

# ANKIT SINGH RATHI

DevOps Engineer | AWS Solutions Architect Professional Certified |  
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## EXPERIENCE

### DevOps Engineer

01/2020 - Ongoing

Tradeling.com

Dubai, UAE

- Set up Infrastructure on **self-managed kubernetes** cluster from scratch on AWS using **ansible**, **terraform** and **poseidon/typhoon**. Generated k8s manifests using **php**.
- Migrate all backend APIs to **AWS Edge Optimized API Gateway** and **EKS**. Also used **AWS WAF**, **API Throttling**, **API Caching**, **Network LB** and **VPC Link**
- Caching APIs at **AWS Cloudfront** with dynamic origins thereby reducing the homepage response time by **75%** (105ms to 25ms). Also used custom **CORS** and caching policies.
- Reduced the **avg website load time** in China by **80%** (2500ms to 500ms) by testing with **Zenlayer Global Accelerator**, **Huawei CloudConnect**, **Alibaba Global Accelerator**, **Geolocation Records** and reduced the cost of solution from 3500\$ to 70\$ i.e. **98%**
- Closed around 70 plus vulnerabilities reported in ASV, Network VAPT, Web Application PT to make the infrastructure **PCI compliant Level 1**
- Set up **Monitoring** for Tradeling Infrastructure from scratch using **ELK stack**, **metricbeat**, **journalbeat** and **ansible** which collects data from 50+ servers across 3 environments
- Set up **CI-CD** on **Github Actions** and **Docker Jenkins** using ansible running **15000** jobs daily. Maintained jenkins jobs using groovy scripts
- Created Monitoring **Dashboards** in **Kibana** for API Performance, MongoDB, NATS, MySQL, Kubernetes, Hosts, System Monitoring and Docker.
- Daily Automated Releases using **python** script (**2000+ lines of code**) sending **automated email change log** of **50+ repositories** to respective teams. Attend **stand-ups** and **sprint planning** sessions.
- Maintaining Self Managed Databases including **MySQL**, **MongoDB** using docker-compose
- Daily backups** of MongoDB, MySQL using ansible being uploaded to AWS S3 buckets
- 24/7 automated website monitoring using **Prometheus**, alertmanager, blackbox exporter with automated slack alerts.

### DevOps Engineer

11/2018 - 01/2020

Accelya Group

Dubai, UAE

- Setting up Infrastructure of the new customers for Development, UAT and Production Environments on **Weblogic** and **Tomcat** Platforms.
- Migration** of the build-jobs of **66 customers** to separate the 'Builds & Deployments' phases.
- Build **JIRA Dashboard** for the team. This was extensively used by all teams to log tickets and follow the DevOps Approach

### Software Engineer

01/2017 - 10/2018

Walmart Labs

Bangalore, India

- Set up Infrastructure for **microservices** on **OneOps** with **DR** enabled involving **1000s** of servers across two data centers.
- Created DevOps Automation **Dashboard** using **Django**, **Python** to automate **splunk** alert actions.

## CERTIFICATIONS



## PROJECTS

### API Caching At AWS Cloudfront

By caching the GET APIs at AWS Cloudfront we were able to **reduce** the **response** time by **75%** (**105ms to 25ms**)

- Created **dynamic origins** with **custom caching** and **custom CORS** policy
- Were able to achieve **single digit millisecond latency** for some GET APIs endpoints

## FIND ME ONLINE

ankitrathi.info

Blogger

https://codeaprendiz.blogspot.com

LinkedIn

www.linkedin.com/in/ankit-singh-rathi

GitHub

www.github.com/codeaprendiz

Stack Overflow

https://stackoverflow.com/users/5761011/codeaprendiz?tab=profile

HackerRank

https://www.hackerrank.com/codeaprendiz

HackerEarth

https://www.hackerearth.com/@codeaprendiz

## SKILLS

### Infrastructure As Code Tools

Ansible · Terraform · Cloud Formation

### Cloud Providers

AWS · GCP · Alibaba · Huawei

### Container And Orchestration

Docker · DockerSwarm · Kubernetes · ECS · Fargate

### Languages

python · go · shell · nodejs · php

### Version Control Systems

Git · SVN · Code Commit

### Ingress Controllers

Traefik · Istio · Kong · Nginx

### Monitoring

Grafana · Prometheus · Elastic Search · Kibana · Logstash · Splunk · Datadog · Journalbeat · Metricbeat · Alertmanager · Blackbox Exporter · Cloudwatch

## PROJECTS

### Re-Architecting Backend APIs with AWS API Gateway

We improved the **security** and **performance** of all the backend APIs by using Edge Optimized AWS **REST API gateway**.

- Applied AWS **WAF** at AWS API Gateway to improve the security of APIs.
- Also used API **throttling**, API keys and custom domain names.
- Used **Edge Optimized** REST API gateway to improve performance by using caching features
- Other AWS Services used : **Network Load Balancer**, **EKS** and **VPC Links**

### Architect Cloud Infrastructure for China - Multi Cloud

We improved the website performance in China by **reducing** the avg website **load time by 80%** (2500ms to 500ms). This project was multi-cloud and was implemented in 3 phases.

