



## ***Team-6***

**Divyaraj → Docker & K8s.**

**Sanatan → AWS & Terraform.**

**Parmeshwar\* → Ansible & Docker.**

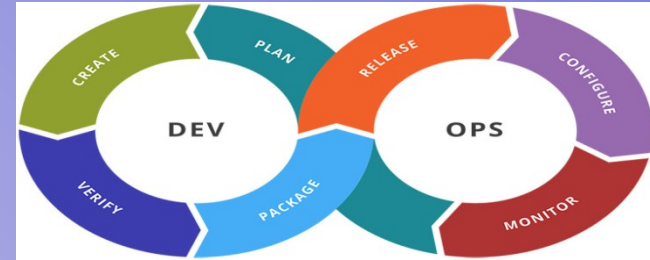
**Priya → Terraform & AWS.**

**Shreya → Jenkins & Ansible.**

# Outline

- Problem Statement
- Objective
- Project Overview
- Technology and Tools Used
- Project Architecture
- Amazon Web services.
- Terraform
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- Jenkins.
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# ***Problem Statement***



Design and deploy tasks required to build CI/CD pipeline for *BookMySlot application* on cloud platform as a set of micro services on containerized platform such as docker and Kubernetes. Provision Infrastructure using terraform on aws, and configure same using Ansible.

