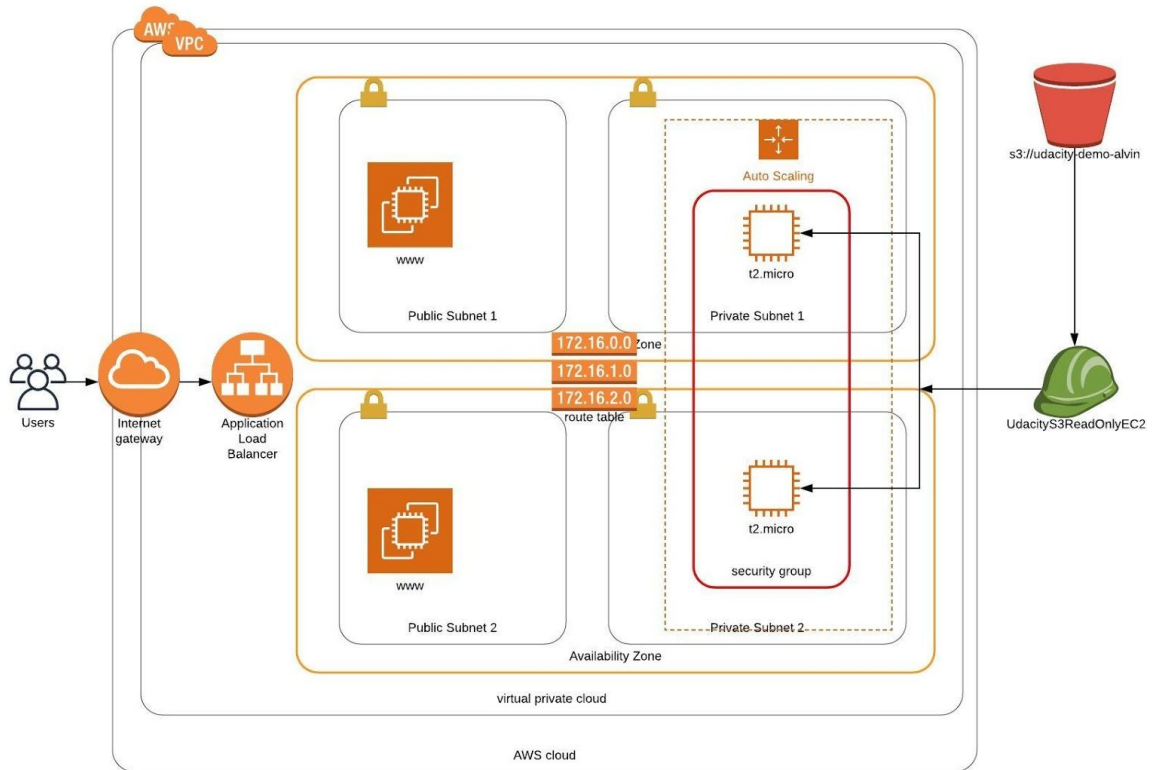


Deploy-a-High-Availability-Web-App-Using-CloudFormation

1. Infrastructure_Diagram:



2. Instruction to deploy:

```
./create.sh infra infra.yml infra-parameters.json
```

```
./create.sh UdagramApp server.yml server-parameters.json
```

3. Deploy complete:

CloudFormation

Stacks

StackSets

Exports

Designer

CloudFormation registry

Resource types

CloudFormation > Stacks

Stacks (3)

Filter by stack name

Active View nested

Stack name	Status	Created time	Description
UdagramApp	CREATE_COMPLETE	2020-03-31 00:03:59 UTC-0700	Alvin Hsieh This template deplo...
infra	CREATE_COMPLETE	2020-03-31 00:00:13 UTC-0700	Alvin Hsieh / Udacity This temp...
aws-cloud9-wdb-a1ab3ac28cad4cd4b...	CREATE_COMPLETE	2017-12-26 15:55:30 UTC-0800	-

