

Bishwa Thapa

Lead 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 ENGINEER — CNAPP TEAM

As one of the lead engineers of CNAPP Team at Plerion, I was responsible for:

- Leading the inception and development of cloud-agnostic KSPM and IaaS Scanning products, and toolset tailored for quality assurance and performance testing. Scaling the backend to simultaneously handle metadata of 10+ EKS clusters, totaling 1.5M+ assets and identifying 25M+ misconfigurations and vulnerabilities.
- Delivering a customer-aligned roadmap and high-quality customer-facing product within 2 months of joining the organization. Transitioning from a solo engineer to building and leading a high-performing team of 4 software engineers capable of end-to-end product ownership.
- Reducing R&D efforts by 2-4x through the adoption of open source software. Actively contributing to the upstream development of trivy, trivy-kubernetes to address critical feature gaps and ensure alignment with the product vision.
- Detecting and addressing onboarding bottlenecks, reducing device provisioning time from 2-3 days to 2 hours, benefiting 10+ hires and saving 200+ work hours, directly boosting operational efficiency.

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

ZSCALER INC

Jul 2019 - Jan 2023

SENIOR SOFTWARE ENGINEER - PLATFORM TEAM

Promoted (Apr 2021)

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

- Architecting a bespoke edge router to unblock all new customer deployments and prevent application logic from cluttering AWS Route53. This initiative slashed the number of DNS records for the CBI platform by 100x while opening up capacity to support 20-30x more customers than before.
- Performing an in-depth analysis of customer usage patterns, attributing them to AWS bills, and leveraging the insights to implement metrics-driven autoscaling system and shared resource allocation model to achieve a 2x reduction in resource wastage and ~40% reduction in AWS costs.
- Implementing a Prometheus-based monitoring and alerting system to achieve 99.999% uptime globally, enabling immediate response to critical incidents to ensure continuous global operational coverage.
- Introducing an on-call rotation system and actively contributing to support operation and maintenance of 15+ EKS clusters spread across 10 AWS Regions.
- Facilitating orthogonal communication to deliver cross-team initiatives and guiding junior engineers and new hires to grasp the product, enabling them to make informed decisions on priorities and timelines.

SOFTWARE ENGINEER II - PLATFORM TEAM

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

- Using IaaS tools to implement the entire infrastructure from scratch in AWS and migrating applications to newly created infrastructure. Exposing metrics and scraping logs to monitor and trace applications.
- Implementing a multi-region highly-available deployment using AWS ALB to route traffic across multiple EKS cluster within a single region to optimize traffic distribution in high-demand regions, minimize end-user latency, and expand global footprint to support 2M+ monthly active CBI users.

- Automating tenant provisioning to reduce deployment time by ~95% and pipeline bottlenecks by ~80%, compressing deployment cycles from weeks to days and enhancing overall customer satisfaction.
- Taking full ownership of the CI/CD systems and boosting developer productivity by reducing the build duration by ~85%, resulting in accelerated development cycles.
- Implementing strategies resulting in a 40% of AWS costs by optimizing the resource allocated to containers, migrating to Spot Instances, and down-scaling lower environments during off-peak hours.

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:

- Contributing to relocate research and development operations from off-site to on-site. Participated in the hiring and onboarding a team of technically competent engineering professionals.
- Enhancing the application performance by 4x through the comprehensive rewrite of all existing monolith onto a flexible micro-service. This initiative helped to accommodate new features and functionalities, accelerated scalability goals, and positioned the system for adoption of new technologies.
- Encouraging early feedback and involvement from the stakeholders by enforcing software development practices, git-based workflows, continuous integration, continuous deployment, and testing.
- Increasing the 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 solutions.

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

Skills

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|-----------------------|--|
| Languages | • Professional experience with Go/Python, with some experience in TypeScript |
| Infrastructure | • Professional experience with Docker, K8S, and IaC tools (Terraform/Helm/Ansible) |
| CI/CD | • Professional experience working with Jenkins, Github Actions and ArgoCD |
| Frameworks | <ul style="list-style-type: none"> • Professional experience developing REST APIs • Some professional experience developing with gRPC and Protobuf |
| Databases | • Professional experience with PostgreSQL databases |
| Webservers | • Professional experience administering linux systems and web-servers |

OSS Contributions

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