Amazon Web Services

AWS Project - 1

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Create Web Server and Connect with RDS

- This tutorial helps you install an Apache web server with PHP and create a MySQL database. The web server runs on an Amazon EC2 instance using Amazon Linux, and the MySQL database is a MySQL DB instance. Both the Amazon EC2 instance and the DB instance run in a virtual private cloud (VPC) based on the Amazon VPC service.

Create Web Server and Connect with RDS

- **Create a VPC**

- Go to VPC Service

- Click on Create VPC

- Enter the Name & IPV4 CIDR block

- Click on Create VPC

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- **Create Public Subnet**
- Click on Create Subnet
- Select VPC
- Enter Subnet Name
- Select Availability Zone (ap-south-1a)
- Enter IPV4 CIDR Block
- Click on Create Subnet

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- Enable Public IP

- Select the Subnet

Actions → Edit Subnet Settings

- Check Enable Auto Assign Public IPV4 Address

- Click on Save

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- **Create Private Subnet**
- Click on Create Subnet
- Select the VPC
- Enter the Subnet Name
- Select Availability Zone (ap-south-1a)
- Enter IPV4 CIDR Block
- Click on Create Subnet

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- **Create Second Private Subnet**
- **Note: Choose an Availability Zone that is different from the first private subnet.**
- Click on Create Subnet
- Select the VPC
- Enter the Subnet Name
- Select Availability Zone (ap-south-1b)
- Enter IPV4 CIDR Block
- Click on Create Subnet

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- **Create Internet Gateway**

- Click on Create Internet gateway

- Enter the name

- Click on Create Internet gateway

- Attach Internet gateway with VPC

Actions → Attach to VPC

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- Select the VPC
- Click on Attach internet gateway
- **Attach Route table with Private Subnets**
- Go to Route table
- When we create the VPC by default system will create the route table

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- Select the route table (Our VPC Route table)

- Select both the Private Subnet
- Click on save associations
- **Create Route table**
- Click on create route table

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- Enter the Name
- Select the VPC
- Click on create route table
- Attach Public Subnet

- Select the Public Subnet
- Click on save associations

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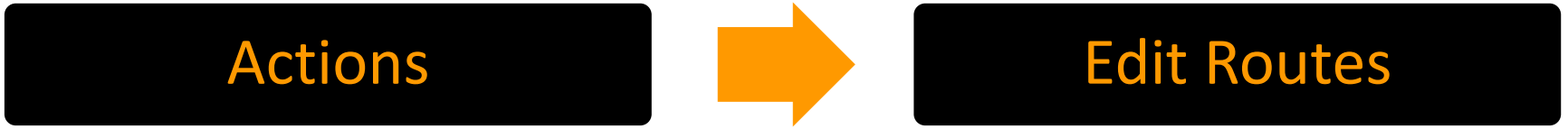
- Attach internet gateway with route table
- Select the route table



- Click on add route
- Attach Internet gateway as target & 0.0.0.0/0 as Destination
- Click on save changes

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- **Create a Security group for Public Web Server**

- Go to Security group

- Click on create Security group

- Enter the Name & Description

- Select the VPC

- Click on Add for inbound rules

- Select type as SSH & Source as My IP

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- Select type as HTTP & Source Anywhere IPV4
- Click on Create security group
- Note down the security group ID
- **Create a Security group for Private Database Instance**
- Click on Create Security group
- Enter the Name & Description
- Select the VPC

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- Click on add for inbound rules
- Select type as MYSQL/Aurora & Source as web server Security group
- Click on Create Security group
- **Create Database Subnet Groups**
- Database Subnet Groups are collection of subnets.
- Go to Amazon RDS

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- Click on Subnet Groups
- Click on Create DB Security group
- Enter the Name & Description
- Select the VPC
- Select the Availability Zone
- Select both the Private Subnets
- Click on Create

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- **Create MYSQL Database**
- Click on Databases
- Click on create database
- Select standard create
- Select engine option as MYSQL
- Select template as Free Tier
- Enter Database Instance identifier

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- Enter Master Username
- Enter master password & Confirm Password
- Go to Connectivity
- Select the VPC & Select the Subnet group
- Select Public Access as No
- Select our VPC Security group
- Click on Additional Configuration

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- Enter Initial Database Name (**Note: Very Important**. With this name we are connecting database with webserver) (sample)
- Click on Create Database
- Create EC2 Machine in Public Subnet
- Select our VPC & Select the Public Subnet
- Select the Security group
- Launch the Instance

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- Connect the Instance using putty

- Enter the User name (ec2-user)

- Update the Software

sudo yum update -y

- Install the PHP software

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

- Install the Apache web server

sudo yum install -y httpd

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- Start the web server

sudo systemctl start httpd

- Configure the web server to start with each system

sudo systemctl enable httpd

- check the Web Server using the Public IP

- Add the ec2-user user to the apache group.

sudo usermod -a -G apache ec2-user

- Verify that the apache group exists

groups

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- Change the group ownership of the /var/www directory and its contents to the apache group.

sudo chown -R ec2-user:apache /var/www

- Change the directory permissions of /var/www and its subdirectories to add group write permissions and set the group ID on subdirectories created in the future.

sudo chmod 2775 /var/www

find /var/www -type d -exec sudo chmod 2775 {} \;

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- Recursively change the permissions for files in the /var/www directory and its subdirectories to add group write permissions.

find /var/www -type f -exec sudo chmod 0664 {} \;

- **Connect your Apache web server to your DB instance**

cd /var/www

mkdir inc

cd inc

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- Create a new file

>dbinfo.inc

- Edit the file

nano dbinfo.inc

- Copy the Database End point

- Add the Database end point in code

- Add the Code: **Click Here**

- Press CTRL + x (to Save the file)

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- Change the directory

cd /var/www/html

- Create a PHP file

>SamplePage.php

- Edit PHP File

nano SamplePage.php

- Add PHP Code: **Click Here**

- Save and close the SamplePage.php file

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- Verify the Webpage

http://EC2 Public IP/SamplePage.php

- Make some Entries

- **Connect with Database**

mysql -h <Database Endpoint> -u <database username> -p

- Enter the password

- Check databases

show databases;

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- Connect to sample

use sample;

- Check tables

show tables;

- Query our table

Select * from EMPLOYEES;

- Connect the EC2 Machine with our domain

- Go to Route 53

Create Web Server and Connect with RDS

- Click on Hosted Zones
- Click on the record
- Click on Create record
- Enter record name as www
- Enter the value as Public IP Address
- Now check the Web URL
- http://www.domainname/SamplePage.php

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