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Ryan Troll

- Objective To acquire a challenging architectural or software development position.
- Experience April 1999 – Present Excite@Home Redwood City, CA
NMS Architect
- Designed solutions to network management related problems, using technologies including SNMP, Perl, SQL, and other languages / software infrastructures.
 - Helped design and implement the *@Home Network Management Database*, which tracked all devices on the Excite@Home network; and contacted the devices via SNMP, Telnet, and/or SSH to keep the information accurate and up to date. This database was used to generate reports, as a source of network device information for the NMS and various statistical systems, and as a reference for systems such as asset management, DNS, DHCP, and others.
 - Helped design and implement a *Broadband Network Management System* (BNMS), using software packages by SNMP Research, Micromuse, OSI, and Concord, in addition to software designed and developed internally. The BNMS monitored and managed network devices, servers, and services being provided across the entire Excite@Home network, and provided a common management interface to the NOC. The BNMS included systems that covered fault management, performance management / capacity planning, and configuration management.
 - Wrote architectural documents detailing the NMS in use when I started, the next-generation NMS required to meet the company's management requirements, and various aspects of the overall network management environment within @Home. Helped perform reliability studies indicating the overall reliability of the NMS systems, which were used to justify the need, and cost, for updated systems.
 - Helped design processes and workflow surrounding the use of the BNMS. Worked closely with all engineering teams within @Home to help integrate their systems with the BNMS, to ensure all systems were actively monitored and maintained by the @Home NOC. Also worked to design requirements to be met by all software and hardware before deployment.
 - Directed a project standardizing the @Home Tivoli infrastructure, and migrating support of all Tivoli components to the @Home operations center; increasing the overall reliability of the Tivoli software distribution environment.
 - Participated in a company-wide asset system assessment, and the definition of all asset management related processes.
 - Attended weekly outage summary meetings, and improved existing / designed new monitoring solutions based on real problems occurring within the network. These changes resulted in a lowering of the time to identify problems, and an overall increase in reliability.
 - Participated in Open Access discussions, describing and documenting how the BNMS may be leveraged in an open access environment.

- Directed a project standardizing the mechanism by which all servers notify the NMS when problems arise. This project increased the reliability of our server-monitoring infrastructure from 98% to 99.96%.
- Directed a company-wide monitor cleanup project, during which all server monitors were standardized. All development organizations worked with our team to define what must be monitored, what alert to display to the NOC, and what the NOC must do when the alert appears. This project removed many invalid alerts from the NMS, and increased the overall monitoring coverage of the NMS.
- Designed processes for using the Tivoli software distribution environment; and processes for software approval before production release. This provided all development organizations with a common set of rules for how to build and distribute software that included acceptance and approval from the Operations organization.
- Worked with other organizations to define naming conventions for all network components and services. These naming conventions allowed the NOC to quickly identify what a device was, and where the device existed.

1994 - 1999

Carnegie Mellon

Pittsburgh, PA

Manager of Network Development (1997 – 1999)

- Member of the Computing Services Architecture committee. Actively participated in the evolution of the Carnegie Mellon computing environment. Evaluated new network technologies, and wrote white papers describing the results. Also wrote white papers detailing the future of the existing infrastructure. (Documents available at <http://www.net.cmu.edu/docs/arch/>)
- Managed multiple employees. Instituted bi-weekly informational classes to keep the group informed. Over-saw university-wide migration from AMS bulletin boards to an IMAP infrastructure. Performed hardware evaluations, and made server upgrade decisions.
- Attended IETF (<http://www.ietf.org/>) meetings to remain current with respect to technology advances, and future development efforts. Discussed and documented how new IETF based work would apply to the Carnegie Mellon computing environment. Actively participated in IETF working group discussions to help ensure the group's output would be useful in our environment.
- Attended regular meetings with other Universities and helped coordinate the sharing of information and technology.
- Wrote software to gather interface statistics from network devices, and automatically post it nightly to a bboard.
- Ported software packages to Linux and Solaris. Used the GNU autoconf suite to ensure the software was portable to as many systems as possible. Used Rational Purify, Quantify, and Pure Coverage to optimize all software packages, and to make sure as few problems existed as possible.
- Maintained the university DNS infrastructure. SNMP instrumented the DNS software (BIND), for easier remote administration. (Patches are available from <ftp://ftp.net.cmu.edu/pub/snmp/dns>)

Research Systems Programmer (1996 - 1997)

- Worked on SNMP based network management tools (available at <ftp://ftp.net.cmu.edu/pub/snmp>). Helped work on NADINE and NetBar. (<http://www.net.cmu.edu/projects/netbar>)
- Incorporated SSH into the Andrew environment
- Carried rotating pager to perform AFS administration duties as required.

- Upgraded DNS servers to Solaris. Ported and optimized the CMU SNMP library (<ftp://www.net.cmu.edu/pub/snmp/>). Wrote NSAPI programs for the CMU UserWeb (<http://www.andrew.cmu.edu/>) project.

Help Desk User Consultant (1994 - 1996)

- Integrated Email services into the help center knowledge database (*Aprion*), wrote scripts to help automate and enhance the help center.
- Found and fixed bugs in the cross-platform printing environment.
- Taught computer education classes covering the Internet, Unix, WWW, HTML, and the Carnegie Mellon Andrew environment.
- Helped setup and maintain the Carnegie Mellon web site (<http://www.cmu.edu>).
- Helped maintain Unix machines running SunOS, Solaris, HPUX, Ultrix, and Irix; as well as Macs and PCs running Win3.1/Win95/WinNT.

Systems Administrator (1992 - 1994)

- Maintained a VAX 6420 and Alpha 5000/300.
- Designed, built, released, maintained, and debugged databases for the online Library Information System (LIS).
- Wrote C code to convert raw data from database vendors into ASN.1/BER. Wrote scripts and documentation for the entire database build process.
- Wrote a multi-user retrieval server and customization routines for LIS.
- Designed and implemented a method for delivering documents over the Internet that included authentication, replication, and access control.
- Designed a Motif document browser, used in conjunction with the document delivery system.
- Started the University Libraries web site (<http://www.library.cmu.edu/>).

1994 Computer People Pittsburgh, PA

Computer Consultant

- Stationed at Alcoa, I designed and implemented a Macintosh based database to store computer hardware and network information; and a setup to generate named and bootp tables on a weekly basis from the Macintosh data.

Education 1990-1998 Carnegie Mellon Pittsburgh, PA

- Bachelor of Science, Math and Computer Science.

Publications A list of publications, including RFC2563, Internet Drafts and white papers, is available at <http://www.rtroll.org/ryan/publications.html>.

- Training
- Guerrilla Windows Programming
- Seminars and
- Management Excellence Training
- Memberships
- Total Quality Management
 - Internet Engineering Task Force (IETF)