Joshua Bicking

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EXPERIENCE

CLOUDFLARE INC. | *Software Engineer - Zero Trust CASB Team*

Aug 2021 - Present | Remote

* Lead design, development, & optimization of a flexible, async-focused task pipeline for IO heavy workloads. Replaced existing Celery task pipeline, increasing throughput by >50x.
* Built & deployed CASB's ServiceNow support, informing customers of misconfigured instances, users, knowledgebase articles, or incident tracking tickets.
* Designed & developed CASB's DLP integration, empowering customers to quantify the impact of improper SaaS file sharing.
* Integrated Cloudflare's Logpush product with CASB, optionally sending security insights to customer storage.
* Wrote HA Helm charts for Redis, MongoDB, & RabbitMQ, solidifying platform reliability.
* Migrated Vectrix AWS & Confluent services to in-house offerings, as part of Cloudflare's acquisition.

VECTRIX INC. (acquired by Cloudflare in Feb 2022)

* Autoscaled EKS deployments with Terraform & Kubernetes Cluster Autoscaler.
* Wrote & deployed Helm charts for Vectrix services, enabling reversible deployments & DB migrations with zero downtime.
* Designed the API & backend for "User inventory", a single pane of glass for all user accounts across all integrated SaaS apps.

DATTO INC. | *Software Engineer II - Engineering Productivity & BCDR Cloud Team*

March 2020 – Aug 2021 | Rochester, NY | Remote

* Developed a service to auto-provision Azure hypervisors as customer restore targets, expanding Datto's rapid restoration offerings to Azure VMs.
* Extended our VM deployment service with an Azure backend, providing Azure compute deployment & cleanup. Facilitated testing & development of Azure-focused products.
* Migrated test reporting software to an HA, Helm-managed Kubernetes deployment. Provided reliable and scalable test reporting for all BCDR products.
* Extended our libvirt VM deployment backend with ZFS-backed VM snapshots. Enabled "replaying" hard-to-reproduce actions in test scenarios.

Software Engineer I - Engineering Productivity

May 2019 – March 2020 | Rochester, NY

* Lead design & development for a backup agent test harness & a long-term test environment, complete with monitoring tools & reporting.
* Built and deployed a flexible provisioning system for our VM lifecycle management service. Enabled seamless integration of a legacy developer VM deployment service.

Software Engineering Intern - Quality Assurance Automation

Jan – Aug 2018 | Rochester, NY

* Built a REST API for VM lifecycle management, automatically provisioning mock customer environments.
* Assisted in building a test framework for Datto's flagship backup product, leveraging the VM REST API.

BAYER RADIOLOGY | *System Software Verification & Validation Intern*

June – Aug 2017 | Indianola, PA

* Built a log parser to semi-automate the regression testing of contrast injectors, shortening 1 week of manual testing to ~20 minutes.

SKILLS

LANGUAGES

* **Confident in Python** from 4+ years of professional experience building APIs and batch systems. Well-versed on **asyncio** & async Python tooling. 1 year of professional **Golang**. Frequent use of **Bash** & **Powershell**.
* **Familiar with C, Rust** & **Haskell** from hobby projects, tech talks, & college courses. Used **JavaScript & React** during hackathons/hobby projects. Some exposure to **Java** & **Assembly (MIPS, x86)**.

OPERATING SYSTEMS

* Used **Linux** (Debian & derivatives, Fedora, Alpine) for business, development, & personal use.
* Familiar with automation & orchestration of **Windows** environments (sysprep).

VIRTUALIZATION, CONTAINERS & CLOUD

* Personally manage a **K3s** cluster. Professional experience with **managed & onsite Kubernetes**.
* Wrote, modified, & deployed numerous **Helm** charts, occasionally extended with **Jsonnet**.
* Built & deployed **Docker** images for both personal and professional applications.
* Leveraged the **Libvirt** API & for on-demand VM creation & fast ZFS-backed snapshots.
* Familiar with several hypervisor & cloud APIs, including **vSphere**, **Openstack**, **Azure,** & **AWS**.

FRAMEWORKS

* Experienced writing extensible **Pytest** plugins & heavily utilizing its fixture system.
* Redesigned an app's usage of **Django** models & **Django REST Framework** views. Seasoned with **Django ORM** & its async support.
* Familiar with **Rocket** and **Diesel** from Rust hobby projects.

TOOLS

* Heavily use **Mypy** to verify applications & extend Python's type system.
* Comfortable with **Cloudflare Tunnels**, easily and securely exposing Kubernetes services to the web.
* Manage **Gitlab CI, CircleCI, & Teamcity** configurations for automatic linting, testing, building, & deployment.
* Write & utilize **Prometheus** metrics for several services, building **Alertmanager** rules and **Grafana** dashboards.

SERVICES

* Ran & utilized HA **Redis Cluster** & **Sharded MongoDB** clusters.
* Experience building applications with **Kafka** & **PostgreSQL**.

PROJECTS

SPEEDWAGON | *Web-based RSS reader & aggregation server*

Backend is a versioned, RESTful API built with Rust + Rocket, using Postgres + Diesel for state management. This multi-user platform supports source filters & organization via tagging.

SERVER | *How I Self-Host*

An ongoing collection of deployments and instructions for a full-featured, easily installed Kubernetes instance for personal use. Powered by K3s, rook-ceph, & Prometheus Operator.

EDUCATION

ROCHESTER INSTITUTE OF TECHNOLOGY | *B.S. in Computer Science*

Aug 2015 – May 2019 | Rochester, NY | 3.7/4.0 GPA | Dean's List (6/7 semesters)

Brickhack (RIT hackathon) Sponsorship volunteer. Women in Computing Hackathon volunteer. RIT Linux Users Group Treasurer & frequent "tech talk" speaker.