



Cloud Assignment 01
Deploying a 3 tier-Web Application on AWS

Submitted By

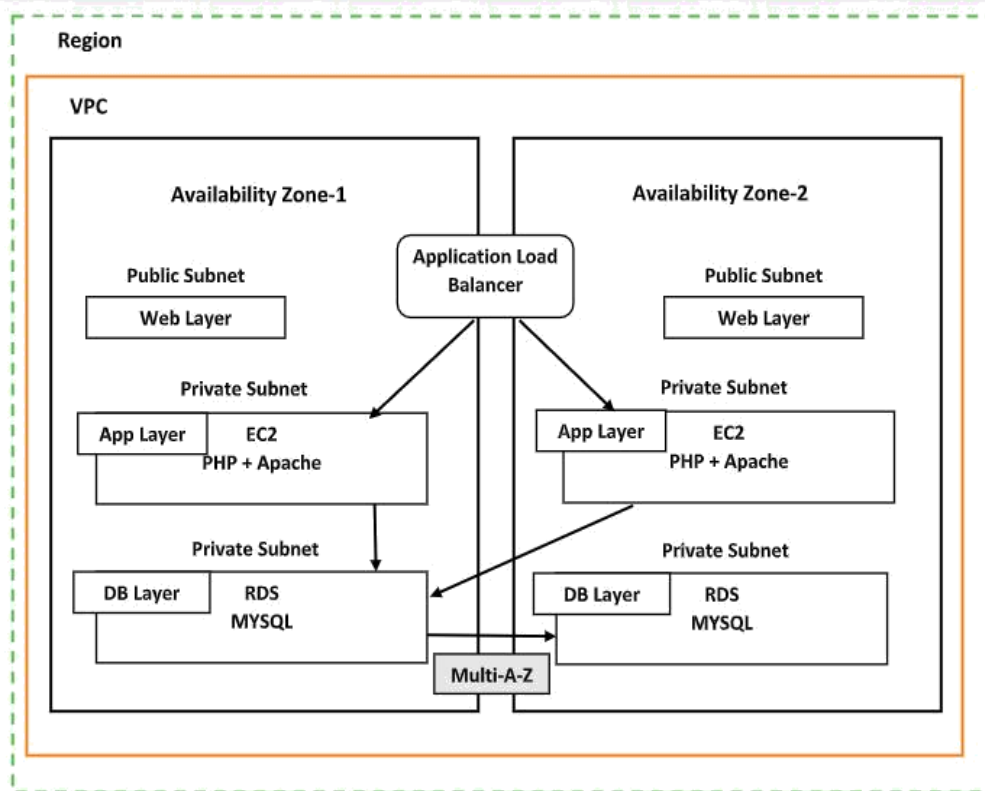
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Submitted to

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Architecture:



Step no 1:

Create VPC

Your VPCs (1/2) [Info](#) ↻ Actions ▾ Create VPC

< 1 > ⚙️

<input checked="" type="checkbox"/>	Name ▾	VPC ID ▾	State ▾	IPv4 CIDR ▾	IPv6 CIDR ▾
<input checked="" type="checkbox"/>	assignment1-vpc	vpc-01bb7e3d91279a951	Available	172.20.0.0/20	-

VPC ID

vpc-01bb7e3d91279a951

Tenancy

Default

Default VPC

No

Network Address Usage metrics

Disabled

State

Available

DHCP option set

dopt-0ecaf5937ce50184a

IPv4 CIDR

172.20.0.0/20

Route 53 Resolver DNS Firewall rule groups

-

DNS hostnames

Disabled

Main route table

rtb-08aa5950010cec1ac

IPv6 pool

-

Owner ID

237913657547

DNS resolution

Enabled

Main network ACL

acl-070511c2989d37a07

IPv6 CIDR (Network border group)

-

Step no 2 :

