernetes for production, from Raspberry
   Pi to DC.

   https://microk8s.io/high-availability

67 updates can be installed immediately.
8 of these updates are security updates.
To see these additional updates run: apt list --upgradable

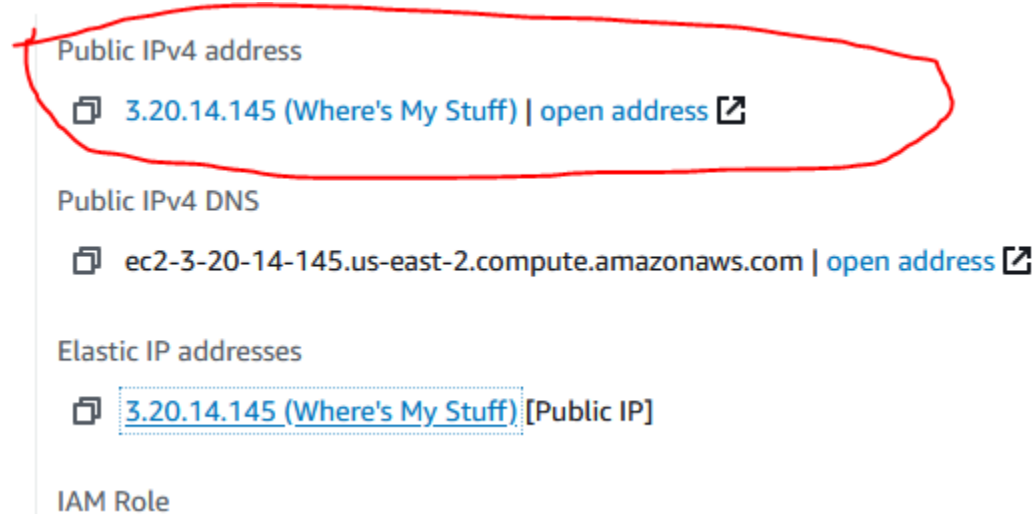
3 updates could not be installed automatically. For more details,
see /var/log/unattended-upgrades/unattended-upgrades.log

*** System restart required ***
Last login: Sat Feb  6 01:12:43 2021 from 73.240.9.67
ubuntu@ip-172-31-33-161:~$

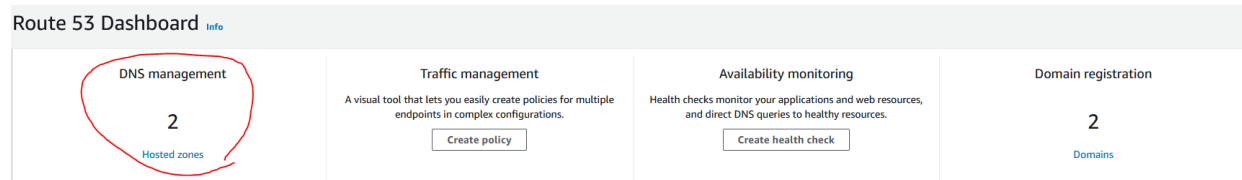
```

- a.
5. Once in the instance, you will need to download some extra tools to help
 - a. Download nvm using "sudo apt-get install nvm"
 - b. Download node using "nvm install v14.15.0"
 - c. Download git using "sudo apt-get install git"
 - d. Download forever using "sudo apt-get install forever"
6. Once these are all downloaded, clone the [project repository](#) and navigate into it with "cd Capstone-Inventory-App"
7. Run "npm install" to download any dependencies necessary
8. Run the command "forever start -c "npm run start" ./" to start the frontend service in the background

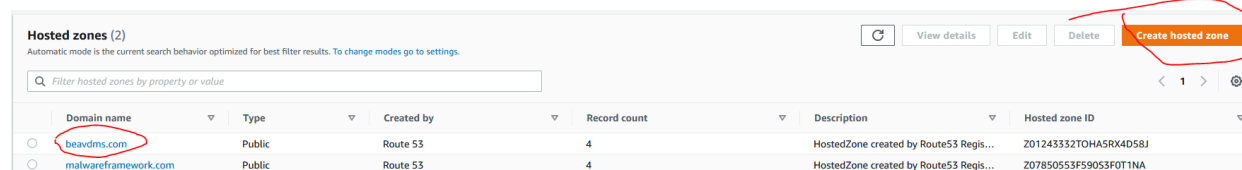
9. Navigate into the repository and the api directory with "cd api"
10. Download the dependencies again with "npm install"
11. Run the backend application using "forever start -c "npm run start" ./"
12. Navigate to the public DNS value of the instance at port 3000 to see the website



- b. This value will be used to create a static URL
13. Navigate to the Route 53 services tab
14. A hosted zone will need to be created to specify a domain to be reserved.



- b. Click the hosted zones tab to see the hosted zones
15. Create a hosted zone or select a hosted zone that you want to use.



16. From here, create a record that is associated with your static IP address

► Hosted zone details Edit hosted zone

Records (4) | DNSSEC signing | Hosted zone tags (1)

Records (4) [Info](#)

Automatic mode is the current search behavior optimized for best filter results. [To change modes go to settings.](#)

🔄 Delete record Import zone file Create record

Filter records by property or value Type Routing policy Alias < 1 >

<input type="checkbox"/>	Record name	Type	Routin...	Differ...	Value/Route traffic to
<input type="checkbox"/>	beavdms.com	NS	Simple	-	ns-1651.awsdns-14.co.uk. ns-618.awsdns-13.net. ns-1047.awsdns-02.org. ns-33.awsdns-04.com.
<input type="checkbox"/>	beavdms.com	SOA	Simple	-	ns-1651.awsdns-14.co.uk. awsdns-hostmaster.amazon.com. 1 7200 900 1209600 86400
<input type="checkbox"/>	wms.beavdms.com	A	Simple	-	3.20.14.145
<input type="checkbox"/>	www.beavdms.com	A	Simple	-	44.239.158.55

- a.
- b. Add the static IP to the value box and add a record name, for instance wms and leave everything else the same

Route 53 > Hosted zones > beavdms.com > Create record

Quick create record [Info](#) Switch to wizard Add another record

▼ Record 1 Delete

Record name [Info](#) Record type [Info](#) Value [Info](#) Alias

beavdms.com A – Routes traffic to an IPv4 address and so... 192.0.2.235

Valid characters: a-z, 0-9, ! " # \$ % & ' () * + , - . / : ; ~ = > ? @ [\] ^ _ ` { | } . ~

Enter multiple values on separate lines.

TTL (seconds) [Info](#) Routing policy [Info](#)

Simple routing

1m 1h 1d

Recommended values: 60 to 172800 (two days)

c.

17. From here the website should be reachable from the newly created record URL