

Raymond S Brand

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Professional Summary

- Results oriented, hands-on, professional with 20+ years of Unix and internet technical experience, as an architect, systems engineer, administrator and/or programmer, on Linux, Solaris, SunOS, AIX, and others; and 15+ years of Linux specific technical experience as an architect, systems engineer, administrator and/or programmer with Red Hat and Debian based Linux distributions.
- Highly proficient at analyzing and determining the root cause of application, system and performance anomalies, and driving the required corrective actions.
- Adept at architecting, defining, and implementing systems and servers such that the process is documented, repeatable, and maximizes the security and utility of the systems while minimizing the maintenance burden.
- Extensive programming experience in C, Perl, and the various Unix scripting languages such as Korn shell, Bourne shell, AWK, Sed, for analysis, research, development and automation tasks.

Experience

- **Site Reliability Architect, Staples Inc.**

October 2014 to June 2015

Represented the Global Site Reliability organization in all phases of the software development life cycle. Collaborated with business and technical teams to innovate and deliver new features and enhancements for the Staples E-commerce platforms. Identified project risks and worked effectively to mitigate them. Participated and collaborated in finding and fixing stability/scalability issues in very time critical and high volume E-commerce production environments. Lead or participated in event post mortem and root cause determination activities related to high volume E-commerce production environments and the activities to resolve the identified issues. Lead orchestration initiatives, recommend improvements, mentored and guided junior team members.

Performed gateway architectural reviews of changes to the E-Commerce environments and systems with respect to performance, scalability, reliability, operability, and internal & external best practices. Provided engineering effort, plan implementation, and system change rollout estimates for changes to very time critical and high volume E-commerce production environments. Collaborated with engineers and other cross functional teams like Product Management, Project Management, Architecture, Release Engineering, Performance Engineering, Quality Assurance, Development teams, etc. to develop and deliver innovative solutions to meet market needs with respect to functionality, performance, scalability, reliability, realistic implementation schedules, and adherence to development goals and principles.

- **Computer Scientist, self**

April 2011 to October 2014

Research, design, implementation and all other aspects of a number of personally motivated projects. A partial list comprising over 300 technical documents (conference paper, presentation slide sets, standards documents, etc.) read, since March 2011, as part of my research is available upon request.

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- **Senior Systems Engineer, New York State Department of Health**

Contractor, January 2011 to March 2011

Provided LDAP expertise and guidance to the New York State Department of Health in support the LDAP infrastructure upgrade and migration project. Applied knowledge of professional engineering concepts, production procedures, system administration skills, debugging and troubleshooting, coding and automation skills to design and install the new LDAP infrastructure and to resolve complex technical problems with the legacy LDAP infrastructure.

Provided insight and root-cause diagnosis of LDAP system and client anomalies for problem resolution by analyzing the LDAP servers log files; by interviews with LDAP client application maintainers and users; by interviewing the New York State Department of Health staff and contractors responsible for the LDAP infrastructure operation and maintenance; and based upon accumulated knowledge and experience.

Collaborated with New York State Department of Health staff and contractors to insure that the updated LDAP infrastructure would meet current and anticipated needs. Insured that the migration from the legacy infrastructure would be as transparent to the LDAP clients as reasonably possible and that the designated New York State Department of Health staff and contractors would be able to manage and maintain the upgraded LDAP infrastructure after the project completion.

- **Senior Systems Capacity Planner for Mid-Range Systems, Bank of America Corp.**

February 2007 to May 2010

Applied analytical skills and accumulated expertise to make proactive capacity planning recommendations to mitigate business risks. Worked to optimize the hardware, software and network resources to meet business unit service level requirements in a timely and cost effective manner.

Provided insight and root-cause diagnosis of system anomalies for problem resolution using collected and historic data. Acted to resolve system performance problems and developed trend analyses to forecast capacity requirements.

Collaborated with other systems management and engineering organizations, applications, vendor, and technical staff in support of business requirements and service level objectives. Provided assessments, documentation, prioritization and execution of existing and required tools, the methodologies and task plans to meet business unit capacity planning requirements. Created and presented executive and technical presentations pertaining to capacity planning, root-cause diagnostics and other topics as needed.

