AWS Academy Capstone Project

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IFT 598: Cloud Architecture for Information Technology

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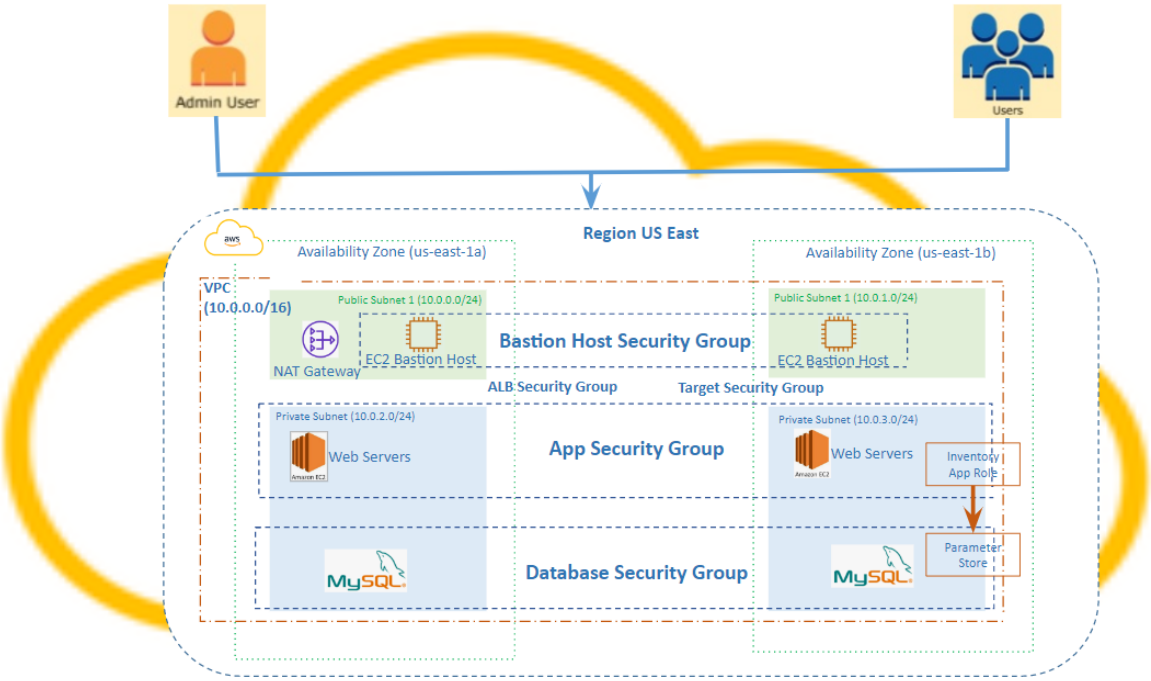
Figure 1

Final architecture diagram



Summary:

In this AWS Capstone Project. I was able to implement the skills which I learnt throughout the semester. Purpose was to deploy a highly scalable project . The project can be scaled up and down depending on the requirement and the data which is available. This project showed very secure access to the data through the cloud architecture the attributes such as secure MySQL database hosting, secure administrative access, anonymous web user access, running the website on a t2.small EC2 instance, granting administrators access to Secure Shell (SSH), providing high availability to the website through a load balancer, storing database connection information in the AWS Systems Manager Parameter Store, and offering automatic scaling using a launch template were all requirements for the solution.

The main duties were creating a Web site and a sample application based on a microservices architecture, then deploying them to a staging environment using native AWS CI/CD tools/services. The framework was used to build an ElasticC2 container registry, VPC networking resources, and an HTTP proxy service that encrypts outbound connection for our apps. Ansible and CloudFormation will be used to provide a broad toolchain for completely automated, infrastructure-as-code cloud service deployment. Learn how to improve CloudFormation and the resources it uses by using AWS Lambda functions. Using CloudFormation templates, which provided adjustable settings for both environments, all of the AWS services required for this project were installed. Choosing which services to use was the most challenging step in the process.

Before making a decision, take into account aspects like time to market, price, possible long-term savings, portability to other cloud suppliers, and other issues. Popular/open-source technologies should be abandoned in favor of cloud vendor-managed services if speed to market is a high priority. The organization's planned growth makes it possible that it will be difficult to predict costs with any degree of accuracy. I had to deploy a PHP application that complied with the system requirements in order to complete this task.The following actions are taken to finish the project.

