Contact

jayunit100@gmail.com

www.linkedin.com/in/jayunit100 (LinkedIn)
careers.stackoverflow.com/jayunit100 (Other)
jayunit100.blogspot.com (Blog)
www.rudolflabs.com (Personal)

Top Skills

golang

Google Kubernetes Engine (GKE)

Amazon Web Services (AWS)

Publications

Core Kubernetes

20+ Software and Cloud Technology Patents

...10+ Publications in NCBI peer reviewed journals...

Jay Vyas

Tanzu Kubernetes Grid @ VMWare (TL for Antrea-CNI, Windows, edge) #camerason #gotowork

Concord, Massachusetts, United States

Summary

CNCF and ASF Member, Engineer, Founder, Kubernetes contributor/maintainer, ex-Protein Bioinformatician

Experience

VMware

Member of Technical Staff, Staff Engineer

July 2019 - Present (3 years 2 months)

Leading a variety of productized, open technologies that are essential to the VMWare Tanzu Portfolio, specifically around:

- Antrea (our CNI)
- Kubernetes on Windows
- Release Engineering and Conformance Testing
- Edge compute offering

As an engineering leader at VMWare I serve in the following capacities:

- Engineering Lead for "Thick" Edge and Antrea Kubernetes related initiatives at VMWare.
- Engineering Lead for Kubernetes on Windows (VMWare Tanzu) and our broader Extended Infrastructure initiative. Brought Windows from a POC to a fully supported TKG feature, defined upstream and downstream SLAs around windows. Defining windows conformance for the world https://github.com/kubernetes/enhancements/issues/2578 .
- Managing customer escalations around networking, windows , and CNI providers, some of which were extremely time and business sensitive.
- Building teams, pairing w/ new engineers, keeping morale high in the face of continuous change, creating a culture of radical transparency, continuous collaboration, and openness, every day.

Meanwhile, I spend alot of time in the K8s community, driving several upstream initiatives:

- TL for sig-windows (CNCF) - working on the windows conformance initiative
- Lead for several sig-network (CNCF) sub projects, started both the network policy and kube proxy refactoring initiatives.
- Windows Conformance https://github.com/kubernetes/enhancements/tree/master/keps/sig-windows/2578-windows-conformance
- Network Policy Validation https://github.com/kubernetes/enhancements/tree/master/keps/sig-network/1611-network-policy-validation
- Default Namespace labels: https://github.com/kubernetes/enhancements/tree/master/keps/sig-api-machinery/2161-apiserver-default-labels

- Note I Joined in 2021 as an MTS4, was promoted to a Staff Enginneer in 2022... as an MTS4 my main focus was on Upstream K8s networking, Antrea as a CNI, and initial investments into TKG Window

The Apache Software Foundation
Commiter, PMC, and Member
April 2014 - Present (8 years 5 months)

Maintainer: Apache Bigtop, CTakes
Contributor: Apache Hadoop, Spark, Storm, and other projects
Creator of the Apache BigPetStore application (a blueprint for big data workflows in the hadoop era)

Synopsys Inc
Cloud Native Chief Architect (Synopsys SIGs - All Products)
January 2019 - October 2019 (10 months)

- Architected (and UN-architected) aspects of Kubernetes security and performance of our Blackduck and Polaris applications at large scales.

- Kept the team on track to tactical product goals, preventing tech churn in the sea of emerging cloud native buzzwords and mousetraps.

- Advising senior leadership, VP and Directors towards the ongoing R&D strategy for our cloud native app delivery models and matching innovative personnel against strategic focus areas for the Cloud business.

PRE-ACQUISITION

At blackduck I moved our entire business, including 100s of customers over to a pure SaaS, Kubernetes implementation - post-Synopsys acquisition, I took

over leading all of those initiatives. This included *all* of the major architecture for how our Blackduck, Polaris, and Opssight Platforms ran in the cloud at scale, and deployed on cloud native on-premise environments.

