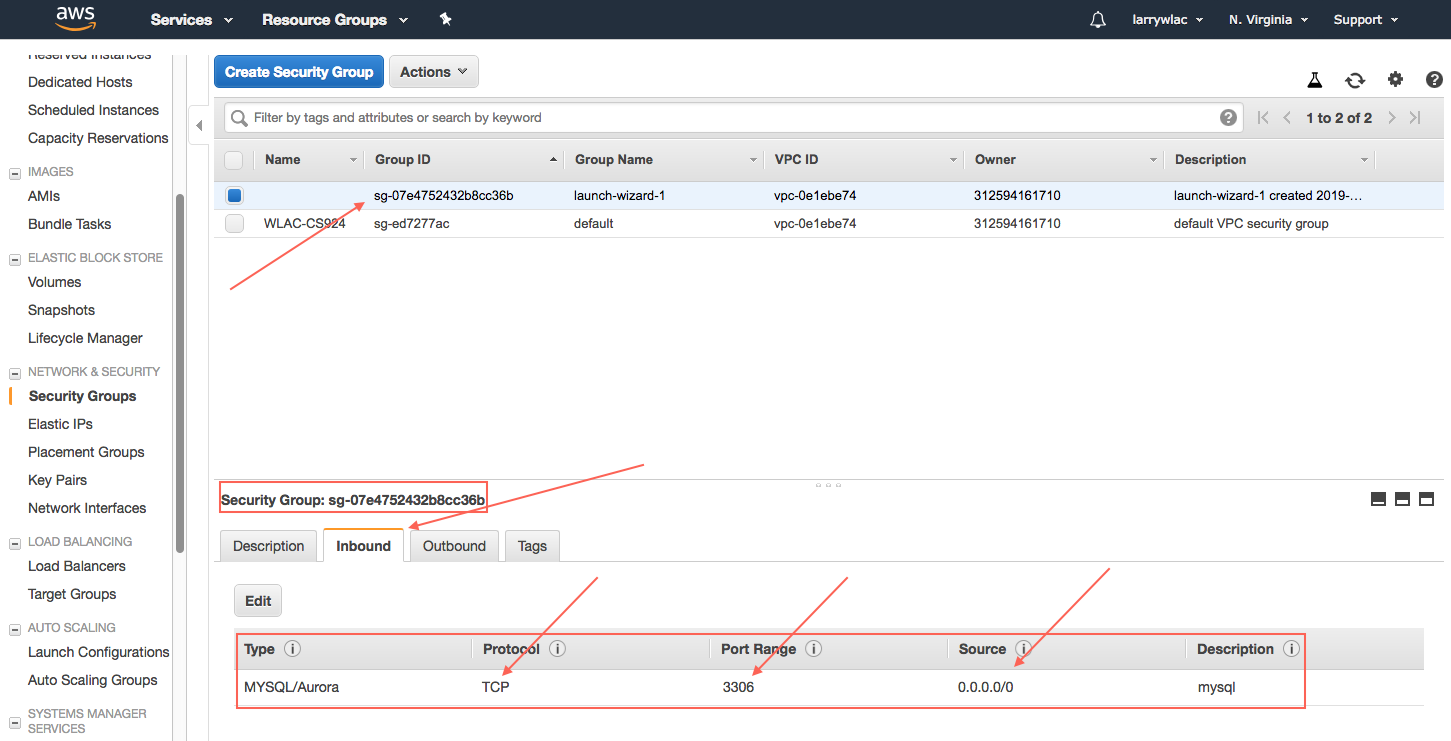
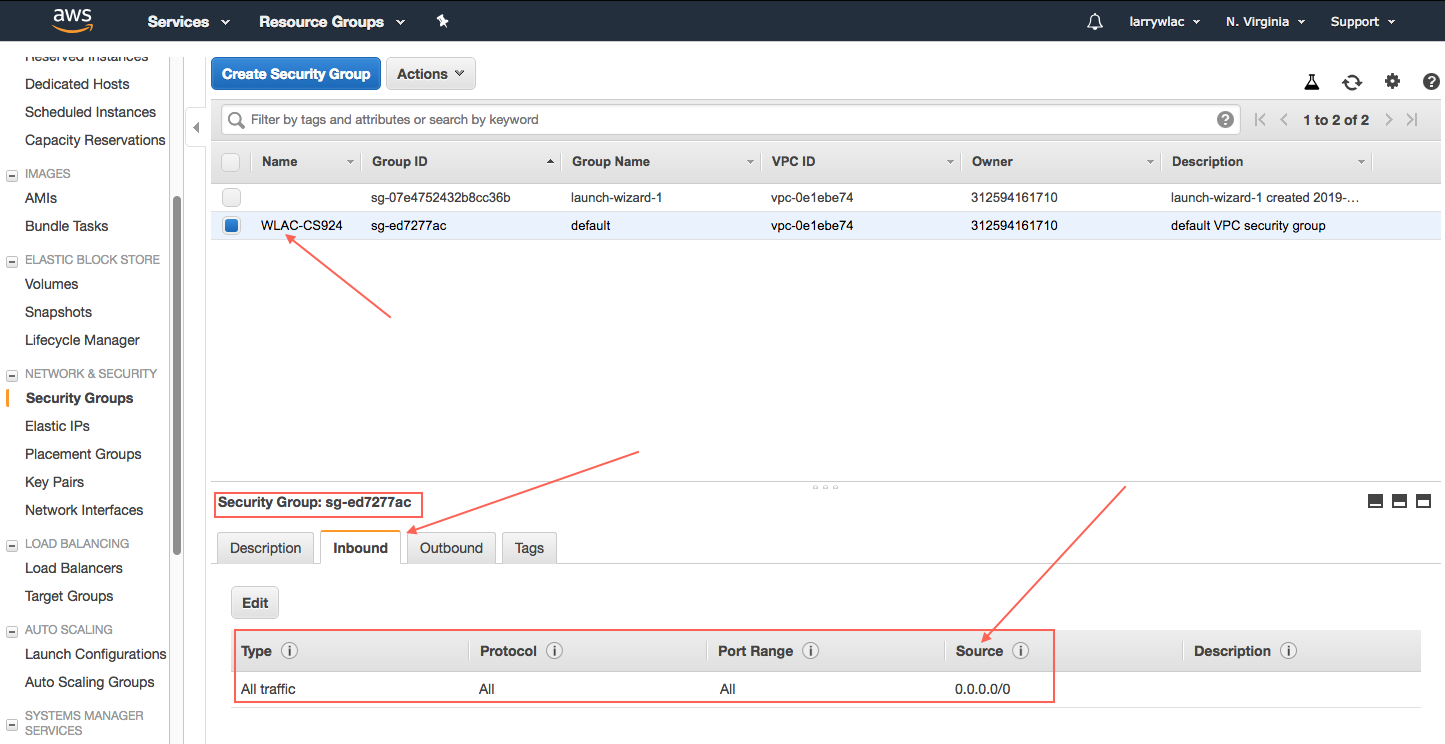
**Assignment 5: Create Amazon Aurora DB Instance & Auto Scaling Groups**

**Assignment 5A: Create Aurora DB instance:**

1. Make you have a VPC and the VPC has subnet and security group that allow port 3306 inbound connections. If you don’t have a VPC, you can create a new one with multiple availability zones during Aurora DB cluster deployment.



