

Adam Trefonides
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I'm an IT Engineer with 20 years' experience. I'm a battle proven Senior UNIX Systems Administrator with extensive experience working in academic and scientific research settings. I'm also a creative maker-type with a background in fine arts, sculpture, graphic design and print publishing. I have experience with 3d modeling, scientific visualization, and unconventional human to computer interfaces. I work effectively with both technical and non-technical groups and thrive in environments where I can integrate my varied skills and strengths to tackle challenging puzzles and design innovative systems.

Skill Summary:

I have production level expertise in a wide range of UNIX systems and hardware platforms, including:

- Solaris on Intel (10.0 – 11.4), and on SPARC (2.5.1-9)
- Linux: Ubuntu, RHEL, Centos, Debian
- FreeBSD, OpenBSD, NetBSD
- Mac OS X 10.1-10.13

I'm highly skilled in designing, deploying and maintaining a wide array of IT infrastructure services, including:

- Network based data storage: NetApp FAS and E series hardware, cDOT 9 and Data ONTAP 7-Mode, ZFS, NFS, CIFS SMB, iSCSI
- Data integrity protection and security: IBM Spectrum Protect "TSM", Veritas Netbackup
- Web services: NGINX, Apache
- E-mail: Postfix, Sendmail, Cyrus, Zimbra
- Directory/ID management: LDAP, BIND
- Virtual machine infrastructure: VMWare VSphere, Virtualbox, Parallels
- System provisioning/change-management systems: Ansible, Puppet, BCFG2
- I have advanced shell scripting skills, and intermediate skill with python, perl, etc.

I am skilled in 3D visualization, computer modeling and 3D printing. My background in graphic design, sculpture and metal fabrication uniquely informs this work. I have a keen interest in visual communication and have published scientific figure illustrations, print books, as well as music album packaging. I have experience with many industry standard applications in these fields, including:

- Graphic Design: The Gimp, Inkscape, Photoshop, Omnigraffle, Image Magick
- 3D modeling & Design: Fusion 360, AutoCAD, OpenSCAD, Cura, Slic3r, IdeaMaker
- Imaging / visualization: Freesurfer, 3DSlicer

Professional Experience

Argonne National Lab (2006 – present)

Senior Systems Administrator (November 2015 – present)

Computing, Environmental Life Sciences (CELS) - Core Systems Group

Primary roles:

- Technical operation and support of the CELS directorate computing infrastructure and high-performance computing (HPC) for the scientific, research and administrative staff
- Consult, advise and coordinate with technical staff and colleagues at other labs and universities
- Lead SysAdmin for building and maintaining an installation of 100+ servers running Linux and Solaris distributed over 4 locations, hundreds of virtual machines hosting multiple internal infrastructure services and dozens of externally facing client services. Running and maintaining division facing common services (file services, mailing lists, tape backup, web services), manage virtual machine infrastructure
- Create and maintain technical documentation for end-users and internal use
- Day-to-day technical support for the user community of the directorate
- Divisional Cyber Security Program Representative (CSPR)

Major accomplishments:

- Designed and deployed file-services and account provisioning infrastructure for the General Computing Environment, "GCE". The GCE is a complete from-the-ground-up rebuild of the UNIX computing environment for the five divisions under the CELS directorate. The GCE is a robust, scalable system to provide and manage all aspects of the Directorate's primary computing environment, including account provisioning, user authorization and access, resource allocation, software deployment, multiple shell environments, data integrity and security, remote access and storage provisioning
- Centralized the division's file services onto a single Oracle Solaris 11 server leveraging ZFS filesystem features to optimize the NFS automount system for divisional home directory and shared project storage provisioning
- Rearchitected the account provisioning system to manage user authorization by efficiently enabling and disabling individual user ssh key deployments
- Expanded and completely reconfigured the petabyte storage system for the backend database for the MG-Rast project, a metagenomics RAST server – a public resource for the automatic phylogenetic and functional analysis of metagenomes
- Architected an efficient pipeline to provide data security and disaster recovery for the unique MG-Rast data profile
- Participated in the merging of the Bio-sciences and Environmental Sciences Divisions' IT support and infrastructure into the CELS Systems Shared Services group
- Managed the transition and migration of the administrative staff storage from OSX Server based AFP shares to the Lab-wide Box installation
- Participated as a Directorate CSPR in a number of Lab-wide infrastructure and security audits

Notable Ancillary projects:

- Designed a parametric model to generate "slicing blocks" to be used to slice brain specimens for scanning electron microscopy study using Fusion 360, OpenSCAD and 3DSlicer biometric modeling software
- Technical consultant to numerous scientific projects and individuals on subjects from HA data storage to remote secure access to 3D printing processes
- Sitting member of the CELS Diversity and Inclusion committee

Senior Systems Administrator (May 2006 – October 2015)

Math and Computer Science Division (MCS) – Core Systems Group

Primary roles:

- SysAdmin for building and maintaining Linux servers, workstations, support staff desktops
- Technical operation and support of the MCS division computing infrastructure, including e-mail administration, file services, data security / backup

Major accomplishments:

- Managed a major migration of the legacy IBM Cyrus e-mail server from AIX to Linux and then from Cyrus to Zimbra
- Lead the migration of the data storage, tape backup robotics and servers in a major move from the divisional data center into a new facility
- Designed built and maintained mail exchanger and gateway systems running Postfix on Linux
- Migrated legacy Tivoli backup system on AIX with an IBM TS3500 Robotic Tape library to RHEL Linux server with a Spectralogic T950 library
- Migrated a diverse and disparate hodgepodge of NIS managed, ad hoc file servers to a pair of Sun Solaris ZFS servers running NFS, with hundreds of LDAP managed automounts

The University of Chicago (April 1997 – March 2006)**Manager/Lead Systems Administrator (August 2002 – March 2006)**

Networking Services and Informational Technologies (NSIT), Enterprise Network System Administration (ENSA)

Primary roles:

- Lead Solaris Systems Administrator and manager of ENSA, providing central network-based services and Unix services for the entire University
- Lead administrator of E-mail services for a population of 27,000+ University users worldwide and auxiliary systems, such as authentication and spam filtration
- Policy development concerning services and systems administration, active on a number of University-wide information technology policy committees
- Personnel management for three system administrators and two developers
- Assisted with budget generation for the systems group

Major accomplishments:

- Spearheaded the purchase and implementation of a \$1.5m e-mail system, negotiated contracts and system specifications, integrating it into the existing university infrastructure while working closely with the VAR and hardware vendors for integration into the University legacy infrastructure
- Negotiated complex contractual support agreements with numerous vendors
- Supervised the research, purchase, and roll-out of an enterprise all-campus anti-spam/anti-virus product
- Supervised the development and installation of a complex system to replace incoming mail application software while maintaining grandfathered features

Senior Systems Administrator (May 2002 - August 2002)

Networking Services and Informational Technologies (NSIT), Enterprise Network System Administration (ENSA)

Primary role:

- Solaris system administrator, e-mail and machine room physical infrastructure

Major accomplishments:

- Restructured the data center machine room, including the consolidation of disparate production servers to new locations
- Streamlined the environmental control and power supply systems
- Redesigned and re-cabled multiple networks to reduce confusion; managed KVM and console access for a diverse population of servers
- Coordinated machine room needs for other groups in the same division

Unix Systems Administrator (October, 2000 - May, 2002)

Physical Sciences Division, James Franck Institute and Materials Research Science and Engineering Center (JFI/MRSE)

Primary role:

- Solaris, Linux, SGI system administrator

Major accomplishments:

- Administered production level file, print, and web services on Solaris systems; maintained and upgraded the Institute's public lab of Linux PCs, Sun Ultra 5s running Solaris 8, and SGI Irix workstations
- Worked closely with a diverse set of scientific research groups to ensure that the department computing infrastructure met all the needs of their staff and projects. Responsible for approximately 200 Linux workstations spread throughout the Institute
- Liaison between scientific groups and vendors for implementation of computing infrastructure
- Managed the Desktop Support group for the Institute and mentored student engineers

Project Manager / Systems Administrator (October, 1997 – September, 2000)

Biological Sciences Division, Information Services (BSD/IS)

Primary roles:

- Silicon Graphics (SGI) Systems Administrator
- Administered and maintained the Division's molecular modeling and stereo visualization lab, using SGI workstations, CrystalEyes stereo vision systems, and an SGI file server
- Managed two developers who designed the software for the courses. Managed the Division's student computer labs, trained and managed a staff of eleven student employees
- Acted as the SGI point of contact for the Division, facilitating all support issues and assisting users with support and system administration
- Designed support procedures, policies and a service level agreement that identified and defined the key supported computing technologies for the Biological Sciences Division
- Provided hardware and software technical support for the BSD/IS developers, research and administrative staff

Major accomplishments:

- Developed the visual support materials for a number of courses for the lab and created "labs" for courses in the undergraduate and graduate Biology College and the Pritzker Medical School
- Created a number of web sites for the College and the Division in order to augment class material, some including 3-D molecular modeling, and trained the faculty and staff to maintain their sites
- Managed the software developers for a number of projects, including the development of a web version of a secure FTP client, the implementation of a traffic reporting system for the entire Division's web services, and the development of a specialized database for the Psychiatry research department

Education

1987 - 1991 - Undergraduate Degree program at The School of the Art Institute of Chicago.
Major Areas of Study: Sculpture, Art and Technology/Computer Arts

Publication

Craig Stacey, **Adam Trefonides**, Tim Kendall, Brian Finley (2009). "The Water Fountain vs. the Fire Hose: An Examination and Comparison of Two Large Enterprise Mail Service Migrations." Conference Paper: Proceedings of the 23rd Large Installation System Administration Conference

Scientific Illustrations

Nina Kraus and Jessica Slater (2015). "Music and Language: Relations and Disconnections." Handbook of Clinical Neurology, Elsevier. 129: 207-222.

Figure 12.1. Timescales of speech and music characteristics: different frequencies of neural oscillatory activity lock on to meaningful temporal patterns in speech and music. (p211)

Nina Kraus and Jessica Slater (2016). "Beyond Words: How Humans Communicate Through Sound." Annual Review of Psychology 67: 83-103.

Figure 2. Sound provides an inventory of motion: The repeating movements of a galloping horse create repeating patterns in the resulting sound wave. Original images of a horse galloping by Eadweard Muybridge. Figure created by Adam Trefonides. (p85)

References available upon request.