Post-acquisition I served as the cloud native architect for all Synopsys-SIG SaaS products, including blackduck as a SaaS, the opssight-connector, and next-generation SaaS offerings that brought coverity and similar products to the cloud.

- Architect for all cloud native technical strategy at Synopsys, largely involving the Polaris and Blackduck platforms strategic direction.

- Aligned our Cloud Native tech engineering R&D with the security goals and directives at several Fortune 500 companies, along the lines of container scanning, operators, defining precise SLAs for performance of our platform on various K8s platforms that had highly variable storage and networking modes.

- Broadened the Blackduck offering to a larger scale, integrating with 3 other infrastructure and operations teams in a multi zone setting: new products included coverity, seeker, and many other incubating projects under the synopsys umbrella.

Platform9 Systems
Kubernetes Engineer
January 2019 - July 2019 (7 months)

K8s Engineering on the PMK and Managed Apps platforms.

- Architected observability and metrics into our Kuberenetes platform from scratch so that individual nodes on any cluster could be remotely monitored for health metrics in our SaaS offering.
- Internal training around Kubernetes core principles and concepts for SE's and customer success teams.
- K8s consulting work our largest customers
- Feature and bugfixes around various aspects of networking, CSI support.
- Built developer tooling and selinux tooling for SE's in the field (https://github.com/platform9/new-go-app, https://github.com/platform9/selinuxmodules).
- Prototyped and designed cloud controllers for monitoring managed applications (Prometheus) hosted on our platform.

Red Hat

Principal Software Engineer

November 2012 - May 2017 (4 years 7 months)

Wesftord, MA

- Kubernetes core, scheduling, and e2e contributor, maintainer.
- Major contributor to the Hadoop ecosystem and its role in the GlusterFS community.
- Original automation of the HA platform for kubernetes prototypes
- Authored of the declarative cluster state mechanisms inside kube itself for simulating complex's workloads at large scales.
- Worked on a broad spectrum of other parts the CNCF kubernetes platform, co-lead various SIGs with other developers advocating Red Hats interests in the scalability area.

- Big Data: Contributed several enhancements to projects in the Apache Software foundation (including Hadoop, Spark, BigTop, ...) on behalf of Red Hat to increase our interop with open source big data projects, particularly in the Hadoop ecosystem (specifically BigTop, Apache Hadoop). Also wrote open source blueprints for internal evaluation and testing of Flink, Spark, Hadoop.

- Storage/Emerging Technologies: Enablement of bigdata workloads on various filesystems with difference CAP and semantic properties.

- One of the first implementations of spark and cassandra on kubernetes ; working out kinks of SparkStreaming and other blueprint applications repository for details in cloud native platforms and maintaining them in the upstream CNCF community .

- Mentoring and training: Trained, and increased productivity of developers, QE, and communities on integration testing for the hadoop ecosystem, microservice architectures, reproducible deployments with vagrant, + internal cloud migrations.

Tech: Bash, JVM stuff (scala), lots of hacking in Python, Ruby. Cloud native stuff in Golang. And Vagrant, Terraform for immutable infra.

Brandwatch Peerindex

BigData Engineer (Hadoop, EMR, ML platforms)

May 2011 - November 2012 (1 year 7 months)

London, United Kingdom and Hartford CT

- Worked with data scientists, engineering directors, and the front-end team to ensure that data quality standards for 100s of millions of outputs were always met using a rock solid data model contract.

- Built Hadoop pipelines for terabytes of ingest from concept->prototype->deployment on our DAG MapReduce platform (implementing RDD style data transformations in the pre spark era).

- Took over and maintained PISAE (Peerindex social action engine) platform, which captured actions and converted them to social primitives for algorithmic classification of influencers at terabyte scale.

- Development of our backend MapReduce java systems - largely based on ingestion and feature extraction.

