

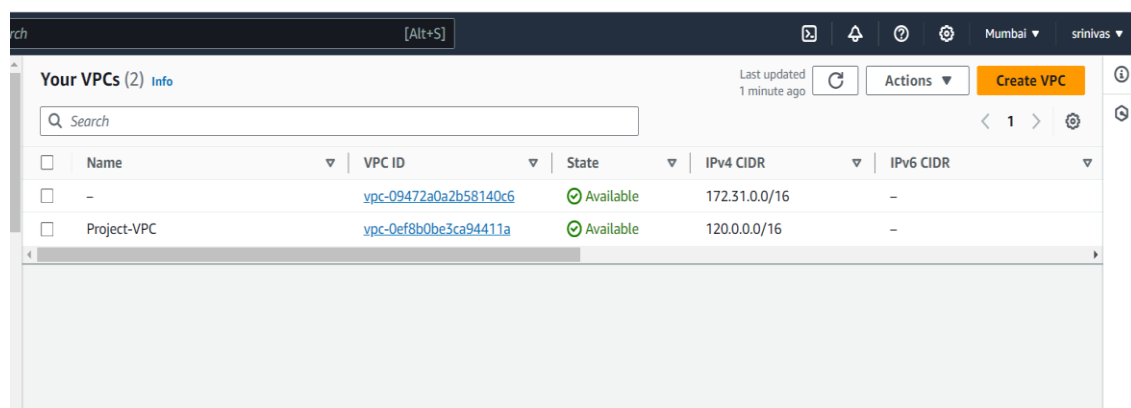
Multi-Tier Architecture

Required AWS Services:

- 1) Virtual Private Cloud
- 2) Elastic cloud Compute
- 3) Load Balancer
- 4) Auto- Scaling Group
- 5) Relational Database

Virtual Private Cloud (VPC):

- 1) Login into your AWS Account and Search for VPC on Search Box.
- 2) Click on Create VPC & Subnets (public - 2 & Private – 4 in two AZ).
- 3) Create Two Routables Named it as Public-rout & private-route.
- 4) Create Internet Gateway and Attach it to your VPC.
- 5) Go to edit routes in the Public-routable and Add IGW in that inbound rules.
- 6) Create a NAT gateway and add routes in private-Routable.



uth-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#subnets:

Search [Alt+S]

Subnets (9) Info

Last updated less than a minute ago

Actions Create subnet

Find resources by attribute or tag

<input type="checkbox"/>	Name	Subnet ID	State	VPC	IPv4 CIDR
<input type="checkbox"/>	my-subnet-public-1b	subnet-0fa465c42918de422	Available	vpc-0ef8b0be3ca94411a Proje...	120.0.50.0/24
<input type="checkbox"/>	my-subnet-private-1-1b	subnet-0007ac9c0c50674b2	Available	vpc-0ef8b0be3ca94411a Proje...	120.0.22.0/24
<input type="checkbox"/>	my-subnet-public-1a	subnet-02eb1b378cb9b877d	Available	vpc-0ef8b0be3ca94411a Proje...	120.0.0.0/24
<input type="checkbox"/>	my-subnet-private-2-1a	subnet-0ebff8ea98413df7b	Available	vpc-0ef8b0be3ca94411a Proje...	120.0.44.0/24
<input type="checkbox"/>	-	subnet-07e2702afb93850d8	Available	vpc-09472a0a2b58140c6	172.31.32.0/20
<input type="checkbox"/>	-	subnet-0dc27bf7fd2e5bb3c	Available	vpc-09472a0a2b58140c6	172.31.16.0/20
<input type="checkbox"/>	-	subnet-045e370aaa321fed4	Available	vpc-09472a0a2b58140c6	172.31.0.0/20
<input type="checkbox"/>	my-subnet-private-2-1b	subnet-021d020dba4d6758	Available	vpc-0ef8b0be3ca94411a Proje...	120.0.33.0/24
<input type="checkbox"/>	my-subnet-private-1-1a	subnet-0dfcae6bc08fee7c1	Available	vpc-0ef8b0be3ca94411a Proje...	120.0.55.0/24

uth-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#RouteTables:

Search [Alt+S]

Route tables (1/4) Info

Last updated 1 minute ago

Actions Create route table

Find resources by attribute or tag

<input type="checkbox"/>	Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
<input type="checkbox"/>	-	rtb-0509b48963745d5ea	-	-	Yes	vpc-09472a0a2
<input type="checkbox"/>	-	rtb-01f6a68a6bb1bbbce	-	-	Yes	vpc-0ef8b0be3c
<input checked="" type="checkbox"/>	my-route-private	rtb-098576bd14e2ef667	4 subnets	-	No	vpc-0ef8b0be3c
<input type="checkbox"/>	my-route-public	rtb-00758b865b108972b	2 subnets	-	No	vpc-0ef8b0be3c

rtb-098576bd14e2ef667 / my-route-private

Details Routes Subnet associations Edge associations Route propagation Tags

Elastic Cloud Compute (EC2):

- 1) Go & clicke on Launch Instance.
- 2) Launch 4 Ec2 instances in two different AZ.
- 3) Some Snapshots are attached below

Instances (4) Info

Find Instance by attribute or tag (case-sensitive) All states ▾

	Name ↗ ▾	Instance ID	Instance state ▾	Instance type ▾	Status check	Alarm status	Availability Zone ▾	Public IPv4 DNS ▾
<input type="checkbox"/>	instance-1b-1	i-017c422ced0030cb4	Running 🔍 🔍	t2.micro	✔️ 2/2 checks passed View alarms +		ap-southeast-1b	-
<input type="checkbox"/>	instance-1b-2	i-0b5880a7af2a8f7b2	Running 🔍 🔍	t2.micro	✔️ 2/2 checks passed View alarms +		ap-southeast-1b	-
<input type="checkbox"/>	instance-1a-1	i-Defc953c448297995	Running 🔍 🔍	t2.micro	✔️ 2/2 checks passed View alarms +		ap-southeast-1a	-
<input type="checkbox"/>	instance-1a-2	i-05cc980c4bd4cc92a	Running 🔍 🔍	t2.micro	✔️ 2/2 checks passed View alarms +		ap-southeast-1a	-

Load Balancer:

- 1) Firstly, we need to create a Target Group and Target Group Attachment.

EC2 > Target groups

Target groups (2) [Info](#)

[Refresh](#) [Actions](#) [Create target group](#)

<input type="checkbox"/>	Name	ARN	Port	Protocol	Target type	Load balancer
<input type="checkbox"/>	project-1-tg	am:aws:elasticloadbalanci...	80	HTTP	Instance	None a
<input type="checkbox"/>	project-tg	am:aws:elasticloadbalanci...	80	HTTP	Instance	None a

0 target groups selected

Select a target group above.

Auto Scaling Group:

services

Q Search

[Alt+S]

Mumbai

srinivas

Amazon Machine Images (AMIs) (2) Info

Recycle Bin

EC2 Image Builder

Actions

Launch instance from AMI

Owned by me

Find AMI by attribute or tag

< 1 >

<input type="checkbox"/>	Name	AMI name	AMI ID	Source	Owner
<input type="checkbox"/>		srinu-img	ami-0e7afccc09d6c3760	891376977016/srinu-img	891376977016
<input type="checkbox"/>		project-image	ami-0dee9dd2717442564	891376977016/project-image	891376977016

Select an AMI

ch

[Alt+S]

Mumbai

srinivas

Launch Templates (2) Info

Actions

Create launch template

Q Search

< 1 >

<input type="checkbox"/>	Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time	
<input type="checkbox"/>	lt-0eab563fc2ec1d70b	project-tmpt	1	1	2024-08-07T17:14:12.000Z	a...
<input type="checkbox"/>	lt-0b3db2d3cdc34b3f3	srinu-tmp	1	1	2024-08-07T18:09:18.000Z	a...

