Resume of Dan Mack

Dan Mack

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Overview

Passionate technologist, team leader, system administrator, storage engineer, and tool developer with a strong customer service focus.

Looking to join a team in any role working on large scale computer infrastructure problems or emerging technology.

This resume is code! Fork it @ https://github.com/danmack/resume.git

Career Interests

System Administration, systems software development, tools, and team leadership.

Throughout my career I have worked on designing, implementing, and managing compute system infrastructure at scale while meeting business requirements. This required that I draw on my education, experience, and team work. Specifically leveraging the following skills:

- ☑ Troubleshooting OS, hardware, network, storage and application issues
- ☑ Operating System expertise including FreeBSD, Linux, SmartOS, Solaris and others.
- ☑ Enterprise Storage Architecture, Primary Storage, and Data Protection Expertise
- ☑ Regular user of dynamic infrastructure patterns including Docker, SmartOS Zones, FreeBSD Jails, Vagrant, and other virtualization technologies.
- ☑ Cloud management skills including Joyent Triton/SDC, Amazon AWS/EC2, Terraform, Ansible, DigitalOcean etc.
- ☑ High Performance Computing Systems Management (Beowulf, Cplant, and OHPC)
- ☑ Creating and/or using tools to improve work flows, add automation, and to make complex tasks easier and more predictable
- ☑ Modern "agile" development process and tools (git, JIRA, and others)
- ☑ Writing technical and user documentation using a variety of tools
- ☑ C, C++, Ruby, Tcl/Tk, Perl, Fortran, Shell, and Python programming experience.
- ☑ Excellent mentoring and team leadership skills
- ☑ Organization management and budgeting
- ☑ Strong customer service attitude

Experience and Education

Experience at a Glance

Director, Engineering	Bitwise IO, Inc.	2016 → 2017

Director, Cloud Engineering	Code42 Software, Inc.	2013 → 2015
Enterprise Storage Architect	Thomson Reuters, Inc.	2011 → 2013
Team Lead, Storage Support	Thomson Reuters, Inc.	2010 → 2011
Team Lead, Storage Design	Thomson Reuters, Inc.	2010
Lead Storage Engineer, Storage Optimization	Thomson Reuters, Inc.	2009 → 2010
Principal Consultant	Glasshouse Technologies, Inc.	2004 → 2009
Software Engineer	Unlimited Scale, Inc. (a.k.a. Cassatt, Inc.)	2002 → 2004
Senior Storage Engineer	Imation Storage Professional Services	2001 → 2002
Senior System Administrator	BraVara Communications, Inc.	2000 → 2001
Senior System Administrator	Silicon Graphics, Inc (SGI)	1996 → 2000
Senior System Administrator	University of Minnesota, Institute of Technology	1994 → 1996
Programmer/Analyst - System Administrator	Cray Research, Inc. Software Division	1992 → 1994
UNIX System Administrator	University of Minnesota, Computer Science Dept.	1990 → 1992
Laboratory Consultant	University of Minnesota, Institute of Technology	1989 → 1990
Student, Computer Science	University of Minnesota, Institute of Technology	1987 → 1992
Soldier, Military Police	US Army Southern Command	1985 → 1987
Pharmacy Technician	Rice Pharmacy, Caledonia MN	1984 → 1985
Intern: Civil Engineering	MN Soil and Water Conservation District	1983

Activities

- May 1984: 2nd Place Award / Data Processing & Programming Division-A Competition. WWTI LaCrosse, WI.

- June 1985 → June 1987: U.S. Army Military Policeman. Served in Republic of Panama, Honduras, and Costa Rica. Earned Army Achievement, Over Seas, and Good Conduct Medals. Honorable Discharge.

- June 1987: Honorary Citizen of Puntarenas Province, Costa Rica, for participation in the Puentes de La Paz Project.

- May 2002: Professional PADI SCUBA Diving Instructor. Earned: IDC Staff, Master SCUBA Diver Trainer, and Master SCUBA Diver ratings, amongst other instructor level ratings and qualifications.

- Aug 2003: Technical SCUBA Diver earning TDI Advanced Trimix, Trimix, Advanced Nitrox, Gas Blender, and Decompression Procedures Ratings. Approximately 250 technical dives logged.

- Sep 2006: Licensed United States Parachute Association (USPA) Skydiver. Over 500 skydives logged. Currently holding USPA-A and USPA-B licenses.