The RDS databases which we have used are as follows :

- /example/username
- /example/username
- /example/password
- /example/database

- SQL Dump file was imported as a database file.

wget https://aws-tc-largeobjects.s3-us-west-2.amazonaws.com/ILT-TF-200-ACACAD-20-EN/capstone-project/Countrydatadump.sql

- We made use of AMI instance to create the instance.
- Creation of target group as instance.
- Made use of load balancer for instance.
- Auto Scaling Group helps in the launch of the template.
- All the 4 instances must be available and must be running with 2/2 checks passed

Web application is checked after it shows the end result by executing specific queries which is asked by the user.

Screenshots:

Figure 2

EC2 Instances

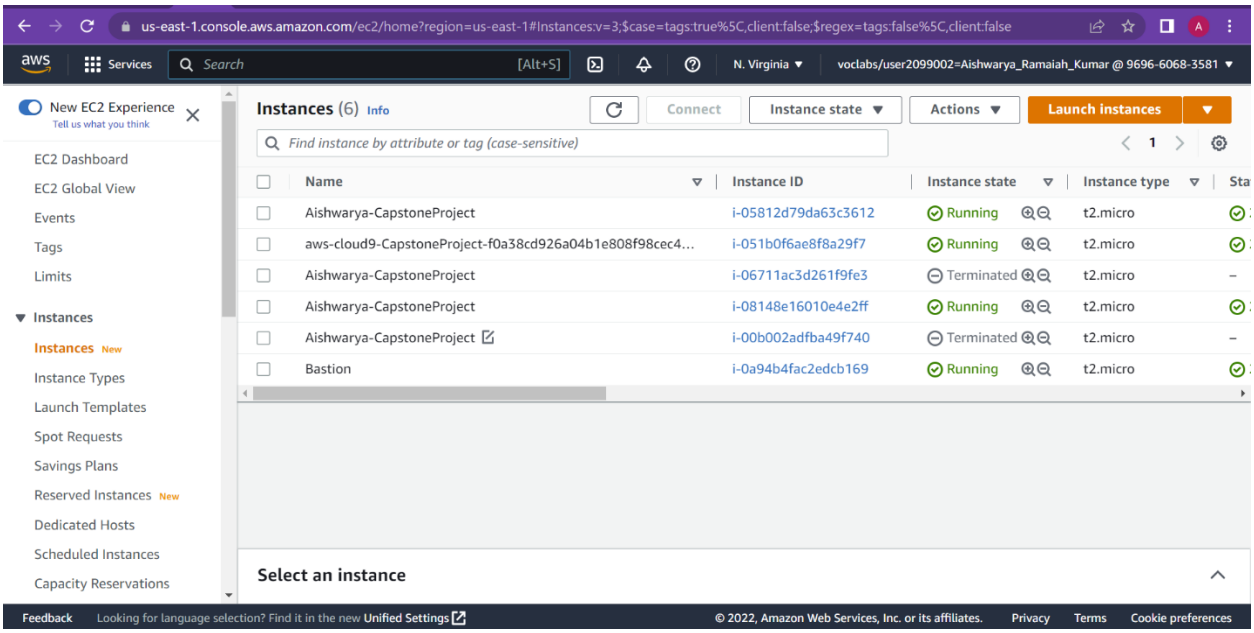


Figure 3

Launch Templates

