Bala Krishna A

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AWS DevOps Engineer | CI/CD Expert | Terraform | Kubernetes | Cloud Infrastructure Automation

PROFESSIONAL SUMMARY

DevOps Engineer with over **4 years** of strong experience in **CI/CD automation**, **cloud infrastructure provisioning**, **infrastructure as code (IaC)**, and **container orchestration**. Proficient in managing complex deployments across **AWS** and **Azure** environments using tools like **Terraform, Jenkins, Ansible, Docker, and Kubernetes**. Proven expertise in optimizing deployment processes, increasing delivery velocity, and ensuring infrastructure scalability, security, and resilience. Adept at collaborating with cross-functional teams to automate workflows, implement DevOps best practices, and streamline release cycles.

- Expertise in CI/CD implementation using Jenkins, Azure DevOps, GitHub Actions, Argo CD .
- Extensive hands-on experience with AWS (EC2, S3, VPC, IAM, CloudWatch,EKS,ECS,API Gateway ,ELB) and Azure (AKS, App Service, API Management).
- Skilled in provisioning infrastructure using Terraform and Ansible for cloud-native and hybrid environments.
- Proficient in containerization with Docker and orchestration using Kubernetes/AKS.
- Built automated deployment pipelines reducing release times by over 50%.
- Strong scripting skills using Shell, Bash, YAML, Python and JSON for automation.
- Experience working with microservice architectures and distributed systems
- Experience in configuration and security using SSL/TLS certificates, IAM roles.
- Familiar with Agile/Scrum practices, Sprint cycles, and release planning.
- Skilled in application deployments to Apache Tomcat, Nginx, and Azure App Service.
- Expertise in monitoring and log management with Nagios, Grafana, ELK Stack.
- Developed reusable playbooks, Docker images, and CI/CD templates for faster rollout.
- Successfully deployed microservices on Kubernetes with service discovery and scaling.
- Experience working with DevSecOps pipelines and managing code vulnerabilities.
- Adept at collaboration, documentation, and mentoring teams in DevOps best practices.
- Hands-on experience using AI tools like GitHub Copilot and ChatGPT to accelerate coding, automation, troubleshooting, and documentation.

TECHNICAL SKILLSET

CI/CD & Build Tools: Jenkins, Azure DevOps, GitHub Actions, Maven, Ant, Argo CD, Argo Rollouts.

Cloud Platforms: AWS (EC2, S3, VPC, IAM, CloudWatch, ELB, EKS, ECS, Lambda, AWS Glue, App Runner, AWS **Karpenter,** Step Functions, API Gateway, AWS Batch, Redis, Amazon MSK, Code Build, Code Deploy, Code Pipeline), Azure (AKS, App Service, API Mgmt), IBM (OMS Sterling)
Infrastructure as Code: Terraform, CloudFormation
Configuration Management: Ansible
Containerization & Orchestration: Docker, Kubernetes (AKS,EKS, ECS), Helm
Version Control Systems: Git, GitHub, Bitbucket, SVN
Monitoring & Logging: Nagios, Grafana, Prometheus, ELK Stack (Elasticsearch, Logstash, Kibana)
Web/Application Servers: Apache, Nginx, Tomcat
Scripting & Automation: Shell scripting, Bash, YAML, JSON, Python
Repository Management: Nexus Repository Manager

Bug/Issue Tracking: JIRA, ServiceNow
Security & Access Mgmt: IAM (AWS), SSL/TLS, Secrets Management (Azure Key Vault, AWS SSM)
Operating Systems: Red Hat, CentOS, Ubuntu, Windows

PROFESSIONAL EXPERIENCE

Barnes & Noble Education (BNED) – DevOps Engineer
Duration: July 2022 – Present
Role: DevOps Engineer
Worked across three major enterprise platforms, AIP (Adoption & Insights Portal), DDP (Direct Digital Platform), and FDC (First Day Complete), Courseware Platform, IBM Sterling Order Management System (OMS) supporting large-scale AWS cloud infrastructure, CI/CD automation, observability, deployments, and operational excellence.

Project 1: Courseware Platform

A digital platform for professors and students to share and collaborate on academic course materials and content.

Roles & Responsibilities:

- Built automated CI/CD pipelines with Jenkins, GitHub, and Terraform.
- Provisioned EC2, ASG, ALB, VPC, security groups, and custom AMIs.
- Implemented Terraform modules for reusable infrastructure provisioning.
- Deployed Java applications on Apache Tomcat & Nginx.
- Configured CloudWatch alarms, logs, dashboards.
- Automated configuration using Ansible.
- Managed DNS, SSL, S3, snapshots, AMI lifecycle.
- Performed AWS cost optimization (unused AMIs, EBS, snapshots, EC2 right-sizing).
- Implemented DR strategy (backups, snapshots, multi-AZ)
- Performed extensive AWS cost optimization (unused AMIs, snapshots, idle EC2, EBS cleanup, resource right-sizing).
- Designed and implemented complete Disaster Recovery strategy, including automated backups, multi-AZ failover, and cross-region snapshots.

Impact & Achievements:

- Improved release delivery speed by 40% by automating end-to-end CI/CD pipelines using Jenkins & Terraform.
- Achieved 99.99% system uptime through Auto Scaling, load balancers, and CloudWatch-driven tuning.
- Reduced AWS monthly cost by 25% by cleaning unused AMIs, EBS volumes, snapshots, and right-sizing EC2.
- Implemented AMI & S3 lifecycle policies saving 30% storage overhead monthly.
- Strengthened platform reliability with automated backups, DR strategy, and multi-AZ failover.
- Reduced manual deployment effort by 80% using Ansible automation and reusable IaC modules.
- Delivered 25–30% cost reduction through automated cleanup and monitoring of unused resources.
- Ensured business continuity with a robust DR strategy improving RTO/RPO significantly.