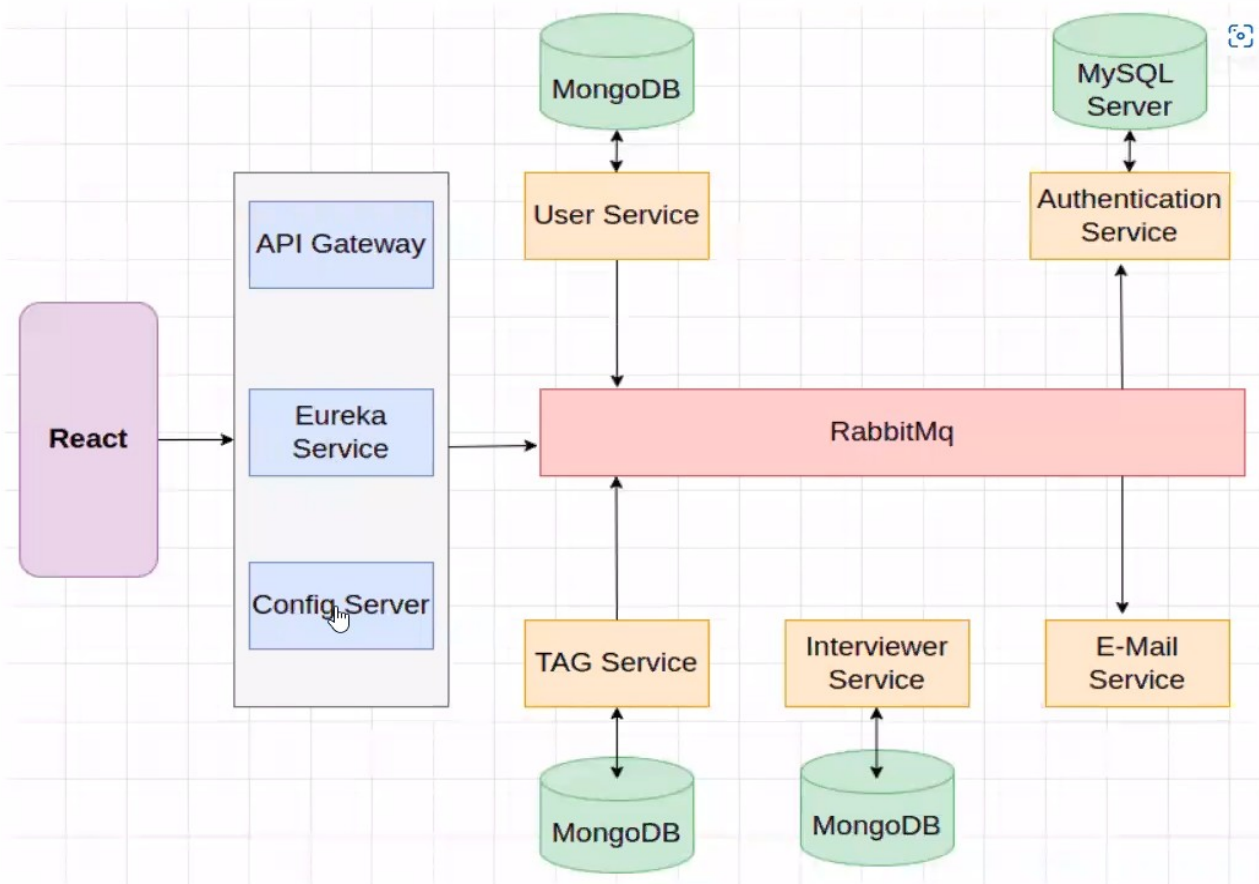


# ***OBJECTIVE***

**Our objective is to provide best deployment service on server (Cloud) for BookMySlot Application.**



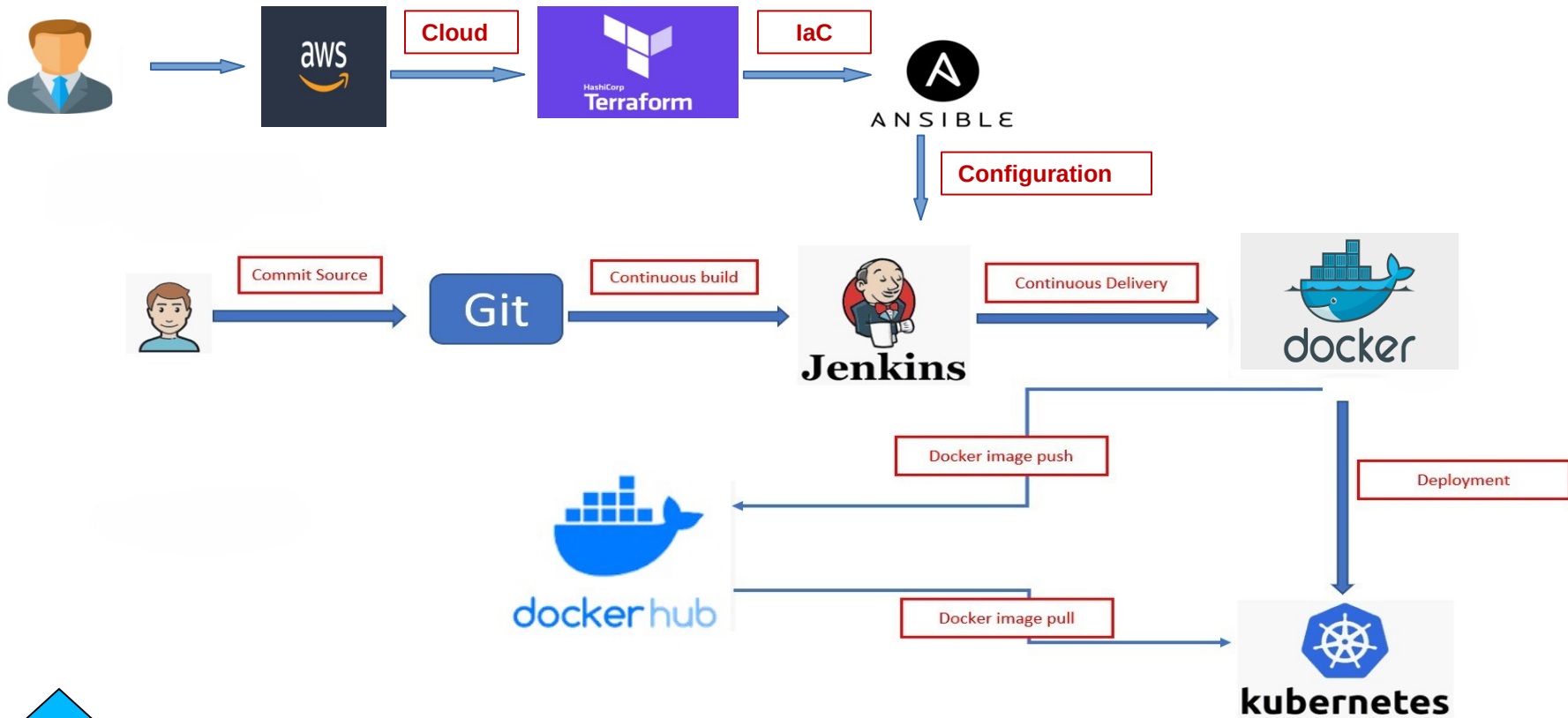
# ***Project Overview***



# ***Technologies and Tools Used***



# Project Architecture



# Amazon Web Service



Amazon  
EC2



Amazon EBS



AWS IAM

Search for services, features, blogs, docs, and more [Alt+S]

PC IAM Singapore priya @ 3755-9602-4297

### Instances (9/9) Info

Find instance by attribute or tag (case-sensitive)

Instance state = running X Clear filters

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic I
<input checked="" type="checkbox"/>	pk-stagging	I-01461a8c876ff0fee	Running	t2.xlarge	2/2 checks passed	No alarms	ap-southeast-1a	ec2-52-76-121-211.ap-...	52.76.121.211	52.76.1...
<input checked="" type="checkbox"/>	pk-jenkin-mas...	I-0f61a83d141fae019	Running	t2.xlarge	2/2 checks passed	No alarms	ap-southeast-1a	ec2-13-228-157-144.ap-...	13.228.157.144	13.228...
<input checked="" type="checkbox"/>	priya_Cap	I-05f97ab99c0c40baa	Running	t2.micro	2/2 checks passed	No alarms	ap-southeast-1b	ec2-13-229-107-69.ap-...	13.229.107.69	-
<input checked="" type="checkbox"/>	sp-jenkin-master	I-02bde5b8af64fd6d3	Running	t2.xlarge	2/2 checks passed	No alarms	ap-southeast-1b	ec2-3-0-242-159.ap-so...	3.0.242.159	3.0.242...
