AJAY AKILAN

Site Reliability Engineer | DevOps · Platform Engineering

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PROFESSIONAL SUMMARY

Site Reliability Engineer with 5 years operating Zoom's global instant-messaging platform — billions of requests daily on multi-cloud infrastructure spanning AWS, Azure, and OCI. Specialized in migrating live production systems without downtime, building reliability and release tooling in Python, and delivering multi-region active-active architectures. Combines software development with full production ownership: on-call, incident command, capacity, and cost across the service lifecycle.

KEY METRICS: 15 Global Clusters | 99.99% Availability | 5-Year Incident-Free Change Record | CKA Certified

TECHNICAL SKILLS

Cloud & Infrastructure: AWS (EKS, EC2, Route 53, DynamoDB, VPC, IAM, Lambda, ElastiCache), Azure (AKS, Cosmos DB, Functions), OCI; Terraform, Ansible
Kubernetes & Delivery: Kubernetes (CKA), Docker, Tekton, Jenkins; canary, blue-green, and rolling deployment strategies; Git-based delivery and release workflows
Programming & Automation: Python (boto3, CLI tooling, automation frameworks), Bash
Observability & Reliability: Prometheus, Grafana, ELK, SLI/SLO design, alerting architecture, incident management, capacity planning
Networking & Security: NGINX/OpenResty, NLB/ALB, DNS at scale, VPC peering, TLS certificate lifecycle, Linux production debugging (strace, netstat, lsof)

PROFESSIONAL EXPERIENCE

ZOOM VIDEO COMMUNICATIONS Bangalore, India
Site Reliability Engineer (DevOps) — Instant Messaging Platform *July 2021 – Present*

Service owner for Zoom's core instant-messaging microservices — backend APIs, real-time XMPP messaging, and the public edge — with end-to-end production responsibility for releases, incidents, capacity, and cost. Scope grew from single-service operations to leading fleet-wide infrastructure programs: replatforming, multi-region resilience, and release automation.

Zero-Downtime Infrastructure Migration

- Led the replatform of the public-facing edge layer (OpenResty → NGINX Plus) across the global production fleet on AWS and OCI, using phased traffic cutovers with automated verification and failover validation at each stage — completed with zero customer impact and a 50% reduction in edge infrastructure cost on the largest cluster.
- Owned the EC2-to-Kubernetes (EKS) migration of the messaging microservices within a company-wide containerization program — built the Terraform and Tekton deployment pipelines with embedded verification, cutting deployment time from hours to under 3 minutes and rollback to under 2 for services sustaining peak traffic above 1M packets per second.
- Executed the Redis-to-Valkey cache-layer transition as a documented, repeatable process adopted as the team standard, and retired the legacy edge stack through staged decommission with full DNS, certificate, and monitoring cleanup.

Reliability Engineering Through Software

- Built the automated release-verification framework for the messaging services — evolved from Bash and Ansible scripts into gates embedded in a Tekton-based deployment platform, validating every pod in every production release — and co-developed the parallelized deployment workflow that together cut the multi-cluster release cycle from 7 hours to 52 minutes.
- Developed a Python CLI for production DNS operations on a 100,000+ record Route 53 zone: resolution-chain tracing with live health-check overlay, bulk weight changes behind a preview–confirm–apply safety flow, and per-change audit logging. Primary tooling for all traffic cutovers; packaged and distributed to global DevOps

teams.

- Automated the TLS certificate lifecycle for the global edge — zero-downtime rotation using Kubernetes Secrets with isolated pre-production validation — and built Python utilities for multi-repository management, AWS operations, and log analysis, eliminating 10–15 hours of manual work weekly.

Multi-Region Architecture & Multi-Cloud Operations

- Led the active-active rollout for the chat backend and edge services across 14 of 15 production clusters — dual-region live-traffic architecture with weighted DNS routing and failover integrated with an internal traffic-orchestration console — eliminating single-region dependency at near-zero recovery time.
- Built production clusters from the ground up on three clouds, including a full-lifecycle OCI region delivery — infrastructure, five services, active-active enablement, and edge migration — and earlier builds on segregated AWS accounts meeting government data-residency and compliance requirements.
- Incident commander for the messaging estate, on-call from the third month of tenure: resolved hundreds of P0/P1 events alongside NOC, development, and platform teams, converting every incident into post-mortem-driven monitoring, alerting, and runbook improvements.

Additional Scope

- Drove cost optimization across owned services through instance right-sizing, storage-mode tuning (DynamoDB, ElastiCache), and Kubernetes resource refinement — six-figure annual savings with per-cluster spend reductions of 29–77%; authored the ongoing optimization roadmap.
- Led the observability migration for the messaging services from Grafana to an in-house metrics platform — hundreds of dashboards, severity-tiered alerting tied to runbooks, and SLI/SLO definitions co-owned with development.
- Onboarded two newly launched services through production and GA as lead DevOps co-owner; mentored 3–4 engineers and served as the standing escalation point across India, US, and China engineering teams.
- Executed ∼90% of global production releases from India through staged rollouts (canary → international → primary clusters), establishing the India team's full operational independence.

EDUCATION

Bachelor of Engineering (B.E.), Electronics and Communication Engineering
Madras Institute of Technology, Anna University — Chennai, India 2021

CERTIFICATIONS

Certified Kubernetes Administrator (CKA) — The Linux Foundation February 2025
Kubernetes and Cloud Native Associate (KCNA) — The Linux Foundation January 2025
AWS Certified Cloud Practitioner — Amazon Web Services April 2023

LANGUAGES

English — Full Professional Proficiency **Tamil** — Native