Krzysztof **Nazarewski**

KUBERNETES/CLOUD ENGINEER · DEVOPS/AUTOMATION/DEVEX ENGINEER · PYTHON/GO/IAC DEVELOPER

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Proficient with infrastructure & programming, passionate about automation & development experience.

Summary

I am striving to build highly automated, scalable and cloud-agnostic platform covering the whole software development lifecycle: starting with ergonomic local development through efficient test environments and CI/CD leading to secure, observable and highly available production.

I am focused on the Kubernetes, Infrastructure as a Code and Nix ecosystems to achieving above goals.

Skills

Programming	Primary: Python, Go, shell/bash, Nix; Basics: JavaScript, Lua, Java, CUE; Aspiring: Rust, Nickel
CI/CD	Argo CD/Workflows, Gitlab, CircleCI, Bitbucket, Luigi
Security	Vault, Netbird/Wireguard, authenticated/private infrastructure, unprivileged system services
IaC	Terraform (incl. writing providers), NixOS, GitOps
Containers	nix, docker, podman, buildkit, skopeo, buildah
Kubernetes	Talos, Rancher, k3s, EKS Helm, Kustomize, actively exploring config management improvements/alternatives
Observability	Elasticsearch/Opensearch, OpenTelemetry, Fluentd, Prometheus, Datadog
AWS	SDK (Python, Go), Route53, VPC, EC2, SSM, ASG, IAM, S3, Lambda, EKS and other EKS-assisting services
Backend	Python (Django REST Framework, asyncio/trio, Celery), PostgreSQL, Redis
Languages	Polish, English, basic mandarin

Education

Warsaw University of Technology   *Warsaw, Poland*

B.S. IN COMPUTER SCIENCE AND SOFTWARE ENGINEERING   *2011 - 2015, grad.2018*

Bachelor's Thesis - *Implementing Kubernetes cluster on diskless machines*

Experience

Signicat   *Warsaw, Poland*

CLOUD | DEVEX ENGINEER   *Sept. 2023 - Present*

- Working in a small team of 5-8 professionals purpose-hired to assimilate infrastructure into company-wide platform after acquisition,
- Started with infrastructure best described as: too large for creators and (then) our new 4 person team, highly utilized, poorly automated, outdated, highly heterogeneous (k8s, mesos, cloud, on-prem),
- Were primarily concerned with keeping lights on while improving maintainability as much as feasible given the circumstances,
- Personally focused on automation of legacy systems and actively exploring & building understanding of company landscape to start integrating with shared platform,
- In a few months we have improved it enough to be actively maintainable by 2 people at a time, while the rest of the team works on improvements and towards the final goal,

Personal project

BUILDING UP HOMELAB   *June 2024 - Aug. 2024*

- Worked part-time during less active summer period to jumpstart a storage/backup cluster & self-assembled router,
- Made a first attempt with a set of Raspberry Pi 4s, but resource constraints made it impossible to run Ceph,
- Built 3 NAS machines then formed them into Talos cluster,
- Added simple secret management & made repository public: nazarewk-iac/talos-configs,
- Implemented Nix-built workloads for immediate development feedback loop,
- Implemented ZFS-backed local storage with a mix of ZFS disk encryption/management scripts & OpenEBS,
- Implemented node-level Netbird VPN for remote access,
- Deployed proof of concept Ceph/Rook network storage cluster to figure out missing pieces,
- Started integrating Cilium for networking layer,
- Upgraded to IPv4+IPv6 ISP, purchased networking equipment and implemented a router on top of a NixOS module system, see the code,

