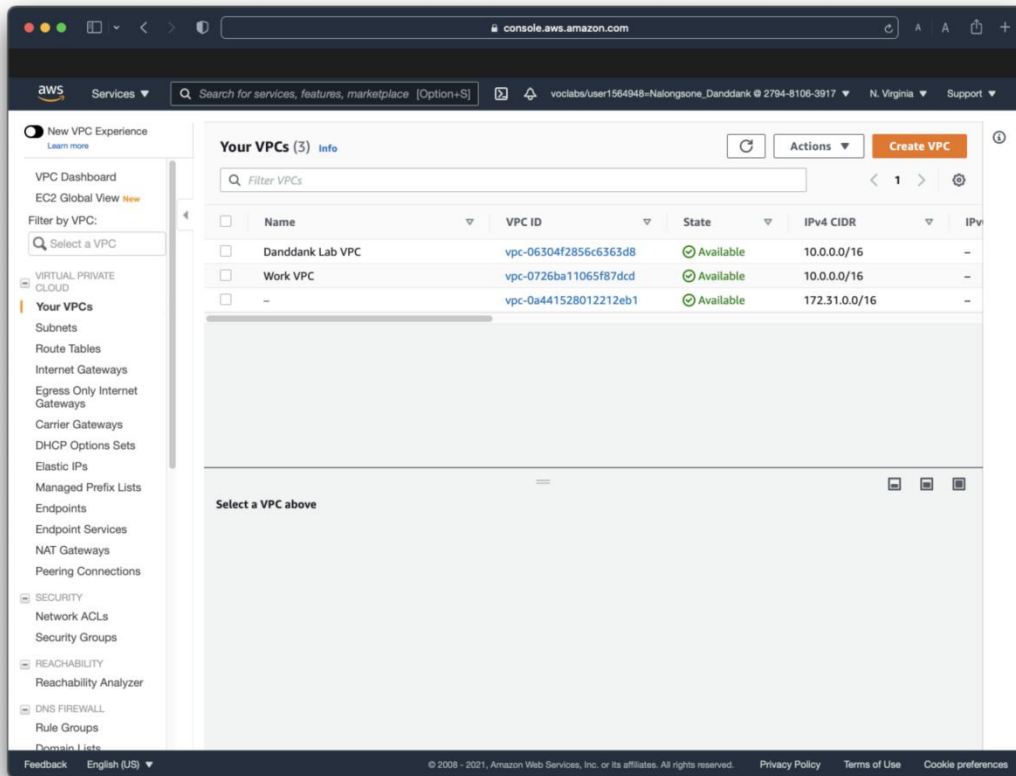


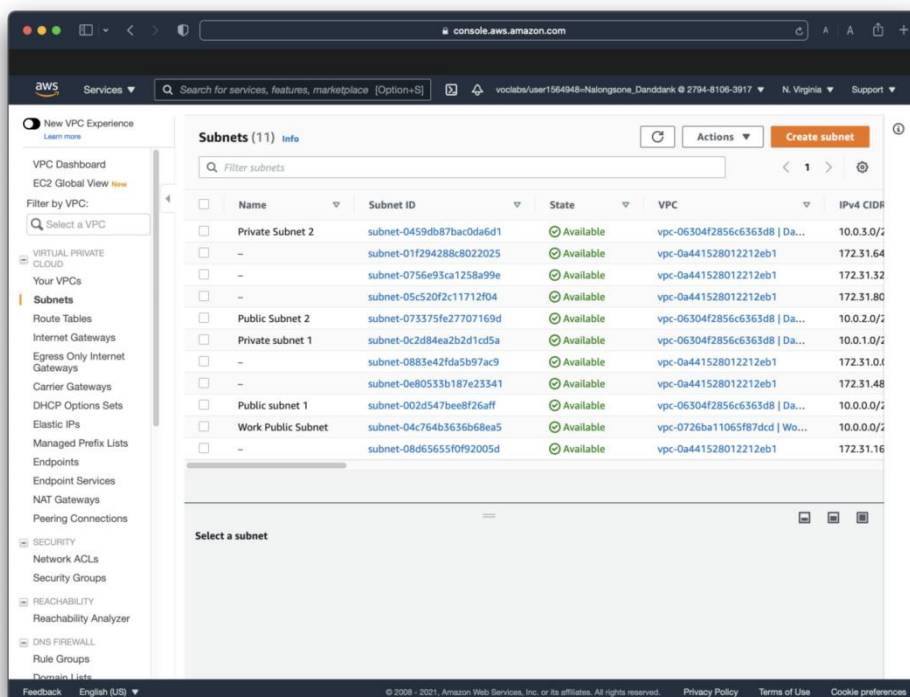
Lab #5 : Networking and Load Balancing in AWS

Exercise 1: Virtual Private Network (VPC) on AWS.

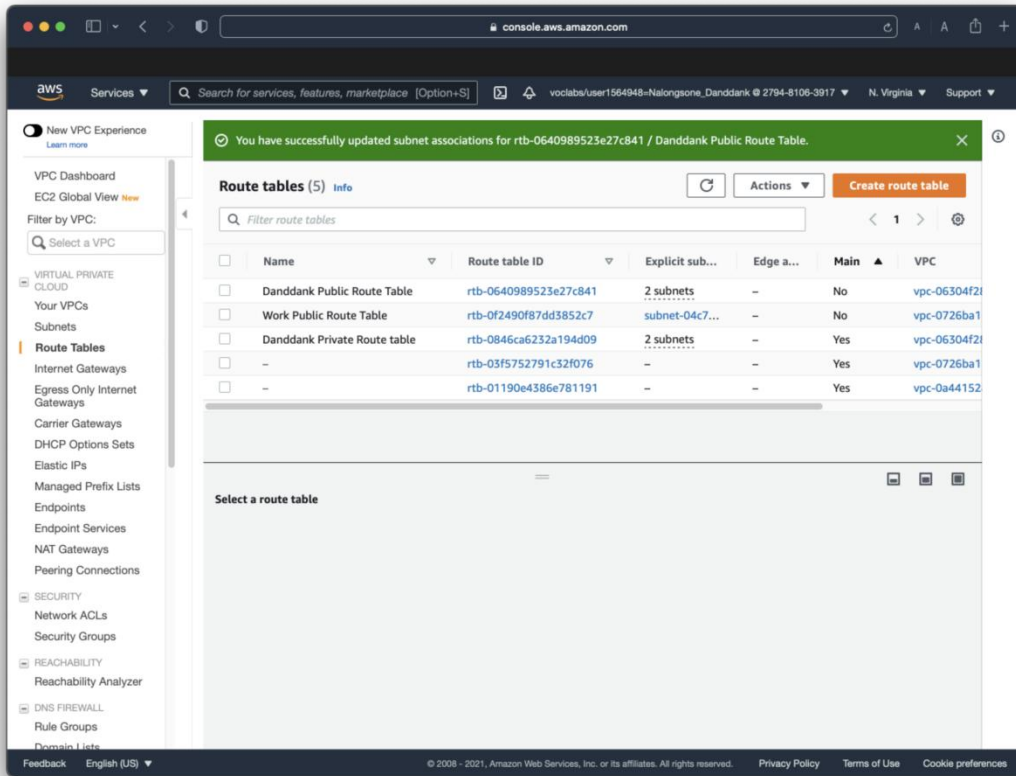
Lab report screen-shot #1:



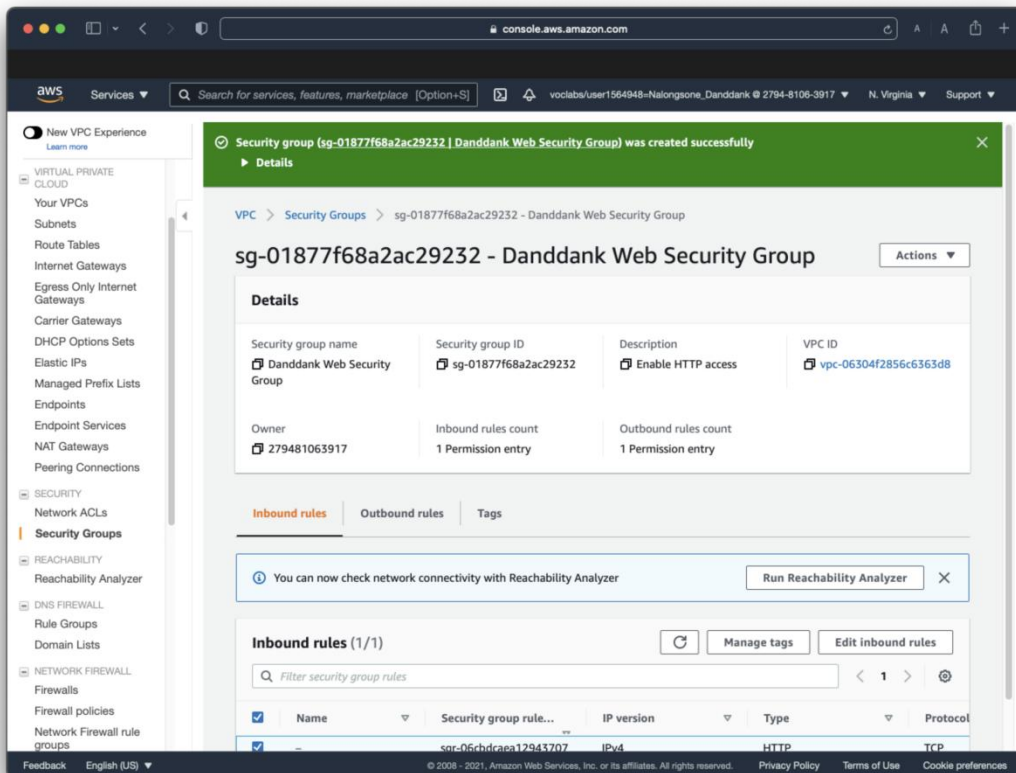
Lab report screen-shot #2:



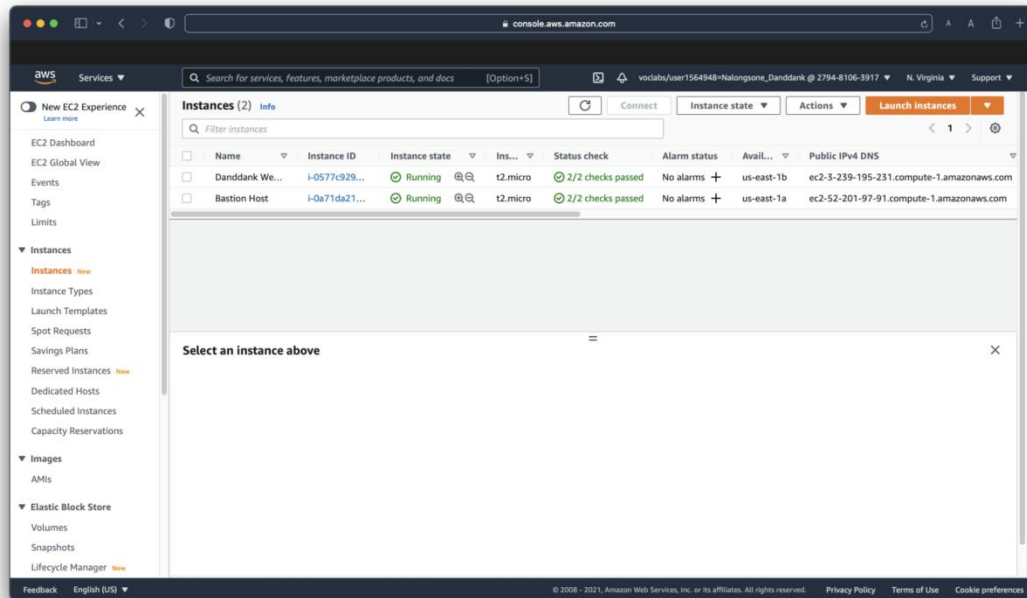
Lab report screen-shot #3:



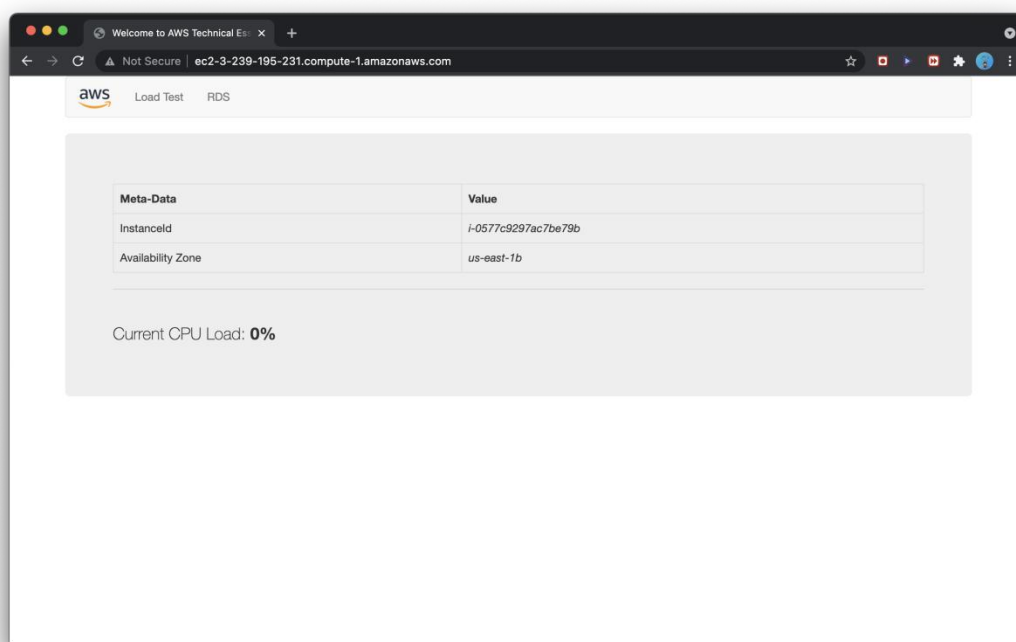
Lab report screen-shot #4:



Lab report screen-shot #5:

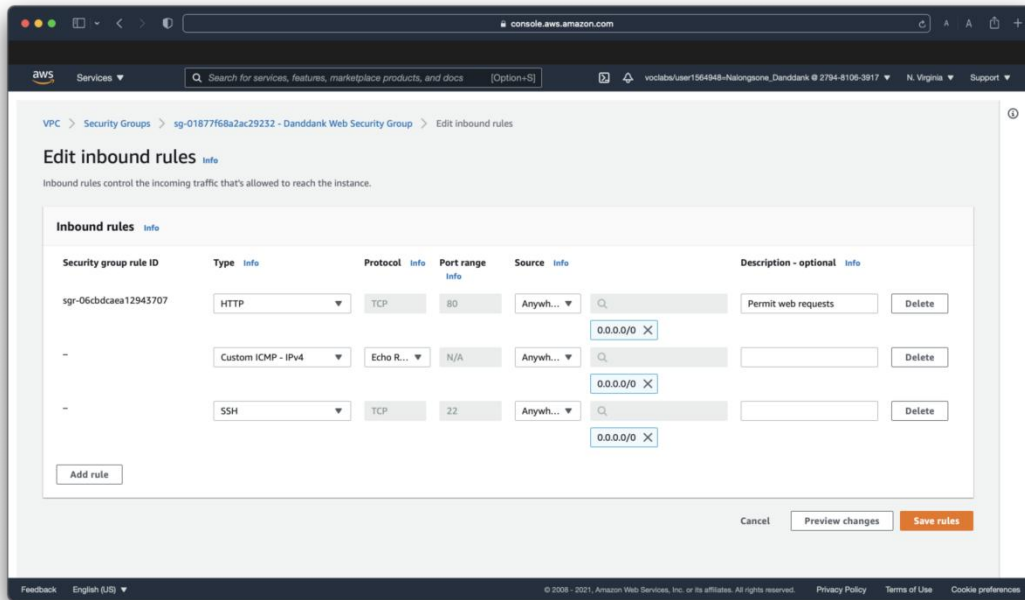


Lab report screen-shot #6:

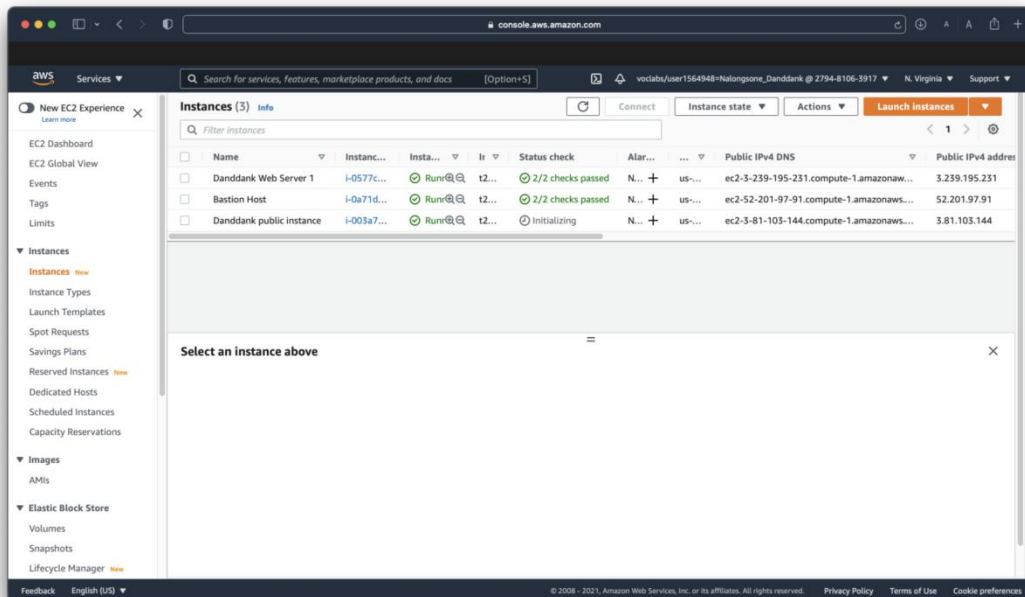


Exercise 2: Connecting to instances in public and private subnets.

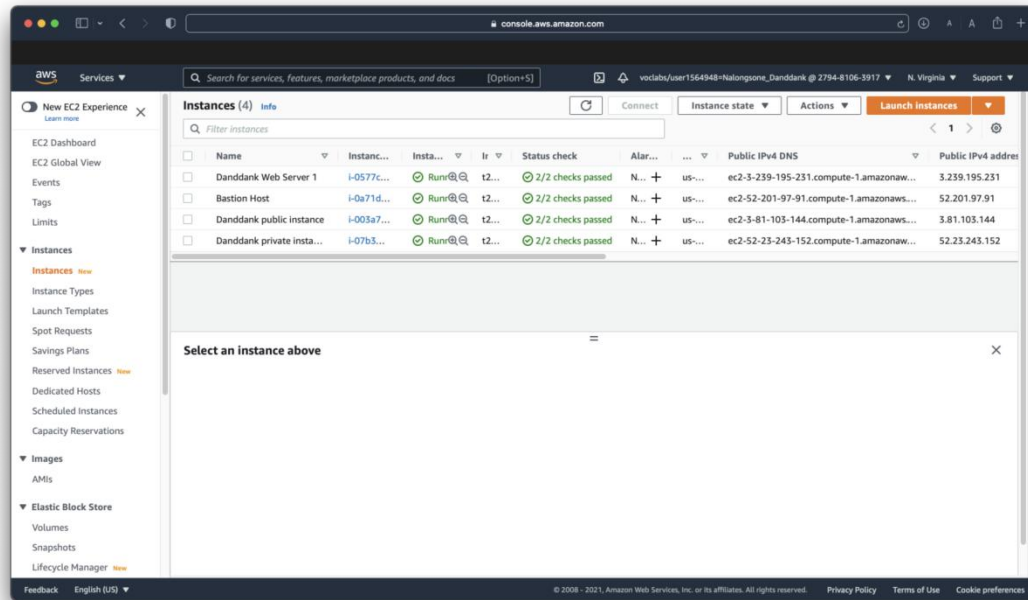
Lab report screen-shot #7:



Lab report screen-shot #8:



Lab report screen-shot #9:



Lab report screen-shot #10:

```

(base) ping58972@Nalongsones-MacBook-Air ~ % ping 3.81.103.144
PING 3.81.103.144 (3.81.103.144): 56 data bytes
64 bytes from 3.81.103.144: icmp_seq=0 ttl=235 time=136.893 ms
64 bytes from 3.81.103.144: icmp_seq=1 ttl=235 time=143.248 ms
64 bytes from 3.81.103.144: icmp_seq=2 ttl=235 time=137.820 ms
64 bytes from 3.81.103.144: icmp_seq=3 ttl=235 time=152.330 ms
64 bytes from 3.81.103.144: icmp_seq=4 ttl=235 time=133.977 ms
64 bytes from 3.81.103.144: icmp_seq=5 ttl=235 time=159.459 ms
64 bytes from 3.81.103.144: icmp_seq=6 ttl=235 time=138.482 ms
64 bytes from 3.81.103.144: icmp_seq=7 ttl=235 time=136.152 ms
64 bytes from 3.81.103.144: icmp_seq=8 ttl=235 time=140.520 ms
64 bytes from 3.81.103.144: icmp_seq=9 ttl=235 time=144.813 ms
64 bytes from 3.81.103.144: icmp_seq=10 ttl=235 time=149.457 ms
64 bytes from 3.81.103.144: icmp_seq=11 ttl=235 time=136.215 ms
64 bytes from 3.81.103.144: icmp_seq=12 ttl=235 time=143.318 ms
64 bytes from 3.81.103.144: icmp_seq=13 ttl=235 time=151.403 ms
64 bytes from 3.81.103.144: icmp_seq=14 ttl=235 time=146.076 ms
64 bytes from 3.81.103.144: icmp_seq=15 ttl=235 time=140.820 ms
^C
--- 3.81.103.144 ping statistics ---
16 packets transmitted, 16 packets received, 0.0% packet loss
round-trip min/avg/max/stddev = 133.977/143.186/159.459/6.857 ms
(base) ping58972@Nalongsones-MacBook-Air ~ %

```



```
-zsh
(base) ping58972@Nalongsones-MacBook-Air ~ % ping 52.23.243.152
PING 52.23.243.152 (52.23.243.152): 56 data bytes
Request timeout for icmp_seq 0
Request timeout for icmp_seq 1
Request timeout for icmp_seq 2
Request timeout for icmp_seq 3
Request timeout for icmp_seq 4
Request timeout for icmp_seq 5
Request timeout for icmp_seq 6
Request timeout for icmp_seq 7
Request timeout for icmp_seq 8
Request timeout for icmp_seq 9
Request timeout for icmp_seq 10
Request timeout for icmp_seq 11
Request timeout for icmp_seq 12
Request timeout for icmp_seq 13
Request timeout for icmp_seq 14
Request timeout for icmp_seq 15
Request timeout for icmp_seq 16
^C
--- 52.23.243.152 ping statistics ---
18 packets transmitted, 0 packets received, 100.0% packet loss
(base) ping58972@Nalongsones-MacBook-Air ~ %
```

Lab report screen-shot #11:

```
ec2-user@ip-10-0-0-182:~
--|  --|  )
_| (  /   Amazon Linux 2 AMI
---|\---|---|

https://aws.amazon.com/amazon-linux-2/
3 package(s) needed for security, out of 15 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-10-0-0-182 ~]$ ping 10.0.1.12
PING 10.0.1.12 (10.0.1.12) 56(84) bytes of data.
64 bytes from 10.0.1.12: icmp_seq=1 ttl=255 time=0.567 ms
64 bytes from 10.0.1.12: icmp_seq=2 ttl=255 time=0.570 ms
64 bytes from 10.0.1.12: icmp_seq=3 ttl=255 time=0.581 ms
64 bytes from 10.0.1.12: icmp_seq=4 ttl=255 time=0.573 ms
64 bytes from 10.0.1.12: icmp_seq=5 ttl=255 time=0.518 ms
64 bytes from 10.0.1.12: icmp_seq=6 ttl=255 time=0.578 ms
64 bytes from 10.0.1.12: icmp_seq=7 ttl=255 time=0.533 ms
64 bytes from 10.0.1.12: icmp_seq=8 ttl=255 time=0.583 ms
64 bytes from 10.0.1.12: icmp_seq=9 ttl=255 time=0.582 ms
64 bytes from 10.0.1.12: icmp_seq=10 ttl=255 time=0.630 ms
^C
--- 10.0.1.12 ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9212ms
rtt min/avg/max/mdev = 0.518/0.571/0.630/0.037 ms
[ec2-user@ip-10-0-0-182 ~]$
```

Lab report screen-shot #12:

```
ec2-user@ip-10-0-1-12:~  
[ec2-user@ip-10-0-0-182 ~]$ chmod 400 lab5keypair.pem  
[ec2-user@ip-10-0-0-182 ~]$ ssh -i "lab5keypair.pem" ec2-user@10.0.1.12  
  
  _ | _ | _ )  
 _ | ( /   Amazon Linux 2 AMI  
---| \---|---|  
  
https://aws.amazon.com/amazon-linux-2/  
3 package(s) needed for security, out of 15 available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-10-0-1-12 ~]$ ping 10.0.0.182  
PING 10.0.0.182 (10.0.0.182) 56(84) bytes of data.  
64 bytes from 10.0.0.182: icmp_seq=1 ttl=255 time=0.530 ms  
64 bytes from 10.0.0.182: icmp_seq=2 ttl=255 time=0.552 ms  
64 bytes from 10.0.0.182: icmp_seq=3 ttl=255 time=0.489 ms  
64 bytes from 10.0.0.182: icmp_seq=4 ttl=255 time=0.575 ms  
64 bytes from 10.0.0.182: icmp_seq=5 ttl=255 time=0.550 ms  
64 bytes from 10.0.0.182: icmp_seq=6 ttl=255 time=0.567 ms  
64 bytes from 10.0.0.182: icmp_seq=7 ttl=255 time=0.567 ms  
64 bytes from 10.0.0.182: icmp_seq=8 ttl=255 time=0.565 ms  
^C  
--- 10.0.0.182 ping statistics ---  
8 packets transmitted, 8 received, 0% packet loss, time 7168ms  
rtt min/avg/max/mdev = 0.489/0.549/0.575/0.033 ms  
[ec2-user@ip-10-0-1-12 ~]$
```

Lab report screen-shot #13:

```
ec2-user@ip-10-0-1-12:~  
uery/3.1.1/jquery.min.js' type="text/javascript" charset="utf-8"></script> <scri  
pt src="https://unpkg.com/scrollreveal/dist/scrollreveal.min.js"></script> <scri  
pt src="js/main.js" type="text/javascript" charset="utf-8"></script> </body> </h  
tml>  
[ec2-user@ip-10-0-1-12 ~]$ ping google.com  
PING google.com (172.217.164.142) 56(84) bytes of data.  
64 bytes from iad30s24-in-f14.1e100.net (172.217.164.142): icmp_seq=1 ttl=51 tim  
e=2.25 ms  
64 bytes from iad30s24-in-f14.1e100.net (172.217.164.142): icmp_seq=2 ttl=51 tim  
e=1.68 ms  
64 bytes from iad30s24-in-f14.1e100.net (172.217.164.142): icmp_seq=3 ttl=51 tim  
e=1.56 ms  
64 bytes from iad30s24-in-f14.1e100.net (172.217.164.142): icmp_seq=4 ttl=51 tim  
e=1.61 ms  
64 bytes from iad30s24-in-f14.1e100.net (172.217.164.142): icmp_seq=5 ttl=51 tim  
e=1.65 ms  
64 bytes from iad30s24-in-f14.1e100.net (172.217.164.142): icmp_seq=6 ttl=51 tim  
e=1.63 ms  
64 bytes from iad30s24-in-f14.1e100.net (172.217.164.142): icmp_seq=7 ttl=51 tim  
e=1.62 ms  
^C  
--- google.com ping statistics ---  
7 packets transmitted, 7 received, 0% packet loss, time 6010ms  
rtt min/avg/max/mdev = 1.567/1.719/2.259/0.229 ms  
[ec2-user@ip-10-0-1-12 ~]$
```