Subnets (12) Info							Create subnet	
Filter subnets							< 1 >	
<input type="checkbox"/>	Name	Subnet ID	State	VPC	IPv4 CIDR			
<input type="checkbox"/>	my-private-app-su...	subnet-020aa768c88fe46b3	Available	vpc-01bb7e3d91279a951 as...	172.20.5.0/24			
<input type="checkbox"/>	my-public-web-sub...	subnet-0db65752aec1a3dad	Available	vpc-01bb7e3d91279a951 as...	172.20.3.0/24			
<input type="checkbox"/>	-	subnet-0fd4d3d869f8d4a04	Available	vpc-0efed96a434469b82	172.31.0.0/20			
<input type="checkbox"/>	my-private-app-su...	subnet-0b2e93c2fa5a6ea39	Available	vpc-01bb7e3d91279a951 as...	172.20.4.0/24			
<input type="checkbox"/>	-	subnet-0b5a62f50d1ed5b9f	Available	vpc-0efed96a434469b82	172.31.32.0/20			
<input type="checkbox"/>	my-public-web-sub...	subnet-0ee4e40e2f03dafd9	Available	vpc-01bb7e3d91279a951 as...	172.20.2.0/24			
<input type="checkbox"/>	my-public-web-sub...	subnet-03958bfefbb7369d4	Available	vpc-01bb7e3d91279a951 as...	172.20.1.0/24			
<input type="checkbox"/>	my-private-app-su...	subnet-0e7752e4200060af4	Available	vpc-01bb7e3d91279a951 as...	172.20.6.0/24			
<input type="checkbox"/>	my-private-db-sub...	subnet-087ce2a7c286d3f9b	Available	vpc-01bb7e3d91279a951 as...	172.20.8.0/24			
<input type="checkbox"/>	my-private-db-sub...	subnet-0f94eb4277e302f9d	Available	vpc-01bb7e3d91279a951 as...	172.20.7.0/24			
<input type="checkbox"/>	-	subnet-0637b40541d300939	Available	vpc-0efed96a434469b82	172.31.16.0/20			
<input type="checkbox"/>	my-private-db-sub...	subnet-0b01c4f37e922acf6	Available	vpc-01bb7e3d91279a951 as...	172.20.9.0/24			

Create Subnets

STEP no 3:

Routing tables public

Route tables (5) Info							Create route table	
Filter route tables							< 1 >	
<input type="checkbox"/>	Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC		
<input type="checkbox"/>	-	rtb-0f39c5f04ef6fd436	-	-	Yes	vpc-0efec		
<input type="checkbox"/>	my-private-db-rout...	rtb-00bf61e5a416881be	3 subnets	-	No	vpc-01bb		
<input type="checkbox"/>	my-public-routetable	rtb-0da414c6dad048c4e	3 subnets	-	No	vpc-01bb		
<input type="checkbox"/>	my-private-app-rou...	rtb-00fc4b2653109d2c9	3 subnets	-	No	vpc-01bb		
<input type="checkbox"/>	-	rtb-08aa5950010cec1ac	-	-	Yes	vpc-01bb		

STEP no 4:

Internet Gateway

Internet gateways (1/2) [Info](#)

Filter Internet gateways

<

1

>

Name

Internet gateway ID

State

VPC ID

☐

-

igw-028d359b95ec39f6c

✔ Attached

vpc-0efed96a434469b82

☒

my-internet-gateway

igw-049ebc8e63cf8ffb9

✔ Attached

vpc-01bb7e3d91279a951 | assignment1-vpc

igw-049ebc8e63cf8ffb9 / my-internet-gateway

Details

Tags

Details

Internet gateway ID

igw-049ebc8e63cf8ffb9

State

✔ Attached

VPC ID

vpc-01bb7e3d91279a951 | assignment1-vpc

Owner

237913657547

STEP no 5:

NAT gateways (1/1) [Info](#) Refresh Actions Create NAT gateway

Filter NAT gateways

Name	NAT gateway ID	Connectivity type	State	State message	Actions
my-nat-gateway-1	nat-0ba4878fef5450f85	Public	Available	-	1

Details

NAT gateway ID nat-0ba4878fef5450f85	Connectivity type Public	State Available	State message -
NAT gateway ARN arn:aws:ec2:ap-northeast-1:237913657547:natgateway/	Elastic IP address 18.178.51.139	Primary private IPv4 address 172.20.1.79	Network interface ID eni-0c76b8feb267376e8

