

# Martin Walsh

SYSTEMS ENGINEER · DEVOPS · SRE

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## Summary

Code-slinging system administrator, DevOps practitioner, open source enthusiast with more than 15 years experience and a penchant for automating ... everything.

- Detail-oriented and dedicated to fulfilling business objectives
- Trusted teammate and mentor with a reputation for high productivity
- Deep understanding of configuration management practices and rationale
- ChatOps fan; an advocate for operational transparency through a self-service approach
- Strong programming background; Python language expert in scripting/automation

Seeking a challenging, and multifaceted, systems engineering position requiring the creative application of open source technology.

## Proficiencies

<b>Cloud (AWS)</b>	IAM   VPC   EC2   S3   EFS   ECS   ECR   RDS   Aurora   Cloudfront   ELB   Route53   Cloudwatch
<b>Operating Systems</b>	RHEL/Centos/Amazon Linux   Debian/Ubuntu   OpenBSD   Mac OS X
<b>Network Servers</b>	Apache   Nginx   HAProxy   RabbitMQ   BIND   Postfix   SSH
<b>Databases/Datastores</b>	MySQL/MariaDB/Aurora   PostgreSQL   MongoDB   Redis   Memcached
<b>Configuration Management</b>	SaltStack   Puppet   Hiera   PuppetDB   Ansible   Terraform   Packer
<b>Monitoring</b>	Icinga   Nagios   Ganglia   Graphite   Statsd   Monit   ELK   Grafana   Telegraf   InfluxDB
<b>Programming/Scripting Languages</b>	Python   Ruby   Crystal   Coffeescript/Javascript   Groovy   Bash
<b>Other Tools</b>	Make   Git   Jenkins   Vagrant   Docker   Docker-Compose   Test Kitchen

## Work Experience

### Peapod Digital Labs

Chicago, IL

DEVOPS ENGINEER III

2018–2019

Geographically distributed cloud (Azure) and datacenter (VSphere); in support of Java applications, both internal and public facing.

- Implemented pull-request smoke tests and syntax validation for config management code contributions and data updates, that:
  - eliminated deployment issues caused by simple errors and typos
  - significantly reduced the time and effort required to review pull requests
  - improved the safety/confidence in deployments, thus increasing overall team velocity
- Introduced automatic system-level metrics collection for all provisioned systems, that:
  - mirrored published metrics to a redundant cluster of InfluxDB hosts
  - included a grafana frontend, with automatic creation of dashboard and datasources
  - provided a mechanism for inclusion of custom metric-sets by host role
- Supported multiple geographically distributed teams in a large-scale datacenter migration, by:
  - providing subject matter expertise in the efficient application of config management principles and best practices
  - proposing and implementing a new workflow for peer review to avoid duplication of effort
  - quickly patching upstream open-source software, to unblock teams when bugs were encountered
  - developing easy to use tools to facilitate verification of both new and migrated resources
- Developed custom execution and state modules, reactors and orchestration states for SaltStack
- Contributed to the design and ongoing maintenance of common jenkins pipelines, utilized by development teams company-wide
- Wrote shared library pipeline functions for routine tasks, complete with unit tests

### Rocketmiles

Chicago, IL

SR. SYSTEMS ENGINEER

2016–2018

First systems engineering hire.

100% Cloud: AWS (RDS | Aurora | ElastiCache | EC2 | ELB | Beanstalk | EBS | EFS | ECS | ECR | Lambda | S3 | EMR | Redshift), Compose, Cloudflare.

- Established infrastructure automation using Ansible and Terraform.
- Built a bootstrapping, docker-based, and fully automated CI/CD pipeline with Jenkins, ECS, ECR, Ansible, Terraform, Groovy.
- Developed chatbot scripts to trigger builds, test and/or deployments, and respond on success or failure using Hubot, Coffeescript.
- Extended Ansible with custom modules providing a less error-prone, automated blue-green deployment process on ElasticBeanstalk.
- Provisioned an ELK stack (elasticsearch, beats, kibana, grafana, cloudwatch, S3 etc.) providing centralized logging and monitoring.
- Created a general-purpose performance and load testing suite for diagnosing issues and performance comparisons during deployments.
- Designed, implemented and proctored the systems-engineering challenge to facilitate evaluation of prospective hires.
- Provided systems engineering domain expertise in support of the ongoing development and deployment of several selling platforms.
- Assisted in the launch of two new whitelabel web products, by building production infrastructure and ancillary services on a tight timeline.

## Jellyvision

SR. DEVOPS ENGINEER

Chicago, IL

Jul 2016–Sep 2016

- Identified and contributed improvements to the onboarding procedure for new DevOps engineering hires.
- Established stop-gap redundancy for a highly critical, customer facing, authentication system.

