

Deepak Agrawal

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Experience Highlights

- Working as **Manager - Global Infrastructure (Architect)** in **Sequoia Capital** and responsible for managing cloud Infrastructure spread in multiple Geo in **AWS** and GCP with EKS and IaC
- I have a total of **9.5 years of experience** in **people management**, project management, **hiring**, stakeholder & vendor management, **site reliability**, **production engineering**, **cloud governance**(AWS Org, SCPs, tagging etc), GitOps practices, managing audits and compliances, **observability**, operations management, containerization (**K8s**), IaC (**Terraform**), architecture design, **security best practices**, **configuration management**, deployment, automation, **self-service tooling**, **python**, infrastructure design patterns, system/application monitoring, troubleshooting, system administration and application development and **cost optimizations** etc.
- 8 years into DevOps/SRE/Cloud and **1.5 years into app development** in Python/Django. Also, have experience working with **global teams**. Overall 3.5 years of experience in **hiring and managing a team** of 9 members.
- Built **self-service** tools (Sticker and DevOps Dashboard) to automate manual tasks and empower developers with the **left-shift** approach.
- Experience working with key **stakeholders** to get their requirements related to dependencies on DevOps and prioritize/plan/manage them with sprints.
- Work with senior tech **leadership** to define the **roadmap** for DevOps/Infra and directly responsible for **hiring** and grooming the DevOps team.
- Architected and redesigned infrastructure with **automation** (Terraform), **deployment** (Jenkins, Git-Actions) and **configuration management** (Ansible) for multiple companies with **microservices-based** architecture
- Expertise in **right-sizing** and designing/architecting/provisioning Infrastructure with **cost-optimized** best practices to keep the bill under control.
- Played **DBA** role on Postgres, MySQL, SQL Server for multiple applications and performed several optimizations (**parameters tuning**) in AWS RDS
- Expertise in setting up deployment, release management, automation, monitoring, observability for microservices-based architecture.
- Experience in inculcating DevOps **culture** in organizations by defining and implementing any new or standardized policy for DevOps best practices.
- Have experience working with both **product and service-based** companies.
- For 15 months, provided 'On-Demand' **DevOps services** to five offshore clients irrespective of technology/tools.
- Have the capability to design/build/set up an application's database, backend apps, deployment strategy, **release management**, configuration management from scratch on AWS cloud.
- Infrastructure-as-Code (**IaC**), complete automation, least manual intervention, fault tolerance, high availability, self-healing, reliability are always part of my **design and strategy**.

Technologies

AWS	: EC2, RDS, S3, ElastiCache, IAM, CloudWatch
AWS	: AutoScaling, ELB, Route53, CloudFormation
AWS	: SQS, SNS, VPC, Glacier, CloudFront, Lambda
AWS	: EMR, Athena, SES, DMS, Cost Optimisation
AWS	: Trusted Advisor, Spot Servers, Workspaces, EKS
Control Tower	: CloudHealth
Containerization	: Kubernetes (KOPS), EKS, ECS, Docker
Security	: Macie, Inspector, Guardduty, Config, IAM,
Security	: Cognito, Organizations, Security Hub,
Security	: WAF, SCPs, Security Hub, SSO and CloudFlare
Networking	: HTTP/HTTPS, SSH, TCP, UDP
Centralised Logging	: ELK Stack (Beats, Logstash, ES, Kibana, APM)
Secret Management	: HashiCorp Vault, KMS
Configuration Management	: Terraform, Ansible, Chef
Databases	: PostgreSQL, MySQL, Redis, Cassandra
Scripting Languages	: Shell/Bash script, Python3, Boto3, Groovy
Virtualization Technologies	: Virtualbox, Vagrant, Openstack
Command line Utilities	: alembic, sqlacodegen, SQLAlchemy, awscli
Monitoring Tools	: Nagios, Graphite, Newrelic, Prometheus, Grafana
Defect Tracking Tools	: JIRA, YouTrack
Search Engines	: Elasticsearch, Solr
Deployment Of Clusters	: Elasticsearch, Spark, Kafka, Redis, Hadoop
Deployment Of Clusters	: Zookeeper, Storm, Solr
IDEs	: PyCharm, Visual Studio Code
Web Frameworks	: Django, Vyked
Operating System	: Windows, Linux (Ubuntu, RHEL), UNIX, Mac OS
Other Tools	: JMeter, JavaScript, JQuery, AJAX