<input checked="" type="checkbox"/>	sp-k8s-master	I-03731a1f65585aa17	Running	t2.xlarge	2/2 checks passed	No alarms	ap-southeast-1b	ec2-54-169-112-146.ap...	54.169.112.146	-
<input checked="" type="checkbox"/>	Shreya-TF-Ansi	I-02af632f0920d4968	Running	t2.micro	2/2 checks passed	No alarms	ap-southeast-1b	ec2-54-179-135-136.ap...	54.179.135.136	-
<input checked="" type="checkbox"/>	sp-stagging	I-0b049adfa23e4e986	Running	t2.xlarge	2/2 checks passed	No alarms	ap-southeast-1b	ec2-13-212-21-44.ap-s...	13.212.21.44	-
<input checked="" type="checkbox"/>	sp-node1	I-05ff8a0e5252ac59c	Running	t2.xlarge	2/2 checks passed	No alarms	ap-southeast-1b	ec2-13-214-64-223.ap-...	13.214.64.223	13.214...



# TERRAFORM

- Terraform has all necessary tooling for configuring servers and provisioning infrastructure.
- Terraform is an immutable infrastructure tool.
- It is a flexible tool.



```
resource "aws_instance" "ec222" {  
    ami            = var.ami  
    instance_type  = var.instance  
    subnet_id      = data.aws_subnet.selected.id  
    security_groups = [data.aws_security_group.sg.id]  
    key_name       = var.key_name  
    count          = var.count_no  
    tags           = {  
        Name      = "jenkin_master"  
    }  
    root_block_device {  
        volume_size   = "30"  
        volume_type    = "gp2"  
        encrypted      = true  
        delete_on_termination = true  
    }  
}
```

i-Obaf5556a5824f28b (Ansi-Terra\_param)