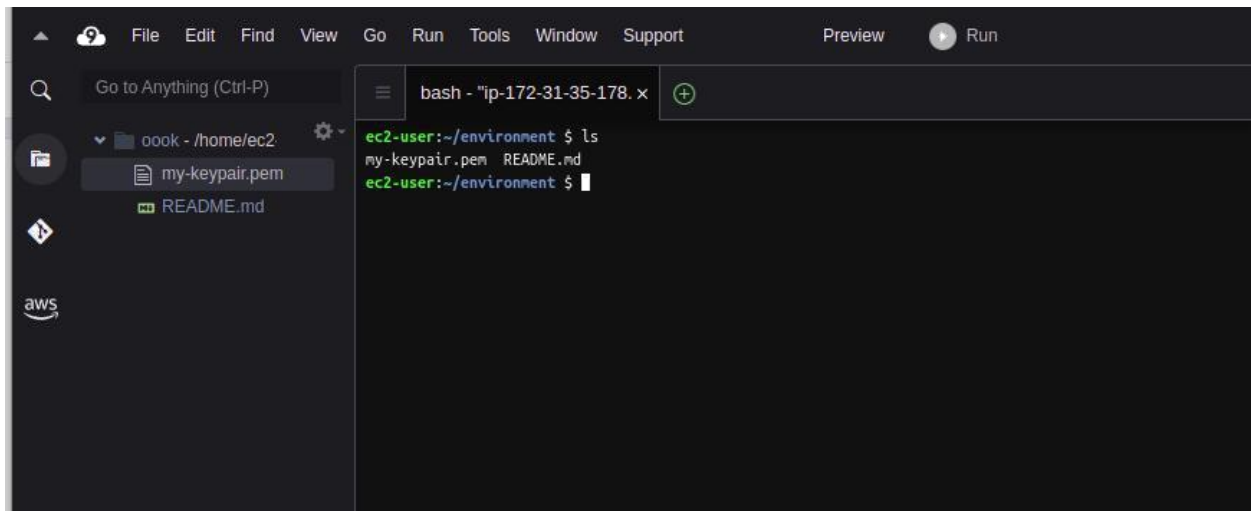
Nat gate way public route tables→internet gateway private both→nat

STEP no 6:

Instances

<input type="checkbox"/>	my-ec2-instance	i-099f1537c066a814f	Running		t2.micro	2/2 checks passed	No alarms	+
<input type="checkbox"/>	my-db	i-023c6b852738926fa	Running		t2.micro	2/2 checks passed	No alarms	+
<input type="checkbox"/>	justforapp	i-0e311ec3968d4043d	Running		t2.micro	2/2 checks passed	No alarms	+
<input type="checkbox"/>	aws-cloud9-o...	i-03a59c5116fb8a916	Running		t2.micro	2/2 checks passed	No alarms	+

STEP no 7

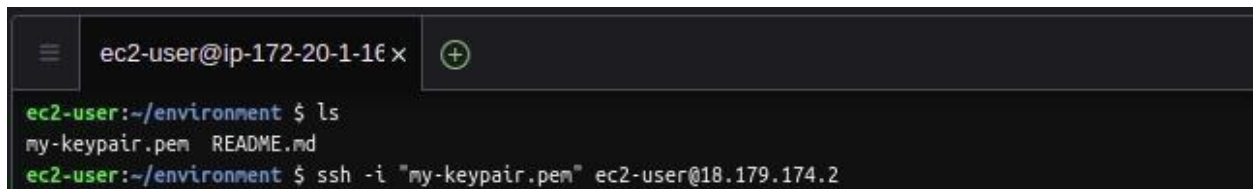


Using cloud 9 environment

STEP no 8:

Connecting system with public web instance.

Command: `ssh -i "my-keypair.pem" ec2-user@18.179.174.2`



STEP no 9:

Connecting public web instance with private app instance **Command :** `ssh -i "my-keypair.pem" ec2-user@172.20.4.164`

STEP no 10

Connecting public web instance with private database instance **Command:** `sudo ssh -i "mykeypair.pem" ec2-user@172.20.7.160`

```
[ec2-user@ip-172-20-4-164 ~]$  
[ec2-user@ip-172-20-4-164 ~]$  
[ec2-user@ip-172-20-4-164 ~]$ exit  
logout  
Connection to 172.20.4.164 closed.  
[ec2-user@ip-172-20-1-168 ~]$  
[ec2-user@ip-172-20-1-168 ~]$  
[ec2-user@ip-172-20-1-168 ~]$  
[ec2-user@ip-172-20-1-168 ~]$ sudo ssh -i "my-keypair.pem" ec2-user@172.20.7.160  
https://aws.amazon.com/amazon-linux-2/  
1 package(s) needed for security, out of 1 available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-172-20-7-160 ~]$
```