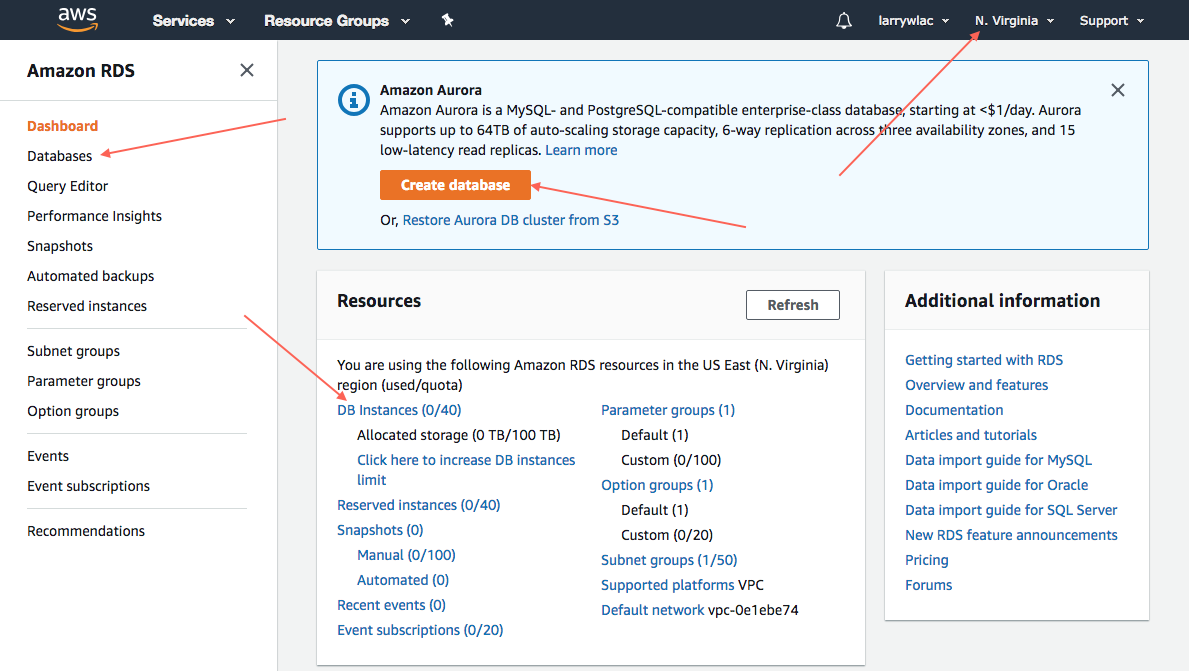


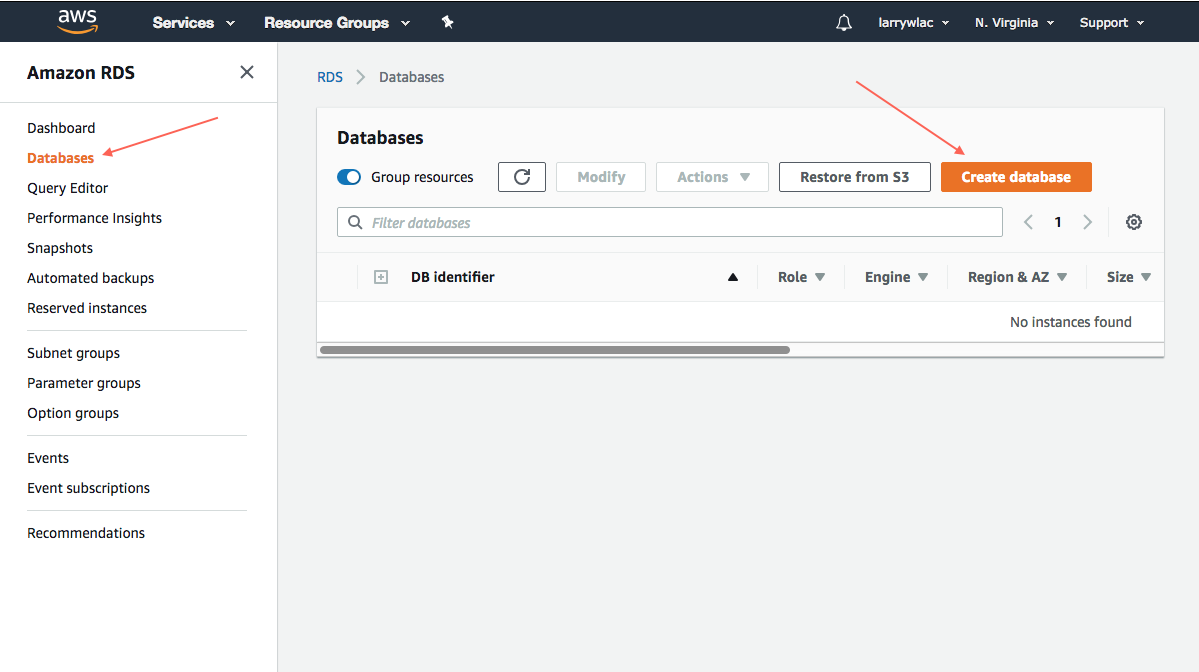
Above are details of my two “Security Groups”, both have sources of 0.0.0.0/0. Make sure the one of yours chosen to use with assignment have this rule.

1. Sign in to the AWS Management Console and open the Amazon RDS console at:

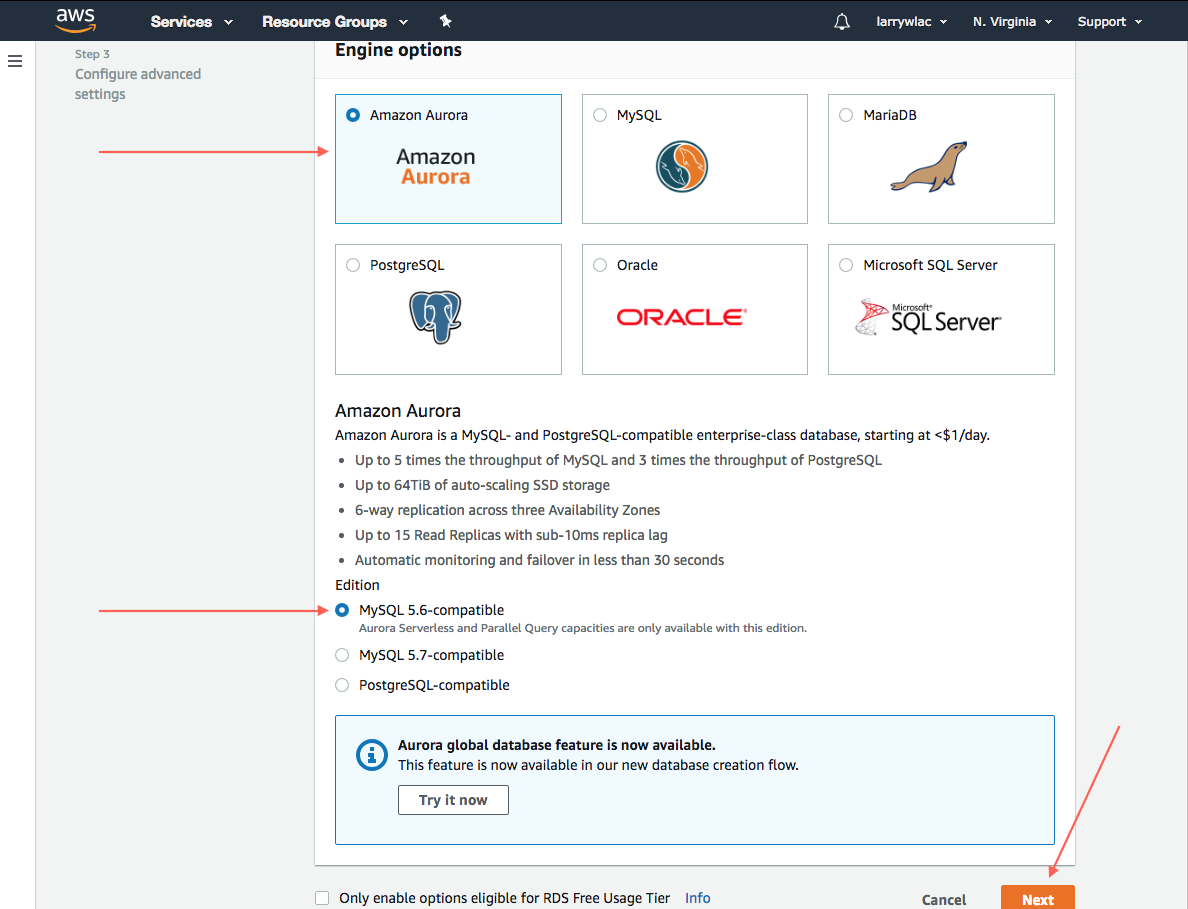
<https://console.aws.amazon.com/rds>

1. Make sure you’re on a default region (N. Virgina).
2. Choose “Create database” or choose “DB Instances” then choose “Create database”





1. On the “Select engine”, choose “Amazon Aurora” and choose “MySQL-compatible edition”, choose “Next”. (Note: Aurora is not eligible for Free tier).



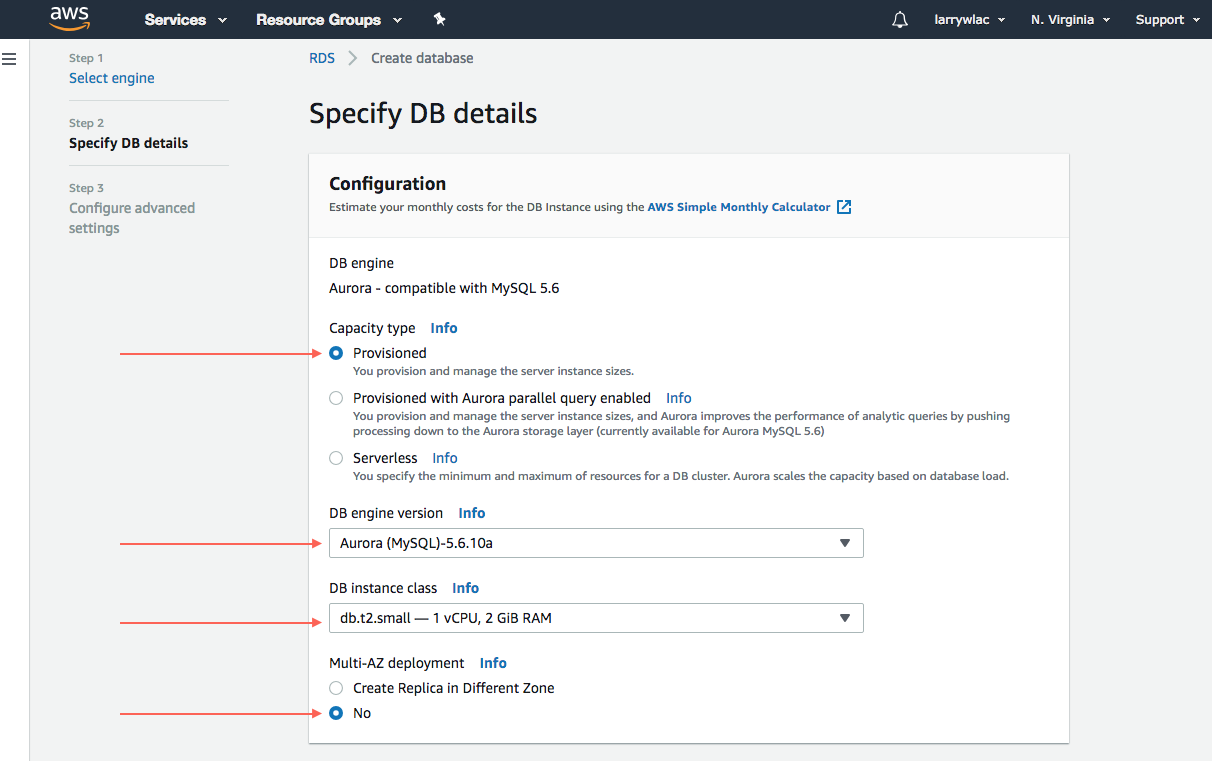
1. On the Specify DB details, set the following:

Capacity type: Provisioned

DB engine version: Aurora (MySQL)-5.6.10a

DB Instance class: db.t2.small – 1 vCPU, 2 GiB RAM --- Good enough for our assignment

Multi-AZ deployment : No --- no need for multiple AZs in our assignment.