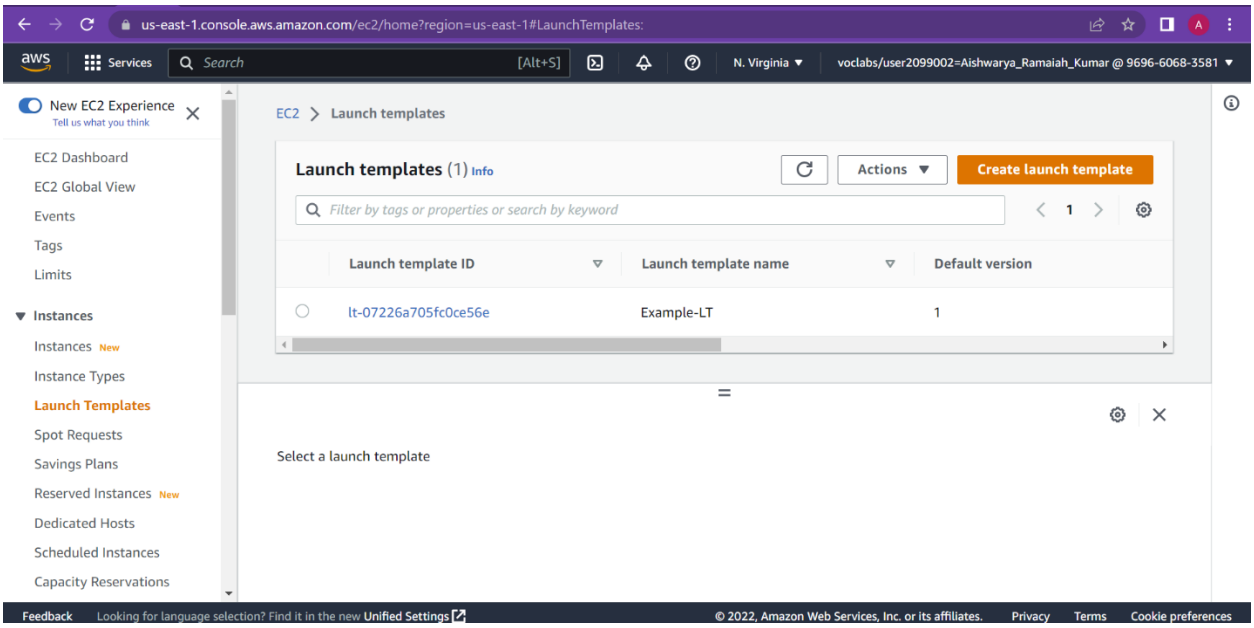


Figure 4

AMI

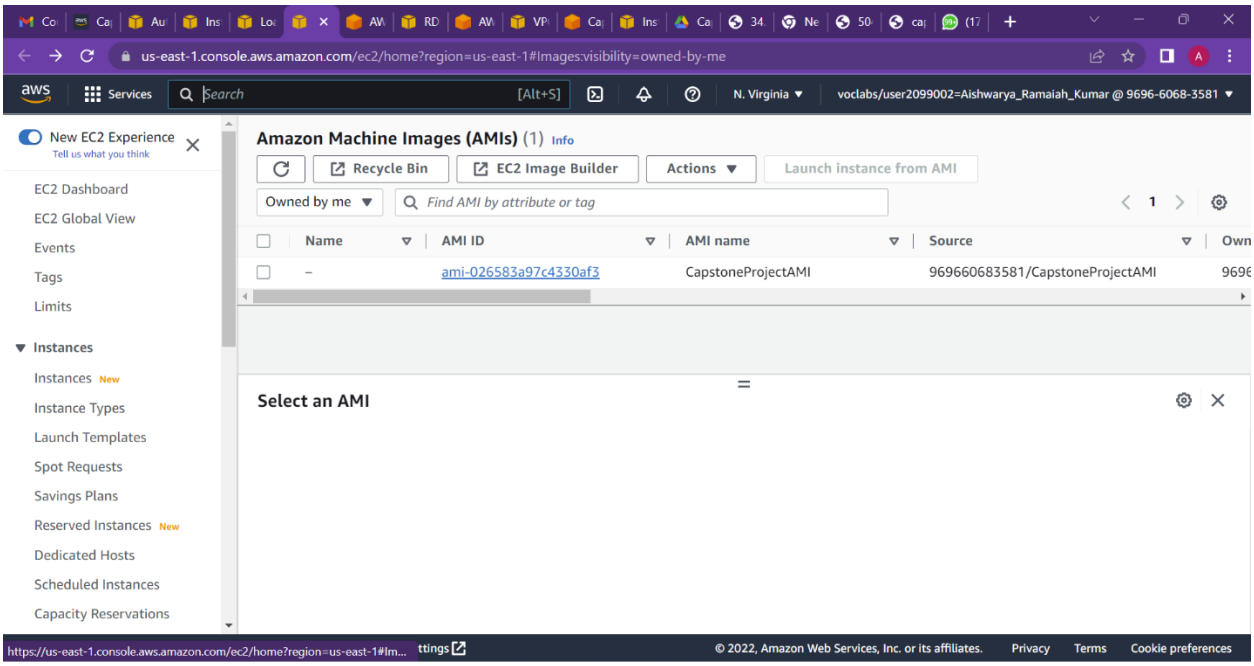

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Images:visibility=owned-by-me
Services
Search
[Alt+S]
N. Virginia
voclabs/user2099002=Aishwarya_Ramaiah_Kumar @ 9696-6068-3581
New EC2 Experience
Tell us what you think
EC2 Dashboard
EC2 Global View
Events
Tags
Limits
Instances
Instances New
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances New
Dedicated Hosts
Scheduled Instances
Capacity Reservations
Amazon Machine Images (AMIs) (1) Info
Recycle Bin
EC2 Image Builder
Actions
Launch instance from AMI
Owned by me
Find AMI by attribute or tag
Name
AMI ID
AMI name
Source
ami-026583a97c4330af3
CapstoneProjectAMI
969660683581/CapstoneProjectAMI
Select an AMI
© 2022, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