- Dec 2004 → Mar 2008: Emergency First Aid, CPR, and AED Instructor (PADI)

- May 2015: Private Pilot Ground School, Inflight Pilot Training

- On going - I run a semi-production UNIX server farm on my own bare metal, Amazon AWS, and DigitalOcean servers. Technologies I use include Postfix, Cyrus IMAPD and SASL, FreeBSD, SmartOS, CentOS/RedHat, nginx, and a host of other open source software.

- For fun I also love cross country skiing, riding my skate board (Sector 9/Niark1) or Bianci AXIS bicycle, trail running, weight lifting, and playing computer games like EVE Online.

Education

- Senior, University of Minnesota, Institute of Technology, Computer Science. Not currently enrolled; 195 credits completed.

- Fibre Channel Protocol and Analyzer Operation, Solution Technology, Inc. 2002

- EMC Control Center and SAN Management 2005

- EMC SRDF Business Continuity Course 2005

- Symmetrix Configuration Management 2005

- LISA USENIX System Administration Courses 1994 and 1997

Detailed Work History

Director, Engineering

Bitwise IO, Inc.

May 17, 2016 → June 23, 2017

- distributed ledger/block-chain software development in python

- CI pipeline design and implementation (Docker, Jenkins, AWS)

- HPC systems management software analysis, documentation, and development

- distributed scale testing using Amazon AWS EC2 using terraform and ansible

- agile team and project management using JIRA

Director, Cloud Engineering

Code42 Software, Inc.

February 18, 2013 → November 6, 2015

Leading team of engineers delivering the Code 42 Cloud service offering for consumer, commercial, and enterprise customers. Responsible for:

- global data center operations
- managing and improving service quality through incredible growth, now well over 300 PB and more than 130,000 disk drives
- hardware appliance product development and life cycle management
- networking, data center, and system administration teams
- improving efficiency, unit cost, data durability, and scalability
- aligning the cloud capabilities with new customer requirements over time

Storage Architect

Thomson Reuters, Inc.

March 2011 → Feb 2013

As a storage infrastructure architect I design storage service offerings from new technologies and process to deliver solutions to business units. This involves evaluating and characterizing new technologies and incorporating these technologies into larger infrastructure building blocks or service offerings.

- storage subject matter expert attending daily incident meetings.
- NAS and SAN subject matter expert on multiple platforms. NetApp, BlueArc, HDS, EMC and ZFS Sun Storage Arrays. Protocols supported included NFS, FC, FCoE, and iSCSI.
- developed a competency of managing performance as capacity within the organization.
- wrote monitoring and data analysis models and tools to characterize performance across the storage environment.
- integrated performance data into the provisioning process which led to a reduction in performance related incidents and helped with capacity management.
- helped pilot and evaluate several new technologies such as distributed file systems, flash storage arrays, Fibre Channel over Ethernet (FCoE), and others.
- wrote time saving and error reducing programs which reduced the complexity of provisioning storage in the environment. This had a positive effect by reducing time-to-provision (TTP), reduction in errors, and helped the storage admins select the best destination for storage based on both performance and capacity data.

Team Lead: Storage Support

Thomson Reuters, Inc.

December 2010 → March 2011

Team lead supporting production storage systems and storage networks:

- light management of team managing the storage environment
- NetApp, BlueArc, HDS, EMC, and Sun ZFS storage arrays
- Provisioning, Reclamation, Troubleshooting
- Monitoring, alerting, and automation activities

Team Lead: Storage Design

Thomson Reuters, Inc.

June 2010 → December 2010

As the team lead of the storage design team, my role includes:

- Team Leader / Management responsibilities of 3 storage engineers
- Introducing new storage technologies into the implementation and support organization, including:
    - NetApp Multi-store/vFiler Technology
    - Sun 7300 Series Storage Subsystems / ZFS
    - BlueArc and Hitachi (HDS) NAS Filers

Lead Storage Engineer: Storage Optimization

Thomson Reuters, Inc.

May 2009 → June 2010

As a member of the storage optimization team, our group rolled out storage virtualization technologies (Hitachi USP-V and NetApp Multi-store) to support increased utilization of storage capacity throughout the environment. Specifically:

- thin provisioning
- automated capacity monitoring, alerting, and mitigation
- storage migration and visualization

Principal Consultant: Storage and Data Protection

Glasshouse Technologies, Inc.

October 2004 → April 2009

As a principal consultant, my emphasis has been on formalizing the operational aspects of enterprise infrastructure management and implementing technologies to support customer's business requirements. This includes developing processes and procedures to assure that reliability, performance, and operational requirements are met.