Team lead for the mid-range systems capacity planning efforts to support the transition funded projects of the Countrywide Financial Corp. acquisition.

Participated in the developing, maintaining, recommending, documenting, and supporting of the tools and supporting utilities used by the mid-range servers capacity planning organizations.

- **Site Reliability Engineer, Google Inc.**

October 2005 to August 2006

Applied knowledge of professional engineering concepts, production procedures, system administration skills, debugging & troubleshooting, coding & automation skills to carry out technical tasks and resolve complex problems.

Contributed to infrastructure development and automation, service and system troubleshooting, change management, monitoring and emergency response. Functioned effectively as the primary owner of on-call responsibility for a production service. Contributed to the evaluation to technical solutions to help make decisions and/or recommendations.

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- **Systems Engineer, AlertSite/Boca Internet Technologies Inc.**

January 2005 to May 2005

Primarily responsible for administering, installing and maintaining the Linux systems used for the web site monitoring and security monitoring products offered.

Specific duties include the following: Install and secure OS and applications on new servers. Trouble determination, and problem resolution. Perform performance tuning and capacity planning. Implement monitoring tools and ongoing monitoring of systems. Document procedures and systems. Automates systems administration processes. Develops and maintains standard operating procedures. Stay current on latest Internet technologies and developments, particularly as they relate to development, enhancement, and/or security aspects of product offerings.

- **Lead Systems Developer, ValueWeb/Affinity**

January 2002 to January 2003

Plans and implements new Internet systems as dictated by business needs, technical needs, and requests.

Specific duties include the following: The design, implementation, integration, testing, and deployment planning of new and/or improved Internet services and/or products. Analyzes the ongoing design of the existing systems. Provide technical guidance and project leadership to the department. Aids in establishing a professional development environment including code documentation standards and procedures to implement projects through to production. Provides encouragement and fosters a positive environment in the development department. Supports the operations staff in trouble determination, and problem resolution. Stay current on latest Internet technologies and developments, particularly as they relate to development, enhancement, and/or security aspects of product offerings.

- **Lead Systems Developer, ValueWeb/CyberGate**

August 2000 to January 2002

Plans and implements new Internet systems as dictated by business needs, technical needs, and requests.

Specific duties include the following: The design, implementation, integration, testing, and deployment planning of new and/or improved Internet services and/or products. Analyzes the ongoing design of the existing systems. Provide technical guidance and project leadership to the department. Aids in establishing a professional development environment including code documentation standards and procedures to implement projects through to production. Provides encouragement and fosters a positive environment in the development department. Supports the operations staff in trouble determination, and problem resolution. Stay current on latest Internet technologies and developments, particularly as they relate to development, enhancement, and/or security aspects of product offerings.

- **Systems Administrator, ValueWeb/CyberGate**

April 2000 to August 2000

Primarily responsible for administering web and application services such as: HTTP, Apache, FTP, E-mail, sendmail, DNS, bind, security, backups.

Specific duties include the following: Install and secure OS and applications on new servers. Trouble determination, and problem resolution. Perform performance tuning and capacity planning. Implement monitoring tools and ongoing monitoring of systems. Document procedures and systems. Automates systems administration processes. Develops and maintains standard operating procedures. Stay current on latest Internet technologies and developments, particularly as they relate to development, enhancement, and/or security aspects of product offerings.

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- **Unix Administrator, GTE Data Services**

Contractor, July 1999 to October 1999

An individual contributor performing broad professional/functional responsibilities, including: system design and implementation following company standards and practices; initiating and providing conceptual solutions to satisfy new or changed business requirements; providing technical evaluations of hardware, software, tools, and procedures; support and maintenance of second-level support methodology and procedures in a distributed computing environment.

Specific duties include the following: Participate in server configuration activities. Participate in operating system upgrade activities. Participate in outage conference calls. Ensure proper, complete documentation for projects/products.