- We initially used **Alibaba Global Accelerator** and **geolocation** records. Cost of the project was around **\$3500** per month. We purchased dedicated bandwidth from HongKong to India.
- We then used **Huawei Cloud Connect**, **SNAT**, **DNAT**, **NLB**, geolocation records. The cost was around **\$1500** per month.
- Finally we used **Zenlayer Global Accelerator** with geolocation records. This had the least cost of **\$100** per month. This was based on data-transfer per month.

### Migrating Self Hosted Services to AWS Managed Services

- MySQL was migrated to AWS RDS MySQL
- MongoDB was migrated to MongoDB Atlas
- Elasticsearch was migrated AWS ElasticSearch
- Self managed kubernetes cluster using kops was migrated to EKS

### Monitoring And Logging Setup Using ELK Stack

Tradeling Monitoring and Logging Setup from scratch to set up dashboards

- **ELK** i.e. Elastic Search, Logstash and Kibana was used. All were set up on individual instances using **docker-compose** and **ansible playbooks**
- **Journalbeat** was used to set up logging for kubernetes. **Metricbeat** was used for getting metrics of kubernetes, instances, mongodb, mysql and NATs.
- **Dashboards** set up for Kubernetes, System, Host, MongoDB, MySQL, NATs, Docker monitoring. **URL monitoring** and **Alerts** on slacks using Prometheus, Alertmanager, Blackbox-Exporter
- **Prometheus**, **Alertmanager**, **Blackbox-exporter** set up done using ansible, docker-compose

### Self Managed kubernetes infrastructure using opensource Typhoon

- Created using AWS, Terraform and OpenSource poseidon/typhoon repository.Used **reserved** and **spot** Instances to **save cost**
- The cluster was **self healing**. Whenever spot instance was terminated, **lamda** function would trigger a **webhook** in Jenkins which would run **ansible playbook task** to **drain** the corresponding kubernetes cluster node.

### Automated Releases to Staging and Production

- **Python** script with **2000+** lines of code and triggered via **ansible-task** to automate release to staging environment which was in turn triggered through Jenkins
- **Automated Change Log-Email** sent to the dedicated audience after the release
- **Live Updates** of the release on **Slack Channel** showing status of builds and deployments

### Infrastructure setup using Terraform, Ansible

- Setting up 3 environments - **Prod**, **Stage**, **Dev**
- Each environment consisting of **VPCs**, **EC2**, **Route53** records, **Route** tables, **Security** Groups, **Bastion** hosts, **NAT** Gateways etc
- Planning regular **upgrades** of self managed services like **MongoDB**, **MySQL**, **NATs**

### Payment Card Industry Data Security Standards (PCI-DSS) Compliance - L1

Tradeling Infrastructure was made **PCI-DSS complaint L1** by closing ~70 vulnerabilities across different scans : **ASV**, **Network VAPT** and Web Application **Penetration** Testing.

- Used AWS **KMS** to encrypt card holders data before it was saved to the database.
- Provided necessary documentation and closed all the gaps that were high-lighted.

### ankitrathi.info | DevOps Essentials

Creating a website for DevOps Essentials

- Terraform: <https://github.com/codeaprendiz/terraform-kitchen>
- Kubernetes: <https://github.com/codeaprendiz/kubernetes-kitchen>
- Ansible: <https://github.com/codeaprendiz/ansible-kitchen>
- DevOps-Essentials : <https://github.com/codeaprendiz/devops-essentials>
- Linux - <https://ankitrathi.info/devops-essentials/linux-commands/linux-commands-index.html>

## SKILLS

### Web Servers

Tomcat · Apache · Nginx · Jboss

### OS

Feroda CoreOS · Linux · Windows

### Build Configuration

Maven · npm

### CI-CD

Github Actions · Jenkins · Code Build ·

Code Deploy · Drone-CI

### Databases

MySQL · PostgreSQL · MongoDB ·

Oracle-SQL

## EDUCATION

### B.E. Computer Science and Engineering

Bangalore Institute Of Technology

07/2013 - 07/2017 Bangalore, India

GPA | **75** / 100

## ACHIEVEMENTS

### 💎 AWS Certified Solutions Architect - Professional

It took me around 290 hours spread across 4 months to prepare for the examination outside office hours.

### 💎 Daily Automated Releases to Stage And Weekly to Prod

It took a lot of **sleepless** nights to develop **2000+ lines** of **python** code which sends live slack alerts for build status and deployment status, calculates the change log of **50+ repositories** and send automated email to required audience

## LANGUAGES

English Advanced ●●●●●

Hindi Native ●●●●●

## PASSIONS

♥ Coding

✎ Documenting

🏃 Healthy Lifestyle

📖 Learning