Figure 5

Security Groups

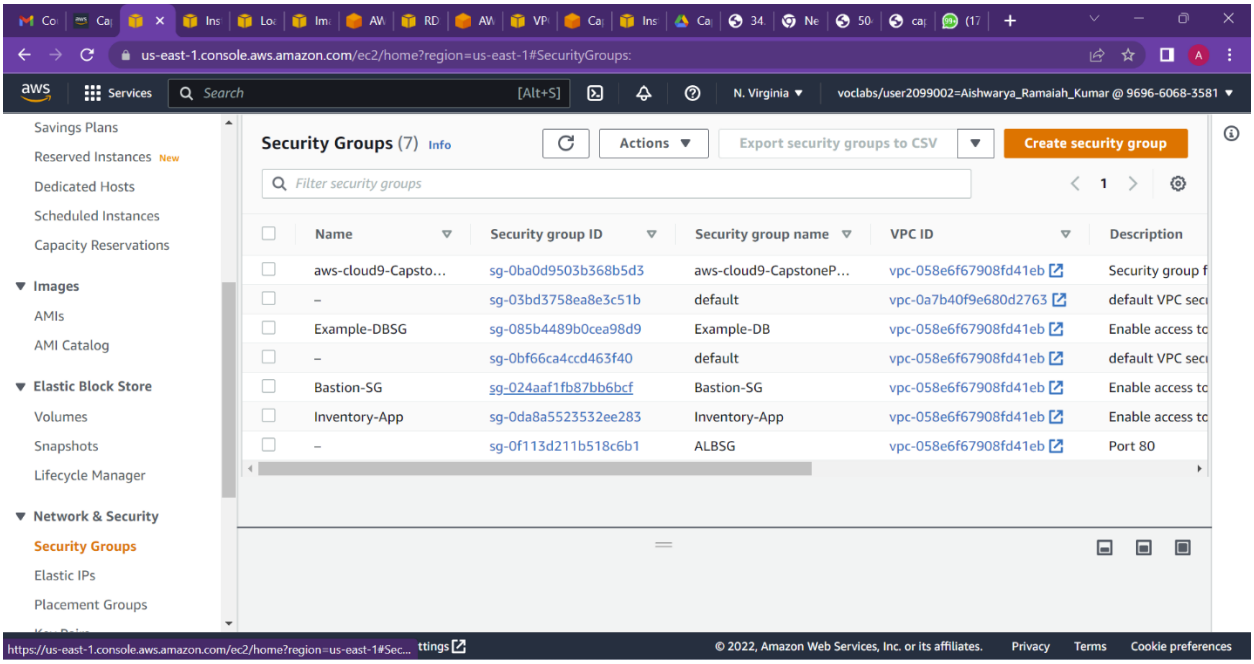


Figure 6

Load balancer

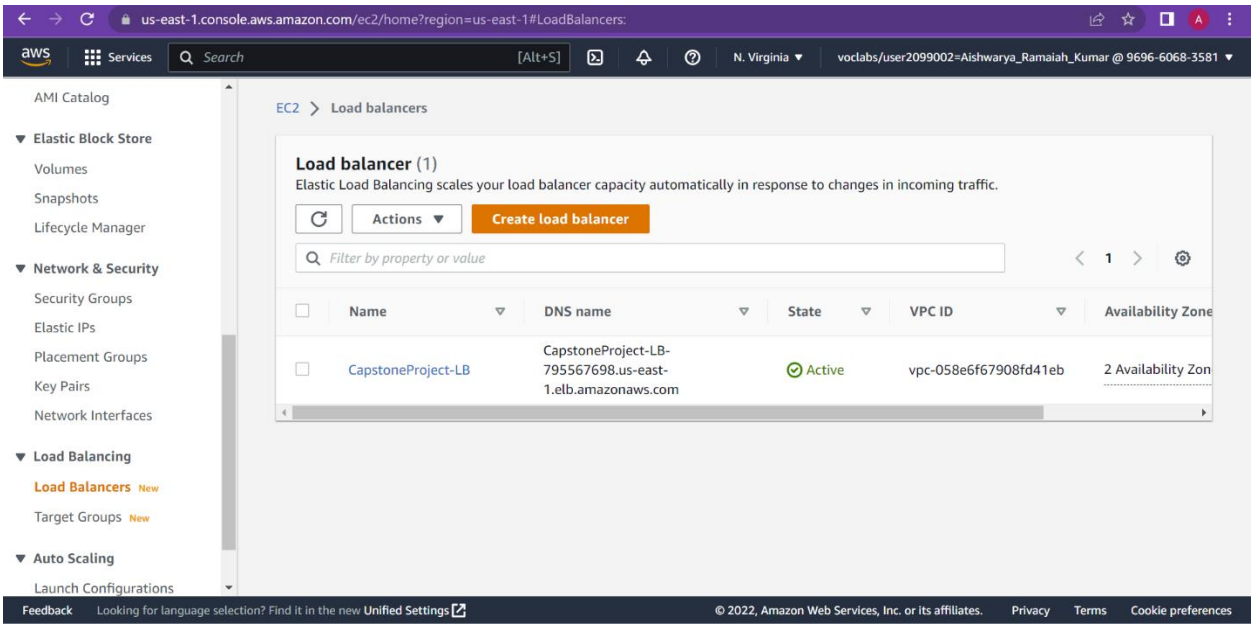


Figure 7

Target Groups

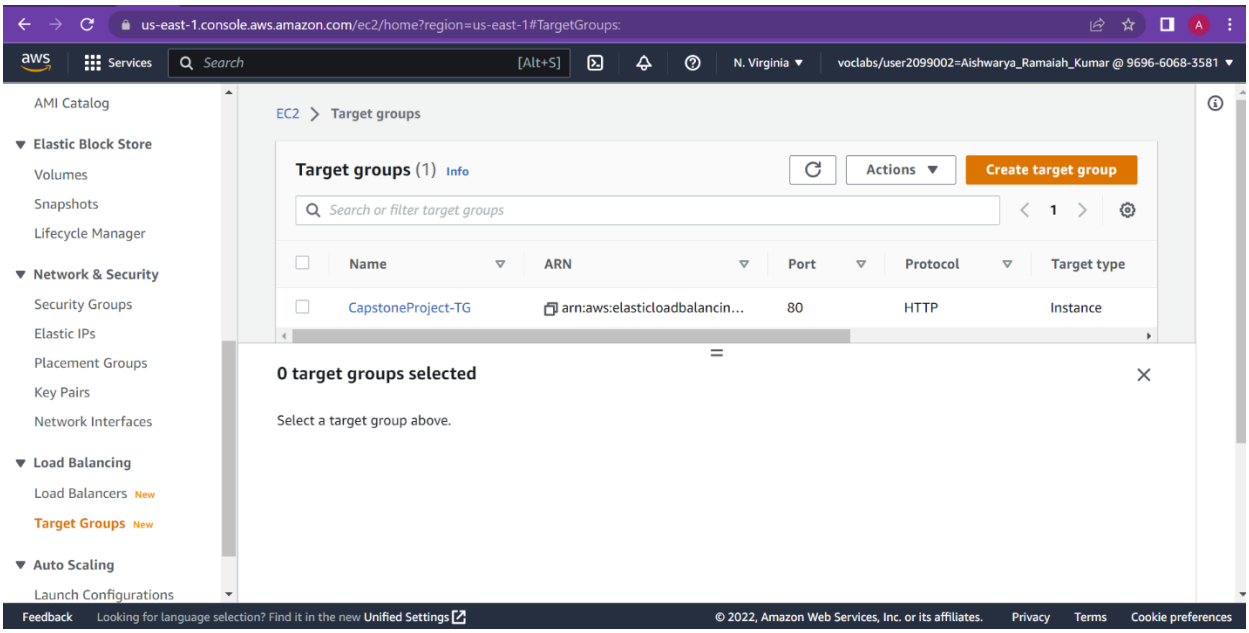


Figure 8

Web Page Result for Country Name

Pick another query

This is a Country Name	Number of mobile phone providers
Afghanistan	0
Albania	29791
Algeria	86000
American Samoa	1992
Andorra	23543
Angola	25806
Antigua and Barbuda	22000
Argentina	6487950
Armenia	17486
Aruba	15000
Australia	8562000
Austria	6117000
Azerbaijan	420400
Bahamas, The	31524
Bahrain	205727
Bangladesh	279000
Barbados	28467
Belarus	49353
Belgium	5629000
Belize	16812
Benin	55476
Bermuda	13000
Bhutan	0
Bolivia	582620
Bosnia and Herzegovina	93386