

Maxwell Spangler

DevOps Engineer / Linux Admin / SRE

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Denver, Colorado

github.com/maxwax

Operations engineer for Linux based computing environments with a love of metrics, monitoring, visualizations and documentation to support teams and their services. I excel at seeing the big picture of computing challenges and then drilling down to overcome obstacles and provide organizations with the results they require.

Experience

Sabbatical

Denver, Colorado, October 2019 –

Took a few months off to code and travel. Code published at github.com/maxwax whenever possible.

- Created Chef repo *maxlab* to provision my lab with all core services, node configurations and applications.
- Created Chef repo *station* to provision my personal Linux workstation with tools and services for productive use.
- Rewrote a variety of scripts using best practices. See: *santoku*, *safe*, *vital-backup*, *birdseye*, others.

DevOps Engineer, Oracle

Boulder, Colorado, February 2014 – October 2019

Team member on a geographically remote team that supported social media intelligence applications including a real-time big data pipeline for capturing, analyzing and enriching billions of messages annually. Operated over 1600 server nodes running Linux OS or OracleVM hypervisor. Member of 24/7 on-call team rotations and accepted escalations from others. Configured internal and external monitoring systems to alert on health of network, hardware, OS, services and applications. Automated build out of Linux nodes using PXE & Kickstart and provisioning of nodes with Chef cookbooks. Wrote scripts to automate manual processes and support services as required. Managed storage resources on Oracle ZFS filers for NFS clients. Began work porting metrics services from existing data center to Oracle Public Cloud.

- Joined with minimal enterprise operations experience but left as a senior engineer experienced in resolving issues and incidents.
- Planned & managed patching for MELTDOWN/SPECTRE security vulnerabilities on ~750 nodes without service interruption.
- Designed, deployed and operated HA Graphite metrics cluster handling > 6 million metrics per minute from over 750 nodes.
- Developed custom Grafana metrics dashboards allowing superior visualization of services' health for ops, devs and management.
- Created scripts to simplify complex technical processes to enable less technical staff to perform routine maintenance tasks reliably.
- Built specialist expertise in networking, hardware, virtualization and Linux OS to overcome technical obstacles as they presented.
- Collaborated with network and security teams to understand and resolve connectivity and performance issues.
- Designed business process and supporting tools to guide staff to use best practices consistently for routine operations.
- Created documentation using Confluence wiki with effective diagrams to convey technical knowledge accurately & comfortably.
- Trained staff using zoom presentations, interactive exercises and wiki documentation to cultivate other engineers on my team.

Technologies

Server OS

Linux (Red Hat, Oracle, CentOS, Debian, Ubuntu, SuSE), Unix

Virtualization

Oracle VM (Xen), ProxMox

Cloud

Oracle Public Cloud

Provisioning

Chef, Kickstart, PXE Boot

Monitoring & Alerting

Oracle Enterprise Manager, Thousand Eyes, PagerDuty

Metrics

Graphite, Grafana

Scripting & Coding

Bash, Ruby, Progress 4GL

Task Automation

Rundeck

Development

Test Kitchen, Vagrant

Git, Github, Gitlab

Data Center

Planned, Racked, Cabled and Operated servers

Ticketing

JIRA, JQL

Documentation

Confluence (Wiki), Draw.io, Visio, DokuWiki

Network Services

DNS, DHCP, NFS, Samba

Databases

Progress RDBMS, SQL

Storage

Oracle ZFS Filers, HP SANs, Fibre Channel

Server Hardware

Extensive experience with x86 servers from HP, Oracle, others.

Experience with HP Integrity Enterprise systems including Superdome partitioned systems.

Interests

Traveling and exploring, buying more books than I have time to read, joining friends in cooking meals and walking dogs downtown to make people smile. PADI SCUBA Instructor since 2004.

Past Experience

Consultant, Rocky Mountain School of Expeditionary Learning

Denver, Colorado, March 2010 – present

Provide technical consulting to RMSEL in support of a major building construction project impacting their existing computing resources. Previous to that I worked with a small team to completely overhaul their wired and wireless networks, upgrade server infrastructure, deploy Linux based services, improve internet connectivity and document critical technical resources.

- Created project plan for dismantling and future re-deployment of entire computing resources after summer 2020 construction.
- Resolved legacy network issues with a re-engineered network topology using LACP trunking to eliminate performance obstacles.
- Produced documentation and meticulous diagrams of network infrastructure for ongoing support requirements.
- Wrote bash scripts as needed to automate tasks such as nightly backups and analysis of students' usage of shared file storage.
- Deployed a Linux based student desktop environment with 85+ nodes using central NFS file services and low-cost workstations.

Enterprise Systems Test Engineer, Hewlett-Packard

Fort Collins, Colorado, Contractor, August 2010 – July 2013

Tested combinations of enterprise server hardware, firmware and Linux OS versions in development for future release. Wrote test policy and test plans, configured test infrastructure and test systems, executed tests, gathered methodical evidence of test faults, submitted detailed reports to other teams, and collaborated with them for investigation then verification of fixes.

- Designed a web-based test plan management app that enabled engineers to work smarter for increased productivity.
- Created a testing guidebook that defined specific goals for testing and established standards for testing procedures.
- Organized and completed platform testing for an 8-socket server model update on schedule despite short staffing at HP.
- Designed, built, and deployed a 24-rack test lab within an 800+ rack data center that was successfully used for years.
- Self-trained as needed in multiple enterprise technologies such as HP Integrity servers and Fibre Channel storage.
- Created technical and graphical documentation to increase lab knowledge and quickly educate others.
- Enabled teams in China and India to perform remote testing of local Colorado, USA based physical resources.
- Enabled Linux OS kernel development teams access to QA lab resources using private test access & infrastructure resources.
- Trained other engineers on technologies such as KVM, SR-IOV, VLANs, Ethernet Layer 3 routing, and more

Co-Manager, Serena Restaurant and Bar

Research Triangle Park, North Carolina, March 2005 – September 2008

Partner in a project to take an existing (but financially failing) restaurant and rework its physical resources into a new concept for the investor. Learned to meet the responsibilities of any role in the environment from manager to cook to dishwasher. Exercised customer service skills I was unaware of while working in IT. Managed staff, developed menu, managed inventory, produced website and printed marketing materials, configured and operated MICROS point of sale system.

- Built complex spreadsheet model for food costing & menu analysis to focus sales on high-profit, high-volume menu items.

Software Developer, Great Plains Locating Services

Omaha, Nebraska, January 1999 – June 2004

Developed software to receive work tickets from multiple call centers, apply business rules and deliver tickets to field staff for completion. Collaborated with users, managers and executives to analyze business processes and developed software features for increased daily operations efficiency.

- Remotely managed multiple critical Unix systems operating combed apps and relational databases with minimal service interruption.
- Developed software that exceeded our competitors systems for features, effectiveness, reliability and user satisfaction.
- Used Progress DBA best practices to keep databases in prime health for optimal performance on limited hardware.

Software Developer, One Call Concepts, Inc.

Hanover, Maryland, 1993 – November 1998

Sole developer responsible for full application life cycle of proprietary ticket-based work order system at the core of OCC's business. On-Call with physical pager to respond to alerts and resolve incidents remotely.

- Developed a use-driven search tool using optimized queries to cut search times from 20-40 minutes to less than 1 second.
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