PublicIPs: 43.205.117.174 PrivateIPs: 172.31.45.217

# ***Ansible***

- **Ansible is an open source IT Configuration Management tool.**
- **It aims to provide large productivity gains to a wide variety of automation challenges.**
- **Works on Push Mechanism**
- **Flexible and Agentless.**



```
---
- hosts: jenkins_master
  become: yes
  #remote_user: ec2-user
  #become_user: root
  tasks:
    - name: Download Long Term Jenkins release
      get_url:
        url: https://pkg.jenkins.io/redhat-stable/jenkins.repo
        dest: /etc/yum.repos.d/jenkins.repo

    - name: Import jenkins key from url
      ansible.builtin.rpm_key:
        state: present
        key: https://pkg.jenkins.io/redhat-stable/jenkins.io.key

    - name: yum update
      yum:
        name: '*'
        state: latest

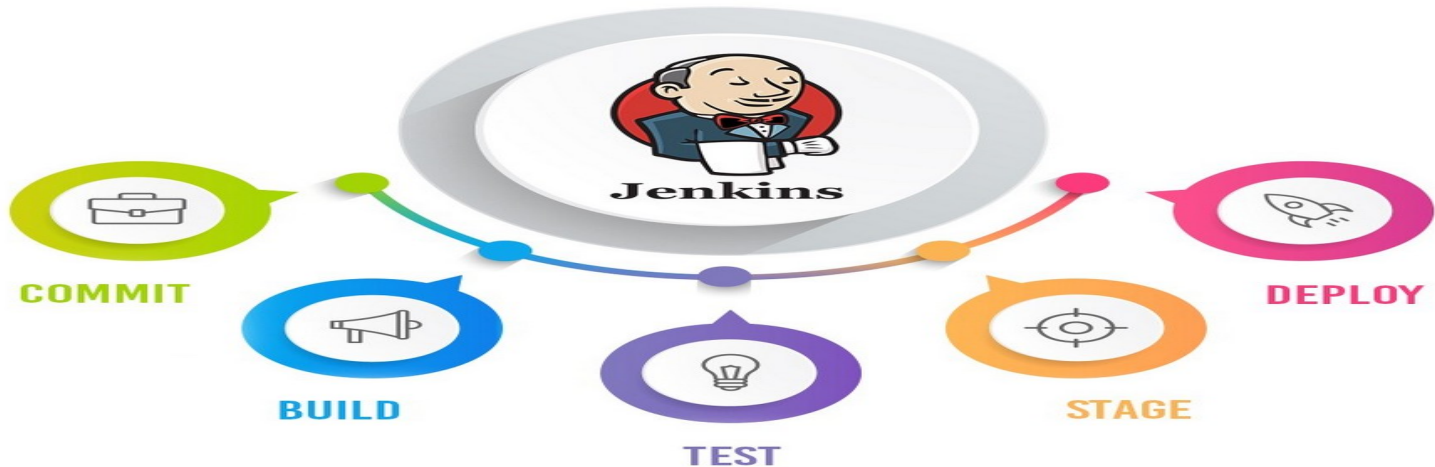
    - name: Install java
      yum:
        name: java
        state: latest


    - name: Install jenkins
      yum:
        name: jenkins
        state: latest

    - name: daemon-reload to pick up config changes
      ansible.builtin.systemd:
        daemon_reload: yes
```

i-0baf5556a5824f28b (Ansi-Terra\_param)

PublicIPs: 43.205.117.174 PrivateIPs: 172.31.45.217



 **Jenkins**

Q Search (CTRL+K) ? ! 2 shreya7123 v log out

Dashboard >

+ New Item

👤 People

📅 Build History

🕒 Project Relationship

🔍 Check File Fingerprint

⚙️ Manage Jenkins

👤 My Views

All +

S	W	Name	Last Success	Last Failure	Last Duration
✓	🔧	book-slot	11 min #6	N/A	3 min 3 sec
✓	☁	book-slot1	4 min 6 sec #8	8 min 20 sec #7	3 min 5 sec
✓	☁	book-slot2	50 sec #5	1 hr 57 min #2	0.91 sec

[Add description](#)

# Docker-Compose

- Compose is a tool for defining and running multi-container Docker applications.
- With Compose, you use a YAML file to configure your application's deployment and services.



```
version: '3.9'
services:
  product-webapp:
    build: product-webapp/
    image: product-webapp
    restart: always
    container_name: product-webapp
    #network_mode: "host"
    #hostname: localhost
    ports:
      - "4200:4200"

  tag-service:
    container_name: tag-service
    build: tag-service/
    #hostname: localhost
    #network_mode: host
    ports:
      - 8070:8070
    environment:
      - servername_mongodb=mongodb
      - servername_eureka=eureka-server
    depends_on:
      - mongodb
      - eureka-server
    restart: always

  email-service:
    container_name: email-service
    build: email-service/
    #hostname: localhost
    #network_mode: host
"docker-compose.yml" [readonly] 173L, 3632
```