Auto Scaling groups (2) Info

Launch configurations

Launch templates

Actions

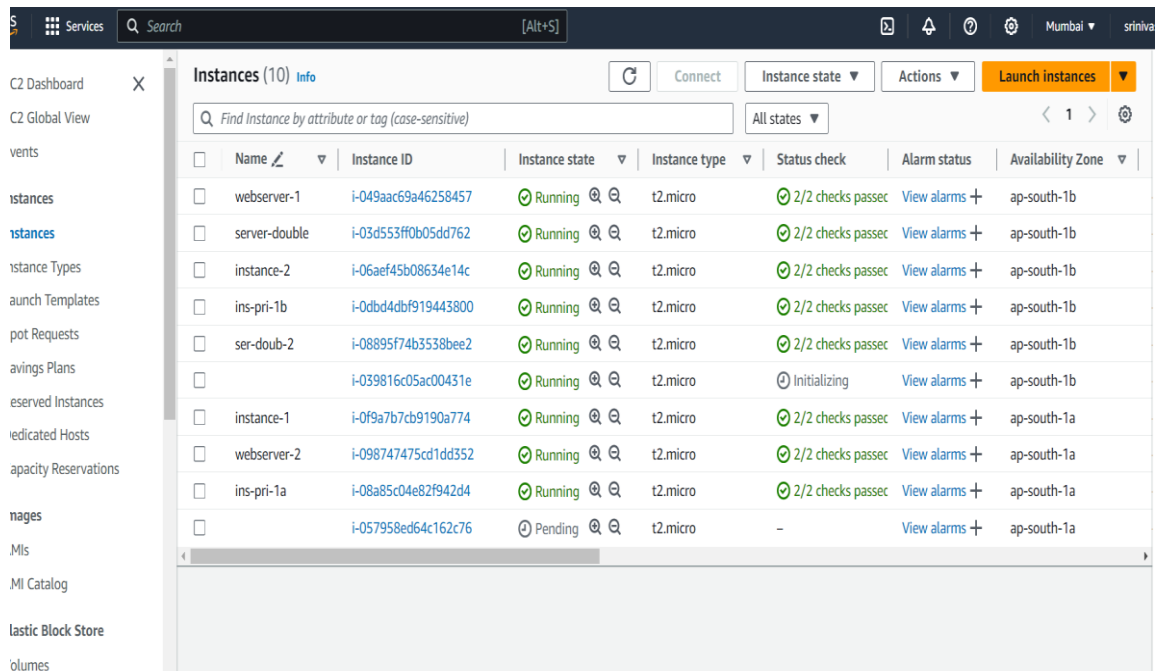
Create Auto Scaling group

Q Search your Auto Scaling groups

< 1 >

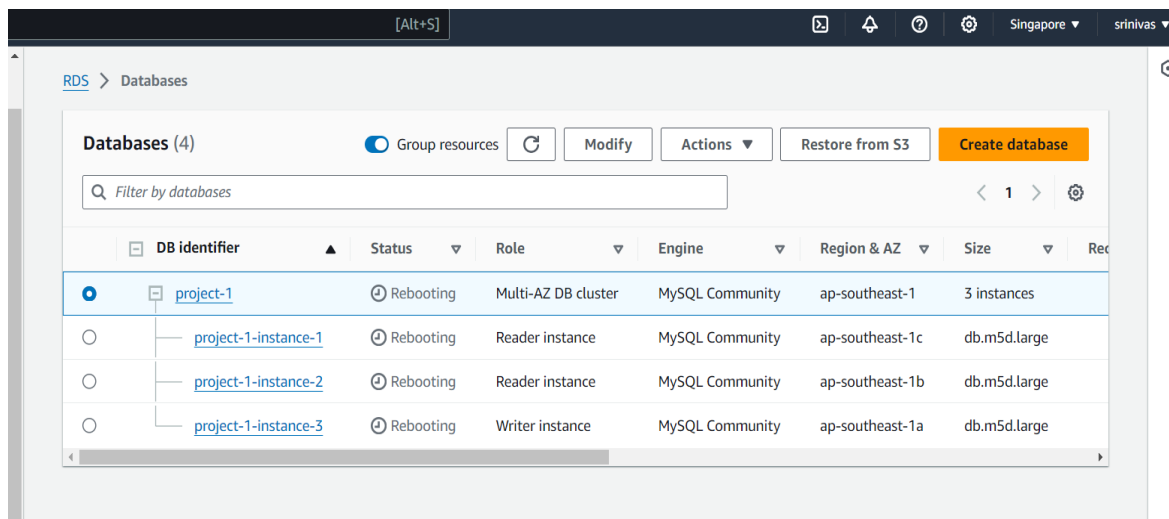
<input type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	
<input type="checkbox"/>	srinu-AS	srinu-tmp Version Default	0	Updating capacity...	2	2	5	a...
<input type="checkbox"/>	project-AS	project-tmpt Version Default	2	-	2	2	5	a...

