AWS Web Hosting Platform Runbook

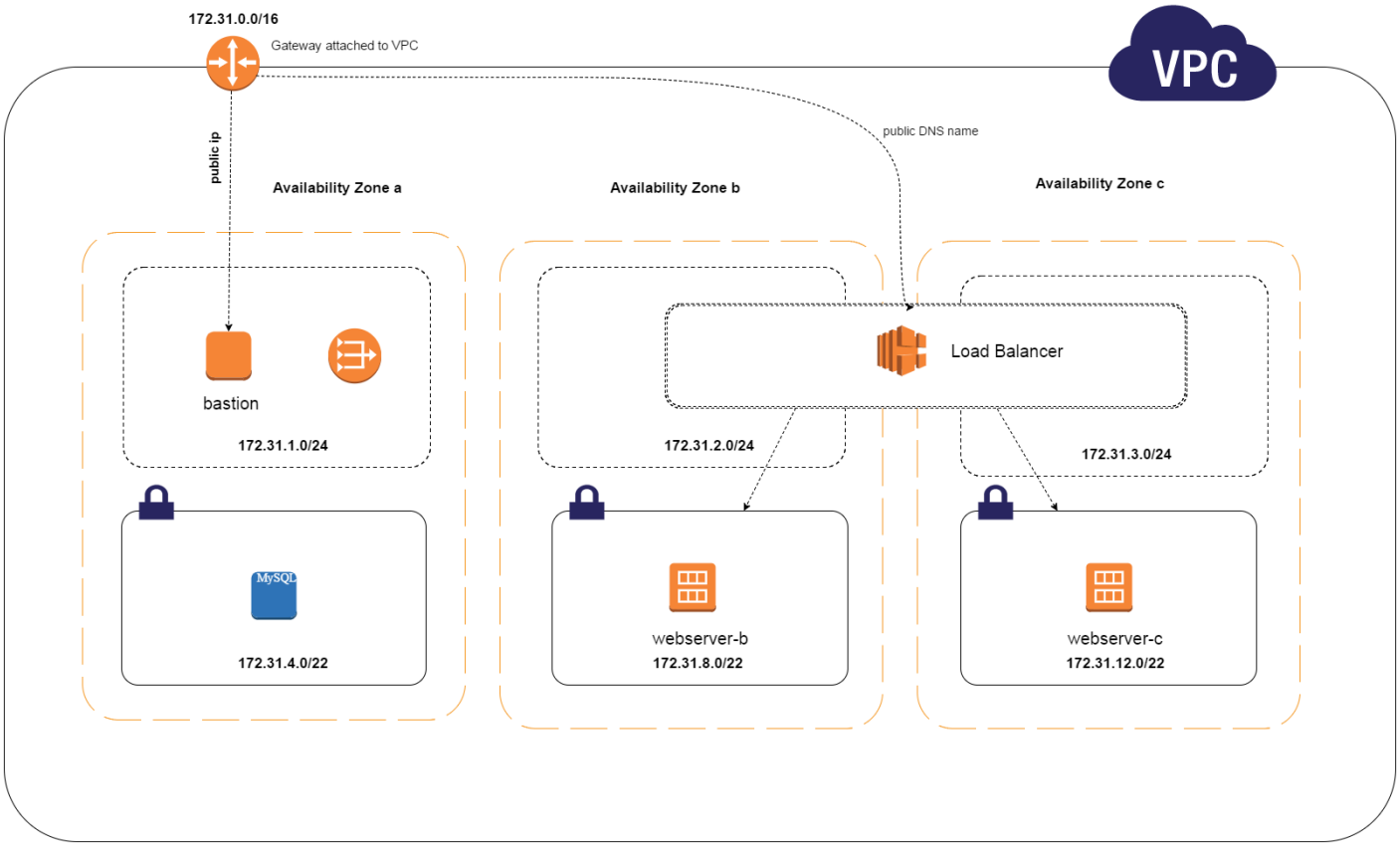
Short Description

Setup Amazon AWS Infrastructure using Terraform and use Ansible to setup/configure web servers.

Required Software

- Amazon AWS subscription
- Amazon EC2 AMI Linux X3
- Amazon RDS MariaDB
- Putty [optional]
- Terraform
- Ansible 2.1
- nginx.x86_64
- php54.x86_64, php-fpm.x86_64, php-ldap.x86_64, php-mbstring.x86_64, php-mcrypt.x86_64,php-mysql.x86_64

Architecture Diagram



Deployment

Before carrying out the deployment please follow the listed Pre-requisites:

1) Centos 7 installed in your computer or VirtualBox
2) Installed Terraform in the Centos 7
3) Installed git

Part 1) Create AWS Infrastructure

1) Using git clone the cit-360 folder [*will only need terraform folder for setting up AWS infrastructure]
2) cd into terraform folder and open terraform.tfvars file
   a) insert your variables
      - ✓ vpc_id, aws_access_key, aws_secret_key, aws_key_name , aws_key_path [AWS account info]
      - ✓ db_username, db_password [RDS master user/password]
3) Open AWS, navigate to EC2. Note the private IP address of webserver-b and webserver-c. Note the public IP of remaining instance.
4) Navigate to RDS and note down your endpoint.

Part 2) Deploy web services and database configurations

1) ssh into the public ip with the user ec2-user
   a) ssh -i ~/.ssh/cit360.pem ec2-user@bastion_public_ip
2) Install git
3) Using git, clone cit-360 folder again
4) cd into ansible folder, open hosts.ini file.
   a) Under [web], insert your obtained 2 private ips.
   b) Under [db], insert your *RDS endpoint* and master *db_username* from Part 1.
5) Run ansible playbook by running the following commands:
   a) ansible-playbook -I hosts.ini db.yml --ask-vault-pass --extra-vars "db_password='database password'"
   b) ansible-playbook -I hosts.ini web.yml --ask-vault-pass --extra-vars "db_password='curriculum user password'"
6) Once both ansible playbooks have finished running successfully, navigate back to your AWS Console.
7) Go into EC2 and click Load Balancer from the left panel.
8) Click on the load balancer and copy down the DNS name.
9) Insert the DNS name into the browser and Curriculum website should be up and running.
10) Congratulation, now you have your web services perfectly setup inside AWS.

Issues

Title: db.yml failed
Description: localhost ssh not allowed
Remediation Steps:

1. ssh-keygen -t rsa
   Press enter for each line
2. cat ~/.ssh/id_rsa.pub >> ~/.ssh/authorized_keys
3. chmod og-wx ~/.ssh/authorized_keys
4) localhost's public key is now added in authorized_keys

Title: Ngninx server might be disabled
Description: Something might have stopped nginx service
Remediation Steps:

1) ssh into both webservers from bastion
2) Systemctl status nginx
3) If "running" is not shown start ngninx by systemctl start nginx and systemctl enable nginx

Title: Error with nginx due to syntax problem
Description: nginx.conf file might got some syntax error
Remediation Steps:

1) ssh into both webservers from bastion
2) Nginx –t [in each server]
3) If the result show "test failed", there will be a file listed on which the test failed.
4) Open the listed file and check for improper syntax.

Title: failed to ssh into bastion instance
Description: blank screen when trying to login into bastion instance
Remediation Steps:

1) Login to AWS, navigate to EC2.
2) Check the public ip of bastion instance again.
3) If IP is changed, try to login in with the newly assigned IP.