Bishwa Thapa

Lead DevOps Engineer at Plerion

+34 607 828 957 | thapabishwak@gmail.com | github.com/thapabishwa | linkedin.com/in/thapabishwa

Experience

PLERION PTY LTD — Feb 2023 - Present

LEAD DEVOPS ENGINEER - IaC AND KUBERNETES SECURITY

As the lead devops engineer of IaC and Kubernetes Security Team at Plerion, I was responsible for:

- Leading the inception and development of Kubernetes and IaC Security offering, taking complete ownership and steering their progression into scalable, resilient products capable of handling millions of cloud assets and findings.
- Developing a customer-aligned roadmap, and promptly delivering a high-quality, customer-facing product within months of joining the organization. Fostering cross-functional collaboration among product ownership, and leadership, and engineering teams to ensure strategic alignment with market demands.
- Transitioning from a solo engineer to building and leading a high-performing team of three software engineers capable of end-to-end product ownership.
- Adopting OSS(trivy and trivy-kubernetes) and actively contributing to the upstream to address feature gaps(QPS/Burst control, all-namespace scans, and resource exclusion) to ensure alignment with the Plerion product vision.
- Streamlining onboarding process, reducing device setup time from 2-3 days to 2 hours, benefiting over 10 subsequent hires, and enhancing organizational efficiency while reducing administrative overhead.

Team's tech stack: Typescript, Golang, AWS, Serverless Framework, Lambda, Step Functions, PostgreSQL, API Gateway, Kubernetes(EKS), Controller Runtime, Helm

ZSCALER INC — Jul 2019 - Jan 2023

SENIOR DEVOPS ENGINEER - PLATFORM TEAM — Promoted (Apr 2021)

As a core member of the Platform team of Cloud Browser Isolation, I was responsible for:

- Supporting operation and maintenance of dozens of K8S clusters spread across 10 AWS Regions.
- Implementing a proactive monitoring system to achieve 99.999% uptime globally and alerting on critical and major incidents to allow immediate response to ensure continuous global operational coverage.
- Re-architecting the entire ingress infrastructure to accommodate 20-30x more customers by designing a Global Ingress system. This system routes client requests to different data centers based on customer-defined Traffic Management Policies, and various data center performance indicators.
- Performing in-depth analysis of customer usage patterns, attributing them to AWS bills, and implementing a shared resource allocation model in Kubernetes, halving resource wastage while reducing cloud costs by approximately 40%.
- Enabling orthogonal communication to deliver cross-team initiatives and mentoring junior and mid-level engineers to understand the product so they can make clear-cut decisions about what to build and when.

DEVOPS ENGINEER II - PLATFORM TEAM

As one of the first few members of a new product team, I was responsible for:

- Using IaaC tools to implement the entire infrastructure from scratch in AWS Cloud and migrating the legacy application to the newly created infrastructure. Exposing metrics and scraping logs to allow distributed monitoring and tracing of applications in the future.

- Integrating the re-architected container-based browser isolation technology into the Zscaler Zero Trust Exchange, and deploying it in a global network of Kubernetes clusters to isolate the malicious browser traffic in the cloud. Designing the micro-services architecture to be highly scalable, fault-tolerant, and able to handle a high volume of traffic with minimal downtime.
- Reducing customer deployment time by ~95% and reducing the number of customer stuck in deployment pipeline by ~80%. Shrinking the cycle time of deployment pipeline from several weeks to couple of days and decreasing the time spent by customers waiting for the deployment to be completed. Packaging the automation used to achieve aforementioned milestones into a Kubernetes controller to further improve usability and reliability.
- Saving ~50% of the cloud costs using techniques such as automatic scaling of the nodes and pods, optimizing the resources allocated to the containers and pods, down-scaling the deployments outside of peak business hours, and finally moving most of the workloads over to Spot and Reserved Instances.

Team's tech stack: Golang, Python, AWS, Terraform, Ansible, Linux, PostgreSQL, Kubernetes(EKS), Prometheus, Grafana, Alert Manager, PagerDuty, Docker, Helm, Controller Runtime

VITAPIO GMBH **Jul 2018 - Jun 2019**

SOFTWARE ENGINEER - WEB APPLICATIONS

As the first member of the onsite team of Vitapio Portal, I was responsible for:

- Helping the management to relocate research and development operations from off-site to on-site. Helping to hire and onboard a team of technically competent engineering professionals.
- Quadrupling the performance of the application by rewriting all the features of the existing monolith on an extensible micro-service architecture. Refactoring helped to accommodate new features and functionalities, achieve scalability goals quicker, and select new technologies later down the road.
- Promoting early feedback and involvement from the stakeholders by enforcing software development practices, git-based workflows, continuous integration, continuous deployment, and testing.
- Increasing quality and throughput of the deliverables by ~30% which enabled the business to adapt rapidly and efficiently in response to changes in the market with innovative business solutions.

Team's tech stack: Python, Django Rest Framework, AWS, Ansible, Linux, PostgreSQL, NewRelic, Docker, ElasticSearch

OSS Contributions

- github.com/bridgecrewio/checkov
- github.com/aquasecurity/trivy
- github.com/aquasecurity/trivy-kubernetes
- github.com/vcfvct/ts-lambda-local-dev
- github.com/anexia-it/django-rest-passwordreset

Education

JACOBS UNIVERSITY BREMEN **BSC IN COMPUTER SCIENCE** **Sep 2015 - May 2018**

- Minor in Intelligent Mobile Systems.
- Awarded with entrance scholarship based on a student's academic record.

Skills

Languages	• Professional experience in Python, Golang, Node.js
Infrastructure	• Professional experience in containerization and container orchestration with Docker and Kubernetes
	• Professional experience working with configuration management tools such as Ansible, Terraform, and Helm(for Kubernetes applications)
CICD	• Professional experience working with Jenkins, Concourse, and ArgoCD to support development workflows of the entire team
Frameworks	• Professional experience with Django and Django Rest Framework for RESTFUL API development
	• Comfortable working with RPC frameworks such as gRPC
Databases	• Professional experience in SQL databases namely PostgreSQL.
Tools and technologies	• Professional experience working in development team with Agile methodologies and git-based workflows
Webservers	• Extensive experience administering linux-based systems (Ubuntu, Debian, Arch), web-server (Nginx, Apache)