4. Stack Info:

Stacks (2)

Filter by stack name

Active View nested

UdagramApp

2020-03-29 22:28:40 UTC-0700

CREATE_COMPLETE

aws-cloud9-wdb-a1ab3ac28cad4cd4b30a44d839cbd083

2017-12-26 15:55:30 UTC-0800

CREATE_COMPLETE

UdagramApp

Delete

Update

Stack actions

Create stack

Stack info

Events

Resources

Outputs

Parameters

Template

Change sets

Overview

Stack ID

arn:aws:cloudformation:us-west-2:167166056075:stack/UdagramApp/503a6470-7247-11ea-879f-0aa1d8d9d478

Description

Alvin Hsieh / Udacity This template deploys a VPC, with a pair of public and private subnets spread across two Availability Zones. It deploys an Internet Gateway, with a default route on the public subnets. It deploys a pair of NAT Gateways (one in each AZ), and default routes for them in the private subnets.

Status

CREATE_COMPLETE

Status reason

-

Root stack

-

Parent stack

-

Created time

2020-03-29 22:28:40 UTC-0700

Deleted time

-

Updated time

-

Drift status

NOT_CHECKED

Last drift check time

-

5. Stack Resource:

CloudFormation > Stacks > UdagramApp

Stacks (3)

Filter by stack name

Active View nested

UdagramApp

2020-03-31 00:03:59 UTC-0700

CREATE_COMPLETE

Infra

2020-03-31 00:00:13 UTC-0700

CREATE_COMPLETE

aws-cloud9-wdb-a1ab3ac28cad4cd4b30a44d839cbd083

2017-12-26 15:55:30 UTC-0800

CREATE_COMPLETE

Resources (10)

Search resources

Logical ID	Physical ID	Type	Status	Status reason
ALBListenerRule	arn:aws:elasticloadbalancing:us-west-2:167166056075:listener-rule/app/WebAppLB/35b47194190d6cf3/a7ced06af3e0dcc9/c92c8a46945d4798	AWS::ElasticLoadBalancingV2::ListenerRule	CREATE_COMPLETE	-
BastionHost	i-0a5de32e69fab2890	AWS::EC2::Instance	CREATE_COMPLETE	-
ELBSecurityGroup	sg-03a4fa1e3d29bd35d	AWS::EC2::SecurityGroup	CREATE_COMPLETE	-
Listener	arn:aws:elasticloadbalancing:us-west-2:167166056075:listener-rule/app/WebAppLB/35b47194190d6cf3/a7ced06af3e0dcc9	AWS::ElasticLoadBalancingV2::Listener	CREATE_COMPLETE	-

6. Stack output:

CloudFormation > Stacks > UdiagramApp

Stacks (3)

Filter by stack name

Active ☐ View nested ☒

< 1 >

UdiagramApp

2020-03-31 00:03:59 UTC-0700

CREATE_COMPLETE

infra

2020-03-31 00:00:13 UTC-0700

CREATE_COMPLETE

aws-cloud9-wdb-a1ab3ac28cad4cd4b30a44d839cbd083

2017-12-26 15:55:30 UTC-0800

CREATE_COMPLETE

UdiagramApp

Delete Update Stack actions ▼ Create stack ▼

Stack info Events Resources **Outputs** Parameters Template Change sets

Outputs (1)

Search outputs

Key ▲	Value ▼	Description ▼	Export name ▼
WebAppLB	http://WebAppLB-786754524.us-west-2.elb.amazonaws.com	The load balancer URL	UdiagramProject-DNS-NAME

7. Stack Parameters:

CloudFormation > Stacks > infra

Stacks (3)

Filter by stack name

Active ☐ View nested ☒

< 1 >

UdiagramApp

2020-03-31 00:03:59 UTC-0700

CREATE_COMPLETE

infra

2020-03-31 00:00:13 UTC-0700

CREATE_COMPLETE

aws-cloud9-wdb-a1ab3ac28cad4cd4b30a44d839cbd083

2017-12-26 15:55:30 UTC-0800

CREATE_COMPLETE

infra

Delete Update Stack actions ▼ Create stack ▼

Stack info Events Resources Outputs **Parameters** Template Change sets

Parameters (6)

