IRA W. SNYDER

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Summary of Qualifications

I am a DevOps Engineer and Systems Administrator with professional experience spanning more than 12 years. My experience and interests are primarily within the Linux ecosystem, and are especially focused on the implementation and operation of highly available distributed systems. I have a passion for automating repetitive tasks so that I can get on with "the fun stuff." I am experienced at working within a small team of dedicated individuals to build and operate production quality systems for scientific and academic research.

Throughout my career, I have been a leader and contributor on many successful projects. I have planned and implemented a migration of an on-premises data center into the Amazon Web Services cloud. I used the Puppet configuration management software to bring a hand built global computing infrastructure under automated control, reducing the time to recover from failures from several weeks down to less than an hour. I enjoy both creating new systems, as well as working with existing systems to improve upon them to adapt to changing business needs.

Experience

- **Las Cumbres Observatory Global Telescope Network**—Goleta, CA
  DevOps Engineer, Systems Administrator: December 2014 – present
  - Migrated on-premises data center to Amazon Web Services cloud to adapt to changing computing needs, and to decrease spending on equipment, power, and cooling.
  - Implemented Highly Available AWS Kubernetes (EKS) cluster supporting more than 100 production services. Used Spot Instances and Autoscaling to minimize cost.
  - Built several Python / Django / PostgreSQL web applications to support IT Team needs.
  - Migrated Science Data Archive to AWS S3 to significantly reduce data storage costs.
  - Implemented Github and Jenkins-based continuous build system.
  - Implemented >200TB Ceph storage cluster to support large scale scientific experiments.
  - Implemented Puppet configuration management for computers at globally distributed telescope sites. Reduced hardware failure recovery time from approx. 1 month to 1 hour.

- **California Institute of Technology Owens Valley Radio Observatory**—Big Pine, CA
  Software Engineer, IT Staff: April 2008 – December 2014
  - **Software Development:**
    - Ported U-Boot and Linux to several custom hardware embedded systems.
    - Implemented several Linux device drivers for various hardware components.
    - Design and implementation of Array Control System software.
    - Design and implementation of Correlator System software.
    - Implemented a Buildbot-based continuous integration system.
  - **IT Operations:**
    - Implemented a Puppet-based system management infrastructure.
    - Implemented comprehensive monitoring infrastructure based on Nagios and Munin.
    - Built a log aggregation and search system with Elasticsearch, Logstash, and Kibana.
    - Maintenance and improvement of computing and network infrastructure. This included the email system, website, DNS, DHCP, Cisco networking hardware, etc.
    - Worked with users to fix any problems with their workstations.

Skills

- **Operating Systems:** CentOS (Red Hat) and Ubuntu Linux.
- **Amazon Web Services:**
  - Elastic Kubernetes Service, EC2, EBS, Autoscaling, Spot Instances.
  - VPC Networking, ALB/NLB, NAT, IPSEC VPN, DHCP, DNS, ACLs, etc.
  - Experienced with EBS, S3, EFS storage.
- **Containers and Kubernetes:**
  - 3 years experience operating Rancher container orchestration platform.
  - 1 year experience operating Kubernetes container orchestration platform.
  - Extensive production operations and debugging experience.
- **Libraries, Frameworks, Tools:**
  - Django, Flask, various Python libraries and tools.
  - Docker, Kubernetes, Helm, Skaffold, Jenkins.
  - Nagios, Grafana, Prometheus, Logstash, Kibana.
  - MySQL, PostgreSQL, SQLite.
  - Redis, RabbitMQ, Elasticsearch.
  - NGINX, Apache, cURL.
  - Github, Google Docs, Slack, Redmine, Bugzilla.
- **Programming Languages:**
  - Proficient with Python, Puppet, bash shell, YAML, Java, C, C++.
  - Comfortable with Golang, Javascript, HTML/CSS.
- **Embedded Systems:**
  - U-Boot Bootloader: CPU/RAM and peripheral configuration and setup.
  - Linux Device Drivers: I2C sensors, FPGA access, Ethernet network, CAN Bus.
- **System Administration:**
  - Proficient with Cisco switches and routers.
  - Proficient with Puppet, Terraform, PXE, and on-premises hardware.
  - Proficient with KVM/QEMU Virtual Machines, Proxmox, Ceph Storage cluster.

Open Source Projects

- **Github – https://github.com/irasnyd/, https://irasnyder.com/devel/**
  - Personal Projects.
  - Contributions to open source projects.
- **U-Boot – http://www.denx.de/wiki/U-Boot/WebHome**
  - Ported U-Boot to OVRO CARMA Board.
  - Ported U-Boot to Freescale P2020 COM Express Board.
  - Submitted various bugfixes.
- **Linux Kernel – http://kernel.org/**
  - Developed and maintained several drivers for both mainstream and custom hardware.
  - Worked with the kernel community to bring the drivers to mainline Linux.

Education and Achievements

- **California State Polytechnic University Pomona**—Pomona, CA
  - BS Computer Science, December 2007.

- Cal-Poly Pomona Dean's List, fall 2007.
- Recipient, California State Governor's Scholarship.
- Awarded Eagle Scout Rank, Boy Scouts of America, 2002.