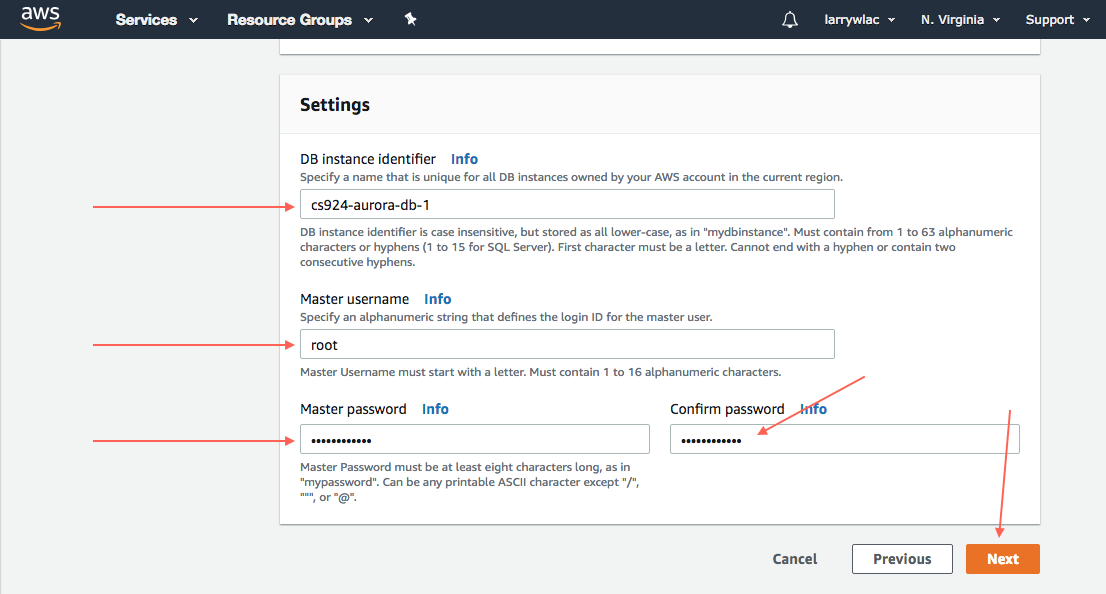


DB instance identifier: cs924-aurora-db-1

Master username: root

Master password: password2019

Confirm password: password2019



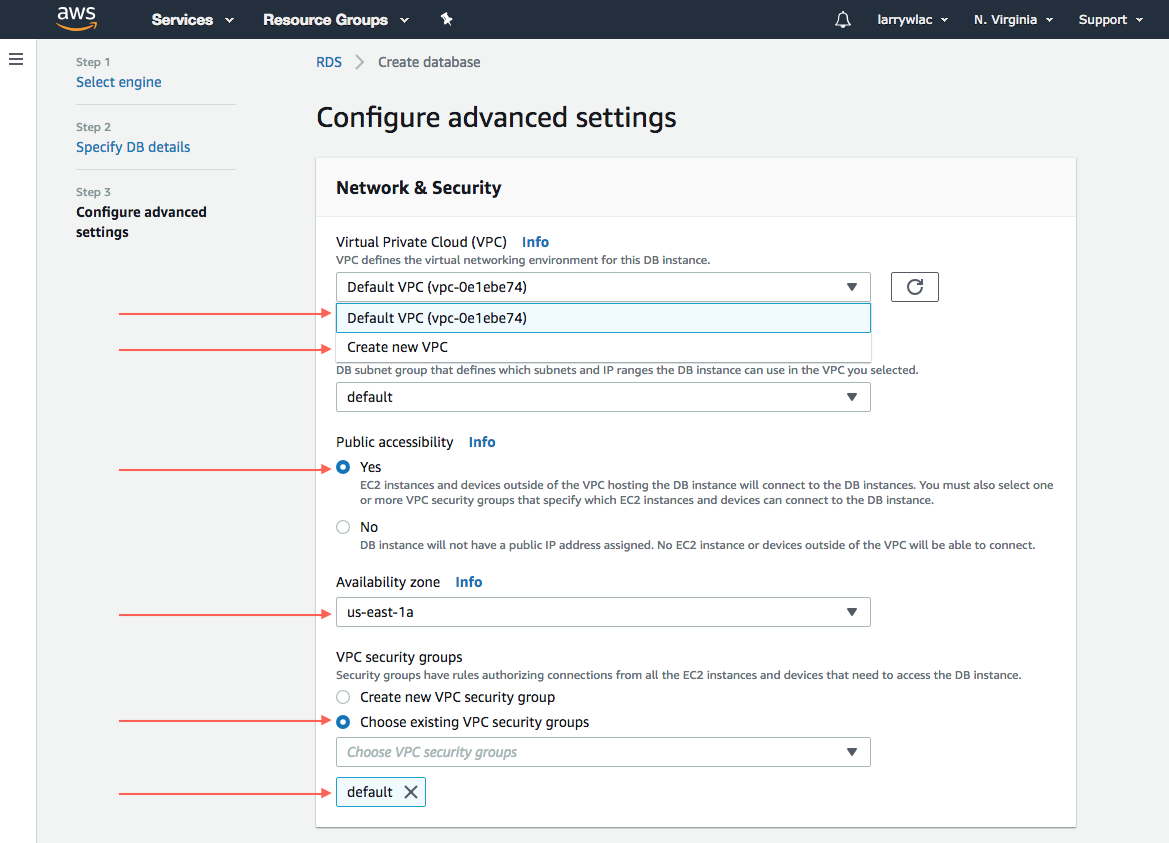
1. On the “Configure advanced settings” Section:

Virtual Private Cloud (VPC): Default VPC – if you don’t have default, then choose Create new VPC

Public accessibility: Yes - If you want to use HeidiSQL, public access is needed

Availability zone: choose one that if you create an EC2 instance for access, the instance can access the cluster

VPC Security groups: I choose “default”. As showed on the top two screenshots, my “default” VPC allow port 3306 from all source (0.0.0.0/0), you need to choose one that has the same rules.



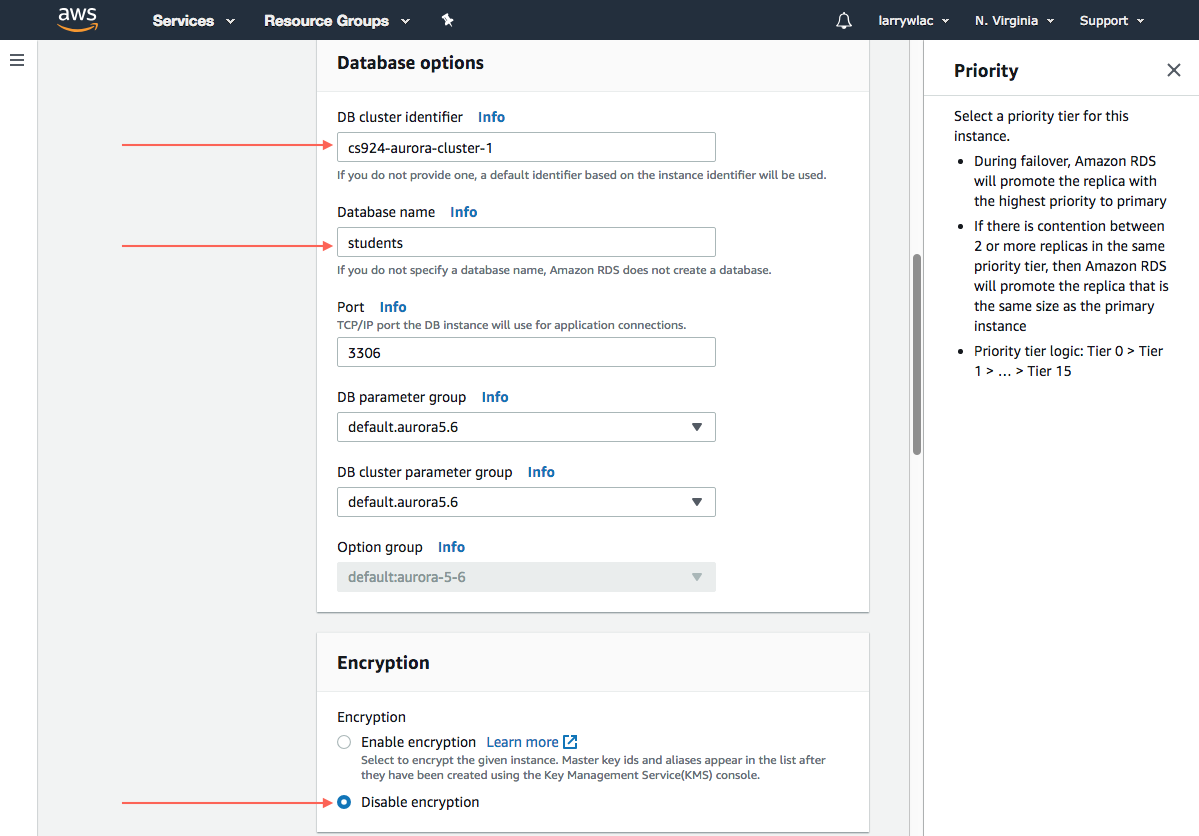
1. On the “Database options” section:

DB Cluster identifier: cs924-aurora-cluster-1

Database name: students

…

Encryption: Disable encryption



….

