danh@shew.io

Daniel Herrera

Engineer with over 8 years of experience leveraging software and automation skills to do what I love:
solve problems and remove toil

Work History

Software Engineer @ HPE (June ’22 - Present)

Operationalizing bare-metal K8s cluster for internal development

Related Tech: Ansible, Bare-metal K8s, HPCM, Go, GitHub Actions

To ensure availability requirements, reproducibility, and general operability, I transitioned ownership of a hand-deployed bare-metal K8s cluster running on HPCM-managed servers to my team. I took inventory of all current operations and users and began by automating both documented and undocumented configuration into fully-reproducible baked images. After recreating all the current deployment code, I configured GitOps deployment of K8s services using ArgoCD, including the deployment of operators for GPU and network drivers, monitoring agents, and secrets injection.

Automating user onboarding and cloud service configuration

Related Tech: Ansible, GitHub Actions, Python

As part of a newly formed Infrastructure team, I developed automation to idempotently configure our cloud services and onboard new engineers. Due to gaps in publicly available tooling, I developed custom Ansible modules to implement specific configuration for our GCP projects and GitHub org. I further reduced our operational costs by wiring together GitHub actions that ran our pre-commit hooks and created PRs for new users with a basic Slackbot so hiring managers could submit onboarding requests for new engineers without our team being interrupted.

Software Engineer II @ Digital Ocean (June ’20 - May ‘22)

Automating dependency vendoring and version bumps

Related Tech: Concourse, Bash

To reduce the coordination cost of recurring manual dependency-review meetings, I began developing pipelines to periodically monitor for new versions to vendor the release artifacts, notify the team of version changes, and create an accompanying PR to bump versions across various repos on new releases. Leveraging Concourse’s available pipeline triggers for GitHub and DockerHub releases, I was able to quickly implement update jobs for various release asset types including archived binaries and OCI images, covering over half of our dependencies and reducing the amount of manual effort involved in our dependency reviews.

Migrating legacy deployment code for bare-metal K8s clusters

Related Tech: Bare-metal K8s, Chef, Ansible, Python

To remove our team’s dependency on legacy Chef configuration code for our bare-metal clusters, I migrated our configuration management to new Ansible playbooks. As part of the migration, I identified all code specific to our domain from the legacy monorepo, reimplemented whatever was still relevant and necessary, and added tie-ins from our Ansible playbooks into the legacy Chef roles for operations outside of our domain that were still necessary, such as security patches published by the Infrastructure team. The new configuration code allowed for quicker iteration on configuration specific to the K8s clusters running on target nodes without the need for the previous provisioning and Chef bootstrapping process.

Implementing feature requests for internal K8s-native app platform

Related Tech: Go, client-go, K8s mutating and admission webhooks, controllers

As part of the Platform team, I was responsible for bug fixes and new features for our deployment tooling and K8s services. The projects I took on included enabling log scrapping for pods by using mutating webhooks to update resource definitions with necessary sidecars and annotations, extending our controller to include reconciliation of managed Job resources, and modifying our custom resources and resource generation code to include versioning annotations to enable rollbacks for apps and job definitions through our CLI. Aside from leading projects, I also collaborated daily with other engineers on PR reviews, RFC discussions, and fielding help-channel requests.

Cloud Engineer @ Ultimate Software (Jan ’16 - June ’20)

Developed an internal, cloud-agnostic Kubernetes offering from scratch

Related Tech: OpenStack, K8s, Rancher, Terraform, Packer, Ansible

Developed new deployment tooling for a legacy, in-house deployment service

Related Tech: OpenStack, Python, GitLab CI, Terraform, Chef

Education

B.S. Computer Science from Florida International University (Fall 2018)

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https://github.com/loksonarius