Search parameters

Key ▲	Value ▼	Resolved value ▼
EnvironmentName	UdiagramProject	-
PrivateSubnet1CIDR	10.0.2.0/24	-
PrivateSubnet2CIDR	10.0.3.0/24	-
PublicSubnet1CIDR	10.0.0.0/24	-
PublicSubnet2CIDR	10.0.1.0/24	-
VpcCIDR	10.0.0.0/16	-

8. Load Balancer:

New EC2 Experience
Tell us what you think

Scheduled Instances
Capacity Reservations

IMAGES
AMIs
Bundle Tasks

ELASTIC BLOCK STORE
Volumes
Snapshots
Lifecycle Manager

NETWORK & SECURITY
Security Groups *New*
Elastic IPs *New*
Placement Groups *New*
Key Pairs *New*
Network Interfaces

LOAD BALANCING
Load Balancers
Target Groups

AUTO SCALING
Launch Configurations
Auto Scaling Groups

Create Load BalancerActions

Filter by tags and attributes or search by keyword

Name	DNS name	State	VPC ID	Availability Zones	Type
WebAppLB	WebAppLB-786754524.us-w...	active	vpc-09a1cb350a53b1376	us-west-2a, us-west-2b	application

Load balancer: WebAppLB

DescriptionListenersMonitoringIntegrated servicesTags

Basic Configuration

Name

WebAppLB

ARN

arn:aws:elasticloadbalancing:us-west-2:167166056075:loadbalancer/app/WebAppLB/35b47194190d6cf3

DNS name

WebAppLB-786754524.us-west-2.elb.amazonaws.com
(A Record)

State

active

Type

application

Scheme

Internet-facing

IP address type

IPv4
Edit IP address type

VPC

vpc-09a1cb350a53b1376

Availability Zones

subnet-0022a8319fc406ece - us-west-2a
IPv4 address: Assigned by AWS

9. Listener:

New EC2 Experience
Tell us what you think

Scheduled Instances
Capacity Reservations

IMAGES
AMIs
Bundle Tasks

ELASTIC BLOCK STORE
Volumes
Snapshots
Lifecycle Manager

NETWORK & SECURITY
Security Groups *New*
Elastic IPs *New*
Placement Groups *New*
Key Pairs *New*
Network Interfaces

LOAD BALANCING
Load Balancers
Target Groups

Create Load BalancerActions

Filter by tags and attributes or search by keyword

Name	DNS name	State	VPC ID	Availability Zones	Type
WebAppLB	WebAppLB-786754524.us-w...	active	vpc-09a1cb350a53b1376	us-west-2a, us-west-2b	application

Load balancer: WebAppLB

DescriptionListenersMonitoringIntegrated servicesTags

A listener checks for connection requests using its configured protocol and port, and the load balancer uses the listener rules to route requests to targets. You can add, remove, or update listeners and listener rules.

Add listenerEditDelete

Listener ID	Security policy	SSL Certificate	Rules
<input type="checkbox"/> HTTP : 80 arn...a7ced06af3e0dcc9	N/A	N/A	Default: forwarding to <a>TargetGroup <a>View/edit rules

10. Target Group:

New EC2 Experience

Tell us what you think

Scheduled Instances

Capacity Reservations

IMAGES

AMIs

Bundle Tasks

ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

NETWORK & SECURITY

Security Groups New

Elastic IPs New

Placement Groups New

Key Pairs New

Network Interfaces

LOAD BALANCING

Load Balancers

Target Groups

AUTO SCALING

Create target group

Actions

Filter by tags and attributes or search by keyword

<<

<

1 to 1 of 1

>

>>

Name	Port	Protocol	Target type	Load Balanc	VPC ID	Monitoring
TargetGroup	80	HTTP	instance	WebAppLB	vpc-09a1cb350a53b1376	

Target group: TargetGroup

Description

Targets

Health checks

Monitoring

Tags

The load balancer starts routing requests to a newly registered target as soon as the registration process completes and the target passes the initial health checks. If demand on your targets increases, you can register additional targets. If demand on your targets decreases, you can deregister targets.