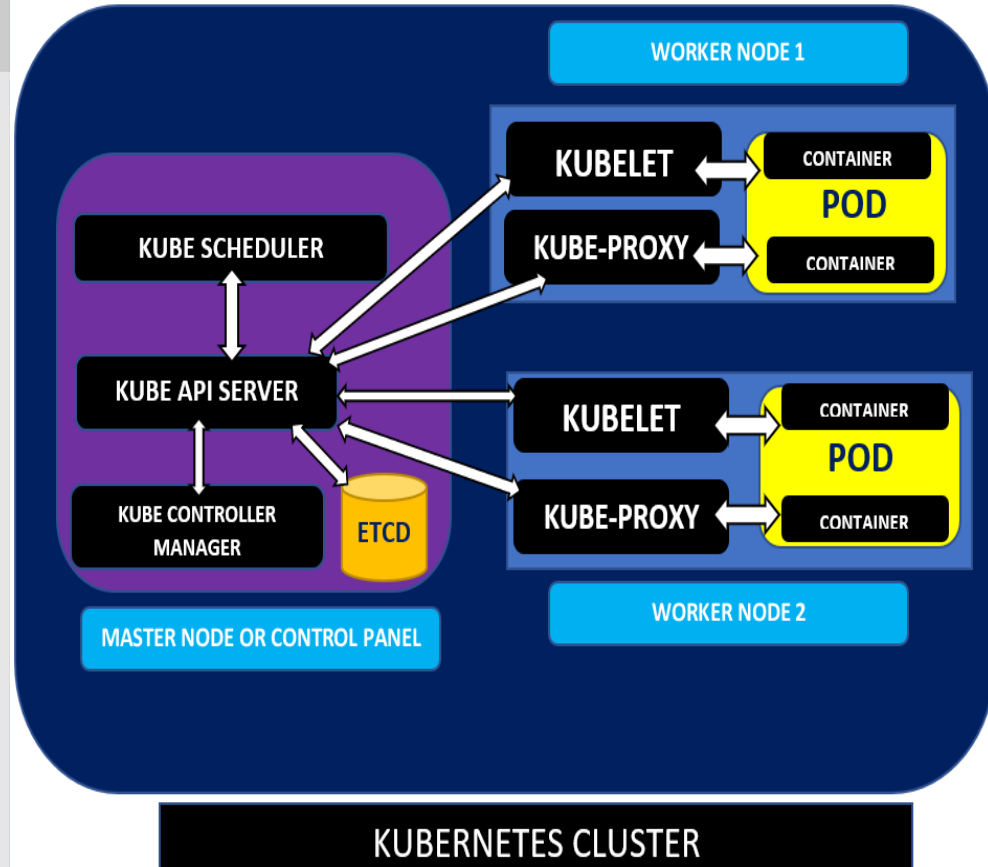
i-032ba8526d930d470 (jstg\_param)

PublicIPs: 3.109.50.77 PrivateIPs: 172.31.47.212

# Kubernetes Architecture

## Advantages of Kubernetes:-

- Kubernete Automates Containerized Environments.
- Scaling Up and Down.
- Strong Open Source Communities.
- Improve Developer Productivity.



# ***Errors faced***

1) ApiGatewayApplicationTests.contextLoads » Failed to load Application.

Soln: Maven Plug-in added into pom.xml of Api\_Gateway

2) Cross-Origin error while sign Up

Soln: this appln deployed with diff domain name we changed that domain with our domain(IP).

3) Containerd-shim-runC-v2 file was missing

Soln: installed the containerd package once again using ( yum reinstall container docker )

4) permission denied to *var/run/docker.sock*

Soln: permission given to docker.sock using (chmod 665 cmd)



# ***Conclusion***

**We have Successfully deployed BookMySlot application using the Devops tools.**



**Thank You...**