STEP no 11:

Commands for app server php installment
Steps from link

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-lamp-amazon-linux-2.html>

[ml](#)

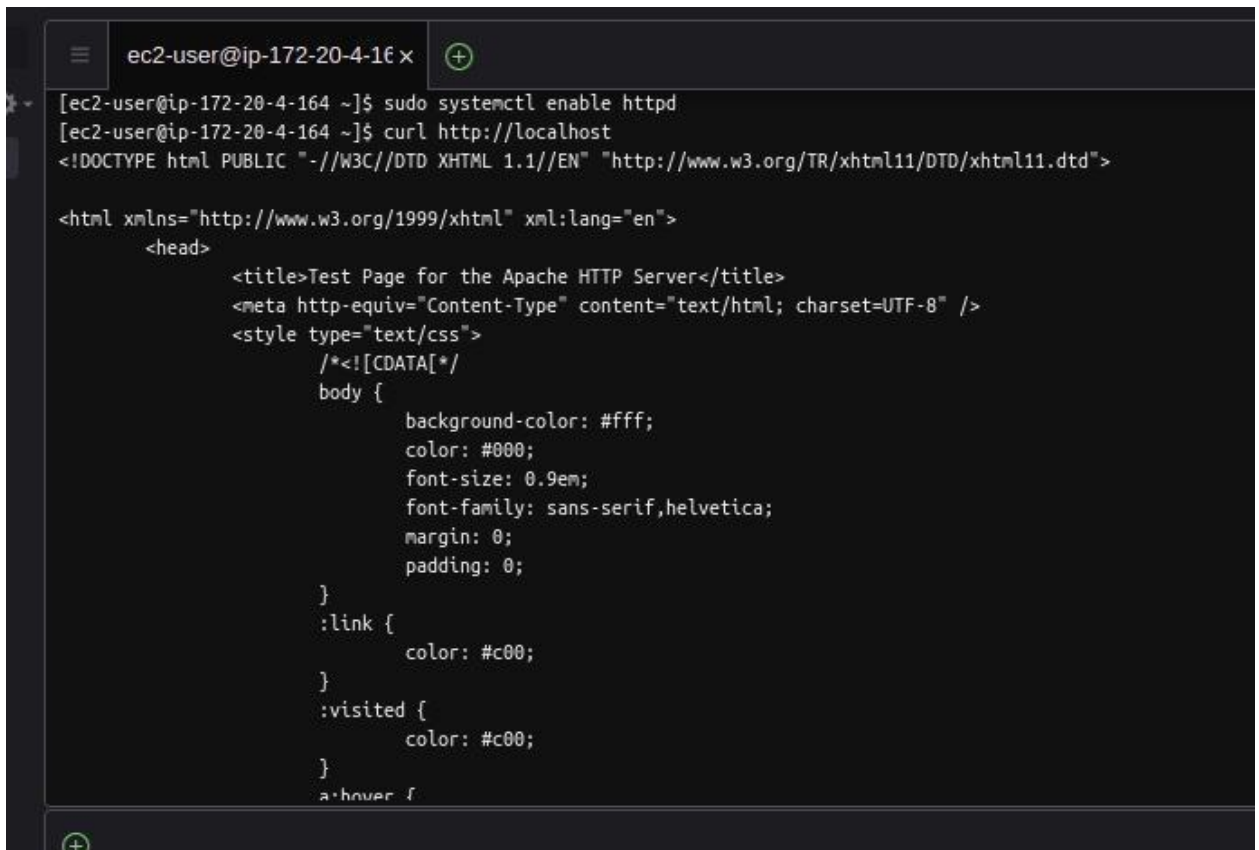
1. sudo yum update -y 2. sudo amazon-linux-extras install -y lamp-mariadb10.2-php7.2 php7.2

3. sudo yum install -y httpd mariadb-server

Starting services:

- sudo systemctl start httpd
- sudo systemctl enable httpd • curl

http://localhost



```
ec2-user@ip-172-20-4-164 ~$ sudo systemctl enable httpd
[ec2-user@ip-172-20-4-164 ~]$ curl http://localhost
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en">
  <head>
    <title>Test Page for the Apache HTTP Server</title>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <style type="text/css">
      /**/
      body {
        background-color: #fff;
        color: #000;
        font-size: 0.9em;
        font-family: sans-serif, helvetica;
        margin: 0;
        padding: 0;
      }
      :link {
        color: #c00;
      }
      :visited {
        color: #c00;
      }
      a:hover {</pre></div><div data-bbox="170 647 380 679" data-label="Text"><p><b><u>Step no 12:</u></b></p></div>
```

```
ec2-user@ip-172-20-4-164 x
</html>
[ec2-user@ip-172-20-4-164 ~]$
[ec2-user@ip-172-20-4-164 ~]$ clear
[ec2-user@ip-172-20-4-164 ~]$ sudo usermod -a -G apache ec2-user
[ec2-user@ip-172-20-4-164 ~]$ exit
logout
Connection to 172.20.4.164 closed.
[ec2-user@ip-172-20-1-168 ~]$ ssh -i "my-keypair.pem" ec2-user@172.20.4.164
https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-20-4-164 ~]$ groups
ec2-user adm wheel apache systemd-journal
[ec2-user@ip-172-20-4-164 ~]$ sudo chown -R ec2-user:apache /var/www
[ec2-user@ip-172-20-4-164 ~]$ sudo chmod 2775 /var/www && find /var/www -type d -exec sudo chmod 2775 {} \;
[ec2-user@ip-172-20-4-164 ~]$ find /var/www -type f -exec sudo chmod 0664 {} \;
[ec2-user@ip-172-20-4-164 ~]$
```

Giving permissions

STEP 13

Install php my admin:

1. `sudo yum install php- mbstring php-xml -y`
2. `sudo systemctl restart httpd`
3. `sudo systemctl restart php-fpm`
4. `cd /var/www/html`
5. `wget`

<https://www.phpmyadmin.net/downloads/phpMyAdmin-latest-all-languages.tar.gz>

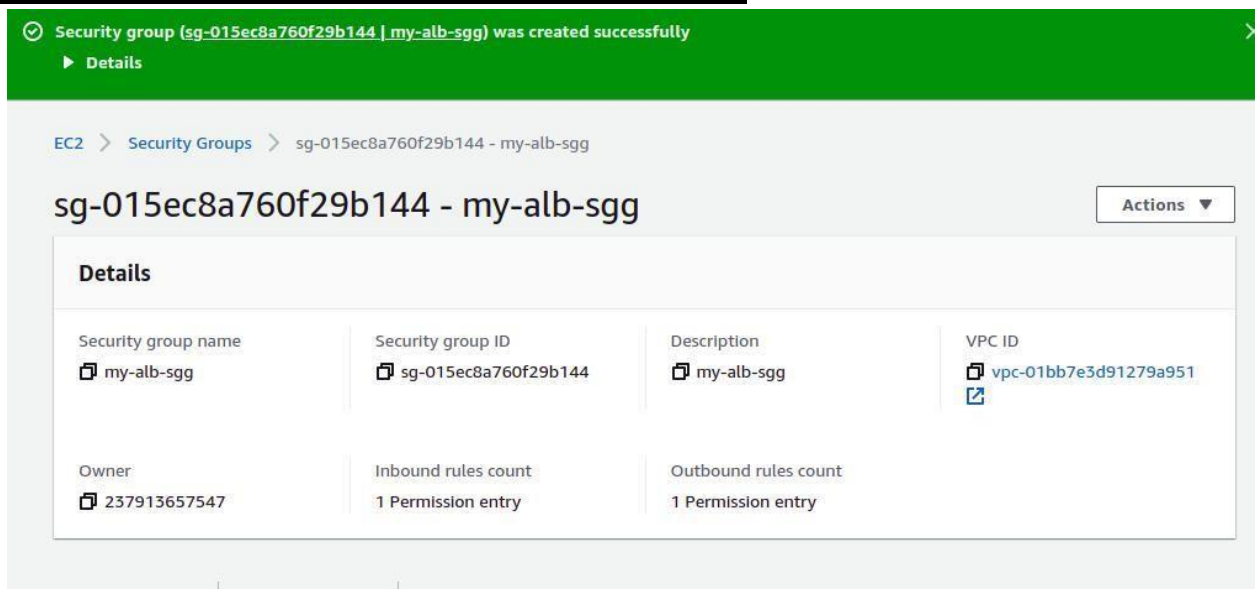
6. `mkdir phpMyAdmin && tar -xvzf phpMyAdmin-latest-`

```
alllanguages.tar.gz -C phpMyAdmin
- strip-components 1 7. rm
phpMyAdmin-latest-all
languages.tar.gz 8. sudo
systemctl start mariadb
```