Tools/Environment: AWS (EC2, ELB, CloudWatch, VPC), Terraform, Jenkins, Git, Ansible, Apache, Nginx, Tomcat, Nagios, RedHat, Shell scripting

Project 2: Direct Digital Platform **(DDP)**

DDP is the central data hub and processing engine for BNED's digital education ecosystem. It acts as the "source of truth" for all institutional data, including courses, sections, enrollments, adoptions, and roster information.

Roles & Responsibilities:

- Designed EKS CI/CD pipelines using Jenkins and ArgoCD.
- Migrated services from ECS → EKS (hybrid architecture).
- Managed **Amazon MSK (Kafka)** and IBM MQ pipelines.
- Implemented autoscaling using **AWS Karpenter**.
- Managed Helm charts, Ingress, RBAC, namespaces, secrets.
- Built dashboards for MSK, ingestion health, EKS workloads.
- Conducted rolling/blue-green deployments.
- Implemented DR for EKS, RDS, MSK using cross-region replication.

Impact & Achievements:

- Reduced cluster cost by ~30% using Karpenter-driven autoscaling and optimized node provisioning.
- Increased pipeline stability by 60% through improved Jenkins/ArgoCD workflows and automated validation.
- Achieved 99.9% uptime for EKS microservices through scaling, failover, and GitOps automation.
- Improved data processing performance by 35% by optimizing MSK pipelines and ETL workflows.
- Enabled cross-region disaster recovery reducing RTO to under 15 minutes.
- Standardized Helm charts and GitOps structure, reducing deployment errors by 70%.

Tools/Environment: EKS, App Runner, API Gateway, Docker, Helm, Secrete manager, Git, Istio, Argo CD, AWS Karpenter

Project 3: FDC (First Day Complete)
FDC is a comprehensive course material delivery program offered by BNED. Its primary goal is to ensure that every student receives all required course materials (digital and/or physical) automatically by the first day of class, typically bundled as part of tuition or fees.

Roles & Responsibilities:

- Managed ECS microservices with Fargate, service discovery, blue/green deployments.
- Automated ETL & batch processing using Glue, Step Functions, EMR, AWS Batch.
- Implemented event-driven workflows (Lambda + MSK + MQ).
- Built Redis caching for real-time performance.
- Designed CodeBuild/CodeDeploy pipelines.
- Implemented multi-environment VPC deployments.
- Managed DR with multi-region backups and restore automation.

Impact & Achievements:

- Improved student material delivery reliability to 99.99% via ECS Fargate HA + blue/green deployments.
- Reduced compute costs significantly by optimizing EMR cluster sizing and Batch workloads.
- Cut release failures by 50% by implementing end-to-end CodeBuild + CodeDeploy automation.
- Reduced ingestion latency by 40% using Redis caching optimization.
- Achieved robust disaster recovery posture with multi-region replication and automated restore procedures.
- Decreased incident resolution time by 35% using centralized CloudWatch + Grafana dashboards.

Tools/Environment: ECS, Lambda, EMR, Glue, Step Functions, API Gateway, AWS Batch, Redis, Amazon MSK, IBM MQ, VPC, **CodeBuild, CodeDeploy, S3,**

Project 4: AIP (Adoption & Insights Portal)

AIP stands for **Adoption Information Platform**. It is a system used primarily in educational institutions to manage and streamline the adoption of course materials

Roles & Responsibilities:

- Managed ECS workloads, scaling, routing, logging.
- Automated nightly ingestion pipelines using Glue, ECS, Step Functions.
- Integrated MSK + MQ for event-driven flows.
- Implemented Redis caching for fast search responses.
- Built monitoring for ingestion failures & export delays.
- Managed CodeBuild & CodeDeploy for ECS/Lambda.

Impact & Achievements:

- Increased data ingestion throughput by 45% using optimized Glue, ECS ELT pipelines, and MSK workflows.
- Improved application responsiveness by 30% by deploying Redis caching for catalog search.
- Reduced deployment time by 60% through automated CI/CD for ECS + Lambda services.
- Achieved 99.99% uptime with HA ECS clusters and multi-AZ architecture.
- Reduced recovery time objective (RTO) by 50% through DR automation and cross-region backups.
- Enhanced observability and reduced debugging time by 40% with centralized monitoring dashboards.

Tools/Environment: ECS, Lambda, EMR, Glue, Step Functions, API Gateway, AWS Batch, Redis, Amazon MSK, IBM MQ, VPC, **CodeBuild, CodeDeploy, S3,**

Project 5: IBM Sterling Order Management System (OMS)

Order orchestration and fulfillment platform for optimizing inventory and delivery processes.

Roles & Responsibilities:

- Built Jenkins CI/CD for OMS builds & releases.
- Automated JAR creation and artifact deployments.
- Managed SSL certs, staging tests, go-live, and rollbacks.
- Configured logging & monitoring for OMS nodes.
- Created SOPs & troubleshooting documentation.
- Designed DR with automated CDT backups.

Impact & Achievements:

- Reduced deployment cycle time by 70% through automated Jenkins CI/CD for OMS builds & releases.
- Reduced production issues by 30% by developing SOPs and structured troubleshooting documentation.
- Achieved quicker rollbacks and safer releases through automated CDT backups.
- Improved cross-team productivity by providing training to L2/L3 teams and standardizing build workflows.

Tools/Environment: IBM Sterling OMS, Jenkins, Git, Linux, Shell, Apache, SSL, JIRA

EDUCATION

B.Tech in Computer Science and Engineering
Jawaharlal Nehru Technological University Hyderabad (2014 – 2018)