- **Senior Unix Administrator, PricewaterhouseCoopers**

Contractor, August 1998 to December 1998

Responsible for architecting, specifying, implementation, and eventual hand-off of "mission critical" implementations and re-implementations of new and existing, enterprise wide, Unix based, intranet and internet services; as well as the day to day operations of the existing Unix servers. Locally support and diagnose an out sourced, high bandwidth, enterprise internet gateway. Responsible for operation and configuration of firewall system connected to multiple clients.

Specific server responsibilities include the following: intranet Domain Name System and DHCP servers; intranet to internet proxy and/or gateway servers for FTP access, Web browsing, Telnet access, as well as some application specific gateways; internet FTP server; internet and intranet HTTP redirection server to support merging of the Price Waterhouse and Coopers & Lybrand Internet an intranet Web pages; application/service specific intranet HTTP servers.

- **Systems Administrator, Cirent Semiconductor**

Contractor, December 1996 to August 1998

Member of site computer security team responsible for specification, configuration, installation and operation of firewalls and other security measures. Member of Unix administration team responsible for configuration, operation and administration of a number of Cirent's Unix systems, as well as operation and administration of the Orlando site system backup servers and client software configuration.

Specific duties include the following: Firewall rule set creation, implementation and maintenance. Integration of high availability and firewall software. Site computer security representative for the site dial-in solution redesign and implementation. Specification and implementation of collaborative, shared data and publication servers. Unix system configuration and installation (SunOS and Solaris), system backups, system operation and maintenance, system software upgrades, Unix/network capacity planning, system administration automation and documentation.

- **Systems Administrator, Multiplex, Inc.**

June 1996 to August 1996

Responsible for configuration, operation and administration of Multiplex's Unix systems, routers and Internet access and services. Also performed other Unix and/or networking roles as needed.

Specific duties include the following: Unix system setup and configuration (DEC Unix, OSF/1), system operation and maintenance, system software upgrades, network setup and configuration, TCP/IP expert for setup of non-Unix (Windows NT & 95) systems, Unix/network capacity planning, technical mentor for Multiplex's InterNIC technical contact staff, technical contact for Multiplex's Internet service provider, Unix system and network security administration, network administration automation, Internet gateway administration, router configuration and administration, network sub-netting, E-mail administration, Domain Name System server administration, World Wide Web server administration, FTP server administration, Usenet news administration, in-house network technical training/mentoring, Unix system hardware/software problem determination, first to call for Unix system problems.

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- **Systems Administrator, The Technical Resource Connection, Inc.**

June 1995 to May 1996

Responsible for the operation and administration of TRCinc's Unix systems and IP portions of TRCinc's local area networks. Also performs other Unix and/or networking roles as needed.

Specific duties include the following: Unix system configuration (SunOS and Solaris), system backups, system operation and maintenance, system software upgrades, Unix/network capacity planning, InterNIC technical contact person for TRCinc's Internet presence, technical contact person for TRCinc's Internet service provider, Unix system and network security administration, network administration automation, Internet gateway and firewall administration, router configuration and administration, network sub-netting, E-mail administration, Domain Name System server administration, World Wide Web server administration, FTP server administration, Usenet news administration, Unix system hardware/software problem determination, first to call for Unix system problems, 7 x 24 system support, enhancement and maintenance of Perl based alphanumeric paging software for Email and WWW forms.

- **Unix Administrator, Intermedia Communications of Florida, Inc.**

January 1995 to May 1995

Responsible for the operation and administration of ICI's Unix systems and IP portions of ICI's local area networks. Also performed equipment evaluation of IP based equipment for use in an in-house telemetry and control network.

Specific duties include the following: Unix system configuration (SunOS and Solaris), system backups, system operation and maintenance, system software upgrades, Unix/network capacity planning, InterNIC technical contact for ICI's TCP/IP network. Unix system and network security administration, network administration automation, network sub-netting, E-mail administration, DNS server administration, WWW server administration, FTP server administration, first to call for Unix system problems.

- **Unix Systems Administrator, Kash n' Karry Food Stores**

July 1993 to January 1995

Responsible for the operation and administration of Kash n' Karry's campus and wide area networked Unix systems, peripherals and X-terminals.

