

Christopher J Ryan | SRE | DevOps | Sr Systems & Platform Engineer

Queen Creek, AZ 85142 | +1 602-492-7273 | chris.ryan@deployitall.com
github.com/ProvenGuilty | linkedin.com/in/christopher-ryan-093360a/

SUMMARY

*nix systems engineer with 23+ years of experience. Adept at cleaning up technical debt, discovering, testing and deploying new technology to improve efficiency. Automating away manual tasks and toil. I deeply enjoy working for fulfilling companies, challenging my hunger to learn new things, and maintaining a sense of humor; no matter how hot the trenches may get.

SKILLS

- Configuration Management and Automation: SaltStack, Ansible, Chef, Puppet.
- Containerization and Orchestration: Docker, Rancher/Kubernetes K8s, K3s.
- CI/CD Pipelines: GitLab CI, Gitlab Runner, GitHub Actions, Jenkins.
- Infrastructure as Code (IaC): Terraform, Vagrant, Tinkerbell for bare metal PXE installs.
- Scripting and Programming Languages: Bash, Python, Perl, Go, Ruby.
- Version Control Systems: git, cvs, GitHub, GitLab.
- Monitoring and Logging: Grafana LGTM, Prometheus, ELK Stack (Elasticsearch, Logstash, Kibana), Splunk.
- Networking: PXE, TFTP, DHCP, TCP/IP, DNS, VLAN, Load Balancing, VPN, Firewalls.
- Security: PKI, SASE/ZeroTrust, Hashicorp Vault, Understanding PII/Data compliance in secure environments (e.g., HIPAA, SOX, SOC2, FedRAMP High).
- Operating Systems: Proficiency in Linux, FreeBSD, Unix and Windows Server.
- Storage: TrueNAS/FreeNAS, ZFS, Ceph, NFS, GlusterFS, CIFS, RAID arrays.
- Virtualization: VM Ware, OpenStack, Xen, Proxmox, Qemu/KVM, FreeBSD Bhyve

INTEREST & SELF LEARNING

- Cloud Platforms: Amazon AWS, Microsoft Azure, Google Cloud Platform (GCP)
- Data Analysis: Python (Pandas, NumPy, SciPy), Jupyter Notebook
- Data Visualization: Tableau, Matplotlib
- Statistical Analysis: Hypothesis Testing, Regression Analysis, Bayesian Statistics
- Machine Learning: TensorFlow, Keras
- Certifications: Novell CNA, CompTIA A+, CompTIA Network+, with CompTIA Security+ and Amazon AWS currently WIP

RECENT 10 YEARS EXPERIENCE

Viasat, Carlsbad, CA (remote)

System Engineer & Stream Systems Architecture

July 2023 - Present

- Created dev environment with Vagrant to spin up local virtual machines for the DevOps team. Vagrant file written in Ruby to simulate production environments for code validation testing and reduce substantial and unnecessary cloud spend.
- Internal CDN Cache stack, DevOps configuration management, SRE monitoring with Grafana dashboards, Splunk for log analysis and building better monitoring for adherence to service reliability SLAs, SLOs and establishing KPIs for a satellite based internet service provider.
- Supporting SRE teams at well-known content providers like Netflix, Disney/Hulu for providing the best possible streaming video content experience to our mutual customers.
- HLS/Dash Live, Linear TV and On-Demand video streaming specifications and interfacing with advertising platforms such as AWS MediaTailor to modify playlists (SSAI/server side advertisement insertion) for revenue growth.
- Prototype set top box device, similar to Roku/Smart TVs that leverage our proprietary satellite internet technology. Built for a proprietary ARM based platform running Linux.
- HTML5/HTTPS delivery, Wireshark used for packet captures, Charles Proxy used for man in the middle traffic inspection to reverse engineer content provider player behaviors on web and mobile devices in test environments to document and assist in our traffic shaping and content delivery network caching objectives for maximum reliability and efficiency.
- Design, build and deploy proof of concept environment for supporting prototype devices with OpenWISP to manage OpenWRT routers, software releases via firmware deployment modules.
- Write and deploy system and service configurations with Ansible/Jinja2 templates.
- Excellent written and oral communication and consensus-building skills through documentation, and live demo to internal customers/teams.
- Began learning Data Science and Analytics, using Jupyter Notebook and python libraries to analyze our internal data from an API databus (live streamed data through AWS Kinesis) S3 buckets, large data lake (repository for structured and unstructured data), CDN edge logs and the provisioned devices of our ISP.
- Tuned configurations of web servers running nginx, varnish, and apache for performance and reliability.

Netskope Inc, Santa Clara, CA (remote)

Platform Engineer - Fedramp High

March 2022 - July 2023

- Uplifted the aging configuration management platform and consolidated from older implementations of Ansible, Chef and Puppet into latest versions and features of Ansible and Saltstack to enforce configuration, security and performance on greater than 50,000+ bare metal servers and cloud hosts for Fedramp High and Fedramp Moderate environments.
- Streamlined custom OS image creation with packer and ansible for deployment in highly secure FIPS enabled environments, adherence to CIS Benchmarks standards for OS hardening and best practices.