STEP no 14:

Load balancers

● **Application load balancers**



Summary:

Summary
Review and confirm your configurations. [Estimate cost](#)

Basic configuration [Edit](#)
my-alb

- Internet-facing
- IPv4

Security groups [Edit](#)

- my-alb-sg
sg-095d3e45fe6666372 [Link](#)

Network mapping [Edit](#)
VPC vpc-01bb7e3d91279a951 [Link](#)
assignment1-vpc

- ap-northeast-1a
subnet-03958bfefbb7369d4 [Link](#)
my-public-web-subnet-1
- ap-northeast-1c
subnet-0ee4e40e2f03dafd9 [Link](#)
my-public-web-subnet-2

Listeners and routing [Edit](#)

- HTTP:80 defaults to my-alb-tg [Link](#)

Add-on services [Edit](#)
None

Tags [Edit](#)
None

Attributes

ⓘ Certain default attributes will be applied to your load balancer. You can view and edit them after creating the load balancer.

STEP no 15:

Inbound rules
Outbound rules
Tags

ⓘ You can now check network connectivity with Reachability Analyzer
Run Reachability Analyzer

Inbound rules (2)
Manage tags
Edit inbound rules

<input type="checkbox"/>	Name	Security group rule...	IP version	Type	Protocol
<input type="checkbox"/>	-	sgr-08f3cd4e7c602d83c	-	HTTP	TCP
<input type="checkbox"/>	-	sgr-0297a89d996e9eff5	-	SSH	TCP

Checking target groups healthy states
Editing security groups of instances
Inbound changes.

STEP no 16:

Checking health state of target groups

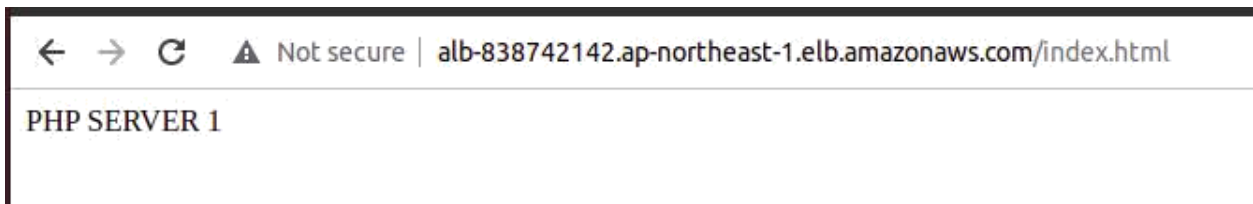
Target group: my-alb-tgg

registered targets (1/2)							
<input type="text" value="Filter resources by property or value"/>							
	Instance ID	Name	Port	Zone	Health status		
<input type="checkbox"/>	i-0e311ec3968d4043d	justforapp	80	ap-northeast-1a	✓ healthy		

STEP no 17:

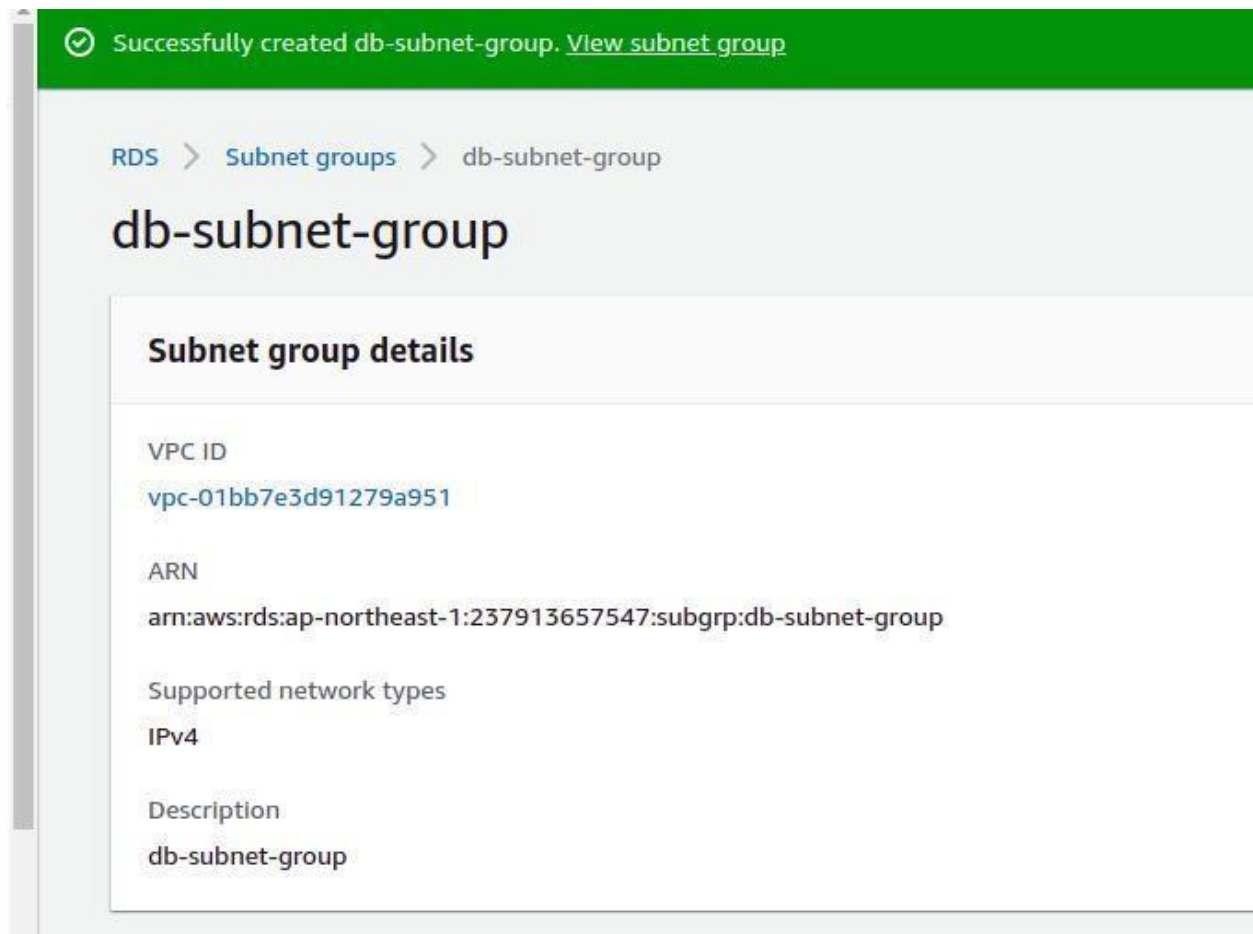
Copy DNS NAME of load balancer and check working





STEP no 18:

NOW DATA BASE ,CREATE SUBNETS



STEP no 19:

Creating data base

✓ Successfully created db-subnet-group. [View subnet group](#)

ⓘ Creating database **database-1**
Your database might take a few minutes to launch. [View credential details](#)

RDS > Databases > database-1

database-1

Modify Actions

Summary

DB identifier database-1	CPU -	Status ⌚ Creating	Class db.t3.micro
Role Instance	Current activity	Engine MySQL Community	Region & AZ ap-northeast-1a

Connectivity & security

Monitoring

Logs & events

Configuration

Maintenance & backups

Tags

STEP no 20:

EC2 > Security Groups > sg-03b9403db5df3b708 - my-db-sg > Edit inbound rules

Edit inbound rules [Info](#)

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules [Info](#)

Security group rule ID	Type Info	Protocol Info	Port range Info	Source Info	Description - optional Info	
-	Custom TCP ▼	TCP	3306	Custom ▼ <input type="text"/>	<input type="text"/>	Delete