Additionally, this role included:

- Being a subject matter expert for multiple GlassHouse customers

- Process and procedure development relating to storage management

- Day to day provisioning of SAN & NAS storage (Storage device selection/creation, Zoning, LUN Masking)

- Supporting EMC Symmetrix DMX Arrays, NetApp Filers, SVC, DS-8300, and Centera storage devices for both Open Systems and iSeries IBM servers.

- Providing Volume Manager Support to server admins for Veritas Storage Foundation for Windows (VSFW)

- Troubleshooting, performance analysis, and issue escalation with vendors.

- Support of CIFS, iSCSI, and NFS protocols.

- Ruby on Rails software development of cost modeling and work flow applications.

- Management of Cisco MDS 9509, 9216, and 9120 Fibre Channel Switches

- Design and implementation of SAN Fabrics using VSANs and IVR to support operational and disaster recovery requirements.

- Day to day maintenance, monitoring, and reporting of key SAN metrics

- Providing storage related subject matter expertise to platform teams

- Creation and development of a software as a service (SaaS) environment.

- Detailed knowledge of the following tools:

  - SSL enabled Apache 2.x Servers and configuration

  - VMWare ESX Configuration and support

  - Ruby on Rails

  - mongrel and phusion passenger servers

  - Bugzilla, Subversion, and Email server configuration and support

  - Wiki deployment

Software Engineer

Unlimited Scale, Inc. (a.k.a. Cassatt, Inc.)

October 2002 → October 2004

As a software engineer, work involves software development on Linux operating system software related to our clustering product. Other activities include supporting product build and source control systems and providing technical assistance to our professional services organization.

Specific responsibilities include:

- Design and maintenance of product build systems

- Design and maintenance of packaging and installation software

- Design and implementation of a high availability I/O feature

- Liaison with channel partners for build and packaging issues

- Technical coordinator for engineering infrastructure

- Data center and lab design; including electrical and HVAC

- Responsible for VPN (FreeSWAN/IPSEC), WAN, LAN, and WIFI (802.11b/g) Networks

- Support iptables firewalls, Sendmail, Postfix, and BIND software

- Supported CVS Source Control Systems

- Utilized AMANDA and other tools to provide a backup/restore and disaster recovery solution

- Maintain NFS file servers, NIS, DHCP, and Apache web servers

- Support for IA32, IA64 Itanium (HP rx2600), and Alpha systems running RedHat Linux

- Utilized Linux multi-disk (md) on servers to provide enhanced data protection.

Senior Storage Engineer

Imation Storage Professional Services

December 2001 → October 2002

As a Senior SAN Engineer, work focused on a variety of storage related projects and customer engagements including performance analysis, troubleshooting, interoperability testing, disaster recovery planning, proof of concept testing, and new product certification. There was also participation in pre-sales research, test plan creation, and some project management activities.

Some specific highlights include:

- Regular interaction with enterprise customers.

- Proficient configuring Fibre Channel fabric switches (Brocade, Qlogic, etc.)

- Working with a variety of host bus adapters: Emulex, QLogic, JNI, Troika, LSI.

- Familiarity with a variety of storage arrays: CLARiiON/EMC, Compaq RA-8000, LSI E4000 Series, and Hitachi 9260.

- Configuring and maintaining network infrastructure equipment including: Cisco Catalyst 4000 series switches,

- Cisco Routers, Extreme Switches, PIX and IPF (BSD) based Firewalls.

- Maintaining internal DHCP and DNS servers.

- Supporting PPTP and SSH based VPN solutions.

- Working with iSCSI hardware and software. Cisco 5420 & 5428. Linux, Sun, and Windows hosts.

- Real world experience using Fibre Channel Analyzers. Finisar GTX, GTJ, and I-TECH.

- Experience working with file systems and volume managers including Sun UFS, XFS, VxFS, ext2fs, ext3fs, reiserfs, XLV, XVM, and LVM.

- Experience with multipathing software. Compaq SANWorks Secure Path and EMC ATF.

- Participating or leading a variety of SAN engagements using a variety of operating systems

Senior System Administrator

BraVara Communications, Inc.

December 2000 → October 2001

Responsible for all I.T. infrastructure in the Minnesota office. Maintained firewalls, storage, backups, Internet connectivity, DNS, wiring, telephones, and vendor relations. I was also electronic postmaster for the entire company.

- Maintained sendmail servers, IMAP servers (Cyrus & UW-IMAP), Mirapoint E-Mail appliance, and supported various mail user agents (mutt, elm, outlook and outlook express).
- Designed and implemented a web based information system to track employee accounts, contact information, and assets.
- Maintained desktops and servers running Linux, BSD OS 4.2, and Solaris 7 & 8. Automated common processes.
- Researched and recommended purchases of development hardware ranging from 1U IA32 systems for prototypes to Sun 280R systems for ASIC simulation purposes.