Specific duties include the following: Unix system configuration (SunOS and Solaris), performance tuning, software installation, system backups, system operation and maintenance, capacity planning, X-terminal administration, Local Area Network sub-netting, E-mail administration, Usenet news administration, FTP server administration, Internet gateway and firewall administration, Unix system and network security administration, handling of level 2 support calls, training for level 1 Unix support personnel, network administration automation, system software upgrades, Solaris conversions, Kash n' Karry application production standards, calendar manager administration, hardware and software problem determination, 7 x 24 system support, backup and support for the network analysts, first to call for Unix system problems, X11 environment configuration and administration, dialup configuration (X11 and ASCII), InterNIC technical contact for Kash n' Karry's TCP/IP network.

- **Systems Programmer, SRI International**

July 1992 to June 1993

Responsible for the operation of an unclassified metropolitan area network consisting of Unix based file servers and Unix and PC based workstations at the Fort Bragg army base in North Carolina.

The network consists of a couple of dozen Sun Microsystems Inc. file servers running SunOS, physically distributed on Fort Bragg and several sites nationally connected by a fiber-optic ring or 56kbit/s leased lines. Each file server provides file sharing and email service to a number of local PCs and/or Sun workstations over a Synoptics twisted pair network using the TCP/IP protocol suite and PC/NFS on the PCs. The network as a whole has between 500 and 1000 PCs and supports a user population of over 1100.

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Duties consist of daily operation of the network as a whole; account creation, deletion, and maintenance, management of PCs as network nodes, server backups, new server configuration, Unix system maintenance, network security, server software fixes and enhancements, network administration automation, client interaction for new/special network requirements, fielding questions/problems from users about mail and shared file problems, Usenet news administration.

- **Software Engineer/Computer Scientist, Commodore-Amiga Inc.**

May 1989 to July 1991

Performed kernel and utility development in "C" and Motorola 680X0 assembler for the the real time, multitasking operating system of the Amiga line of computers. This includes design and coding of new software modules as well as maintenance of existing modules and other system software. Worked closely with the Commodore LSI design group on various aspects of future Amiga chip sets, including functionality and algorithm design. Primary architect of SANA-II, the new Amiga networking strategy. Investigated and prototyped new functionality for the Amiga system software. Authored or ported several tools for software development and maintenance on Unix or Amiga systems. Coordinated several outside software contracts. Worked with the Amiga Unix project team on particular problems of running Unix on Amiga platforms. This work was performed on Sun and DEC Unix platforms as well as Amigas.

During this time I also used/investigated/prototyped, network protocols (TCP/IP, XDR, RPC, VMTP), multiprocessor support, support for distributed applications, image and rendering algorithms, and cross platform standards on Amigas and/or Unix platforms.

- **Software Engineer, ISC Systems Corporation**

September 1984 to August 1987

Responsible for all aspects of bank branch automation software, including system software design, coding, software installation, maintenance and interaction with customer representatives. Rewrote workstation encryption software. Participated in design of solutions to client's special requirements. The nature of this business place special emphasis on the ability of the ISC terminals and concentrators to speak whatever communications protocols the customer wanted.

During this time I also wrote device drivers for a single board CP/M system to support removable hard-disks and ran a computer bulletin board system that was part of the FidoNet network.

- **Independent Microcomputer Consultant**

1978 to 1983

Recommended microcomputer installations, implemented software including device drivers and trained customers in off-the-shelf software.

Computing

- **Programming languages:** C, Perl, Shell Scripts, Python, HTML, 680x0 assembler, Z80 assembler, AWK, REXX, Pascal, APL, PL/1, Lisp, VAX assembler, 6800 assembler, Basic, and Fortran.

Familiar with: Java, C++, PostScript, and Modula 2.

- **Operating systems:** Linux, Solaris, SunOS, DEC Unix (OSF/1), Unix, AmigaDos, MS-Dos, and CP/M-80.
- **Communications:** TCP/IP, Ethernet, HTTP, LDAP, NFS, NIS, NTP, Frame Relay, ArcNet, Bisync, HDLC, SNA and others. Plus data compression and data encryption.

