

Morgan Bauer

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Experience

Morgan bridges the gap between theory and practice for containers and Kubernetes, by bringing not only theoretical knowledge upstream open source experience on the projects, but also practical application of that knowledge from running multiple Kubernetes clusters with up to over 1000 nodes.

Morgan is also an Open Source Software (OSS) Engineer, previously working for IBM on Kubernetes, Docker and the surrounding container technologies. He has extensive experience in the creation of open source software, containerized software development and complex system architecture. Morgan also enjoys working with cross-functional teams, and presenting at conferences and meetups.

Specialties: Containers, Kubernetes, Cloud Computing, OSS Development, Developer Advocacy

Cloudera

Santa Clara, CA

Cloudera Flow Manager Kubernetes Operator for Cloudera Data Flow Experience

2023-11-06 – Current

Staff Software Engineer

- CNCF conformant Operator to deploy and manage NiFi clusters.
- Used within Data Flow Experience on Amazon AWS and Microsoft Azure, and available in Red Hat Operator Catalog.
- Increase team confidence and velocity by optimizing build and development process.
- On-call rotation, and customer triage.

Lyft

San Francisco, CA

Kubernetes Operator

2021-08-18 – 2023-04-28

Software Engineer

- Self-hosted **Kubernetes** v1.16 migration to v1.22 to v1.23 AWS Hosted EKS through workload movement.
- Executing pre-planned initiatives while maintaining and enhancing the stability of the kubernetes clusters as part of an oncall rotation.
- Mentor team members and push for documentation and use of checklists to increase confidence in the infrastructure.
- Infrastructure managed by terraform, along with **Golang** and bash programs.
- Used systemd and podman to move to containerized services for Kubernetes control plane.

IBM

San Jose, CA

Open Source Project Maintainer

2015-07-13 – 2021-02-15

Kubernetes – SIG-Node

- Formed SIG-Node-CI group to raise quality of existing end-to-end Ginkgo tests
- Triaging and fix sig-node testing failures as they occur to increase velocity
- Deprecating and removing failing and superseded test suites to remove duplication and decrease use of expensive server time
- Increase visibility of critical test groups by centralizing to a single top-level dashboard

Hyperledger Fabric - Enterprise Permissioned Blockchain for Business

- Maintained a **Golang** EVM (Ethereum Virtual Machine) chaincode for fabric by guiding new committers through contribution process
- Implemented ethereum json-rpc 2.0 endpoints for Remix IDE to connect with Fabric network to manage and deploy EVM smart contracts
- Drive Fabric adoption by implementing Truffle compatibility resulting in Truffle Conference keynote
- Mentored LinuxFoundation Intern to create WebAssembly Chaincode for Fabric
- Improved code quality of Gossip Protocol by **removing race-conditions** to re-enable integration testing and community usage
- Increased Fabric unit testing speed to increase contributor velocity by targeting slowest tests
- Implemented Kubernetes and Docker backends for Blockhead Ethereum Service Broker and port from Ruby to **Golang**

Kubernetes – SIG-Service-Catalog

- Maintainer and founding community member of Service-Catalog an implementation of the OpenServiceBroker API (OSBAPI)
- Implemented OSBAPI to expose thousands of existing IBM CloudFoundry services to Kubernetes
- Collaborated with multiple cloud providers to adopt CloudFoundry service concept for cross-cloud compatibility
- Created CI pipeline in Travis and transitioned entire pipeline to CNCF infrastructure driven by Prow
- Implemented aggregated APIServer (predating CRDs) for Kubernetes native object behavior
- Ensured multi-architecture compatibility by communicating with stakeholders of PowerPC and S390X

Maintainer of Docker/Moby Engine Core

- Maintainer of Docker ClassicSwarm (Docker-native cluster management predating Kubernetes)
- Decoupled the server side API from the engine leading to separate client and server binaries allowing efficient re-use of client code
- Increased code quality by performing corrective changes and enabling static analysis

Developer Advocate for Open Source

- Design & Execute Education on Cloud Native Technologies
 - Customizing content for internal and external audiences of both technical and nontechnical nature
 - Demonstrate value of containerization to improve application development, deployment, and scaling
 - Encourage contributions back to upstream projects
- Grow IBM Open Source committer base by 300 through mentorship and education on **Applied use of Git with GitHub**
- Decreased new contributor fatigue to Kubernetes communities with increased documentation on node-e2e-test and videos on YouTube
- Triaged community issues by performing fixes and writing documentation

Lenovo

Software Engineer

Rochester, MN

2014-10-01 – 2015-06-15

Manager of Managers (Lenovo XClarity Cluster Management)

- Owned developer services, providing database access and issue tracking
- Administered secure source code repository and auditing with git, ssh, & gpg
- Built automation with maven, jenkins, & guestfish for an end to end pipeline - source code to deployable Virtual Machines

IBM

Software Engineer

Rochester, MN

2012-07-30 – 2014-09-30

Manager of Managers (Lenovo XClarity Cluster Management)

- Project bring-up from first principles using maven, artifactory, jenkins
- RESTful API design and documentation with Restlet
- Componentized program with OSGi bundles and services
- Source control administration and education with RTC & git
- JUnit, EasyMock, Sonar for code quality at > 80% line and branch coverage

VMControl

- Drove unit testing among the team, and increased coverage from 0% to 26% on 200kloc
- Software Testing of Legacy Systems with JUnit, EasyMock, & PowerMock
- Java, Maven, SVN, & Python
- SVN To RTC Migration team handling education to users and consultation on appropriate code to move.

UF School of Physician's Assistant Studies

OPS Clerk

Gainesville, FL

2010-08-15 – 2011-06-15

- Data entry of grades into excel with manual processing to format for reports
- Automated data entry and formatting in Excel using Visual Basic for Applications

Education

University of Florida

Masters of Engineering in Computer Engineering

Gainesville, FL

2010 – 2012

University of Florida

Bachelors of Science in Computer Engineering, Minor in Business Administration

Gainesville, FL

2006 – 2010

Conference Talks

Kubecon EU 2020: A Journey Through Kubernetes Admission Controller Taxonomy

Hyperledger Global Forum 2020: Hyperledger Fabric 101 Workshop

TruffleCon 2019 Keynote: Truffle Support For Hyperledger Fabric

OpenSourceSummit Japan 2019: Hyperledger Fabric 101: Permissioned Blockchain Platforms

OpenSourceSummit China 2019: Creating your First Smart Contract on Hyperledger Fabric

ApacheCon NA 2018: Comparisons of Cloud Native Communities

Kubecon EU 2018: Building a Fault-Tolerant Resource Controller on Kubernetes

CloudFoundry Summit 2018: Open Service Brokers for the CF Container Runtime

CloudFoundry Summit 2018 Hackathon: Project Blockhead - Winning Project

CloudFoundry Summit EU 2017: Getting a Handle on Your Microservices: Istio and the Open Source Broker API

Interests

Amateur Radio - General Class License KN6AQX

Photography - Travel Snapshots, Nikon D500 DSLR

Rust Programming Language