MICHAEL CAMPFIELD

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Experience

- **National Center for Computational Sciences (NCCS), Oak Ridge National Laboratory** Oak Ridge, TN
  High-Performance Computing (HPC) System Administrator April 2015 – Present
  - Worked with HPC Operations group to support the US Department of Energy's Oak Ridge Leadership Computing Facility (OLCF), home of the Titan and upcoming Summit supercomputers.
  - Development and support of infrastructure systems supporting a large-scale research environment home to several petaflop-class high-performance supercomputers and associate support technologies.
  - Extensive experience with Puppet configuration management on Red Hat Enterprise Linux (RHEL) 6/7, CentOS versions 5 - 7, Docker, and Linux Container (LXC) technologies.
  - Creation of DevOps environments using HashiCorp Packer, Vagrant, and continuous integration tools.
  - Configuration and management of clustered VMware virtualization and NetApp storage technologies.
  - 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.
  - Project planning, product evaluations, and technical documentation creation.

- **University of Tennessee (UT) National Institute for Computational Sciences (NICS)** Oak Ridge, TN
  Senior Linux System Administrator/HPC System Programmer June 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 of 6 staff.
  - Initiated and led redesign of complete redevelopment of legacy Puppet environment into new forward-looking 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 majority of existing infrastructure and non-specialized hardware to virtual systems.
  - Development of LXC testing and deployment environments.
  - Lead system administrator for a SGI UV1000 1024-core large-memory supercomputer used for visualization and designed procedures for major system upgrades.
  - Administrator in charge of incorporating national DataOne project systems, environments, and policies from external control into NICS' management and security domain.
  - Technical requirements gathering, solution evaluation, and recommendation reporting for future project directions.
  - Service documentation and architecture guides targeting disparate experience levels and technical knowledge.

- **UT Social Work Office of Research and Public Service (SWORPS)** Knoxville, TN
  System Administrator/IT Specialist February 2005 – October 2011
  - Development, implementation, and maintenance of statewide file, email, authentication, development, and security systems over a departmental network utilizing OpenLDAP, SAMBA, AMANDA, OpenVPN, Nagios, and associated open-source tools.
  - Creation of centralized automated configuration and information management systems in formerly disparate environment utilizing Puppet, Perl, and shell scripting.
  - Virtualization of application servers and development environments through VMware to maximize existing hardware utilization and lower procurement costs.
  - Design and creation of data mining software for use in statistical analysis by departmental staff.
  - Integration of open-source solutions into previously closed-source environment resulting in cost reductions.
  - Implementation of high-availability and high-throughput systems for reliability and improved content delivery.
  - Tier 3 administration and client support for multi-user, distributed server applications.
  - Authored end-user guides and system documentation for customer support and administration reference.

Relevant Skills and Certifications

- Red Hat Certified Engineer (RHCE) and Red Hat Certified System Administrator (RHCSA), ID: 150-136-190, exp. August 2018.
- 15+ years experience with Linux server and workstation administration using Red Hat, SUSE, Debian-based, and Oracle/Sun Solaris operating systems focusing on infrastructure services.
- 10+ years experience with Puppet configuration management tools.
- Virtualization and container technologies utilizing VMware, Vagrant, Docker, Linux Containers (LXC), and KVM/libvirt.
- HPC and Beowulf-style cluster systems administration.
- PostgreSQL and MariaDB/MySQL replicated database cluster design, deployment, and optimization.
- Python, Perl, and shell scripting along with working knowledge of C/C++.
- High-availability and load-balanced resource implementation and orchestration using Pacemaker/Corosync and Linux Virtual Server (Keepalived/IPVS).
- Multi-tier data backup and recovery using various open-source technologies.
- Authentication and authorization tools including LDAP, PAM, PIV, and RSA.
- Deployment, configuration, and upgrades of Request Tracker (RT) ticketing systems including feature extensions and customizations in source.
- Batch job scheduling systems using Adaptive Computing's TORQUE and Moab with working knowledge of the Maui scheduler.

Presentations and Papers

- "Resume Writing - From ACK to discard stack: How I learned to stop worrying and hate the resume." Presentation for the League of Professional Systems Administrators, East Tennessee (LOPSA-ETENN), February 2017.
- "Packing up and shipping out for hostile environments: DevOps utilizing Packer and Vagrant." Presentation for LOPSA-ETENN, March 2016.
- "Serving up virtualization two different ways (with a side of hash tags)." Booth presentation at the Supercomputing 2014 conference (SC14) and LOPSA-ETENN, November 2014, January 2015.
- "Pulling no 'Punches' with Puppet." Presentation for LOPSA-ETENN, July 2013.
- "The XSEDE Ticket System: From Concept to Implementation." Paper and presentation for the XSEDE 13 conference, July 2013.

Education

- **University of Tennessee** Knoxville, TN
  Master of Science in Computer Science 2002
  - Focus on computational theory, software engineering, and hardware design.
  - Developed full POSIX-style operating system in C.
  - Thesis topic: Design and simulation of self-organizing microbial computational automata.
- **University of Tennessee** Knoxville, TN
  Bachelor of Science in Computer Science 1999
  - Focus on algorithm design and software implementation processes.
  - Extensive foundation in multiple areas of mathematics and various scientific disciplines.
  - Thesis topic: Prediction of weight patterns in neural network training.