

Elizabeth Chaos Golubitsky

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Objective

A challenging system engineering or administration position which will enable me to use my experience with configuration management, monitoring, automation, and coordination to manage complex environments.

Experience

BBN Technologies, Cambridge, MA

Engineer I, May 2011 - present

Staff Engineer, September 2007 - March 2008, January 2009 - May 2011

Network Engineer, March - December 2008

- Collaborated on distributed operational monitoring for the NSF GENI project. My contributions included deploying and maintaining a Nagios-based installation to monitor GENI's customized control and network infrastructure distributed across the U.S., developing software for collecting trending data about GENI, and coordinating and testing development efforts of other project participants.
- Defined and tested operational requirements for GENI project software written by local and remote software development teams, and worked with those teams to make sure security, maintainability, and audit requirements could be met.
- Designed and managed GENI project testbed lab with over 100 diverse physical and virtual hosts and network devices, built a configuration management architecture which allows testing and development of diverse research software projects in a controlled environment, and coordinated among a team of 10-20 full-time staffers working on complex network projects in the GENI lab, including policy, design guidance, mentoring, monitoring, debugging, and support of special requests.
- Provided critical planning, coordination, and debugging support for intersite GENI demos which successfully demonstrated networking and research technology on a nationwide network containing over a dozen independent sites. Built and managed a standalone Emulab compute/networking testbed, a complex component integral to these demos.
- Performed survey, research, component design, development, network architecture, and system administration tasks in support of several contract projects.
- Administered and troubleshot routers, switches, firewalls, and custom site traffic monitoring infrastructure in a multi-site network with approximately 150 Cisco and Juniper devices.

Information Assurance Directorate, National Security Agency, Fort Meade, MD

Unix Operating Systems Analyst, July 2005 - August 2007

- Administered network of Fedora Linux workstations and servers. Used Cfengine-based infrastructure to upgrade from FC3 through FC6 without downtime.
- Provided Solaris and Linux security configuration guidance to DoD customers.
- Performed analysis of the OpenSolaris kernel, particularly the IPv6 network stack implementation, and of other source code written in C.

Unix System Administrator, July 2000 - July 2003

Harvard-Smithsonian Center for Astrophysics, Cambridge, MA

- Administered and troubleshot machines at research institution with several hundred active users on mostly Solaris servers and clients.
- Orchestrated transition from telnet to SSH for remote access, including system configuration, group and individual user education, and troubleshooting.
- Implemented spam and virus filtering based on procmail and SpamAssassin.
- Designed central log monitoring infrastructure using syslog and Perl.

Skills

Operating Systems:

- Unix: 15 years user and administrator experience, including: Linux (RHEL/CentOS/Fedora, Ubuntu/Debian), FreeBSD, Solaris (2.5.1-10, Trusted Solaris 8), FreeBSD
- Networking: Cisco IOS, OpenFlow research firmware (primarily HP, NEC)
- Macintosh operating systems (7.5-9, Mac OS X)

Programming languages:

- Proficient in: Python, bash
- Familiar with: C, Perl, PHP, Ruby, awk, sed, Expect, JavaScript

Software and General Skills:

- Configuration management, orchestration, version control: Puppet, Cfengine, Vagrant, CVS, SVN, Git
- Package management/building: RPM/yum, deb/apt, FreeBSD ports
- Testing and debugging: snoop, truss, tcpdump, strace, DTrace, MDB/GDB
- Virtualization: VMWare ESXi, Qemu, Xen, Solaris zones, FreeBSD jails
- Research software: Emulab, ORCA, PlanetLab
- Other software administered: Bacula, Bind, LVM, OpenLDAP, Postfix, OpenSSH, Apache, Trac, WordPress

Monitoring and Security:

- Firewalls: IPTables, NetScreen, Fortinet, Cisco ACLs
- Monitoring: Nagios, RRDtool, Graphite, Ganglia, SNMP
- Host security: SELinux

Education

Carnegie Mellon University, Pittsburgh, PA: M.S. May 2005

Information Networking Institute: major in Information Security

- Classes: operating systems, broadband networks, computer and network security, cryptography, risk management, network security management (student-run class)
- Masters thesis: comparative vulnerability analysis of open source IMAP servers

Swarthmore College, Swarthmore, PA: B.A. May 2000

Double major in Computer Science and Mathematics

- Senior mathematics thesis: error-correcting codes

Publications

Guide to the Secure Configuration of Red Hat Enterprise Linux 5

Operating Systems Division Unix Team of the Systems and Network Analysis Center, NSA, 2007

“Simple Software Flow Analysis Using GNU Cflow”

Article in login: magazine, April 2006

“Toward an Automated Vulnerability Comparison of Open Source IMAP Servers”

Refereed paper, LISA 2005

Solutions Manual for: Linear Algebra and Differential Equations Using Matlab

M. Golubitsky and M. Dellnitz, Brooks Cole Publishers, 1999

Activities

buttonmen-dev github project

Developer and System Administrator, Nov 2012 - present

- Develop PHP/JavaScript-based multiplayer board game as part of a small team.
- Deploy website and Jenkins-based test server using Amazon AWS and Vagrant.

swarpa.net

System Administrator, May 2005 - present

- Administer primarily e-mail and web-based services and virtual domain hosting, with high uptime, for a small number of users.

I Do Foundation, Washington DC

System Administrator, December 2002 - September 2005

- Administered web, e-mail, backups, and other services for nonprofit organization on a volunteer basis.