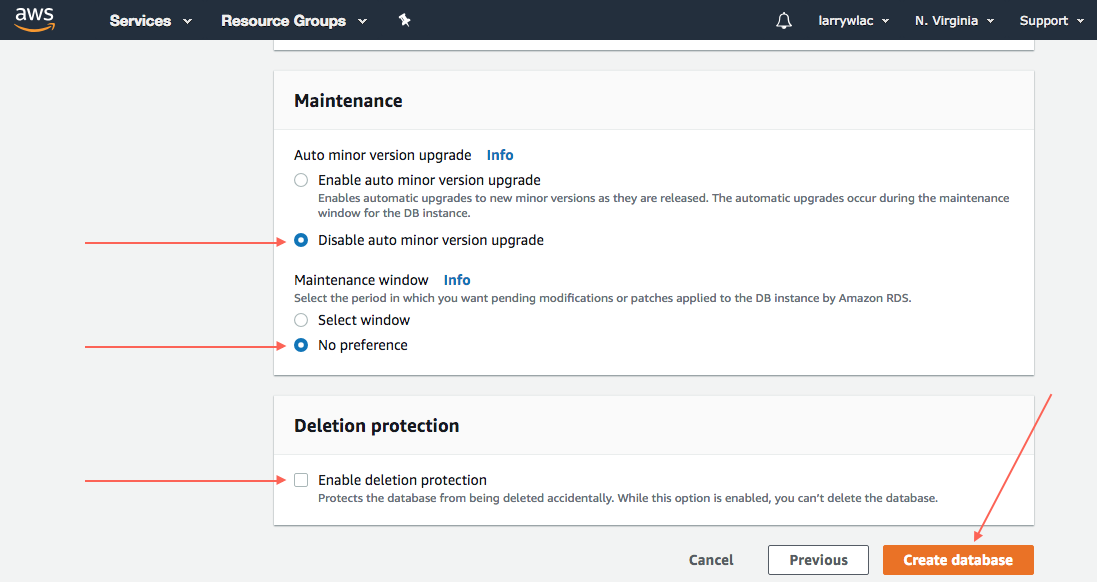
Backtrack: Disable Backtrack

Monitoring: Disable enhanced monitoring

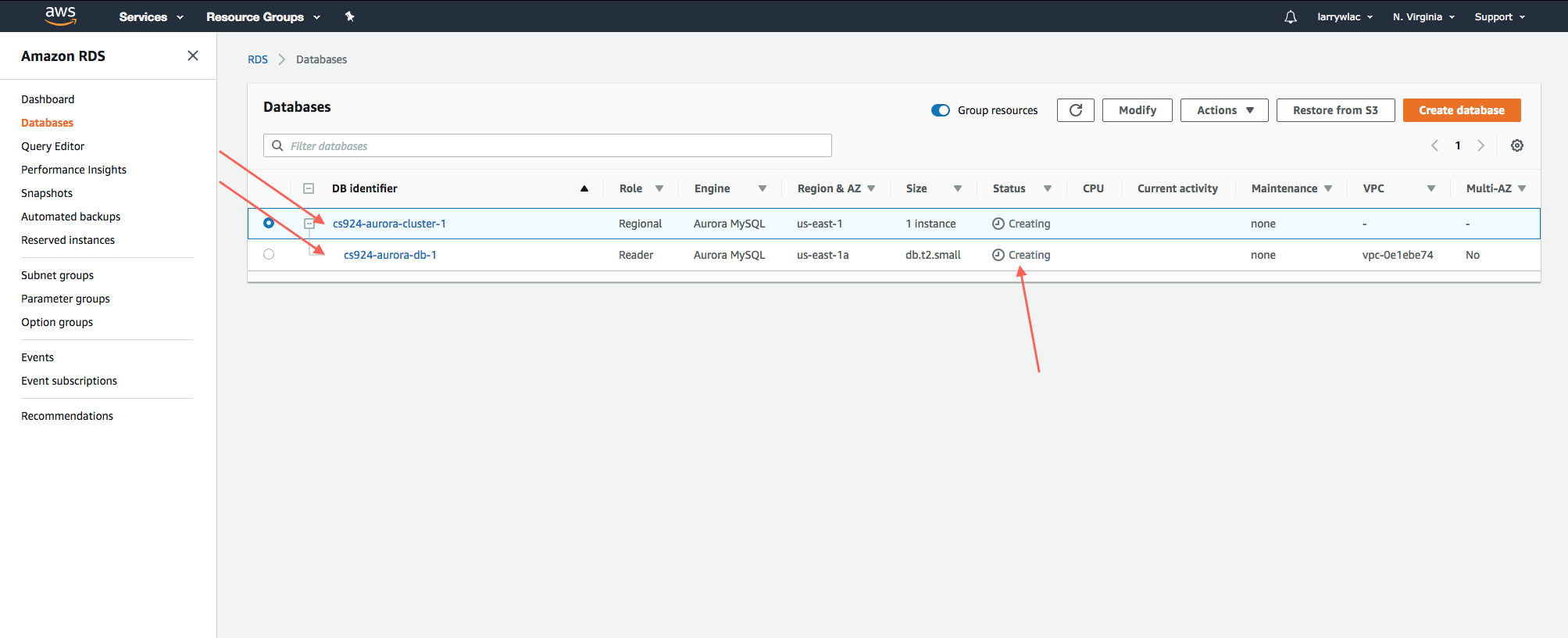
Maintenance: Disable auto minor version upgrade

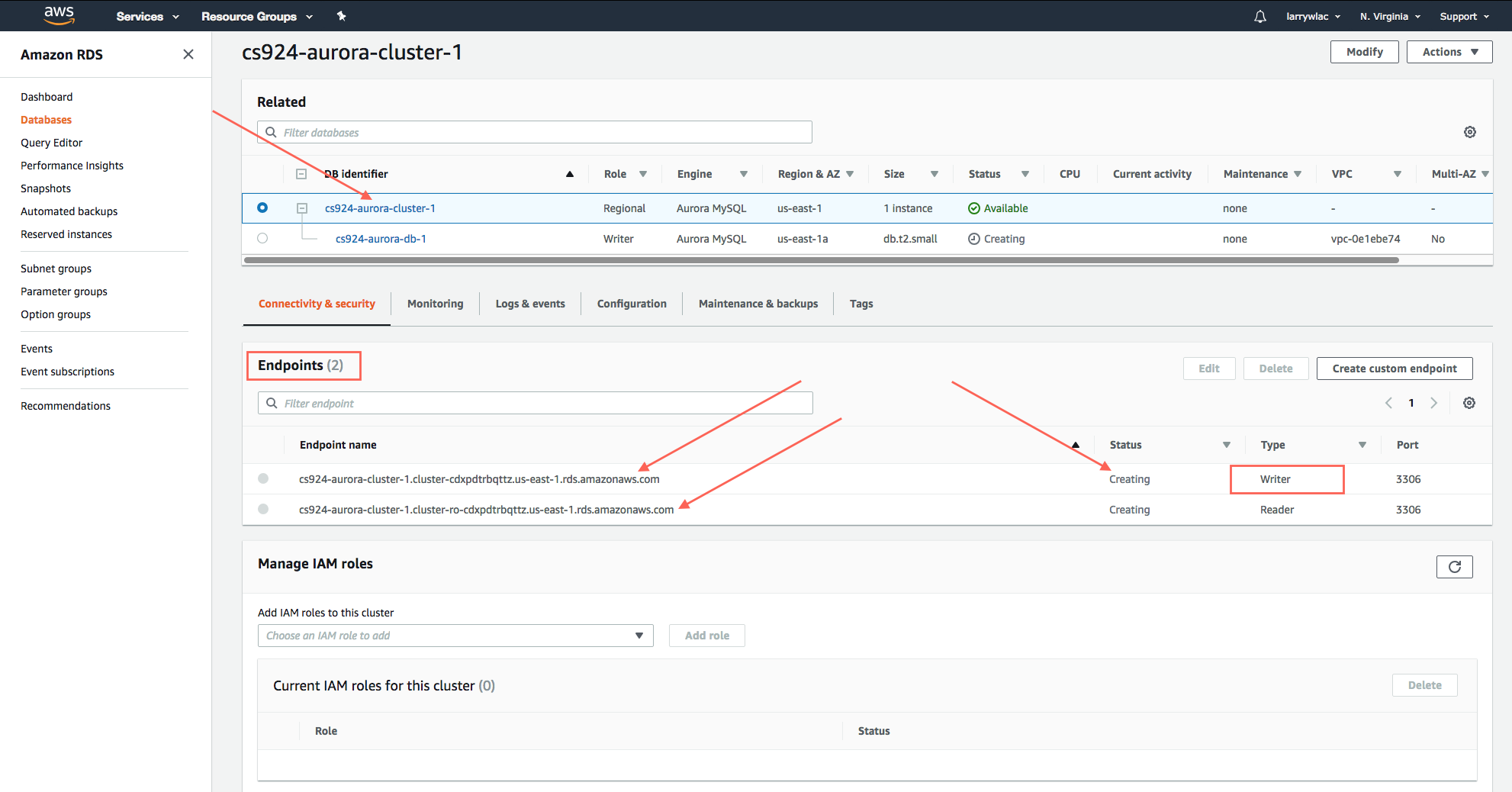
Deletion protection: uncheck - so that we can easily delete the instance later