Lab report screen-shot #14a:

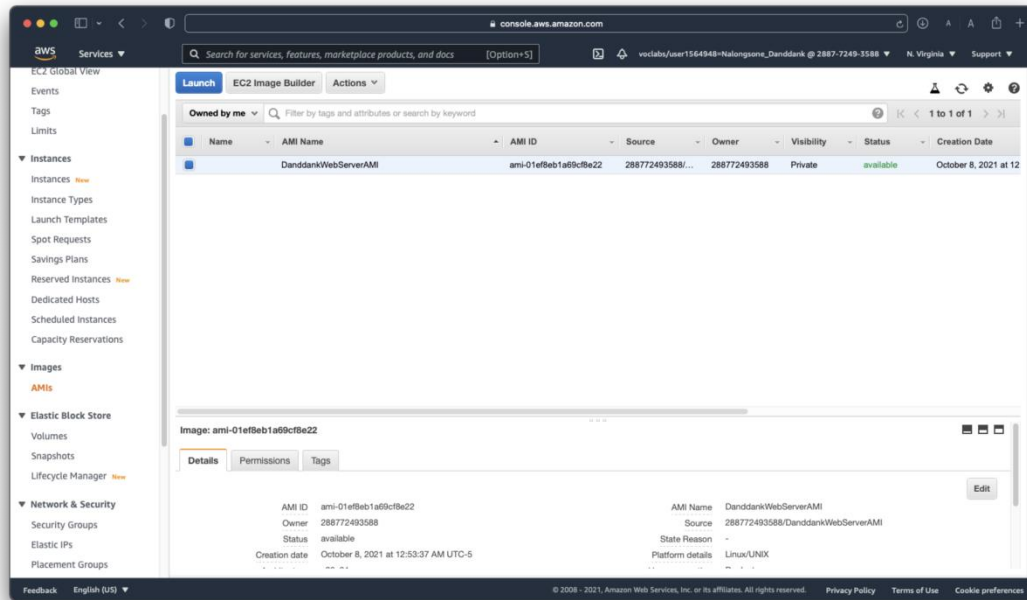

```
ec2-user@ip-10-0-1-12:~  
[ec2-user@ip-10-0-1-12 ~]$ clear  
[ec2-user@ip-10-0-1-12 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/ami-id  
ami-02e136e904f3da870  
[ec2-user@ip-10-0-1-12 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/local-ipv4  
10.0.1.12  
[ec2-user@ip-10-0-1-12 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/hostname  
[ec2-user@ip-10-0-1-12 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/public-ipv4  
52.23.243.152  
[ec2-user@ip-10-0-1-12 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/public-keys  
0=lab5keypair  
[ec2-user@ip-10-0-1-12 ~]$
```

Lab report screen-shot #14b:

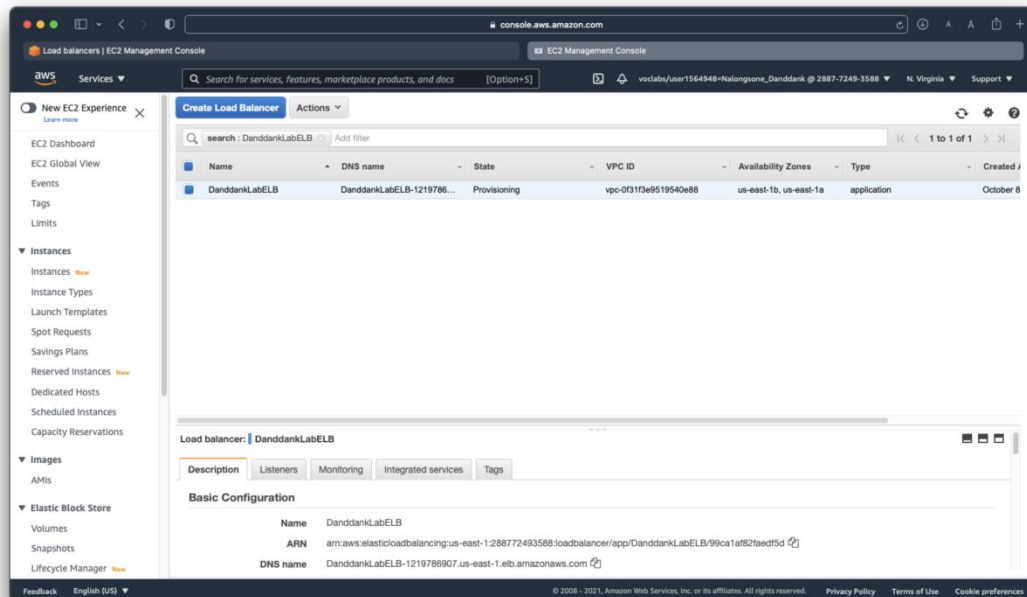
```
rtt_min/avg/max/mdev = 1.567/1.719/2.259/0.229 ms  
ec2-user@ip-10-0-0-182:~  
[ec2-user@ip-10-0-1-12 ~]$ clear  
[ec2-user@ip-10-0-1-12 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/ami-id  
ami-02e136e904f3da870  
[ec2-user@ip-10-0-1-12 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/local-ipv4  
10.0.1.12  
[ec2-user@ip-10-0-1-12 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/hostname  
[ec2-user@ip-10-0-1-12 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/public-ipv4  
52.23.243.152  
[ec2-user@ip-10-0-1-12 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/public-keys  
0=lab5keypair  
[ec2-user@ip-10-0-1-12 ~]$ exit  
logout  
Connection to 10.0.1.12 closed.  
[ec2-user@ip-10-0-0-182 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/ami-id  
ami-02e136e904f3da870  
[ec2-user@ip-10-0-0-182 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/local-ipv4  
10.0.0.182  
[ec2-user@ip-10-0-0-182 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/hostname  
[ec2-user@ip-10-0-0-182 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/public-ipv4  
3.81.103.144  
[ec2-user@ip-10-0-0-182 ~]$ curl -w "\n" http://169.254.169.254/latest/meta-data/public-keys  
0=lab5keypair  
[ec2-user@ip-10-0-0-182 ~]$
```

Exercise 3: Scaling and Load Balancing.