Professional Experience Summary

- **Freelancer** , Gurugram (Remote)
August, 2022 - Present
- **Manager - Global Infrastructure** with *Sequoia Capital*, Bangalore
Dec, 2020 - July, 2022
- **DevOps Consultant (Freelancing)** with *epifi.com (fi.money)*, Bangalore
Oct, 2020 - Dec, 2020
- **Engineering Manager - DevOps** with *Housing/Proptiger/Makaan*, Gurgaon
Oct, 2018 - Aug, 2020
- **Senior DevOps Engineer** (Lead) with *Delhivery Pvt Ltd*, Gurgaon
March, 2017 - Sep, 2018
- **DevOps Engineer** with *1MG Technologies Pvt Ltd*, Gurgaon
October, 2015 - March 2017
- **DevOps Engineer** with *Hadoolytics Technologies LLP*, Gurgaon
Apr, 2015 - September, 2015
- **DevOps Engineer** with *APYL (StackExpress)*, Noida
January, 2014 – Apr, 2015
- **Application Developer** with *Entigence Solutions India (ESIPL)*, Bangalore
May, 2012 – December, 2013

Project Details

1. Sequoia Capital

Duration : Dec 2020 to July 2022

Technical Skills : AWS, GCP, VMWare, Terraform, ECS, Git Actions, CloudHealth, Governance, Security, Python3, Boto3

Project Description:

Sequoia is a VC firm focused on energy, financial, enterprise, healthcare, internet and mobile startups

Responsibilities:

- Evaluated **CloudHealth** Control Tower by VMWare and Integrated it from scratch to manage all AWS accounts and GCP projects. Configured policy based governance for Zombie resources, Tagging, KTLO, Cost, Security, Containers and Operations. Also became - **Certified Platform Administrator Associate - CloudHealth**
- Shared cost and security best practices with teams in different Geos and reduced the AWS bill by \$23k/month in two months.
- Setup Containerised (K8s EKS) Infrastructure to deploy new applications for dev, test, stage and prod environments with 100% IaC using Terraform with best practices of Cost (**Spot servers, Right sizing**) and Security (**IAM Roles, ServiceAccounts, Restricted Security Groups, NACL**).
- Performed Well Architected Reviews (**WAR**) for all accounts with AWS
- Worked on **VPC**, Subnet, Security Groups and NACL design
- Built **in-house CLI tool** for Tagging AWS resources in Python3 and made all AWS accounts 100% **tagging compliant**.
- Configured Security services - **Macie, Inspector**, Guardduty, Config, IAM, **Organizations**, WAF, **SCPs, Security Hub** and CloudFlare

2. EpiFi.com

Duration : Oct 2020 to Dec 2020

Technical Skills : AWS, Terraform, Immutable Infra, Jenkins, Groovy, Packer, Blue/Green Deployment, DevOps Tooling

Project Description:

EpiFi.com (fi.money) is a startup in Neo Bank Fintech domain

Responsibilities:

- Built **fully automated** (using Terraform, Git and Jenkins, Groovy) federated role based cross-account IAM access through SAML (Gmail) for all employees
- Worked on **One-Click deployment** using Packer, Terraform, Jenkins declarative pipeline for immutable infrastructure for non-prod env
- Configured **Blue-Green Deployment** for production using Jenkins, Groovy

- Built **DevOps dashboard** from scratch in Python/Flask to manage the Blue/Green deployment flow and provide metadata around services
- Automated the deployment of DevOps dashboard in ECS using Terraform Jenkins and Groovy

3. Proptiger.com, Housing.com & Makaan.com

Duration : Oct 2018 to Aug, 2020

Technical Skills : Kubernetes, ELK, APM, Ansible, SaltStack, Vault, Openstack, ES, Solr, Database Migration Service, Security, Trusted Advisor, Spot Servers, RIs, RabbitMQ, Microservices, SpotInst, Cost Optimisation

Project Description:

Housing, Makaan and Proptiger are the fastest growing company in the online real estate space.

