

# PETER D. BURKHOLDER

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DEVOPS • WEB ENGINEER • INFRASTRUCTURE AUTOMATION • AWS

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DevOps leadership for agile/lean organizations. Expertise includes continuous delivery, security, cloud computing, capacity planning, configuration management, monitoring, and incident management.

## **Chef Software, Seattle, WA (remote employee) (2014-2016)**

### *Customer Engineer*

Consulted with 7 long-term enterprise customers comprising \$2.0M ARR (including Bloomberg, CitiGroup, Blackberry and IHG) on Chef automation adoption and continued success. Grew or maintained subscription revenue on all my accounts with zero churn.

Conducted the Chef DevOps Journey Assessment (Dojo) with three customers, generated specific one-year recommendations for accelerating delivery of business value with DevOps.

Architected Chef deployments for scale, reliability and security for environments with 10,000 nodes distributed across multiple data centers.

Developed cookbook code, plugins, bug fixes and product feature enhancements on behalf of Chef customers.

Acted as liaison between customers and Chef product team to assess opportunities in new feature development.

Represented Chef at DevOpsDays (DC and Chicago), SurgeCon, LISA, local meetups and Chef events.

## **Rally Health, Washington, DC (2012-2014)**

### *Cloud/Devops Engineer*

Configuration management and operation of *RallyHealth*, a HIPAA-compliant on-line health and wellness platform

Operated multiple development, test, and partner-integration environments in AWS EC2 configured, with Chef, to run identically in each environment. Designed and deployed core infrastructure to support application deployment and monitoring across hundreds of EC2 nodes.

Tools included: Puppet, Chef, MongoDB, RabbitMQ, Redis, Sensu, Graphite, Logstash, Elasticsearch, Jenkins, packaging (FPM, Deb), HAProxy, MySQL.

Mastered much of the AWS ecosystem: EC2, ELB, EBS, IAM, ASG (autoscaling), RDS, Route 53, Cloudwatch, and VPC.

Designed and wrote Ruby-based zero-downtime release system to shift load-balanced (HAProxy and AWS ELB) traffic between versions of application code. Wrote or customized tools for specific needs in Ruby, Python and shell.

Monitored node and application health with *Sensu*. Replaced commercial web-application monitors, Pingdom and NeuStar Nimsoft) with open-source CasperJS and Sensu integration, delivering 10x the monitoring at 1/10th the cost.

Deployed Graphite/StatsD/CollectD and Logstash/Elasticsearch/Kibana for aggregation and search across metrics and 12Gb/day of application logs.

Supported Jenkins continuous integration, test and release to development and staging environments.

Engaged in community-building and outreach by co-organizing DevOpsDC Meetups and inaugurating company's Engineering Blog.

**AARP Digital Strategy and Operations, Washington, DC (2008-2012)**

**Senior Web Engineer/Team Lead**

Operated over 50 web, application, database and development machines (RHEL4/5) to serve 3 million pages/day for AARP.org, the United State's largest membership organization.

Led team of four system administrators in Scrum-style approach to work management.

Deployed open-source Nagios monitoring as alternative to commercial monitoring service, saving client \$100k per year.

Automated application release, reducing errors to near zero, and reducing deployment time by 75%

Saved client \$400k by introducing options to a commercial real-user monitoring system to produce the required business intelligence

Reduced time to identify application issues through implementation of NewRelic, allowing developers to isolate issues in minutes instead of hours

Assured MySQL availability with HA/DRBD pairs on each datacenter master, and master-master replication between two datacenters.

Deployed Puppet for configuration management. Introduced AWS/EC2 to test new system builds.

Built business continuity environment at remote data center.

**National Center for Biotechnology Information, National Institutes of Health, Bethesda, MD (2007-2008)**

**Applications Administrator**

Co-managed over 200 web servers for the U.S. government's busiest web site (<http://ncbi.nlm.nih.gov>, PubMed, MedLine) using CfEngine and Subversion.

Built, configured and tuned Apache servers, deployed locally-developed applications, operated third-party applications such as Mailman, Jira, MySQL, ProFTPD and several wiki platforms.

Worked with developers to resolve application issues. Wrote custom extensions for Jira in JRuby and Ruby. Customized RT3 ticket system in Perl/Catalyst.

**University Corporation for Atmospheric Research (UCAR/NCAR), Supercomputer Science Center, Boulder, CO (2007)**

**Computing Security Consultant**

Developed and delivered a training course on IT security for 112 designated system administrators at UCAR/NCAR, a world-renowned research center. Over four months, created and offered four 3-hour classes in multiple sessions. Topics included Solaris/Linux hardening, incident response, data protection, patch management and Mac OS X security

**EchoDitto, LLC, Washington, DC (2007)**

**Director Of System And Network Operations**

Operated LAMP-based web server farm and Akamai content delivery network for two dozen clients of Internet strategy firm.

Launched up to four new Drupal-based client sites per month, and met peak demand of 910,000 visitors/day.

Managed internal systems for email (Exim), VOIP (Asterisk), and Mac OS X systems.

