Skills

System, Security and Internet/Intranet Administration

I have over twenty years of experience with administering multiple versions of Unix/POSIX OSes, including Linux (Debian, Ubuntu, Red Hat, Slackware, custom distributions), Solaris (SunOS and Solaris 7 and 8), HP/UX (9.x and 10.x), Digital Tru64 Unix (4.x). I also have extensive experience with using desktop operating systems including Linux (Gnome and KDE), Mac OS X, and Windows XP.

I have in-depth knowledge of most aspects of Unix system administration, networking and security:

- networking protocols and software including FTP, HTTP (Apache), NTP, SNMP, iproute2, PPP, TCP/IP, and Ethernet
- directory services, including DHCP (ISC DHCP), DNS (ISC Bind), LDAP (OpenLDAP, Red Hat Directory Server), NIS and PAM
- file and print services, including SMB/CIFS (Samba), NFS and automounters, IPP (Cups) and LPRng.
- email services, including IMAP (Cyrus, uw-imapd), POP3, SMTP (Postfix, sendmail, exim, smail) and anti-spam tools (DSPAM, SpamAssassin, f-prot)
- RAID and logical volume managers (Linux RAID tools, Linux LVM 1 and 2, Solstice Disksuite, HP/UX LVM)
- backup software (Legato Networker, Bacula, Amanda, Dirvish, tar, cpio, rsync)
- system virtualization (Xen, VMWare, User Mode Linux).
- security software and protocols including SSL/TLS, SSH, firewalls/packet filters (Checkpoint Firewall-1,
  iptables, ipchains, Cisco access lists), VPNs (OpenVPN, PPTP)
- database software (MySQL, PostgreSQL)
- other miscellaneous technologies, including X11, PAM, Bonjour

Software Engineering

- Strong knowledge of Perl, C, C++, Objective-C, SQL, shell scripting (sed, awk, grep, etc.) and cfengine
- Familiarity with Ruby, Java, JavaScript, HTML, CSS
- Strong object-oriented design skills using UML and design patterns
- Strong knowledge of software development tools including CVS, Subversion, Trac, Apple Xcode, Microsoft Visual Studio, Cygwin, and command-line tools such as make, ld, etc.
- Proven ability to design and deliver system software and applications for Unix/Linux, PalmOS, Mac OS X, iPhone OS, and Microsoft Windows

Education

University of Alberta, 1988. Awarded a Bachelor of Science with a Specialization in Computing Science (Software Design).

Employment History

PDA Verticals Corporation

Senior Technical Architect
2000 - present

Prime responsibilities include:

- Maintaining the Company's system and network infrastructure. This consists of servers and systems spread across multiple offices, multiple telecommuters from around the world, and a server farm co-located with a dedicated hosting company. All of the sites and the telecommuters are networked via the Internet using VPN software. I maintain all aspects of the infrastructure, including file and print services (NFS, automounter, Samba, CUPS), DHCP and DNS services, multiple firewalls, Apache servers, database servers (MySQL and PostgreSQL), email (Postfix, Cyrus IMAP, DSPAM, f-prot), and directory services (OpenLDAP) to link everything together.
- Design and development of PalmOS-based software for the company and for the company's customers. Some of the software developed includes:
- Palm++ - an object-oriented development library for PalmOS. Adds basic data types such as auto_ptr, string, vector, etc., custom widgets including richtext display, trees, plus provides a framework for managing PalmOS events, forms and form elements, resources, databases and VFS files, and other elements of PalmOS.
- vReader - a eBook reader used as a publishing platform for PalmOS and Windows Mobile. I designed the document architecture and implemented the device-independent parts of the application, as well as implementing the PalmOS user interface. The reader has been used to publish a large number of medical texts, and new titles continue to be developed that use the platform.
- cardupdate - a program to install software and other databases to a PalmOS device from an expansion card using a domain-specific scripting language. The program is used to help our customers with "fleet management" of PalmOS devices, allowing for easy updates, replacements and re-installs for their employees' handhelds. Customers making use of this software include Apotex and Lutron.
- RxVigilance - expert system and drug interaction analysis for pharmacists. I designed and implemented both the PalmOS application, as well as the internal desktop software that is used to migrate database used by the Windows product to a storage- and memory-constrained

PalmOS handheld.

