KHADGA BAHADUR SHRESTHA

Senior Software Engineer | DevOps Engineer
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PROFESSIONAL SUMMARY

Senior Software Engineer and DevOps Engineer with 7+ years of experience building scalable applications and managing highly available cloud infrastructure. Experienced in managing large-scale microservices with strict uptime SLAs. Expert in AWS infrastructure automation, Kubernetes orchestration, CI/CD pipeline design, and full-stack development (Flutter, React.js, Node.js). Working knowledge of multi-cloud environments including Google Cloud Platform (Cloud Run, Firebase) and Microsoft Azure. Proven track record of significantly reducing deployment time, optimizing infrastructure costs, and improving mean time to detection. Strong background in database operations, disaster recovery planning, and architecture design for mission-critical systems.

CORE COMPETENCIES

Cloud Infrastructure: AWS (VPC, EC2, ECS, RDS, ElastiCache, S3, ALB, Auto Scaling, DMS, SQS, Route 53, Elastic Beanstalk, App Runner, CloudWatch, Amazon MQ), Terraform, Infrastructure as Code

Multi-Cloud: Google Cloud Platform (Cloud Run, Firebase, Cloud Functions, Firestore), Microsoft Azure (App Service, AKS, Blob Storage, Virtual Networks, Container Instances)

Container Orchestration: Kubernetes, Docker, ArgoCD, FluxCD, Helm Charts, GitOps, k3d

CI/CD & Automation: GitHub Actions, Jenkins, GitLab CI/CD, Blue-Green Deployments, Rolling Deployments, Pipeline Optimization

Databases & Messaging: MongoDB Atlas, PostgreSQL, TimescaleDB, Redis, RabbitMQ, AWS DMS, Database Migration, Query Optimization

Monitoring & Reliability: New Relic, AWS CloudWatch, Prometheus, Grafana, Root Cause Analysis, Incident Management, SRE Practices

Development: Flutter, React.js, Node.js, Express.js, Python, TypeScript, JavaScript, REST APIs, Clean Architecture, OAuth 2.0

PROFESSIONAL EXPERIENCE

Senior Software Engineer / DevOps Engineer | **PortPro Pvt. Ltd.**   Sep 2021 – Present
Kathmandu, Nepal

Cloud Infrastructure & Architecture

- Architected and automated AWS infrastructure using Terraform modules for VPC, EC2, ECS (Fargate & EC2), App Runner, ALB, and Auto Scaling Groups, managing multi-region deployments.
- Provisioned, configured, and monitored managed services including Amazon RDS (PostgreSQL), ElastiCache (Redis), and Amazon MQ (RabbitMQ), ensuring high availability and optimal performance for production workloads.
- Managed and maintained AWS Elastic Beanstalk and App Runner environments for application deployment, scaling, and lifecycle management.
- Configured and managed Amazon Route 53 for DNS management, domain routing, health checks, and failover strategies across production environments.
- Designed high-availability production systems supporting large-scale microservices architecture with strict uptime requirements.
- Implemented environment segregation across development, staging, and production with secure IAM policies and VPC peering strategies.
- Performed infrastructure cost optimization through right-sizing, automation, and efficient resource management, significantly reducing cloud expenditure.
- Deployed and managed containerized applications on Google Cloud Run and Firebase Cloud Functions, leveraging serverless architecture for scalable and cost-effective service delivery.
- Worked with Microsoft Azure services including Azure App Service, Azure Kubernetes Service (AKS), Azure Blob Storage, Azure Container Instances, and Azure Virtual Networks for multi-cloud deployments.

Containerization & Orchestration
- Built and maintained production Kubernetes clusters with k3d, implementing GitOps workflows using ArgoCD for declarative infrastructure management.
- Containerized applications using Docker and managed orchestration via Amazon ECS and Kubernetes, optimizing container images for improved build times and deployment efficiency.

CI/CD & Deployment Automation
- Designed and maintained comprehensive CI/CD pipelines using GitHub Actions and Jenkins, significantly reducing deployment time and improving reliability.
- Implemented blue-green and rolling deployment strategies for zero-downtime releases across all production services.
- Created deployment automation tools and scripts for ECS services, enabling rapid hot-fix release strategies for critical bug resolution.

Monitoring, Reliability & Incident Management
- Implemented centralized monitoring using New Relic, AWS CloudWatch, Prometheus, and Grafana, significantly reducing mean time to detection (MTTD).
- Conducted root cause analysis for production incidents, creating detailed runbooks and documentation for 24/7 support teams.
- Maintained high uptime SLA across all critical microservices through proactive monitoring and rapid incident response.

