

MICHAEL CAMPFIELD

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OVERVIEW

An experienced professional combining in-depth understanding of infrastructure, automation, containers, cloud, and standards-based design. Experiences across corporate, education, and research environments with extensive involvement in solutions development and environment modernization. Graduate level degrees in both information science and computer science providing holistic understanding of the complexities and opportunities supporting data rich and technically demanding settings. Views each project as a creative venture and that the greatest challenges are solved by leveraging the ideas and feedback from others.

Recent Experience

- **Office of Scientific and Technical Information, Department of Energy (DOE)** Oak Ridge, TN
DevSecOps Lead/Linux Systems Administrator Sept. 2023 – Present
 - DevSecOps lead including containerization efforts, OpenShift/Kubernetes systems, GitLab administration and pipelines, and developer support.
 - Systems administration of Red Hat Enterprise Linux (RHEL) and CentOS Linux.
 - Subject matter expert (SME) for Linux and Infrastructure as Code (IaC) systems.
 - Responsible for CentOS to RHEL project including large-scale Ansible infrastructure design and migration processes development.
 - Continuity planning and multi-project process documentation.
- **Office of Advanced Molecular Detection, Center for Disease Control and Prevention (CDC)** Atlanta, GA
Sr. System Administrator June 2021 – Sept. 2023
 - Senior administrator and architect for mission-critical activities in the High Performance Computing (HPC) research environment covering multiple extreme-visibility projects.
 - Systems administration of RHEL, CentOS, and Rocky Linux 9 - 7 along with Ubuntu/Debian-based systems 18.04+ in hybrid on-premise and multi-cloud environments.
 - SME and primary administrator of automation, HPC, batch scheduling, and petabyte-scale storage systems.
 - SME for configuration management, authentication infrastructures, and data management strategies.
 - Development of Puppet and Ansible configuration solutions bridging siloed environments.
 - Integration of container-based technologies for scientific workflows (e.g., Docker and Singularity).
 - Engineering and implementation of full lifecycle workflow automation systems.
 - Authorship of formal policy documentation and data management plans.
 - Trainer and course author for Linux, HPC, and research environment workshops.
 - Systems metrics solutions for multi-faceted systems management and performance analysis.
- **Managed Services, Science Applications International Corporation (SAIC)** Oak Ridge, TN
Principal System Administrator Feb. 2019 – May 2021
 - Team lead and primary Linux architect and administrator for customer-facing and internal projects across on-premise data centers, cloud-native, and hybrid environments.
 - Systems administration of RHEL and CentOS versions 8 and 7, Amazon Linux 2, and Ubuntu/Debian-based systems.
 - Design and development of Puppet and Ansible-based cross-organizational and multi-project scalable service solutions.

- AWS and Azure cloud engineering, security compliance, and auditing of solution design proposals.
- Support of shared DevSecOps environments using GitLab, Docker, Rundeck, Jenkins, and related technologies used by multiple research groups.
- Automated system creation and deployment across cloud, VMware, and physical systems.
- Programming in Python, Bash, and Ruby.

- **Research and Development Group, Oak Ridge National Laboratory**

Oak Ridge, TN

Neutron Sciences Directorate System Administrator

June 2017 – Feb. 2019

- Embedded team member serving Neutron Sciences Directorate's multi-facility research operations providing administration for 24x7 data acquisition systems, core infrastructure, scientific analysis workflows, multi-petabyte high performance storage, and researcher support.
- Systems administration of RHEL-based versions 7 - 5 and Ubuntu/Debian-based Linux distributions.
- Development of Puppet-based cross-organizational configuration management environment.
- Migration from 3 concurrent configuration management systems to standardized Puppet 4.
- Deployment, troubleshooting, and user assistance for scientific computational clusters and expansion into central lab OpenStack and Red Hat Enterprise Virtualization (RHEV) environment.
- Substantial documentation addition and updating for systems, processes, and project management targeting administration group, internal users, and visiting researchers.

- **National Center for Computational Sciences (NCCS), Oak Ridge National Laboratory**

Oak Ridge, TN

High Performance Computing System Administrator

April 2015 – June 2017

- Member of HPC Operations group supporting the DOE's Oak Ridge Leadership Computing Facility (OLCF) hosting multiple petaflop-class supercomputers.
- Development and support of infrastructure systems supporting a large-scale research environment.
- Configuration management design and development for Red Hat Enterprise Linux and CentOS versions 7 - 5 using Puppet.
- Configuration and management of clustered VMware virtualization and NetApp storage.
- Design and testing of new hardware and software systems for integration into team, group, and center-wide initial deployments and for enhancement of existing services.