- Development of server and desktop software for use within the company and by the company's customers, including
- Netupdate - a successor to cardupdate that uses a desktop conduit to download software updates from a central server and install them to the handheld. In addition to simple updates, the conduit is flexible enough to handle things such as installing software license keys to the device, all at the direction of the server. This prodect has formed the basis of Apotex's iPharmacist program, and the company's own Medicopeia line of products. The next version of Netupdate is nearly complete, and adds support for Mac OS X as well as Windows Mobile devices.
- "beamstation" - software used in kiosks at trade conferences that sends daily updates (symposia notes, conference schedules, etc.) to PalmOS and Windows Mobile handhelds. The software runs on embedded Linux systems (modified Linksys wireless routers), and sends updates via infrared (IrDA) and Bluetooth. I designed the update protocol and implemented the server and the PalmOS client software.
- CC Vault - a standard interface for in-house client software to make credit card charges. Clients communicate with the vault using XML-RPC. The vault performs fraud detection and sends the transactions to PDA Verticals' credit card processor.
- Cserve - the company's in-house customer service application. Processes incoming email message to customer service addresses and provides a UI to customer service agents to process service tickets.
- pdaconfig - a configuration management system system used to manage all Unix/Linux systems in the PDA Verticals network, which uses a combination of Perl and cfengine scripts combined with system information stored in LDAP.

Amazon.com

Senior System Administrator
1999-2000

- Member of Amazon.com's Infrastructure Tools division. Responsible for the specification, development, integration and deployment of the software and tools that were used to manage Amazon.com's Infrastructure. These include areas such as system configuration management, user account management software, directory services, and the public key infrastructure.
- Project leader and architect of Amazon.com's configuration management framework (CMF) for Unix-based servers and desktops. The framework's implementation combined a number of different tools, including cfengine, LDAP directory services, and made extensive use of Perl to link the tools together.
- Member of Amazon's "LDAP Cabal", the group responsible for overseeing the development and deployment of LDAP directory services at Amazon.com

- Technical consultant for many of Amazon.com's other initiatives, such as third-party software management and deployment, internal email services, and revision management and control. This required in-depth knowledge in a variety of different technologies, including LDAP, SMTP, DNS and DHCP, CVS and RCS, SMB and CIFS, NFS and TCP/IP networking.
- Member of the exploratory committee that began examining Linux as a replacement for their existing proprietary Unix systems. Amazon.com went on to replace many of their servers with Linux-based systems, with great cost savings for the company.

Enbridge Pipelines

Senior Technical Analyst
1995-1999

I was a member of Enbridge's Technology Services department, and was responsible for designing, maintaining and managing the Information Systems infrastructure for Enbridge's LANs and WAN, including their mission-critical pipeline control systems based on HP/UX and their business data center which used a combination of Windows NT and Solaris. My primary role was to focus on the "big picture" aspects of the infrastructure, and as much as possible to ensure solid and seamless integration of the the disparate products and technologies that comprise the infrastructure. Some of the major initiatives and projects included:

- Standardized administration of Enbridge's Unix systems. Developed a scalable configuration and change management framework to handle all aspects of managing an Enbridge Unix-based system.
- Designed and implemented Enbridge's remote access/extranet architecture, which aimed to deliver consistent, reliable and secure remote access to Enbridge network resources for Enbridge employees as well as for Enbridge business partners, via the Internet or via private networks.
- Deployment of Internet and intranet services, including web services and directory services (LDAP).

Canadian Forest Service

(Various Titles)
1987 - 1995

I held various positions of increasing responsibility at the Canadian Forest Service's Northern Forestry Centre, starting as a student programmer doing scientific modeling, followed by

technical support/training services, followed by system and network manager for a mixture of VAX/VMS, Solaris and Linux systems.

During my tenure at the Centre, I oversaw the integration of TCP/IP and Unix systems into the existing network which was based on VAX/VMS and DECNet. This included deployment of Sun/Solaris and Linux workstations at the Centre and two regional offices, and integration of the three offices with a TCP/IP network using the Internet for the backbone. Technologies used for this included NFS, NIS, TCP/IP for VMS (TGV Multinet), SMTP email and Samba.

I also developed the Centre’s data recovery plan for both VMS systems, using the VMS Backup utility for the VMS side, and custom backup procedures for the Linux/Unix side, based on a combination of Perl and tar. The recovery plan was successfully tested when we were able to completely recover all user data for the VMS systems in the aftermath of a massive disk crash.