- Installed Tenable Nessus agent and remediated scans for known CVE/security risks, for Fedramp requirements, followed process for live kernel patching, Ubuntu unattended updates for daily OS patching of critical security updates.
- Deployed new sites using Terraform to stand up OpenStack hypervisors, Rancher Kubernetes, (RKE2 for highly secure kubernetes deployments, ie; govcloud)
- Advanced kubernetes cluster management with kubectl for switching namespaces and troubleshooting tasks that might not be fully supported or are cumbersome to execute through the Rancher UI alone.
- Teleport for IAM/SASE/Zero Trust authentication.
- Secured storage and automated deployment of SSL certificates and system secrets for PKI using Hashicorp Vault.
- Peer-reviewed proposed code, scripts, and platform engineering via git and github within an Agile-based team.
- Responsible for operations of large-scale cloud infrastructure and applications. Gained first experience using AWS/Azure/GCP.
- Assist with several production environment's administration, deployments, scaling and troubleshooting of complex microservice-based applications and private cloud infrastructure for kong api gateway, nginx and haproxy.
- Conduct operational response to production issues and drive them to resolution. Perform ticket management. Record trouble tickets and assign based upon urgency and issue.
- Analyze alarms and trouble indicators to identify problem areas and escalate to appropriate parties. Ensure the continuous availability of all services.
- Manage, coordinate and communicate network maintenance and change management events. Create work effort estimates for assigned tasks and support prioritization/release management.
- Participate in an on-call rotation to resolve application issues after normal business hours. Unix/Linux Administration.

Limelight Networks Inc / EDGIO, Tempe, AZ (remote)

Site Reliability Engineer

July 2014 - March 2022

- Design, Rack/Stack, deploy and tuned our open nebula private cloud for our DevOps team, reducing the footprint from dozens of racks to less than 12 new powerful hypervisors. Improved terraform provider to work with our inventory management system (fork of rack money) and IPAM.
- Once in production, deployed many Kubernetes clusters (rancher) in our Open Nebula private cloud at many of our PoPs (point of presence/data centers) throughout the globe.
- Built custom Linux cloud-init images, hardened for security using Packer and Ansible. First experience with CIS benchmarks, Snyk for hosted github/gitlab code auditing, driving security practices and internal tooling.

- Created gitlab ci/cd runner on physical hardware for building the packer generated images for cost reduction. Hosted Gitlab runners were too slow, costly and limited for our needs.
- Migrated our primary operating system from a highly complex and customized FreeBSD installation that was EOL to modern and almost entirely vanilla Ubuntu Linux LTS installation to support modern best practices, security, and software deployment lifecycles.
- Assisted benchmarking performance teams testing differences between XFS, EXT3/EXT4 journaled/non-journaled, and SSD tuning for CDN cache hosts that require bleeding edge performance. Helped network operations team adopt LACP fallback switch configurations that allowed multipath redundancy and accessing multiple VLANS at PXE boot without breaking bonded switch configurations for the first time.
- Uplifted DNS platform from bind9 and manually modified zone files with room for human error to api driven and automated powerDNS system for cache DNS, anycast DNS (using Quagga fork of Gnu/Zebra Router to manage BGP sessions on FreeBSD and Ubuntu hosts).
- Built a Proof of Concept Tinkerbell OSS deployment stack, reducing bare metal host configuration and production readiness from laborious 4-hour endeavors to just minutes. As a joke we even developed a method to re-image hosts from a slack channel without ever touching the command line or an IPMI application. Contributed our improvements to their vagrant sandbox environment back to the open source project on github.
- Tinkerbell allowed running docker workloads at PXE boot time for updating kernel drivers, add mdadm/raid and firmware support, set IPMI configuration etc. This was instrumental in switching our primary OS from FreeBSD to Ubuntu Linux across 10,000+ bare metal machines with cloud native features.
- Developed a versioned control methodology to augment existing github for production configuration management, allowing less risky deployments before Ci/Cd adoption. Reduced network and service outages by helping to build SRE team from scratch and canary to blue/green testing methods.
- Contributed to 31 code repositories totaling 2200+ commits during tenure.
- Became the SME (subject matter expert) for configuration management and senior point of contact for difficult escalations for customer-facing support cases. Uplifted old cfagent2 and chef to modern saltstack environment to enforce configuration policies and software installations including Zabbix monitoring agents and scripts critical to OpsEng.
- Began role as OpsEng Tier 3, trained 5 new employees to complete new infrastructure projects which were completed 6 months faster than previously projected timelines.

EDUCATION

Livonia Franklin High School, Livonia, MI

High School Diploma, June 12, 2001

- Completed Livonia Career Technical Center advanced learning programs for network administration & engineering covering Novell CNA and CompTIA A+ certifications
- Enjoyed tutoring peers in studies of computer science and networking

HOBBIES

- Open-source and Free Software enthusiast
- Automotive hobbyist restoring classic cars & building high performance engines
- Active ice hockey player (Center, L/R Wing positions)
- Drummer and music enthusiast