Responsibilities:

- Worked as Head of DevOps in this role.
- Set up DR (**Disaster Recovery**) for Housing.com and implemented AWS WAF and CloudFlare WAF for different platforms.
- Responsible for **K8s migration, Logging, Monitoring, Alerting, Security, Cost, CI/CD, Automation, Uptime of all Platforms, Beta and Production env issues** and taking Infra to the next level.
- Improved average uptime from 99.86% to **99.99%** in the last 1 year.
- Planned and Scaled Infra for Housing.com to handle sudden **10x traffic** through some marketing campaign with minimal cost in 1 week's time.
- Migrated Proptiger and Makaan **40 APIs** to Kubernetes platform with KOPS, Prometheus, Grafana in AWS
- Worked on **Kafka cluster** for communication service
- Setup centralised logging using **ELK with ElastAlert, Search Guard** and setup **ELK APM** for Java based APIs in beta and prod env. In this activity we re-architected how the logging part was being managed by earlier.
- Implementing **Observability** through ELK Stack, **Jaeger**, OpenTelemetry
- In the last 1.5 year, **hired 6 people** and managed a **team of size 8**.
- Reduced AWS bill by **45%** for all 3 platforms
- Work with key **stakeholders** in tech to get their requirements related to dependencies on DevOps, **prioritize** them and get them implemented for smooth project completion by all tech teams.
- Do **sprint** and project planning every 2 week for all 3 platforms.
- Experience in handling lifecycle for signing contracts with 3rd parties for DevOps people on contract
- Done a PoC on **Vault** implementation for **Secret** management
- Managing 350-400 servers on AWS and 70 servers in local DC using Openstack.
- Made Trusted Advisor **green** in AWS for 3 platforms for Security Groups
- AWS **Aurora migration** using **DMS** with **rollback** strategy
- **Prometheus** implementation for monitoring in Proptiger

- Troubleshooted various production issues related to Infrastructure and provided **RCA/Resolution** to those.
- Setup process to **log all the production incidents** and discuss with key stakeholders every 2 weeks.

4. Delhivery Pvt Ltd

Duration : Mar 2017 to Sep 2018

Technical Skills : Ansible, Terraform, EC2, RDS, S3, ElastiCache, IAM, CloudWatch, AutoScaling, ELB, Route53, VPC, Lambda, EMR, Athena, Database Migration Service, CloudFront, Trusted Advisor, Spot Servers, RIs, RabbitMQ

Project Description:

Delhivery private limited is India's largest and most profitable fulfilment and logistics company for digital commerce and order/waybill tracking.

Responsibilities:

- In the last 6 months, I have managed a team of nine members.
- Designed, standardized, implemented the VPC architecture, directory structure for IaC (ansible and terraform) and DevOps best practices across projects and organization which has the following features:
 - Restricted security groups
 - Automated SSH access
 - Defined naming convention
 - IAM roles on app/worker servers
 - Jenkins Job deployment
 - Zabbix Monitoring
 - URL monitoring
 - Monitoring of Target Group, RDS, Redis
 - Auto Scaling and Spot servers in app and workers
 - Tagging on all AWS resources
- Successfully built a model project to be followed by other projects with new design that was created. Managed the automation of Infra and deployment for 15 services, including new and old services.
- Code review is part of my daily activities and started sprint planning with sprint retro and effort estimations using JIRA.
- Designed, standardized and managed the automation of Infrastructure (S3 bucket and CloudFront) using Terraform and Deployment using Jenkins for 30 frontend dashboards.
- Designed, standardized and managed the automation of Deployment using Jenkins for almost 100 lambda functions using serverless.
- Reduced cost of AWS by 30% using combination of RI's, Spot servers (using SpotInst), cleanup unused resources, optimizations in memory for lambda's, right sizing of EC2, ElastiCache and RDS.
- Troubleshooted various production issues related to lambda and EC2. Also provided RCA and resolution to those.