- **University of Tennessee (UT) National Institute for Computational Sciences (NICS)**

Oak Ridge, TN

Senior Linux System Administrator/HPC System Programmer

Oct. 2011 – April 2015

- Deputy manager for the Extreme Science and Engineering Discovery Environment (XSEDE) Systems Operations group with responsibilities including staff organization, project management, service deployment, quarterly report authoring, and key performance indicator evaluation.
- Infrastructure team leader with technical supervision responsibilities over team projects and goals.
- Deployment, customization, and troubleshooting of TORQUE/Moab batch queuing systems.
- Lead system administrator for a SGI UV1000 1024-core, large-memory, supercomputer targeted at visualization and designed procedures for major system upgrades.
- System administrator on mid-size scientific clusters (Cray, SGI, and Beowulf-style) used for algorithm scaling to supercomputer-level parallelism.
- Initiated and led redesign of and redevelopment of Puppet 2 environment into new Puppet 3 deployment incorporating common IT systems services, high-availability tools, security systems, virtualization management, patch cycle control, and specialized HPC requirements.
- Design, deployment, and management of VMware vSphere primary and disaster recovery sites, migration of existing infrastructure and non-specialized hardware to virtual machines.
- Service documentation and architecture guides targeting disparate experience levels and technical knowledge.

Relevant Skills and Certifications

- 20 years experience with Linux server and workstation administration of Red Hat Enterprise Linux (RHEL) and Ubuntu/Debian-based distributions.
- Virtualization and cloud including VMware, Azure, AWS, and Terraform.
- Containerization utilizing OpenShift/Kubernetes, Helm, Docker, Singularity, and LXC.
- DevSecOps including GitLab, Rundeck, Jenkins, and HashiCorp toolset.
- Extensive experience designing, implementing, and extending configuration management solutions with a focus on Puppet and Ansible.
- Programming in Python, shell scripting, and Ruby with experience in additional C-family languages.
- System and application hardening and continual compliance validation against federal, state, and internal security standards (e.g., DISA STIG and CIS) using tools such as CrowdStrike, Elasticsearch, and Splunk.
- HPC, cluster, and batch processing systems deployment, configuration, and operational support.
- High-availability, high-throughput, and load-balanced resource implementation and orchestration across cloud and on-premise environments.
- Quantitative and qualitative research and experiment design, grant writing, and project support.
- Red Hat Certified System Administrator (RHCSA) certified for RHEL 8.
- AWS Certified Cloud Practitioner including deployment experience.
- Microsoft Certified: Azure Fundamentals including deployment experience.
- DevOps Institute: DevOps Foundation Certification.
- ITIL v4 Foundation Certified.
- Certifications for Thomson Reuters and LexisNexis legal research tools.
- LaTeX and BibTeX authoring, typesetting, and documentation systems.
- Red Hat Certified Engineer (RHCE) and RHCSA certified for RHEL 7 (inactive).
- Maintained US Department of Energy (DOE) L security clearance (inactive).

Open Source, Recent Presentations, and Research

- "tanagra" LaTeX and BibTeX document management and build system.
<https://www.github.com/campfield/tanagra>
- "mimeograph" A high-level configuration and templating environment for HashiCorp Vagrant.
<https://www.github.com/campfield/mimeograph>
- "Stormy Skies Ahead: Batten down the hatches with on-prem." Oct. 2022
- "Techronomicon: Keeping documentation that won't drive you mad." Feb. 2021
- "Designing Configuration Management for Friends and Enemies." May 2018
- ORCID researcher ID: 0000-0002-9708-2879.

Education

- **Indiana University-Purdue University Indianapolis (IUPUI)** Indianapolis, IN
Master of Library and Information Science (MLIS), Academic Librarianship Specialization Dec. 2023
 - Knowledge, data, and information acquisition, organization, and lifecycle management techniques.
 - Information management policy development and analysis.
 - Quantitative and qualitative research design, support, and ethical evaluation.
 - Proposal and grant writing, project design, and feasibility reviews.
 - Scholarly communication, instruction methodologies, and research support.
 - Academic librarian specialization with education and skills applicable across a large swath of corporate, research, government, and higher education settings.
- **University of Tennessee** Knoxville, TN
Master and Bachelor of Science in computer science 2002, 1999
 - Experience with data mining, artificial intelligence, graph theory, and image processing.
 - Software implementation methodologies, programming, and algorithm analysis practices.
 - Member of Computer Science department's Labstaff group responsible for systems administration of departmental servers, storage, and research clusters.