

Saurav Karki

DevOps Engineer

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I am a BIT graduate with experience in DevOps and cloud-native technologies. Worked in HA Kubernetes (RKE2, EKS, K3s, LKE, ECS), networking (Ingress controllers, Envoy, MetalLB, Kubernetes Gateway API, Cloudflare, VPC, Subnets), and secure server hardening. Also Familiar with automation, CI/CD, and observability to deliver zero-downtime, scalable, and secure systems.

Technical Skills

Cloud and Virtualization Technologies	AWS EC2, EKS, AKS, Azure Devops Services, Google computer engine, RDS, S3, Lambda, ECR, ECS, AWS Glacier, VPC, DynamoDB, Code Pipeline, Cloud Formation, Linode Kubernetes Engine, Proxmox and VMware virtualization.
Server Administration	Linux hardening, firewall (iptables, ufw, security groups), system patching, DNS/DHCP.
Container Technologies	Docker, Kubernetes
Scripting	Shell and Python
Version Control System	Git, GitHub and Gitlab
IAC & Configuration Management	Ansible , Terraform
Networking & Security	IPsec VPN (Libreswan), Cloudflare, MetalLB, Envoy Gateway, Gateway API, Ingress
CI/CD & DevSecOps	GitHub Actions, Jenkins, FluxCD and Argo CD , SonarQube, Trivy , SEIM, falco, trufflehog, OWASP, CheckOV.
Observability	Grafana, New Relic, Prometheus, Loki, fluentd.
Build & Testing	Maven, Gradle, Selenium
Web Servers & Proxies	Nginx, Traefik, HA proxy
Automation	N8n, kestra (Just exploring)

Professional Summary

Hamro Patro Inc, Kathmandu — *DevOps Engineer Intern/Trainee*

APR 2025 - Present

- Managed and secured **Linux-based production servers**, performing system hardening, patch management, firewall configuration, monitoring, and deep troubleshooting of OS, network, and application-level issues.

- Designed, deployed, and operated **high-availability Kubernetes (RKE2) clusters**, hosting **multiple microservices** with rolling updates, zero-downtime deployments, failover mechanisms, and production-grade reliability.
- Implemented **service routing, ingress, and load balancing** using **Envoy Gateway, MetalLB, and Cloudflare**, ensuring secure, scalable, and highly available access to services.
- Deployed and operated **microservices-based architectures**, applying **system design and distributed systems principles** such as loose coupling, fault tolerance, scalability, and resiliency.
- Built **event-driven systems** using **NATS and Kafka**, integrating message-based communication between microservices and enabling asynchronous processing and horizontal scaling.
- Configured **NATS clusters and SuperClusters** across data centers, supporting **multi-DC communication, fault tolerance, and disaster recovery (DR)** scenarios.
- Set up and maintained **distributed data stores** including **ScyllaDB (multi-cluster, multi-data center)** and **PostgreSQL**, performing replication experiments, failover testing, and **DR drills** to validate resilience.
- Worked with **Redis and Elasticsearch** to support caching, search, analytics, and high-performance data access for microservices-based applications.
- Implemented **GitOps workflows using FluxCD**, enabling declarative Kubernetes deployments, automated reconciliation, and environment consistency across clusters.
- Built **CI/CD pipelines** for Java applications (**Micronaut, Spring Boot**), automating builds, containerization, testing, and deployments to Kubernetes.
- Configured **automated Docker image builds** using **Docker Hub runners**, enabling CI-triggered builds, versioned images, and secure image delivery pipelines.
- Deployed comprehensive **monitoring and observability stacks** including **ELK, Prometheus, Grafana, InfluxDB, Uptime Kuma, and Kubernetes Dashboard** for metrics, logs, alerting, and real-time visibility.
- Conducted **load testing, capacity planning, and fault-injection exercises** to evaluate system performance, scalability limits, and failure behavior under stress.
- Implemented **site-to-site IPsec VPN tunnels** for secure connectivity between local environments and remote data centers.
- Managed **virtualization platforms** such as **Proxmox and VMware**, enabling automated VM provisioning, resource optimization, and infrastructure lifecycle management.
- Worked with **AWS services**, provisioning and managing **EC2 instances and S3 buckets** for compute and object storage use cases.
- Utilized **DigitalOcean Spaces** as an **S3-compatible object storage solution**, integrating it into application storage and backup workflows.
- Collaborated with **ML engineering teams** to containerize and deploy machine learning models on Kubernetes with autoscaling and production monitoring support.

Ultrabyte International Pvt.Ltd — Office Assistant/QA

APR 03 , 2023 - AUG 16, 2024

- Managed and automated routine office tasks to make daily operations smoother.

- Tested websites and software to ensure they worked properly (CRM, MIS systems).
- worked closely with different teams to support their day-to-day tasks and improve teamwork.
- Organized and prioritized tasks to help the office run more efficiently
- Resolved technical issues in office systems to minimize disruptions.
- Helped coordinate projects and made sure tasks were completed on time.
- Maintained accurate records and documentation of technical and administrative activities.

EDUCATION

Amrit Campus — *Bachelors In Information Technology (BIT)*

June 2021 - July 2025
Computer Science

Course and Certification

DevOps Beginners to Advance with Projects

Instructor: Imran Teli (Udemy)

December 2024

● Key Topics Covered:

- **Cloud Platforms:** AWS fundamentals, managing EC2, S3, EKS, RDS, Elastic Beanstalk and setting up scalable cloud infrastructure.
- **Operating Systems:** Linux command-line essentials and shell scripting for automation.
- **Automation Tools:** Worked in Ansible for infrastructure configuration and management.
- **Containerization:** Docker for creating, managing, and deploying containerized applications.
- **Orchestration:** Kubernetes for deploying and scaling microservices and managing clusters.
- **CI/CD Pipelines:** Maven, Jenkins, and GitHub Actions for automating build, test, and deployment processes.

PROJECTS

1. Production-Ready HA Kubernetes Cluster

- Designed and deployed a **multi-node RKE2 Kubernetes cluster** with **MetalLB, Envoy Gateway, and Cloudflare** integration.
- Implemented minimum downtime deployments, **service-level load balancing**, and secure traffic routing.
- Enabled resilient networking and high availability for critical applications.

2. End-to-End CI/CD & DevSecOps Pipeline

- Built a CI/CD pipeline using **Jenkins, Maven, Docker, Trivy, SonarQube, Nexus**, and **ArgoCD**.

- Automated build, test, containerization, and deployment of Java microservices to Kubernetes.
- Ensured security, compliance, and **GitOps-based** continuous delivery for production-grade systems.

3. DevOps of Java Micronaut Web Application

- Containerized and deployed a Java Micronaut app in **k3s Kubernetes cluster** with **custom domain, SSL, and monitoring dashboards**.
- Automated deployments and ensured scalability, resilience, and performance tracking.

4. Expense Tracker – Three-Tier Application on AWS EKS

- Deployed a Dockerized React + Node.js + PostgreSQL application on **Amazon EKS** using **Kubernetes manifests**.
- Automated infrastructure provisioning with **Terraform (EKS, RDS, IAM)**.
- Configured **Ingress, custom domain, and TLS** (Let's Encrypt) for secure external access.
- Implemented **secure VPC networking, SSL/TLS certificates**, and domain integration via **Route53** and **Cloudflare**.
- Applied monitoring and observability using **Prometheus, Grafana, and ELK** for real-time infra insights.

Portfolio:

<https://ksaurav.com.np>