Edit

Registered targets

Instance ID	Name	Port	Availability Zone	Status	Description
i-0b4bb71c5e7ad4a7f		80	us-west-2a	healthy	This target is currently passing target group's health checks.
i-012bdbf1b66b8b34d		80	us-west-2b	healthy	This target is currently passing target group's health checks.
i-0bec917efe842ecb7		80	us-west-2b	healthy	This target is currently passing target group's health checks.

11. Launch Configuration:

Instance types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations

IMAGES

AMIs

Bundle Tasks

ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

NETWORK & SECURITY

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

LOAD BALANCING

Load Balancers

Target Groups

AUTO SCALING

Launch

Configurations

Auto Scaling Groups

Save up to 90% on Compute

Optimize compute costs by creating your Auto Scaling group with a launch template to combine EC2 On-Demand, Spot, and Rls. [Learn more.](#)

Create launch configuration

Create Auto Scaling group

Copy to launch template

Actions

Filter: Filter launch configurations...

<<

<

1 to 1 of 1 Launch Configurations

>

>>

Name	AMI ID	Instance Type	Spot Price	Creation Time
UdagramApp-...	ami-0d1cd67c...	t2.micro		March 31, 2020 at 12:06:05 AM ...

Launch Configuration: UdagramApp-WebAppLaunchConfig-l663GDBGUG686

Details

Copy launch configuration

AMI ID

ami-0d1cd67c26f5fca19

IAM Instance Profile

UdagramApp-ProfileWithRolesForOurApp-15PTP3MEWBY2F

Key Name

proj2-key

EBS Optimized

false

Spot Price

RAM Disk ID

User data

[View User data](#)

Instance Type

t2.micro

Kernel ID

Monitoring

true

Security Groups

sg-00b19d09559ae0073

Creation Time

Tue Mar 31 00:06:05 GMT-700 2020

Block Devices

[/dev/sdk](#)

IP Address Type

Only assign a public IP address to instances launched in the default VPC and subnet. (default)

12. Auto Scaling Group:

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations

IMAGES

AMIs

Bundle Tasks

ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

NETWORK & SECURITY

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

LOAD BALANCING

Load Balancers

Target Groups

AUTO SCALING

Launch Configurations

Auto Scaling Groups

Try the new design for Amazon EC2 Auto Scaling

This older console is being replaced with the new EC2 Auto Scaling console. No new features or improvements will be made in this older console. [Go to the new console.](#)

Create Auto Scaling group

Actions

Filter: Filter Auto Scaling groups...

<< 1 to 1 of 1 Auto Scaling Groups >>

Name	Launch Configuration /	Instances	Desired	Min	Max	Availability Zones	Default Cooldown	Health Check Grac
UdagramApp-...	UdagramApp-WebApp...	3	3	3	5	us-west-2a, us-west-2b	300	0

Auto Scaling Group: UdagramApp-WebAutoScalingGroup-6WJLU5RFH1TG

Details

Activity History

Scaling Policies

Instances

Monitoring

Notifications

Tags

Scheduled Actions

Lifecycle Hooks

Launch Configuration

UdagramApp-WebAppLaunchConfig-l663GDBGUG686

Desired Capacity

3

Min

3

Max

5

Availability Zone(s)

us-west-2a, us-west-2b

Subnet(s)

subnet-031984658bdb541d8,subnet-00e7d5e64c9999fc9

Classic Load Balancers

Target Groups

TargetGroup

Health Check Type

EC2

Health Check Grace Period

0

Instance Protection

Termination Policies

Default