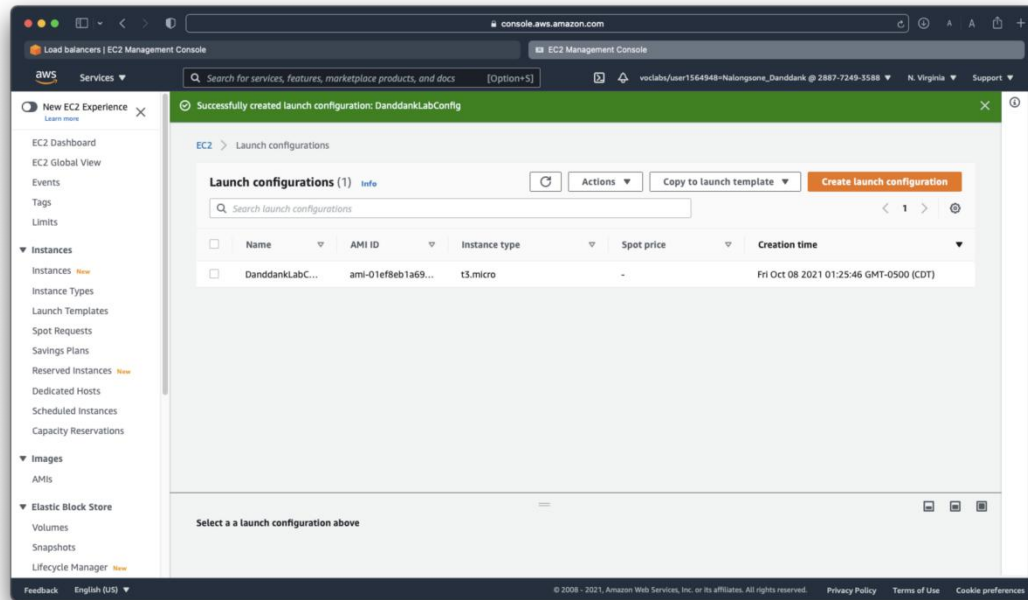
Lab report screen-shot #15:



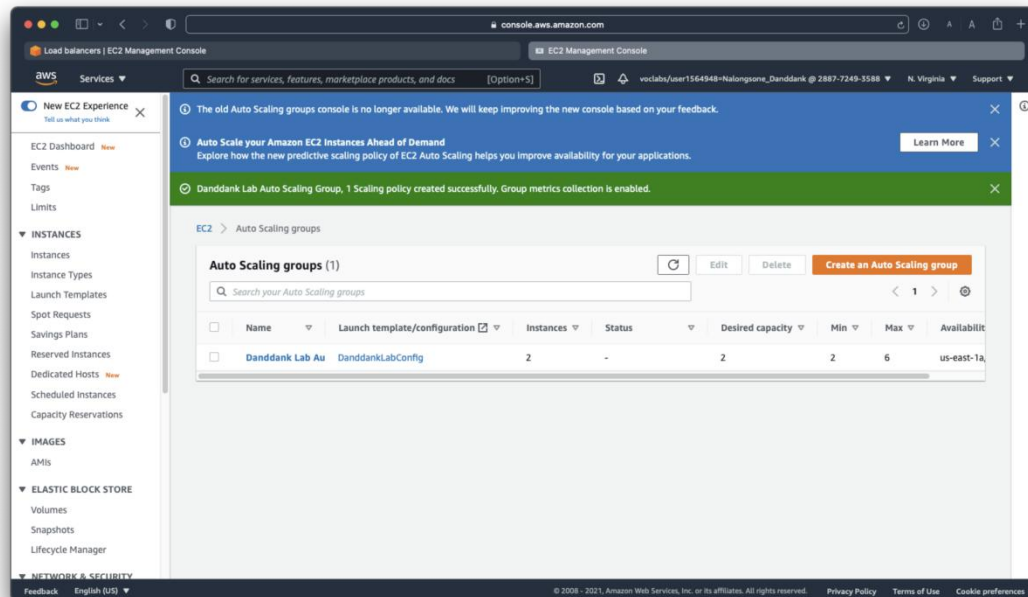
Lab report screen-shot #16:



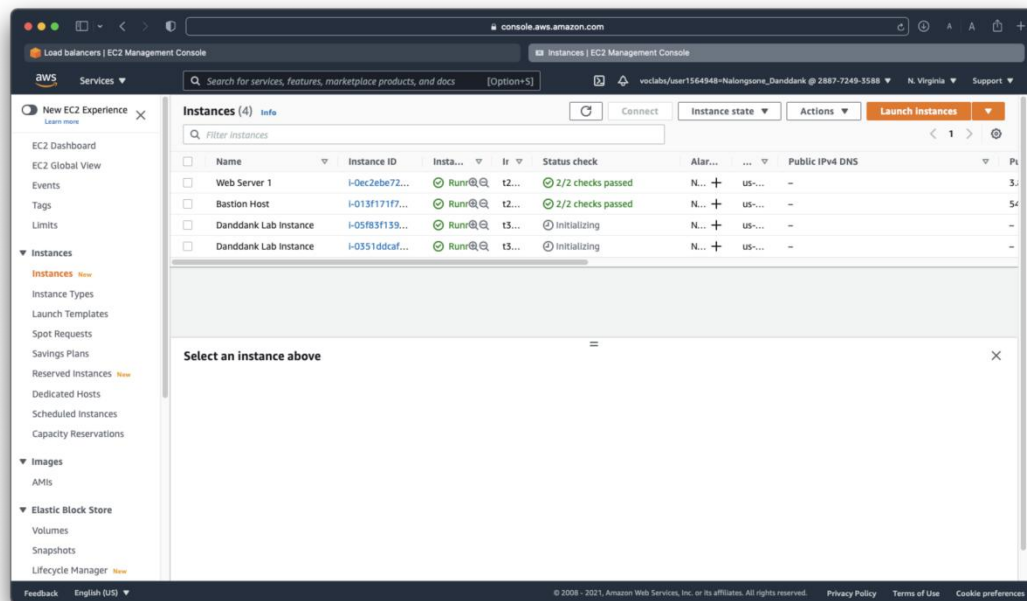
Lab report screen-shot #17:



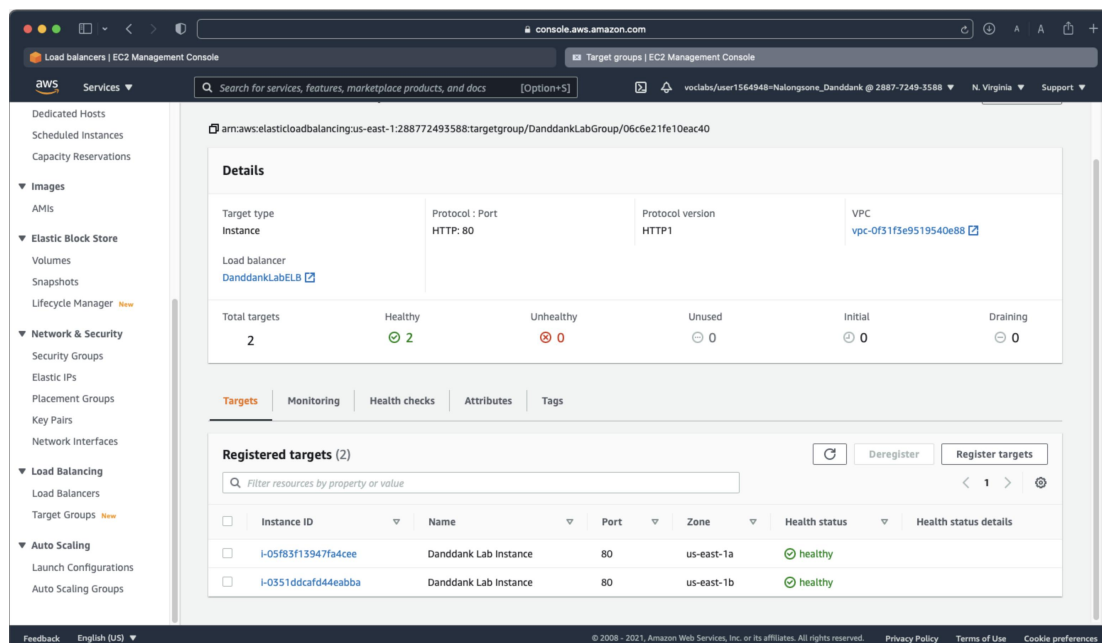
Lab report screen-shot #18:



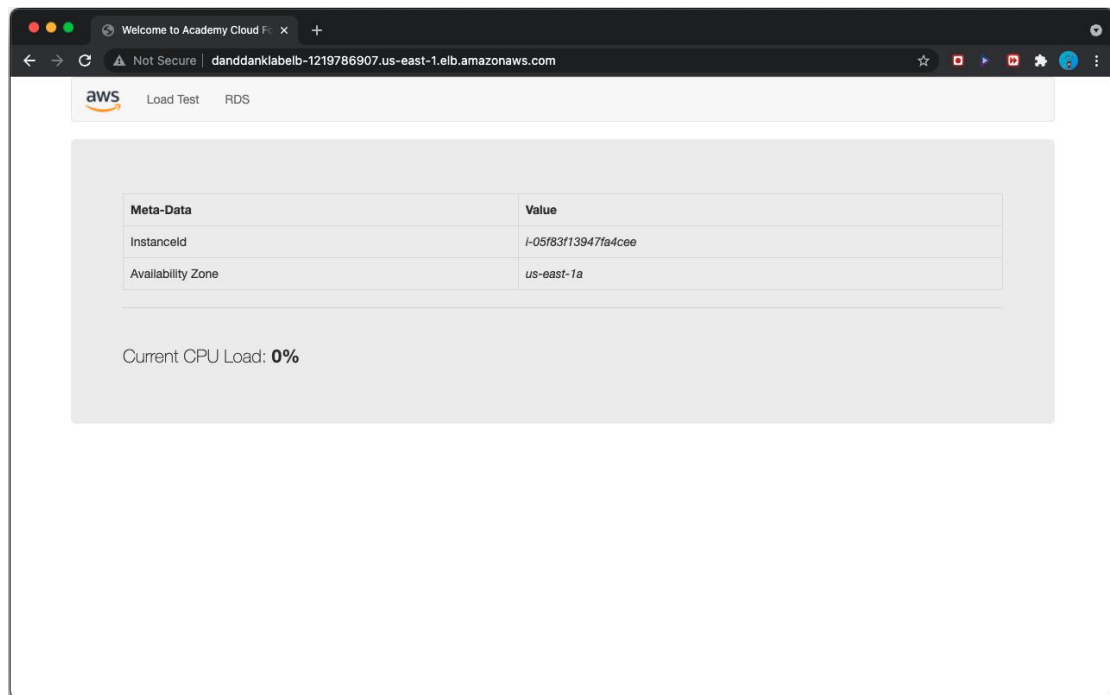
Lab report screen-shot #19:



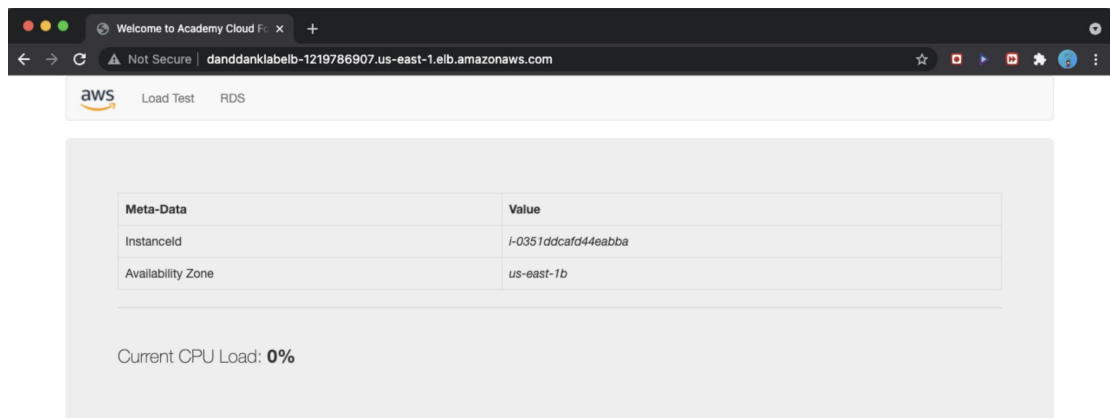
Lab report screen-shot #20:



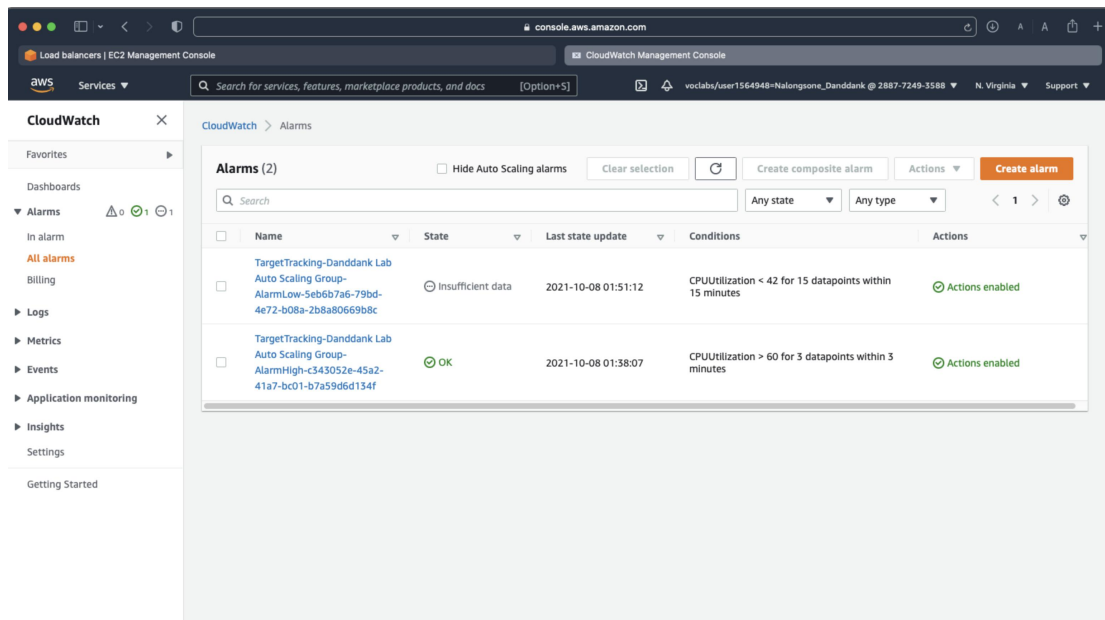
Lab report screen-shot #21:



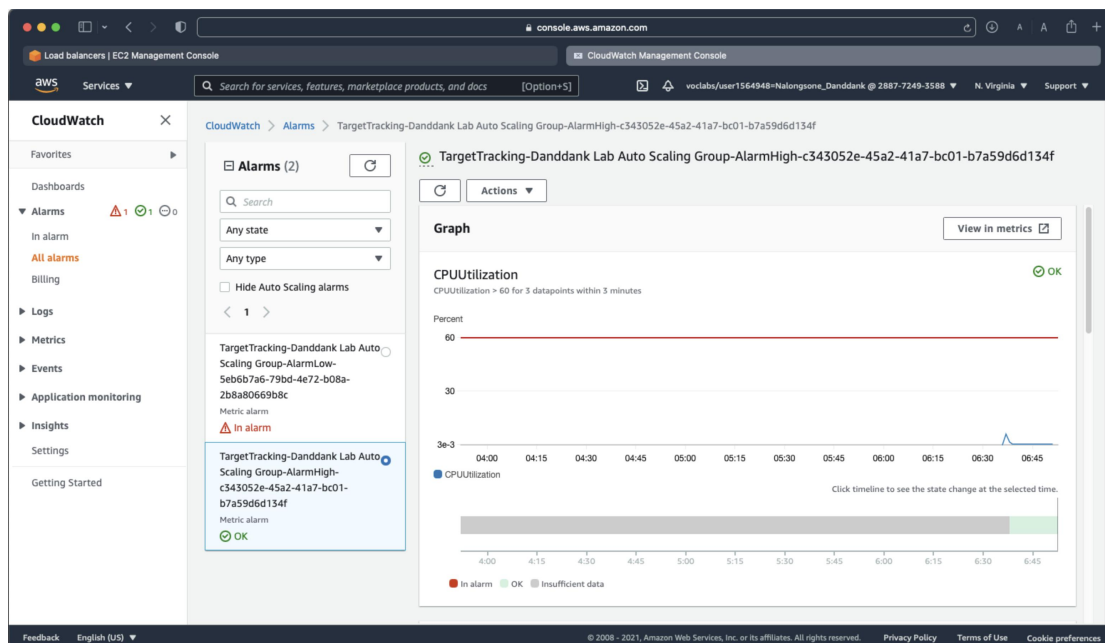
Lab report screen-shot #22:



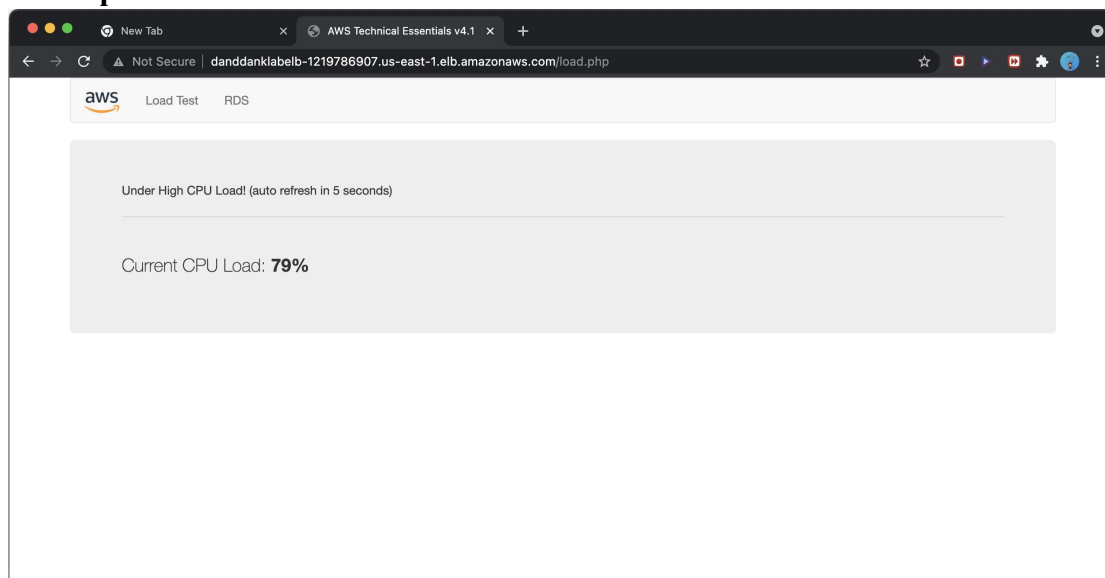
Lab report screen-shot #23:



Lab report screen-shot #24:



Lab report screen-shot #25:



Lab report screen-shot #26:

Services

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voclabs/user1564948=Nalongsone_Danddank @ 2887-7249-3588

N. Virginia

Support

New EC2 Experience

EC2 Dashboard

EC2 Global View

Events

Tags

Limits

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations

Images

AMIs

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Instances 1/5

Filter instances

	Name	Instance ID	Insta...	Ir	Status check	Alar...	...	Public IPv4 DNS	Pt
<input checked="" type="checkbox"/>	Web Server 1	i-0ec2ebe72...	Runr@Q	t2...	2/2 checks passed	N...	+	us...	3.
<input type="checkbox"/>	Bastion Host	i-013f1717...	Runr@Q	t2...	2/2 checks passed	N...	+	us...	5.
<input type="checkbox"/>	Danddank Lab Instance	i-05f83f139...	Runr@Q	t3...	2/2 checks passed	N...	+	us...	-
<input type="checkbox"/>	Danddank Lab Instance	i-0351ddcaf...	Runr@Q	t3...	2/2 checks passed	N...	+	us...	-
<input type="checkbox"/>	Danddank Lab Instance	i-0da069b1...	Runr@Q	t3...	Initializing	N...	+	us...	-

Instance: i-0ec2ebe72e19e7442 (Web Server 1)

DetailsSecurityNetworkingStorageStatus checksMonitoringTags

Instance summary

Instance ID

i-0ec2ebe72e19e7442 (Web Server 1)

Public IPv4 address

3.84.4.41 | open address

Private IPv4 addresses

10.0.0.57

IPv6 address

-

Instance state

Running

Public IPv4 DNS

-

Private IPv4 DNS

ip-10-0-0-57.ec2.internal

Elastic IP addresses

-

Instance type

t2.micro

IAM Role

-

VPC ID

vpc-0f31f3e9519540e88 (Lab VPC)

AWS Compute Optimizer finding

User: am:aws:sts:288772493588:assumed-role/voclabs/user1564948=Nalongsone_Danddank is not authorized to perform: compute-optimizer:GetEnrollmentToken on resource:

Feedback

English (US)

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