**University Corporation for Atmospheric Research (UCAR/NCAR), DLESE Program Center, Boulder, CO (2002-2006)**

**Lead System Administrator**

Supervised team of three sysadmins to operate the technical infrastructure for a J2EE-based digital library.

Developed infrastructure for Red Hat Linux (RHEL) servers with Kickstart deployments, CfEngine+Subversion configuration management, NIS+Kerberos directory service and authentication, automated backups, monitoring and alerting. Automated deployment of Java web applications (ant). Supervised administration of 80 desktop and portable systems.

Provided outstanding customer support in Windows, Linux (Red Hat), Unix (Solaris) and MacOSX environments. Won bids to assume operations for two other programs within our corporation. Expanded team from one to three full-time system administrators.

**Applied Physics Lab, University of Washington, Seattle, WA (2000-2001)**  
***Interim Computing Services Manager / IT Security Manager***

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Managed a team of four full-time and part-time staff to provide computing services for 350 scientists and engineers.

Set strategy in consultation with Lab's computing advisory group, managed budget with Lab administration, and hired new director upon my relocation to Colorado.

Ran network services (DNS, DHCP, mail, etc.) for 500+ nodes. Configured, installed, and managed core servers: (Solaris 2.6-2.8), Linux (Red Hat and Debian), Windows 2000 and MacOS. Expanded network infrastructure from three Class C subnets to five. Configured and upgraded Sendmail, BIND, DHCP, FTP and printing services.

As the lab's first manager of IT security, implemented a program of vulnerability scanning (Nessus) and patching, system administrator education, automated hardening (Bastille), and a formalized incident response and forensics program (TCT).

**SELECTED PUBLICATIONS AND PRESENTATIONS**

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"Ruby TDD for Chef Cookbooks," DC-Ruby Users Group, May, 2016

"Usenix LISA 2015 Tutorial: Automation Bootcamp," (co-instructor) Led units of one-day workshop on Chef, Docker and Sensu. November 2015.

"Diversifying DevOps Workshop," One-day workshop on infrastructure automation, testing and continuous delivery with Chef, AWS and Jenkins. May 2015.

"Sensu: A Cloud-ready Monitoring Framework," DevOpsDC, May 2012.

"Continuous Delivery: A Roadmap for AARP," AARP Lunch and Learn, March 2011.

"Introduction to EC2 and Cloud Computing," Inaugural Presentation NCBI Monthly Lunch Talks, May 2008.

"Topics in Mac OS X Security," Four-hour course for UCAR/NCAR computing personnel, December 2007.

"Topics in Cross-Platform Computing Security," Four-hour course for UCAR/NCAR sysadmins, December 2007.

"Topics in Unix/Linux Security," Four-hour course for UCAR/NCAR computing staff, November 2007.

"Essentials of Windows Incident Response," 30-minute segment of Windows security course, November 2007.

"UCAR Security Essentials," Four-hour course for UCAR/NCAR sysadmins, September 2007.

"SVK: A compelling complement to Subversion," Employer Job Talk, January 2007.

“Under the Hood with Plone,” UCAR, April 2006

“The RT3 Trouble Ticket System,” UCAR, December 2004.

“Shibboleth: Privacy-Preserving Authentication for the Web,” UCAR Web Advisory Group, October 2004

“Subversion: An compelling alternative to CVS,” Colorado SAGE Meeting, February 2004

“Securing Web Applications,” ISSA Denver Chapter Monthly Meeting, April 2002

“SSL Man-in-the-Middle Attacks,” SANS Reading Room,  
<http://www.sans.org/rr/whitepapers/threats/480.php>, 2002

“SSH and SSL for SysAdmins,” Colorado SAGE Meeting, November 2001, and University of Washington, January 2002

“Linux Security Essentials,” a two-hour course for researchers self-administering Linux systems on patching, system scanning, and ipchains, Applied Physics Lab, Seattle, Washington, April 2001.

“Unix for Geophysicists,” a two-day course on shell commands, essential system administration, and using geophysical analysis tools. Johannesburg, South Africa, June 1998.

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#### CERTIFICATION / TRAINING

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Data Science/R Programming (in progress) via Coursera/Johns Hopkins, 2016

MongoDB for Administrators: 10gen M102, 2013

Red Hat Certified System Administrator (RHCSA RHEL 6), 2011, ID: 111-114-716

Red Hat Certified Engineer (RHCE RHEL 6), 2011, ID: 111-114-716

ISC<sup>2</sup> System Security Certified Professional (SSCP), 2002 (lapsed)

SANS Institute GIAC Security Essentials Certification (GSEC), 2002

Usenix/SAGE cSAGE II, 2001

Microsoft MCP, 2001

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#### EDUCATION

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**Univeristy of Wisconsin - Madison** Madison, Wisconsin • Master of Science in Geophysics  
(Seismology)

**Earlham College** Richmond, Indiana • Bachelor of Arts in Physics

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#### PROFESSIONAL AFFILIATIONS AND ACTIVITIES

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Usenix LISA 2016 Volunteer

Meeting Coordinator for DC-SAGE (2009-present) and DevOpsDC.

System Administrators Guild (SAGE), USENIX, League of Professional System Administrators (LOPSA)