## Wellspring Worldwide

SR. SYSTEMS ENGINEER

Chicago, IL

2015–2016

Geographically distributed cloud (AWS), datacenter, and on-site infrastructure:

MariaDB/Percona MySQL, PHP, Apache, Mesos, Cassandra, Zookeeper, RabbitMQ, VMWare.

- Worked closely with dev teams to improve the performance and stability of production applications.
- Implemented a performance testing suite using Python, Ruby, matplotlib/seaborn, Apache, JMeter.
- Hosted weekly training sessions for Ops staff covering topics such as configuration management, centralized logging, and monitoring.
- Implemented automated testing and deployment (ChatOps-style) for several in-house apps using Slack, Hubot, Jenkins.
- Setup an ELK stack to provide centralized logging services for web and mail logs.
- Instituted a new workflow for config management activities based on best practices including unit/acceptance tests.
- Provided guidance related to cultural change (DevOps), systems engineering planning and priorities.
- Built an automated RPM builder with Docker and Jenkins.

## Leapfrog Online

SR. SYSTEMS ENGINEER

Evanston, IL

2012–2015

Datacenter and on-premise infrastructure.

Responsible for system performance, reliability and security of all customer-facing infrastructure.

Apache, Nginx, HAProxy, RabbitMQ, Redis, GitHub Enterprise, Make, Jenkins, Ansible, Puppet, PuppetDB, Hieradata, Graphite, ELK, Grafana

- Participated in two large-scale datacenter migrations with minimal downtime.
- Provided in-house, systems-engineering focused training to cross-functional audiences, covering topics such as:
  - Nagios configuration best practices and custom plugin development
  - Puppet best practices, development workflow and testing
  - Dashboard creation and data analysis with Kibana/Grafana
  - SSL/HTTPS, DNS and domain registration
- Created or maintained more than 75 custom Puppet modules, parser functions, providers and facts.
- Developed a lightweight Puppet dashboard replacement that included endpoints for monitoring integration.
- Automated the reproducible build-out of a comprehensive disaster recovery environment.
- Implemented helper scripts to automate config management tasks including unit/acceptance testing, catalog diff and full context render.
- Shepherded a chatbot used extensively for automated deployments, nagios management and alerting, and orchestration of routing tasks.
- Managed a Nagios instance with approximately 1800 service checks.
- Wrote custom nagios plugins and notification handlers.
- Created Docker images for local testing by fellow software and systems engineers.
- Replaced Windows DNS with BIND automation allowing a self-service workflow based on standard deployment procedures.

## Parity Systems, Ltd.

SYSTEM ADMINISTRATOR

Evanston, IL

2005–2012

Solo linux system administrator, responsible for the care and feeding of all network services and hardware used by internal staff and clients: Tomcat, PostgreSQL, Samba, Nagios, VMWare, ESXi, KVM/libvirt, Proxmox, dnsmasq, PXE/netboot, Subversion, Selenium, AS/400, DB/400

- Supported developers and end-users alike, by providing documentation, training and bug reports.
- Constructed a server-room climate monitoring system for less than \$100 with owfs, Nagios and Python.
- Automated mainframe configuration, monitoring and reporting tasks using Jython, JTOpen.
- Developed several special-purpose network applications (FTP, LPD, xmlrpc) used for internal projects.
- Implemented a comprehensive network and performance monitoring solution using Nagios, Python/Jython/Java, and rrdtool.
- Created a debian based thumb-drive disaster recovery environment.
- Built a bootable, immutable operating system image to provide distributed PDF conversion services for an internally hosted Java app.
- Implemented an OpenBSD/pf-based "bump-in-the-wire" transparent firewall.

## RS Industrial

IT MANAGER

Buford, GA

2000–2005

Standalone sysadmin and IT help desk, providing corporate leadership and support for the entire organization:

MS Exchange, Active Directory, Postfix, Spamassassin, BIND, dhcpd, Hylafax/cups, Samba, Nagios, Filemaker Pro, MS Great Plains.

- Researched, recommended and purchased new technology for the entire organization.
- Coordinated, planned and assisted in overseeing the construction of a second office space and shared LAN.
- Supervised the development of wholesale and retail ecommerce web sites.
- Integrated disparate accounting and customer service platforms, to reduce duplicate entry.
- Developed several custom customer service platform features, in Filemaker Pro, to automate common tasks.
- Automated weekly sales reporting to save time and increase accuracy.
- Created a voice-call alerting system with Nagios, festival text-to-speech, Python and pyserial.
- Programmed the PLC of an adhesive extruder for manufacturing products to customer specifications.