Incredevo
Warsaw, Poland

DEVOPS | CLOUD ENGINEER
Oct. 2022 - Aug. 2023

- Outsourced part-time (100h/mo) as the only cloud engineer in client's company. Was primarily responsible for implementation from scratch and upkeep of their EKS-based AWS infrastructure,
- Started by automating and forcing the build process to be reproducible for 15 Java applications without versioning packaged into 8 containers,
- Researched, evaluated, debugged and sometimes fixed various open-source tools written primarily in Go,
- Built up AWS infrastructure from zero using Terraform/Terragrunt,
- Set up infrastructure to be deployed to private VPC and accessible through Netbird VPN,
- Set up Bottlerocket based EKS cluster configured using kustomization Terraform provider with all the usual cloud controllers,
- Set up observability stack using Opensearch, OpenTelemetry and Prometheus,
- Set up NLB-based APISIX Ingress Controller with automatic certificates using cert-manager,
- Set up Argo Workflows for CI/CD,
- Set up rootless container builds in Argo using buildkit or devenv.sh (Nix),
- Set up devenv.sh based local development environment,
- Rewritten the build process from Bitbucket Pipelines to Argo Workflows,
- Set up cluster (Karpenter) and workflows (VPA) autoscalers for cost optimization,
- Rewritten the build process from Argo Workflows to spotify/luigi for a local execution and easier handover,
- Prepared a NixOS-based EC2 instance capable of running all the tooling to be used as a last-resort when Mac setup breaks,

Fresha
Warsaw, Poland

DEVOPS | DEVEX
Nov. 2021 - Oct. 2022

- Member of a team focusing on increasing development velocity through CI/CD process and developer's experience improvements,
- Successfully cut Datadog monitoring costs by a third through refining gathered data,
- Worked primarily on complete redesign and simplification of existing - organically acquired over the years - complex processes,
- The job involved identifying, measuring and debugging performance and operational issues on very large (30-60 envs, 20+ apps each, multiple deployments per hour) EKS cluster dedicated to staging environments,
- Set up new deployment and secrets management flow using: ArgoCD, External Secrets Operator and a set of Python scripts for the GitOps repository management & optimization,

BEC Poland
Warsaw, Poland

DEVOPS | CLOUD ENGINEER
July 2020 - Oct. 2021

- Introduced 5 man team to: Terraform, pytest and Terraform SDK,
- Introduced team to and provided guidance for custom Terraform providers implementations,
- Participated in design and implementation of company-wide Azure based cloud platform,
- Worked with Azure cloud using Terraform and Python SDK,
- Tested infrastructure with pytest and pytest-bdd (Python implementation of Behaviour Driven Development/Gherkin),
- Designed and implemented shared testing library to be used by the team and customers,
- Designed and implemented developer's environments using: Packer, Vagrant, VirtualBox, Azure DevTest Lab,

GFT Poland
Warsaw, Poland

KUBERNETES ADMINISTRATOR | DEVOPS | CLOUD ENGINEER
Jan. 2019 - June 2020

- Introduced 6-man team to Terraform and Kubernetes,
- Participated in fast-paced infrastructure development in a large team (tens of cloud engineers),
- Participated in development, automation and coordination of workflow across many programming teams and projects,
- Was the only person responsible for deploying, configuring and managing pre-production Kubernetes clusters,
- Provided initial deployment and guidance for Hashicorp Vault, ELK stack and Prometheus,
- Deployment and management of Kubernetes cluster backed by Rancher (Custom Nodes) on AWS EC2,
- Implemented AWS Lambda function overseeing Kubernetes cluster nodes with assistance of AutoScaling Groups,
- Implemented infrastructure development workflow including mass-execution, validation and automation for Terraform,
- Implemented in-cluster network monitoring solution using Calico (iptables) logs and Prometheus,
- Implemented Kubernetes cluster extensions and validation using Webhooks and Custom Resources,
- Achieved close to zero-downtime deployments by working with development teams,
- Integrated a few systems with Okta identity provider,
- Coped with being forced to use the most available Istio features from the start without gradual implementation one-by-one,
- Used/integrated with: OPA Gatekeeper, Datadog, Artifactory, CircleCI, GitHub, Spinnaker,