Choose “Create database” to create the DB cluster and primary instance



1. Click the cluster itself, when the Endpoints become available, connect to your “writer” endpoint of your cluster.



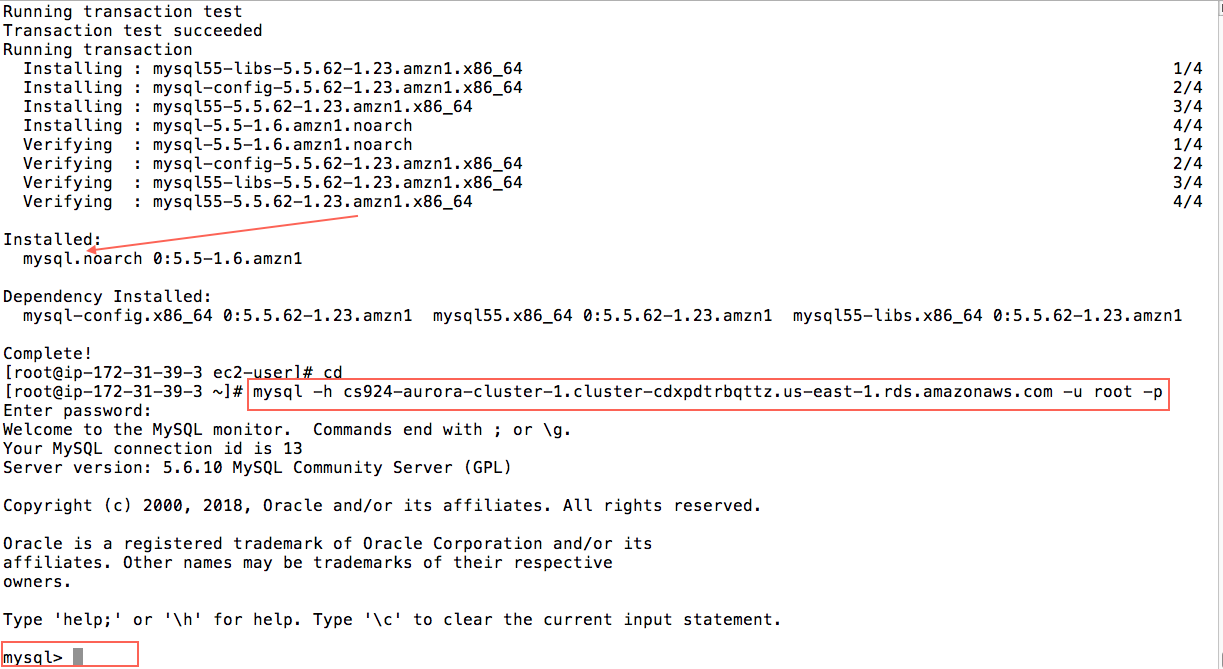


1. When the endpoint of ‘Writer’ is ready, we can start connecting to it.

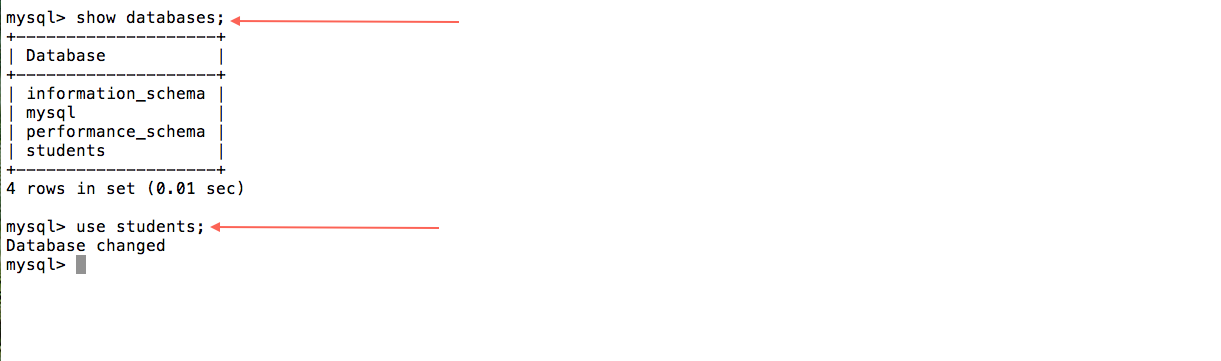
I’m going to use my Linux terminal to connect to it (My Linux already have MySQL client installed).

If you want to use MySQL command-line like the example here, you need to create an EC2 Compute instance, then use MobaXterm to connect to the EC2 Compute instance, become ‘root’, run ‘yum install mysql’, then use the following command example to connect to your Aurora DB cluster and continue the assignment.

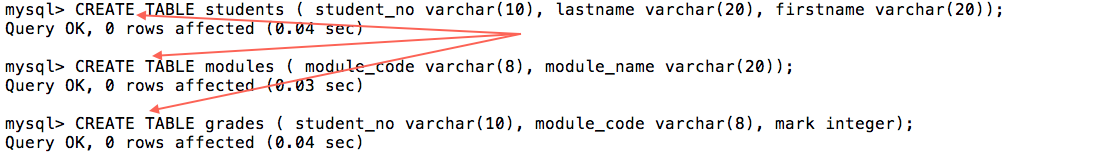
If you plan to use HeidiSQL from your Windows desktop or Laptop, you can just setup a HeidiSQL session to directly connect to your Aurora DB cluster, plug the endpoints, specify user ‘root’ and password.



1. Check database, and select the database “students” to use.



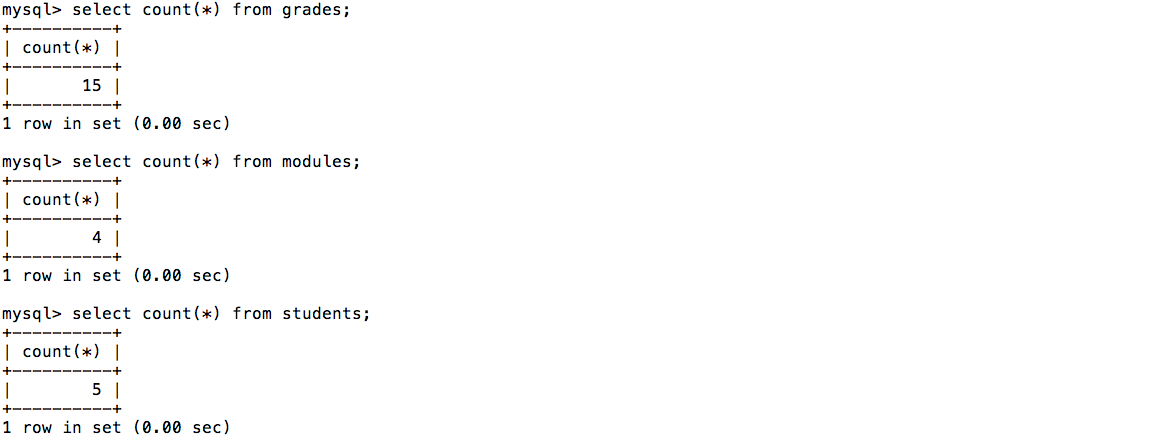
1. Create tables:

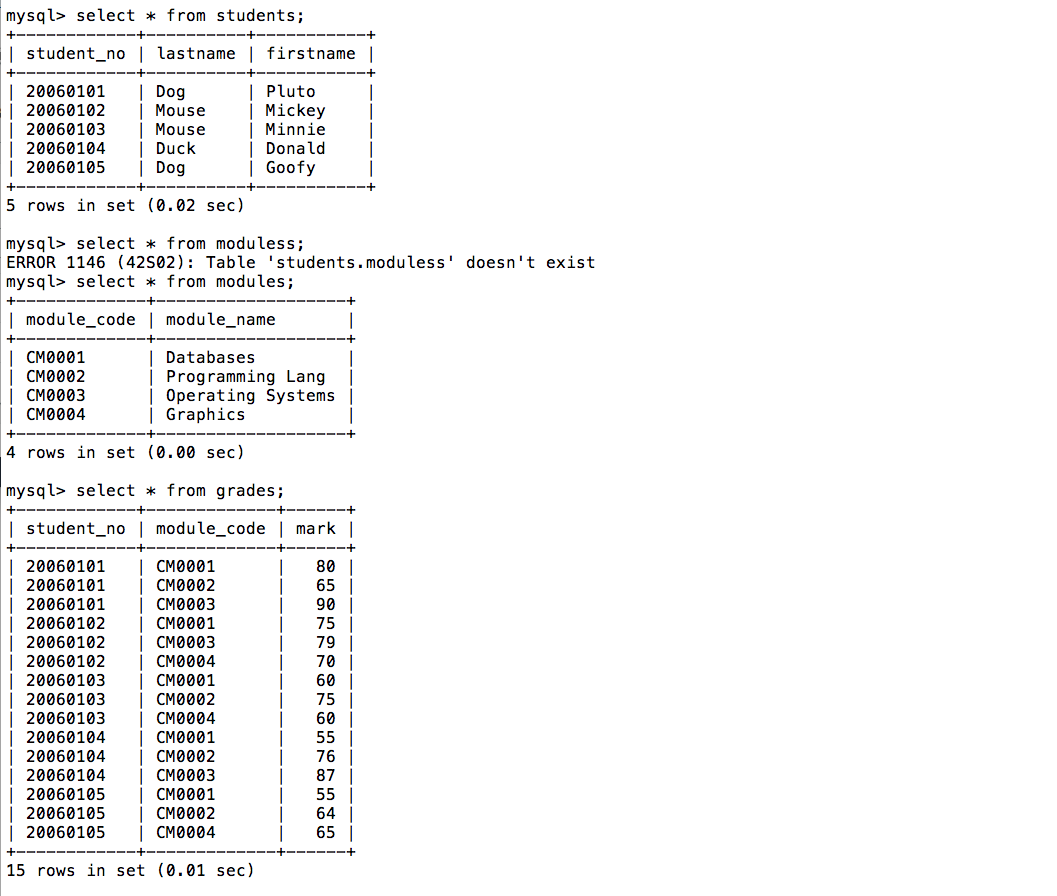


1. Insert data rows:



1. Get results for assignment submissions: TWO Screenshots.

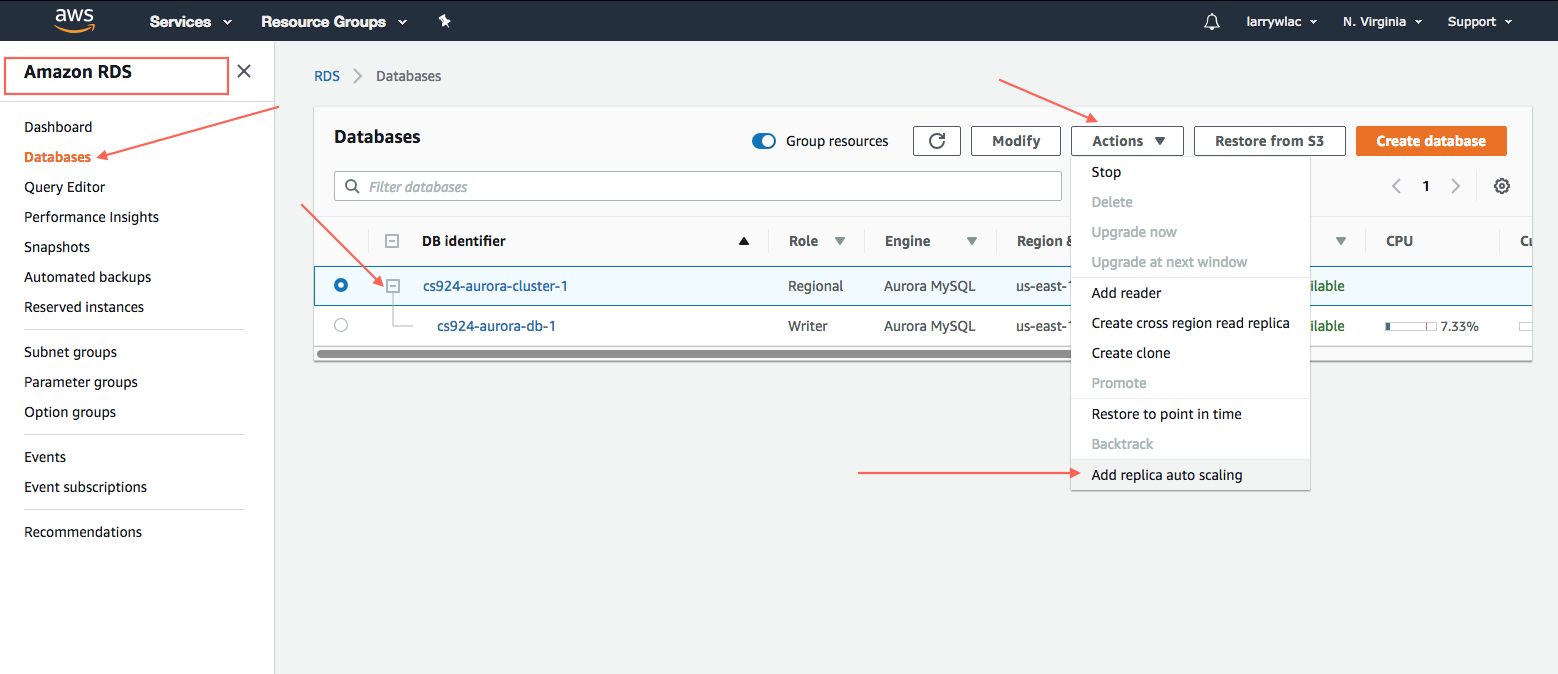




**Assignment 5B: Create Aurora Auto Scale Group.**

Create Aurora auto scale group.

1. Go back to Amason RDS Dashboard, choose “Database”, select the “cs924-aurora-cluster-1” cluster itself, then click “Actions” button to see the drop down window, choose “Add replica auto scaling”



1. On the “Policy details”:

Policy name: cs924-aurora-auto-scale-1

Target metric: Average CPU utilization of Aurora Replicas

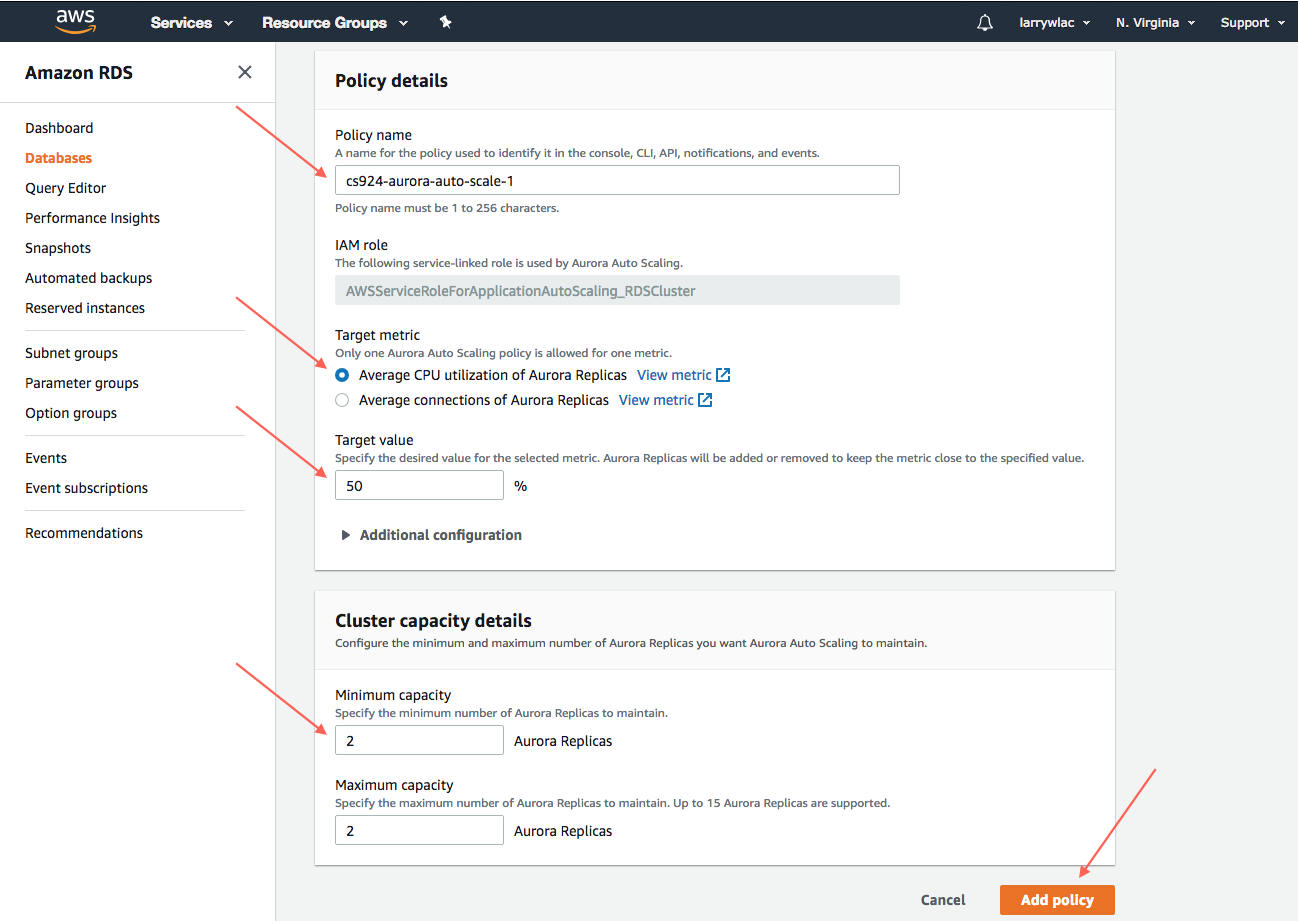
Target value: 50%

On the “Cluster capacity details”:

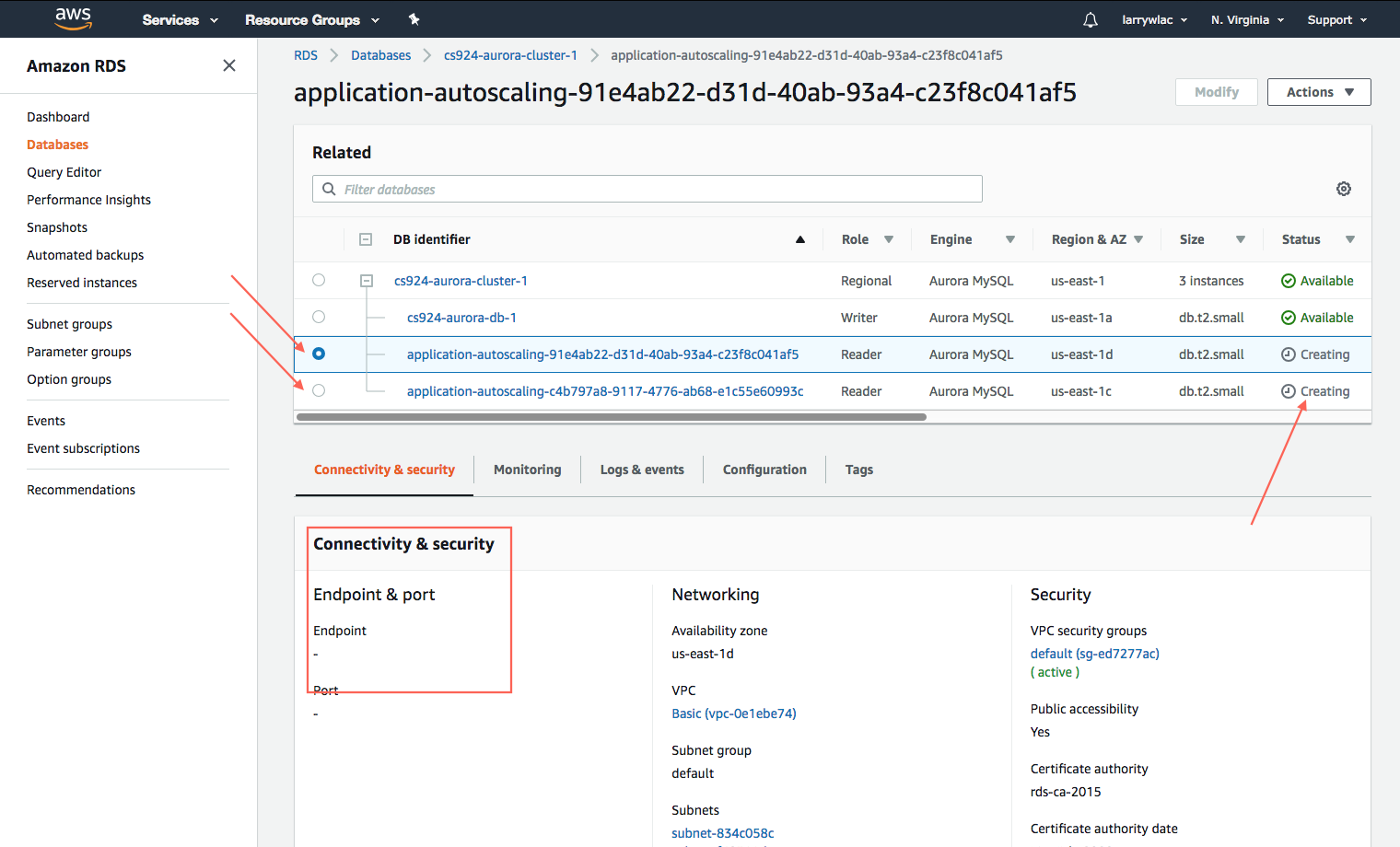
Minimum capacity: 2

Maximum capacity: 2

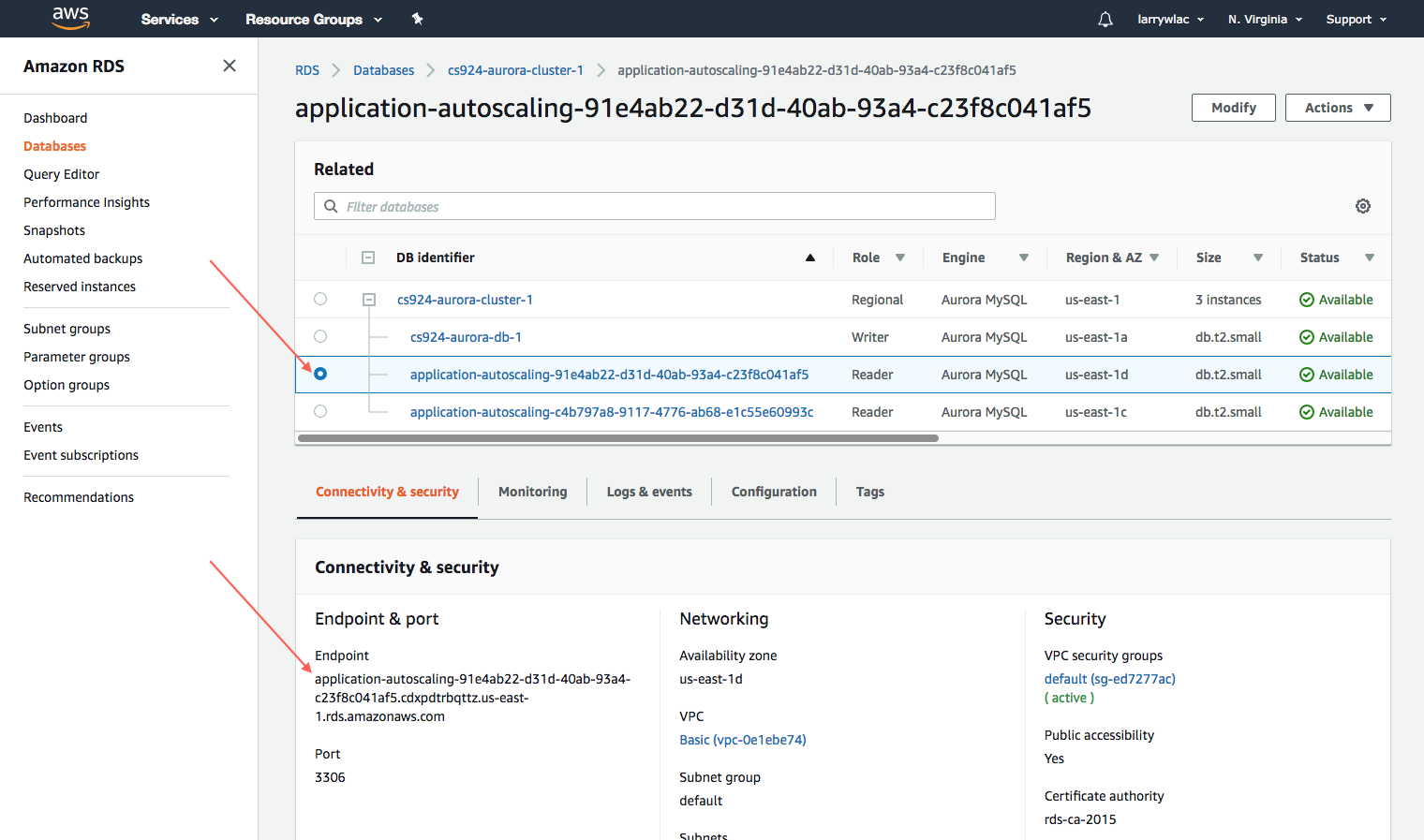
Choose “Add policy”

