Notes:

Host a WordPress Website on AWS

I recently finished a DevOps project where I hosted a WordPress website on AWS, utilizing the resources listed below. I have uploaded the reference diagram and scripts I used to deploy the web app on an EC2 instance to a GitHub repository for the project. Please use this information to create a readme file for the project.

1. Configured a Virtual Private Cloud (VPC) with both public and private subnets across two different availability zones.
2. Deployed an Internet Gateway to facilitate connectivity between VPC instances and the wider Internet.
3. Established Security Groups as a network firewall mechanism.
4. Leveraged two Availability Zones to enhance system reliability and fault tolerance.
5. Utilized Public Subnets for infrastructure components like the NAT Gateway and Application Load Balancer.
6. Implemented EC2 Instance Connect Endpoint for secure connections to assets within both public and private subnets.
7. Positioned web servers (EC2 instances) within Private Subnets for enhanced security.
8. Enabled instances in both the private Application and Data subnets to access the Internet via the NAT Gateway.
9. Hosted the website on EC2 Instances.
10. Employed an Application Load Balancer and a target group for evenly distributing web traffic to an Auto Scaling Group of EC2 instances across multiple Availability Zones.
11. Utilized an Auto Scaling Group to automatically manage EC2 instances, ensuring website availability, scalability, fault tolerance, and elasticity.
12. Stored web files on GitHub for version control and collaboration.
13. Secured application communications using a Certificate Manager.
14. Configured Simple Notification Service (SNS) to alert about activities within the Auto Scaling Group.
15. Registered the domain name and set up a DNS record using Route 53.
16. Used EFS for shared file system
17. Used RDS for database

Script to install WordPress

create to root user

sudo su

update the software packages on the ec2 instance

sudo yum update -y

create an html directory

sudo mkdir -p /var/www/html

environment variable

EFS_DNS_NAME=fs-064e9505819af10a4.efs.us-east-1.amazonaws.com

mount the efs to the html directory

```
sudo mount -t nfs4 -o
nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport
"$EFS_DNS_NAME":/ /var/www/html
```

install the apache web server, enable it to start on boot, and then start the server immediately

sudo yum install -y httpd

sudo systemctl enable httpd

sudo systemctl start httpd

install php 8 along with several necessary extensions for wordpress to run

sudo dnf install -y \

php \

php-cli \

php-cgi \

```
    php-curl \

    php-mbstring \

    php-gd \

    php-mysqlnd \

    php-gettext \

    php-json \

    php-xml \

    php-fpm \

    php-intl \

    php-zip \

    php-bcmath \

    php-ctype \

    php-fileinfo \

    php-openssl \

    php-pdo \

    php-tokenizer


# install the mysql version 8 community repository

sudo wget https://dev.mysql.com/get/mysql80-community-release-el9-1.noarch.rpm

#

# install the mysql server

sudo dnf install -y mysql80-community-release-el9-1.noarch.rpm

sudo rpm --import https://repo.mysql.com/RPM-GPG-KEY-mysql-2023

sudo dnf repolist enabled | grep "mysql.*-community.*"

sudo dnf install -y mysql-community-server

#

# start and enable the mysql server

sudo systemctl start mysqld

sudo systemctl enable mysqld
```

```
# set permissions

sudo usermod -a -G apache ec2-user

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

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

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

chown apache:apache -R /var/www/html


# download wordpress files

wget https://wordpress.org/latest.tar.gz

tar -xzf latest.tar.gz

sudo cp -r wordpress/* /var/www/html/


# create the wp-config.php file

sudo cp /var/www/html/wp-config-sample.php /var/www/html/wp-config.php


# edit the wp-config.php file

sudo vi /var/www/html/wp-config.php


# restart the webserver

sudo service httpd restart
```

Script for Auto scaling group launch template

```bash
 #!/bin/bash
# update the software packages on the ec2 instance
sudo yum update -y

# install the apache web server, enable it to start on boot, and then start the server immediately
sudo yum install -y httpd
sudo systemctl enable httpd
sudo systemctl start httpd

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php-intl \
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php-bcmath \
php-ctype \
php-fileinfo \
```

```
php-openssl \

php-pdo \

php-tokenizer


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sudo dnf repolist enabled | grep "mysql.*-community.*"

sudo dnf install -y mysql-community-server

#

# start and enable the mysql server

sudo systemctl start mysqld

sudo systemctl enable mysqld


# environment variable

EFS_DNS_NAME=fs-02d3268559aa2a318.efs.us-east-1.amazonaws.com


# mount the efs to the html directory

echo "$EFS_DNS_NAME:/ /var/www/html nfs4
nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2 0 0" >> /etc/fstab

mount -a


# set permissions

chown apache:apache -R /var/www/html


# restart the webserver
```

```
sudo service httpd restart
```