Senior System Administrator

Silicon Graphics, Inc. (SGI)

July 1996 → December 2000

Technical leader and mentor for a system administration team maintaining over 1000 UNIX desktop systems and over 30 servers. Supported IRIX, Linux, SunOS 4.x, and Solaris Operating systems on both client and servers. Other highlights include:

- Extensive experience with IRIX 5.3, 6.2 and 6.5.x on both server and desktop platforms.
- Worked on committees specifying and designing the campus client/server network architecture.
- Designed and implemented a campus wide backup/recovery system utilizing Legato Networker, SGI servers, and ATL storage libraries.
- Planned and executed major campus wide upgrades of desktop, server, and storage array OS software.
- Supported storage on UNIX servers utilizing single disks, host/software based RAID systems, and SGI/Clarion SCSI and Fibre Channel storage arrays.
- Maintained NFS, NIS, AutoFS, and Samba server software.
- Utilized Jumpstart (Solaris), Kickstart (Linux), and Roboinst (IRIX) to automate routine server and client installations.
- Cooperated and worked closely with development organizations to ensure that we were providing infrastructure meeting their needs.
- Automated routine tasks. Maintained and supported compilers, editors, debuggers and other development software.

Senior System Administrator

University of Minnesota, Institute of Technology

September 1994 → June 1996

Technical leader and mentor for 12-15 student employee system administrators. Our organization supported 7000+ student UNIX accounts and 3 major Institute of Technology computer labs. Specific responsibilities:

- Supported hardware and software for Sun, SGI, HP, and Linux desktops located in the major campus computer labs.

- Electronic Postmaster for 7000+ accounts. Designed, implemented and supported an email system consisting of multiple email hubs spanning 3 University departments.

- Participated in the design and roll-out of the University's first ATM network.

- Rolled out the department's first Linux computer lab using Slackware. Worked with the team to integrate Linux with our name-services, AufoFS, and NFS storage environment.

- Improved network security by developing policies to deal with security incidents, quickly applying security patches, and utilizing intrusion detection techniques.

- Improved our organization's ability to scale by reducing the number NIS domains, flattening UIDs and GIDs, using the Modules environment modification software, automating system installations, and by making the labs as homogeneous as possible.

- Supported a research parallel computing lab consisting of SGI Challenge servers on HiPPI, Ethernet, Fibre Channel (IP), and ATM networks. Supported OS software, networking, PVM, MPI, and load balancing software.

- Deployed the AMANDA backup package to handle all backup system needs. Trained student operators in both backup and restore procedures.

- Deployed terminal servers to allow for remote console management.

- Worked with peers to forecast and specify future laboratory and production server needs.

Senior System Administrator

Cray Research, Inc.

June 1992 → Sep 1994

Worked as a member of the Sun Resource group providing front line support to Sun, SGI, and Cray users. Provided customer support specializing in compilers, debuggers, NFS, NIS, and Email software. Designed and wrote a sophisticated on-line customer survey tool in C++ which provided valuable feedback from our customer base. Also:

- Supported public domain software applications. Installed, maintained, and supported GCC/G++, GDB, Emacs, X11, Motif, and Elm.
- Installed and supported Sun C & C++ compilers. Worked with engineers to reproduce bugs and escalated bugs to Sun Microsystems when necessary.
- Supported hardware and software on over 30 Sun Servers and 1500 Sun desktops. This included SPARC Center 1000, 2000, Cray CS6400, ELC, and SPARC 5 systems.
- Wrote a variety of perl, shell and C programs to automate routine system administrative tasks.
- Worked as a co-specialist supporting NFS, NIS, AutoFS, and Sendmail.

Systems Administrator

University of Minnesota, Computer Science Dept.

June 1990 → June 1992

- supported computer science department UNIX systems and graduate computing labs
- system admin and operator, staffed help desk
- worked on backup systems, maintained and installed open source tools used for university curriculum

Laboratory Consultant

University of Minnesota, Institute of Technology

June 1989 → June 1990

Worked as a lab consultant in the Institute of Technology Computer Science Laboratories. Primary responsibilities included:

- providing assistance to computer science and engineering students with UNIX, VAX, CDC programming environments.
- tutoring and helping students with C, Pascal, Fortran 77, and assembly language programming problems.
- troubleshooting problems with PCs, Apple MACs, and Sun workstations

References

Available upon request.