Daftcode
Warsaw, Poland

PROJECT CTO | PYTHON DEVELOPER | LINUX ADMINISTRATOR | DEVOPS
Jun. 2016 - Dec. 2018

- Started as the most experienced backend developer on the team with some sysadmin skills, then gradually moved to full-time infrastructure administration and devops role,
- Developed application's prototype (Python 2, Django) into a dynamically growing project,
- Designed from ground up then migrated existing codebase to the new implementation based on Python 3, Django REST Framework and Celery,
- Migrated manually managed on-premise environment to semi-automated (Ansible and Supervisord) deployment onto AWS EC2-based infrastructure split into production and development envrionment,
- Unified error reporting with Sentry and streamlined deployment with BuildBot + Ansible,
- Implemented SSH based infrastructure access management with quick access revocation and automated setup of developers's machines,
- Configured data analysis and monitoring with ELK stack,
- Achieved zero-interruption deployments with uWSGI zerg mode,
- Configured live performance monitoring and alerting with ELK stack and Prometheus (mostly providing data to Kiosk-style dashboard running 24/7 in the office),
- Created terraform-provider-scripted,
- Implemented single-command Kubernetes cluster deployment and management using Terraform, kops and Python scripts,
- Implemented Kubernetes cluster hardening: private network, NetworkPolicy, PodSecurityPolicy, kube2iam, in-cluster SSL authentication, etc.,
- Deployed on Kubernetes: Docker Registry, Helm, S3-backed Vault and Gitlab, cert-manager, Prometheus stack, metrics-server, efs-provider, etc.
- Implemented application infrastructure deployment on top of Kubernetes based on Gitlab CI and Helm.

10Clouds
Warsaw, Poland

DJANGO DEVELOPER
Aug. 2015 - May 2016

- Tested then migrated an existing Django REST Framework & PostgreSQL tenants based SaaS from Python 2 to Python 3,
- Developed and maintained above mentioned backend and occasionaly frontend: Angular 1.3, CoffeeScript, ES6, SASS
- Designed and implemented Django REST Framework based backend in another project,

JMR Technologies
Warsaw, Poland

LEAD PYTHON DEVELOPER
Nov. 2014 - Jun. 2015

- Was primary Python developer in a company newly adopting Python for selected projects,
- Designed and implemented of Django based CRM,
- Gave occasional assistance to Odoo team.

Freelance project
Poland

FULL-STACK SOFTWARE DEVELOPER
Apr. 2014 - Jun. 2015

- Implemented and deployed Django REST Framework backed CMS/knowledge base,
- Implemented JavaScript (Dojo Toolkit 1) based desktop application (TideSDK, NW.js, then Electron) backed by aforementioned backend.

OPEN SOURCE CONTRIBUTIONS

- Go: prometheus/prom2json: implement reading metrics from stdin or file (only URLs were supported),
- Go: netbirdio/netbird VPN: fixed and tested errors with network routing,
- Go+k8s: kubectl drain improvements helping with cleanly scaling down cluster to zero,
- Go+k8s: gitops-engine/Argo CD add proper handling when etcd hiccups (eg: GC) occur,
- Go+k8s: helm/chart-testing: implementing passing of additional flags to helm command,
- Go+k8s: rook: enabled support for running on NixOS by adding NixOS-specific PATH,
- Go+tf+k8s: terraform-provider-kustomization added handling of remaining kustomize flags,
- Go+TF: terraform-provider-vault: improved handling of groups and policies assignments,
- Go+TF: created daftcode/terraform-provider-scripted as a first touch with Terraform and Go,
- Go+TF: created nazarewk-iac/terraform-provider-custom refined and properly designed implementation of above,
- Python+AWS: Nike-Inc/gimme-aws-creds: large refactor to enable using the tool in CI and as a library,
- Nix: various contributions to and packaging fixes for NixOS/nixpkgs,
- Nix+containers: devenv: enable building containers in CI using Nix's Flakes,