EC2 Instances After Auto Scaling:



Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
webserver-1	i-049aac69a46258457	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1b
server-double	i-03d553ff0b05dd762	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1b
instance-2	i-06aef45b08634e14c	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1b
ins-pri-1b	i-0dbd4dbf919443800	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1b
ser-doub-2	i-08895f74b3538bee2	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1b
	i-039816c05ac00431e	Running	t2.micro	Initializing	View alarms	ap-south-1b
instance-1	i-0f9a7b7cb9190a774	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1a
webserver-2	i-088747475cd1dd352	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1a
ins-pri-1a	i-08a85c04e82f942d4	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1a
	i-057958ed64c162c76	Pending	t2.micro	-	View alarms	ap-south-1a

Relational Databases:



DB identifier	Status	Role	Engine	Region & AZ	Size	Rec
project-1	Rebooting	Multi-AZ DB cluster	MySQL Community	ap-southeast-1	3 instances	
project-1-instance-1	Rebooting	Reader instance	MySQL Community	ap-southeast-1c	db.m5d.large	
project-1-instance-2	Rebooting	Reader instance	MySQL Community	ap-southeast-1b	db.m5d.large	
project-1-instance-3	Rebooting	Writer instance	MySQL Community	ap-southeast-1a	db.m5d.large	

```
← → G ap-southeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-091c3bdc9ddb10388&osUser=ubuntu&region=ap-southeast-1... ☆ | | | | |
Click to go back; hold to see history

aws Services Q Search [Alt+S] Singapore ▼ srinivas ▼

root@ip-120-0-22-128:~# mysql -h project-1-instance-3.clywcgiseg2.ap-southeast-1.rds.amazonaws.com -u Srinu -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 69
Server version: 8.0.35 Source distribution

Copyright (c) 2000, 2024, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
4 rows in set (0.00 sec)

mysql>
```

```
← → G ap-southeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-091c3bdc9ddb10388&osUser=ubuntu&region=ap-southeast-1&sshPort=... ☆ | | | | |

aws Services Q Search [Alt+S] Singapore ▼ srinivas ▼

Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Persons (ID, LastName, FirstName, Age)
-> VALUES ('102', 'Anil', 'Rathod', '22');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Persons (ID, LastName, FirstName, Age)
-> VALUES ('103', 'Srinivas', 'Veeravalli', '23');
Query OK, 1 row affected (0.00 sec)

mysql> show tables;
+-----+
| Tables_in_Srinu |
+-----+
| Persons |
+-----+
1 row in set (0.00 sec)

mysql> use Persons
ERROR 1049 (42000): Unknown database 'Persons'
mysql> select * from Persons
-> ^C

mysql> select * from Persons;
+----+-----+-----+-----+
| ID | LastName | FirstName | Age |
+----+-----+-----+-----+
| 101 | Ram Reddy | Pammi | 23 |
| 102 | Anil | Rathod | 22 |
| 103 | Srinivas | Veeravalli | 23 |
+----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```