- Maintained tens of map/reduce jobs chained together in a aggregating data flow which requires continued maintenance and updating in the ever-changing landscape of todays social web - Mostly java based (with some Python or Clojure where I could sneak them in).

- Tweaked and extended our legacy backend to support real time ingestion of tweets for a large group of high profile social entities. This consisted of a monolithic mixture of java, PHP, python, and some black-magic shell scripts. This was as we on boarded to the new MApreduce system described above.

- Administered EMR and hadoop resources on an as needed basis, helped to coordinate the launch of our new site which was completely driven using a key-value storage (DynamoDB) and HDFS data backend.

UConn Health

Open-Source Bioinformatics Developer Java Developer & Researcher

August 2007 - December 2011 (4 years 5 months)

- Developer/designer of a highly interactive client side application for fully integrated molecular visualization platform (VENN) which allows for Jmol based 3D analysis of protein evolutionary conservation (See Publications).

- Created a cross platform VM for NMR data processing (vagrant, virtualbox, and ubuntu).

- Deployed plug-in based modules for implementation of molecular analysis algorithms in a single computational proteomics framework.

- Optimized and changed features of the application to suit emergent needs, such as protein domain oriented analyses.

- Data Warehousing/Modelling of Functional Minimotifs

- Designed a Hibernate API and MySQL data repository along with an java based which integrated proteomic information spanning protein motifs, functional annotations, taxonomy data, sequences, and protein domains.

- Architected an Expert System (MIMOSA) which automatically implemented various text mining and correlation scoring algorithms using ontologies for 5,000,000 publically available medical abstracts.

- Developed a plug in oriented Graphical User Interface using the Java Swing framework which enabled database driven, high throughput annotation of "minimotifs".

- Collaborated on several database aspects of the NIH funded, publically available, web based Minimotif miner application (http://mnm.engr.uconn.edu).

- Engineered Java API's for reading/writing of large, binary FID representations present in vendor-specific NMR spectral data types in support of an open-source translation and conversion API.

- Prototyped a Swing-based workflow building environment (time domain NMR data proc, as a custom 2D graphical app allowing on the fly creation of data-processing "actors", w/ reloadable and persistent state and associated, workflows which triggered offline data processing tasks.

- Design and architecture of an integrated NMR visual data mining platform, as part of the Rudolf project using and Clojure to wrap existing Java API's.

Rudolf Inc
Founder
2004 - 2010 (6 years)
London, United Kingdom ; Hartford CT ;

- Reverse engineering of UML design for various specifications in accountancy systems.
- Design of custom LISP /Python applications for ensuring transaction completeness in large, distributed MySQL systems.
- Evaluation of e-commerce solutions (i.e. google checkout, paypal) with home grown product inventory and management systems.
- Rapid software prototying, informatics consulting, and helping individuals get up to speed with data mining and machine learning related initiatives.
- See also work at Peerindex, above - which contracted through Rudolf Inc. for bigdata consulting for a portion of my work there.

Community Health Resources

Java EE / Hibernate developer for medical informatics applications
2005 - 2006 (1 year)
CT

Java Engineer working on medical informatics software applications :
Retooled a legacy software system built on proprietary software libraries into a homegrown, dynamic Java EE Servlet/JSP MVC framework with a backend system that dynamically mapped objects onto database stored procedures using runtime injection. Backend system was successfully deployed and completed in a short period of time - and the engineers that took this project over were quite happy with its modular design which allowed them to easily introduce static components or changes into the data model without needing to recompile, rebuild, or even redeploy the system.

Education

University of Connecticut

Doctor of Philosophy (PhD), Bioinformatics · (2007 - 2011)

Rensselaer Polytechnic Institute

Master of Science (MS), Computer Science · (2004 - 2006)

University of Arizona

Bachelor's degree, Mathematics (Computer Science) · (2001 - 2004)

University of Arizona

Bachelor's degree, Mathematics

University of San Francisco