- Defined policies for Onboarding of new joiners and access management for DevOps tools e.g AWS, CloudAMQP, Cloud MongoDB, NewRelic, Sentry, BitBucket, Jenkins etc.
- Designed and managed the JIRA integration for all projects.
- Designed and managed URL monitoring (SLA and response time) using Zabbix for internal and external URLs.

5. 1mg.com and 1mglabs.com

Duration : Oct 2015 to Mar 2017

Technical Skills : EC2, RDS, CloudFormation, S3, Route53, IAM, awscli, Ansible, Microservices, Vyked, Python, Nginx, PostgreSQL, Linux, Shell Scripting, Site-Reliability

Project Description:

1mg is India's leading consumer health platform. It enables consumers to learn more about their medicines and also find more cost-effective substitutes. It is a microservices based application built using the Vyked framework.

Responsibilities:

- Setup staging/QA/dev env for both 1mg.com and 1mglabs.com and managed them well.
- Migrated the production infrastructure from Java base monolith application to Microservices based architecture.
- Redesigned the infra orchestration using configuration management tool Ansible to deploy more than 50 microservices on different environments.
- Setup Load Balancing using ELB and Autoscaling in just three days.
- Monitored the complete application infrastructure using CloudWatch and set up notifications using SNS.
- Served as a single point of contact for all day-to-day tasks related to automation, web server (nginx), SSL, staging/QA/dev env issues.
- Written many shell/python scripts to automate our day-to-day tasks using AWS SDK Boto.
- Used python library (Troposphere) to automatically build our cloudformation scripts for different environments.
- Responsible for fixing/reporting bugs/issues on production.

6. Hadoolytics (Arnav - Real Estate Project)

Duration : Apr 2015 to Sep 2015

Technical Skills : EC2, RDS, CloudFormation, S3, ElasticSearch, Kafka, Spark, Kibana, Linux, Shell Scripting

Project Description:

It was a Real Estate Project like MagicBricks.com. Client did not make it live yet due to market constraints. It was built in Java/Spring on AWS.

Responsibilities:

- Make efforts to build a self healing and self managing system.

- Written Shell Scripts for Backup/Restore for Cassandra and Elasticsearch and automated it.
- Did configuration optimization for Cassandra, Elasticsearch, Tomcat, Spark and Kafka.
- Write CloudFormation scripts for all the stack components and setup Auto Scaling for all the clusters in the architecture.
- Implemented Disaster Recovery process for all the components in the architecture. If any server in any cluster goes down, it will bring up new server with the same state in just 5 mins.
- Implemented SonarQube to review the quality of the code and JMeter to do the load testing.
- Responsible for all the AWS, build and deployment related tasks.
- Setup CloudWatch metrics for CPU, Memory and Disk Space Utilization.
- Done POC on Packer, Ansible, Docker, and Jenkins.
- Started on Hadoop (HDFS, Mapreduce) and played with HDP Sandbox Environment. Also learnt Core Java concepts.

7. Ubertor (StackExpress)

Duration : Oct 2014 to Mar 2015

Technical Skills : Chef, vagrant, Git, Tomcat Solr, Redis, Apache, Nginx, Logrotate, Nagios, Zookeeper, Cassandra, Storm, HAProxy, SupervisorD, Graphite, Scribed

Project Description:

It was an app to organize events and trips with your friends, colleagues. More or less, just to hang with your friends mostly on weekends. It lets you see what your friends are doing in the future.