X

Add rule

Cancel

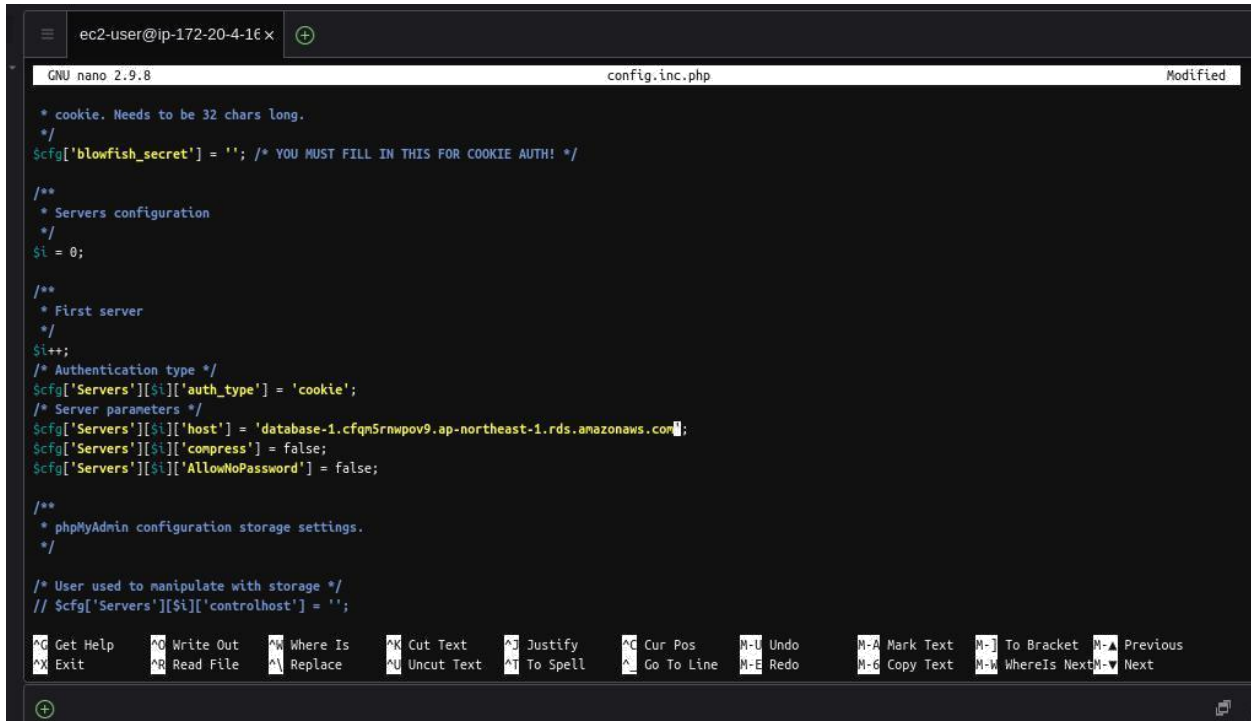
Preview changes

Save rules

Db security group inbound rules

STEP no 21:

File local host to db



```
GNU nano 2.9.8 config.inc.php Modified

/* cookie. Needs to be 32 chars long.
 */
$cfg['blowfish_secret'] = ''; /* YOU MUST FILL IN THIS FOR COOKIE AUTH! */

/**
 * Servers configuration
 */
$i = 0;

/**
 * First server
 */
$i++;
/* Authentication type */
$cfg['Servers'][$i]['auth_type'] = 'cookie';
/* Server parameters */
$cfg['Servers'][$i]['host'] = 'database-1.cfqn5rnwpov9.ap-northeast-1.rds.amazonaws.com';
$cfg['Servers'][$i]['compress'] = false;
$cfg['Servers'][$i]['AllowNoPassword'] = false;

/**
 * phpMyAdmin configuration storage settings.
 */

/* User used to manipulate with storage */
// $cfg['Servers'][$i]['controlhost'] = '';
```

Get Help Write Out Where Is Cut Text Justify Cur Pos Undo Mark Text To Bracket Previous
Exit Read File Replace Uncut Text To Spell Go To Line Redo Copy Text WhereIs Next Next

STEP no 22:

Php my admin



Language

English

Log in

Username:

Password:

Log in