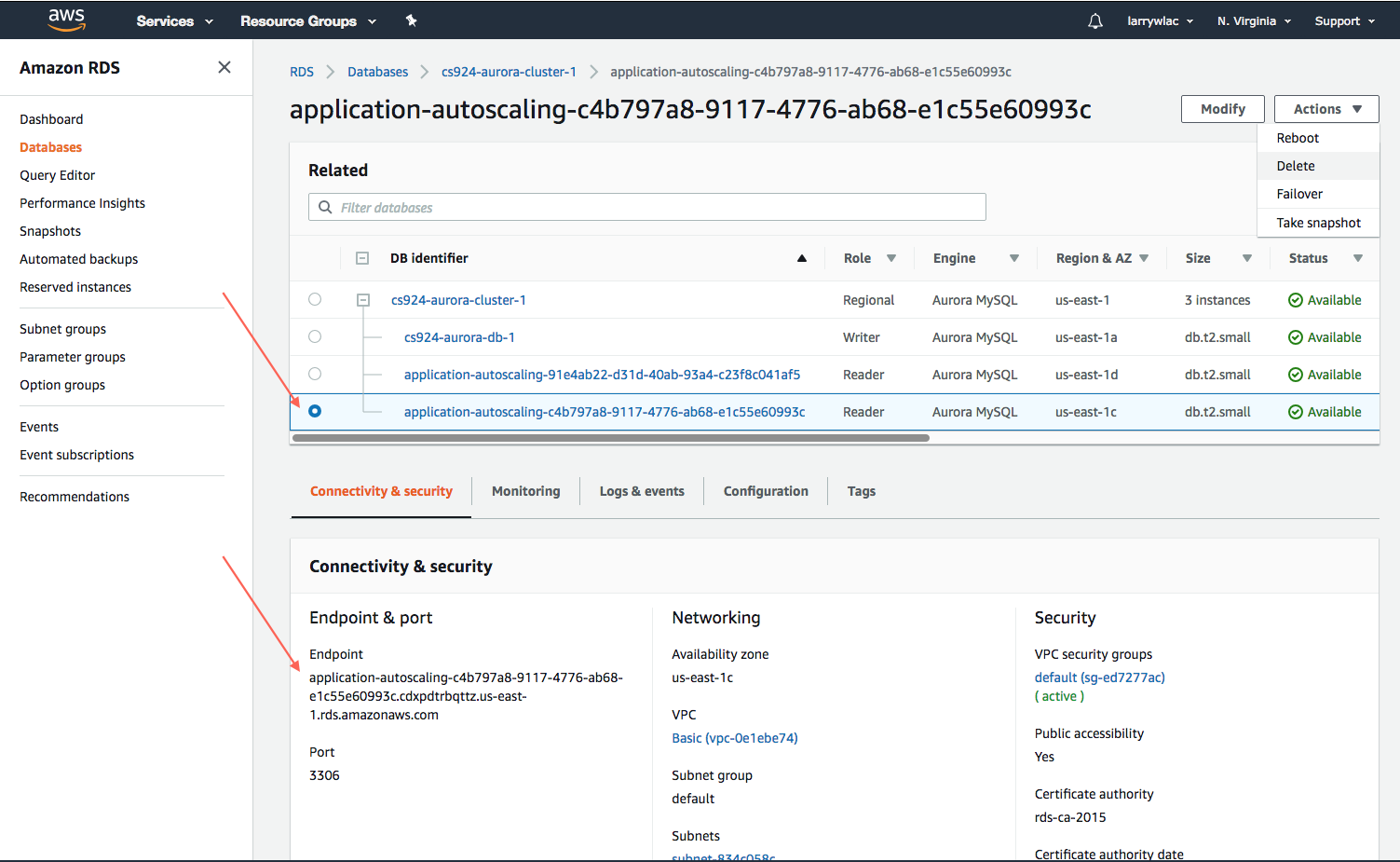


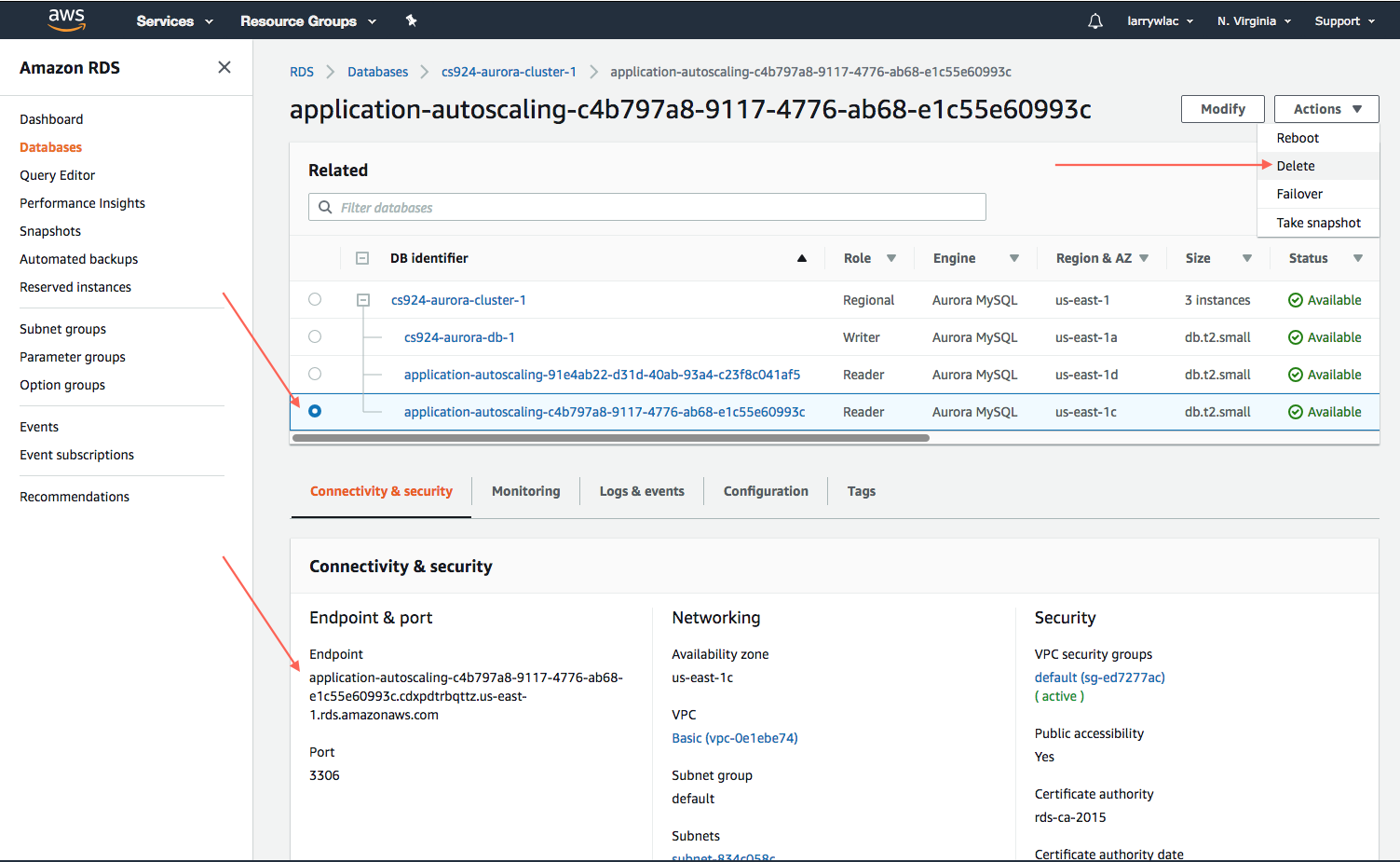
1. Switch back to Database window, you should see two “Reader” replicas are being created.



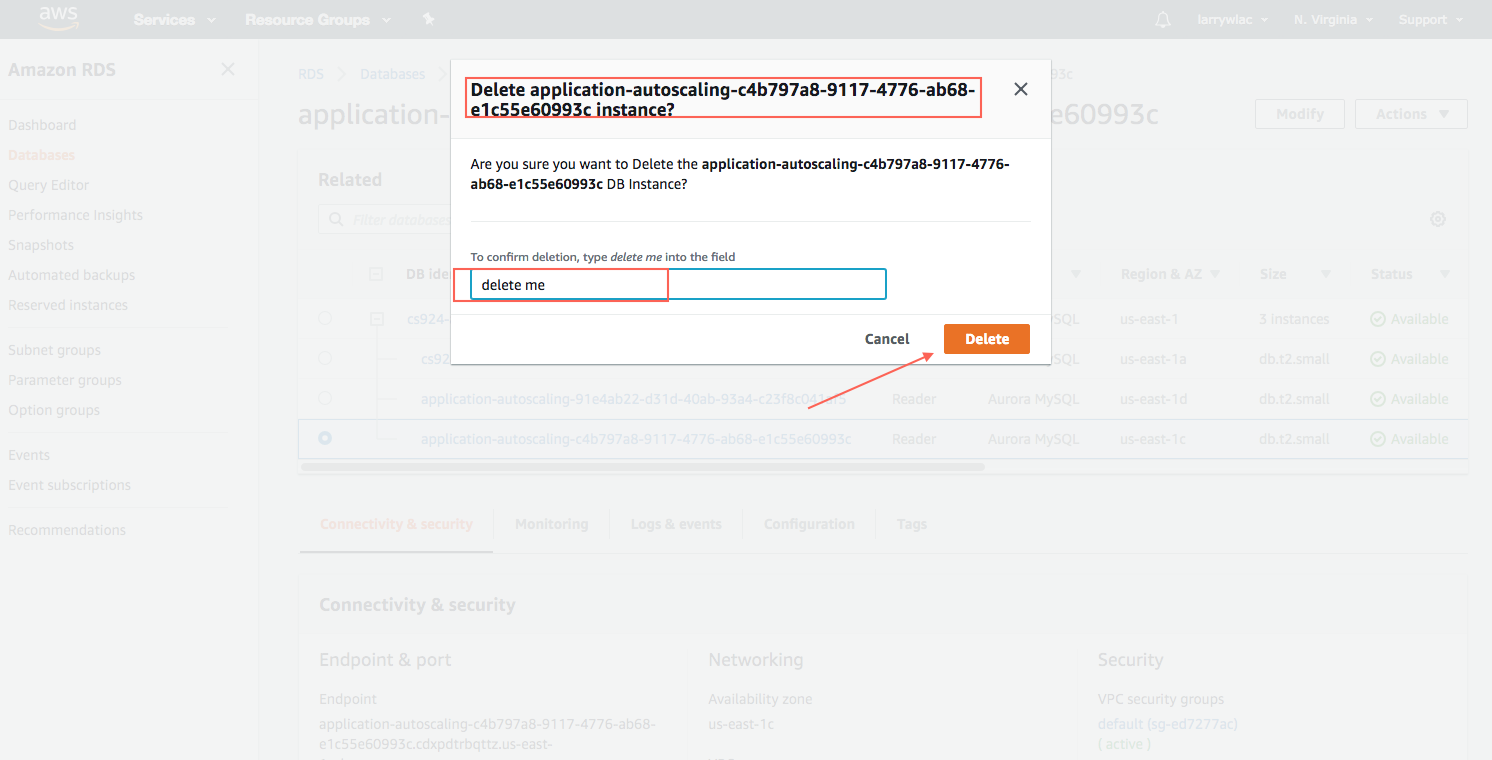
Once the status becomes ‘Available’ and “Endpoints” show up.







Verify the replica instance, type “delete me” in the confirmation prompt, then choose “Delete”.



Do the same for another Replica.

Then let’s delete the primary “DB instance”, this will automatically delete the cluster.

In the Databases window, choose primary DB instance: cs924-aurora-db-1, click “Actions”, and select “Delete” from the drop down window.