Responsibilities:

- Setup complete staging environment equivalent to 15 production servers using Chef Configuration Management Tool.
- Primarily responsible for providing day-to-day consultation for operations issues.
- Configured highly available, self managed, auto scaled Chef Server with automatic restore and backup.
- Automated the whole process using AWS technologies: CloudFormation, EC2, S3, SNS, ELB, Route 53, RDS, SQS etc.

8. PayrollHero (StackExpress)

Duration : May 2014 to Mar 2015

Technical Skills : CloudFormation, EC2, S3, SNS, ELB, Route 53, RDS, SQS

Project Description:

PayrollHero provides consumer friendly Time, Attendance, Scheduling and Payroll in the cloud for web and mobile.

Responsibilities:

- Within two weeks of starting, I started resolving issues and became the primary DevOps professional for the client.
- Within two weeks I understood the client's infrastructure and technology stack, started resolving their issues and started working on assigned tasks and became primarily responsible for day to day DevOps issues/services.
- Understood their Solr Cluster and worked on their tasks.
- Understood their central log rotation policy and modified according to their needs using Log Rotation, Scribed and S3.
- Completed various tasks (Config changes, Enable Staging/Production Alerts, Monitoring) related to Nagios, Munin and Graphite using Chef recipes.
- Upgraded 12 production Cassandra nodes from v1.2 to v2.1. Upgraded Opscenter and DataStax Agents to 5.1.
- Worked on many scheduled AWS maintenance of production nodes.
- Doubled the Cassandra Cluster production capacity to 24 servers. Performed various tasks related to Cassandra Repair/Backup using nodetool command.

9. Hangtime (StackExpress)

Duration : Feb 2014 to Jul 2014

Technical Skills : Chef, vagrant, Git, Tomcat, Solr, Redis, Apache, Nginx, Logrotate, Nagios, Zookeeper, Cassandra, Storm, HAProxy, SupervisorD, Graphite, Scribed

Project Description:

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Responsibilities:

- Setup complete staging environment equivalent to 15 production servers using Chef Configuration Management Tool.
- Primarily responsible for providing day-to-day consultation for operations issues.
- Configured highly available, self managed, auto scaled Chef Server with automatic restore and backup.
- Automated the whole process using AWS technologies: CloudFormation, EC2, S3, SNS, ELB, Route 53, RDS, SQS etc.

10. Lyterati (ESIPL)

Duration : May 2012 to Dec 2013

Technical Skills : Python, Django, Data Structures, Algorithms, MySQL, HTML, CSS, JavaScript, jQuery, Ajax, Facebook APIs, Sphinx, Crispy forms, Haystack and Solr search, Dajax, Dajaxice, Django AutoComplete Light

Project Description:

Lyterati is a comprehensive enterprise-level software that provides senior university leaders with an integrated and paperless view of faculty contributions, appointments, P&T, and productivity supported by CV loading services that enable faculty and administrators to find value on day one.

Responsibilities:

- Developed the Configuration Utility for the application.
- Developed several reports in Pentaho Reporting Tool.
- Developed some components in UI/UX Design.
- Wrote test cases for Load Testing using JMeter.
- Worked on Document Creation Utility.
- Developed various small features and deployed the application on AWS.

11. Claret (ES IPL)

Duration : May 2012 to Aug 2012

Technical Skills : Python, Django, JavaScript, jQuery, Ajax, AutoComplete

Project Description:

This is a Laboratory Information Management System (LIMS).

Responsibilities:

- Responsible for UI/UX design.
- Prepared wireframes to demonstrate functionality.
- Designed and developed barcode generation utility.
- Done (POC) of the technology stack is being used in the project.

Education

- **Bachelor of Technology (74.32%)** 2007 – 2011
College of Engineering Roorkee, Uttarakhand, India
Major: Information Technology
- **Intermediate (82.60%)** 2004 – 2006
Janta Inter College, Rudrapur, Uttarakhand, India
Major: PCM
Achievement: Secured 20th rank in state level merit list

Deepak Agrawal