Database & Data Operations
- Administered MongoDB Atlas clusters at scale, performing daily monitoring, query optimization, and capacity planning for high-traffic applications.
- Executed large-scale data migrations of 60 million+ records using custom SQL scripts and batch processing strategies, ensuring zero downtime throughout the migration process.
- Executed complex database migrations using AWS DMS across PostgreSQL, TimescaleDB, and Redis deployments with zero downtime.
- Performed MongoDB database migrations, backup, and restore operations from MongoDB and PostgreSQL snapshots, ensuring data integrity and recoverability.
- Designed and executed database schema migrations and structural operations, managing evolving data models across multiple environments.
- Designed database schemas, implemented indexing strategies, and optimized query performance for improved response times.

Disaster Recovery & Business Continuity
- Designed and implemented disaster recovery procedures with strict Recovery Time Objectives (RTO) for critical services, conducting quarterly DR drills.
- Implemented multi-region redundancy strategies and automated backup solutions for databases and critical applications.

Application Development & Mobile Engineering (Lead)
- Led mobile application design and development using Flutter with Clean Architecture, serving as the lead mobile developer responsible for end-to-end delivery of iOS and Android applications.
- Coordinated with backend engineering teams to define API contracts, ensure seamless integration, and resolve cross-team technical dependencies.
- Integrated third-party SDKs and services including barcode/QR scanners, mapping services, turn-by-turn navigation, push notifications, and analytics platforms.
- Implemented crash reporting and analysis workflows using monitoring tools, proactively identifying and resolving application stability issues to reduce crash rates.
- Managed complete mobile release lifecycle including version control, App Store and Google Play Store submissions, and hot-patch updates using Shorebird for rapid production fixes without app store approval delays.
- Developed and maintained features for enterprise web applications using React.js, TypeScript, and Node.js with modern state management patterns.
- Developed and integrated backend services with RESTful APIs, third-party services, and implemented secure authentication mechanisms using OAuth 2.0 and Firebase Authentication.
- Managed private Node.js package integration and package storage on GitHub Registry, maintaining internal shared libraries across teams.

- Wrote comprehensive test cases including unit tests, integration tests, and end-to-end tests; implemented automated test suites in CI/CD pipelines.

Mobile Application Architect & Full Stack Developer | **Parentiv**   Jan 2019 – Sep 2021
Remote

- Designed application architecture using Flutter with Clean Architecture patterns and state management solutions for child care management platform serving thousands of users.
- Architected serverless backend infrastructure using Firebase Cloud Functions, Firestore, and Firebase Authentication, handling real-time data synchronization, offline capabilities, and secure multi-tenant access control.
- Built administrative web dashboard using React.js, later migrated to Flutter Web for code sharing and cross-platform consistency.
- Implemented CI/CD pipelines for automated building, testing, and deployment of iOS and Android applications, significantly reducing release cycle time.
- Optimized application performance achieving fast cold start times and smooth rendering across all supported devices.

Full Stack Developer | **Paailatechnologies**   May 2018 – Oct 2019
Biratnagar, Nepal

- Designed and developed RESTful APIs using Laravel framework with optimized MySQL database schemas for job portal and television channel applications.
- Built cross-platform mobile applications using Flutter integrated with Laravel backend APIs for seamless data synchronization.
- Managed complete application lifecycle from development to App Store and Google Play Store releases.

Junior Web Developer | **Delta Tech**   Mar 2016 – May 2018
Biratnagar, Nepal

- Developed responsive web applications using HTML5, CSS3, JavaScript, Bootstrap, and backend services using PHP and CodeIgniter framework.
- Integrated third-party services including Google Sign-In authentication and Google Sheets API for data management.
- Delivered web solutions for e-commerce platforms and business applications across the complete software development lifecycle.

KEY ACHIEVEMENTS

- Successfully designed, developed, and released PortPro Driver Application and PortPro Owner Operator Application to both Google Play Store and Apple App Store, maintaining stable production releases serving logistics operations.
- Maintained high uptime SLA across 100+ critical microservices for 3+ years at PortPro Technologies.
- Significantly reduced deployment time through automated CI/CD pipelines and optimized container images.
- Reduced infrastructure costs through right-sizing, automation, and efficient resource management.
- Successfully migrated multiple production databases with zero downtime using AWS DMS and blue-green deployment strategies.
- Designed disaster recovery procedures with strict RTO targets, validated through quarterly DR drills.
- Contributed to architecture designs that substantially improved system scalability.
- Significantly reduced release cycle time at Parentiv through CI/CD automation for mobile applications.

EDUCATION

Bachelor of Science in Computer Science and Information Technology (BSc CSIT) 2016 – 2020
Tribhuvan University, Biratnagar

CERTIFICATIONS

- AWS Certified Solutions Architect – Associate
- AWS Certified Cloud Practitioner
- Kubernetes for Absolute Beginners

- Terraform Basics Training
- GitOps with ArgoCD
- MongoDB CRUD Operations in Node.js
- Docker Training Course