Professional Associations

- Member of the ACM and several special interest groups.
- Member of the IEEE and the IEEE Computer Society.

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Education

- **State University of New York at Albany**, Spring 1992. Enrolled in the Masters program in the Computer Science department. Withdrew for financial reasons.
- **State University of New York at Albany**, 1987 to 1989. BS in Computer Science and Applied Mathematics, 1989. Courses in Operating Systems, Compiler Construction, Algorithm Design and Analysis, Theory of Computing, Linear Programming, Transformation Geometry, and Non-Euclidean Geometry.
- **Rensselaer Polytechnic Institute**, 1980 to 1984. Courses in Digital Logic Design, Computer Graphics, Systems Programming, Data Structures, Microprocessors, Computer Networks, Economics, and Management.

Project Highlights

- Continuing research into highly scalable systems and related infrastructure.
- "Alles Wird Git" '09, a meeting of Git developers and other interested parties, in Berlin partial sponsor.
- GitTogether '08, a meeting of Git developers in Mountain View, California, partial sponsor.
- Contributor to Git, a distributed version control system.
- Author of "Designated Relays Inquiry Protocol (DRIP)" internet draft. Available from the IETF at <http://www.ietf.org/>.
- Lead architect of a highly scalable, carrier class Email solution.
- FTP server software modifications and supporting machinery on the load balancers to transparently implement FTP services on a cluster of servers.
- Code contributor to the Apache http Server Project.
- Specification and implementation of collaborative, shared data and publication servers.
- Integration of high availability and firewall software.
- Changes to the WU-FTP package to support fully virtual FTP domains.
- Perl code for sending alphanumeric pages from Email and WWW forms.
- Continuing research into communications security issues and related fields.
- Design and implementation of an automated jobs posting system using HTML forms and Perl.
- Design and implementation of a personal Email handling and disposition system.
- Csh code to automatically create various PATH environment variables for dynamic Unix environments.
- Evaluation of IP based equipment for ICI's telemetry and control network.
- Creation and implementation of the sub-netting scheme for Kash n' Karry's class B TCP/IP network.
- Participated in the design of Kash n' Karry's standard for the environment of production applications.
- Research into distributed computing environments for Amigas.
- Distributed Mandelbrot/Julia set explorer using SANA-II drivers.
- Designed standard Amiga network device driver interface (SANA-II).
- Research into graphics rendering algorithms suitable for implementation in VLSI.
- Research into support of multiple processors on the Amiga.
- Research into alternative graphics standards for the Amiga to support a variety of graphics hardware.
- Research into alternate color spaces for efficient, real-time playback of "true color" animations.
- Amiga ArcNet packet driver implementation.
- Graphics information and tools archive.
- Port of RCS, Revision Control System, to the Amiga.

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- Generic image manipulation software.
- C interface library for MC68881 FPU.
- Ports and enhancements of several ray tracing systems.
- Ports of the ARC archiving and compression utility to the Amiga.
- Developed and supported integrated and consistent software interface for magnetic-card support in the ISC teller and platform applications.
- Rewrote ISC Data Encryption Standard (DES) software module to use a consistent interface and half the resources of the original.
- Co-designed user interface to a file/listing browser for use by ISC software engineers.
- Enhancements, fixes and modifications to ISC SNA and IBM 3270 emulation software.
- Wrote custom CP/M-80 BIOS for Servo-8 and Syquest SQ306 removable media winchester drive units.
- Design and construction of winchester drive interface for TRS-80 model I. Modifications to TRS-80 disk operating system, NewDos-80 version 2.5, to use winchester drive.
- Implementation of Servit's Pre-routing Analysis procedure. Design and implementation of a program to process Gerber IDS-80 printed circuit board design files into a form usable by the analysis program.
- IDS Prism 132 color printer driver for TRS-80 SuperScripsit word processing system written in Z80 assembler.
- Generalized Rubik's cube simulator for a Tektronix 4113 Color Raster Display Terminal.