J C LAWRENCE

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LINUX AND UNIX SYSTEMS AND NETWORK SOFTWARE ENGINEER

A specialist in maintainable system and platform portable C and C++ code with a strong interest in Linux/Unix client/server systems. scalability and security. The scope of the tasks addressed have encompassed problem determination, solution design, specification, programming, debugging, validation, implementation, end-user documentation and support, and final product maintenance. I have successfully worked in both project lead and team player positions, as well as sole developer projects. Recently I've made forays into project management. Particular strengths are:

- Solid C and C++ skills
- Detailed understanding of what makes maintainable code and systems
- Portable application, networking, and system development experience
- Solid design skills for new products and existent product extension
- A wide based knowledge of system administration and system security
- Extensive Internet and inter-networking experience
- Able to rapidly learn new areas and techniques and quickly become competent
- Good oral and written communication skills

Skills

Languages

C/C++, Python, shell, SQL, PHP, Tcl/TK, REXX, CMD, SCRIPT

Operating Systems

Linux, Unix (IRIX, HP-UX, Solaris, AIX, SunOS, CLIX,Ultrix), OS/2, PC/MS-DOS, VAX/VMS and VM/CMS

Application Development Tools Used

ACE, OSE, STL, OpenClass, QT, Curses, PHP, libCGI, SCM tools (BitKeeper, CVS, ptools, fcs/kcs, ClearCase, PVCS, RCS, and SCCS), Purify, and assorted profiling, dependency tracing, flow path and code coverage tools.

Example Applications & Tools Developed

- Apache based webmail/email systems amd email driven systems in general
- Groupware (email, news, archiving, calendaring, contact management, wikiwiki, documentation sharing)
- 32/64bit tool and application ports
- Automated regression test harnesses and test suites (black and white box, regression and functional)
- High volume transaction servers (finance market data)
- System and network security (accessability, firewalls, authentication, security audit, secure access, intrusion detection. compartmenting, risk management, privacy concerns)
- Network system configuration and security programs (TCP/IP, Banyan Vines)
- Database backed web servers and services
- Dynamic and static web page maintenance, construction, and auditing tools

- SNMP monitoring systems
- File-system corruption recovery tools (HPFS, Berkeley FFS, FAT)
- IGDS design file manipulation and analysis programs
- User level and scripting language interpreters (interpreted and byte-coded)
- Sales tracking, inventory control, and shipping management
- Databases (relational, flat, object oriented, and distributed)
- Operating System kernel

RECENT EXPERIENCE

CRITICAL PATH (OCT 1999 - PRESENT)

Designed, documented and developed in collaboration with Marketing a POP3 aggregator to daemonise the delivery of external POP3 accounts to wireless device users. Assisted as a member of a four man team in the final development, bug fixing, alpha release, and planned hand-off of the product to a sustaining team of Critical Path s WebMail v4.0 (NG). I was specifically responsible for correctly handling MIME and its various interpretations by mail clients.

VA LINUX SYSTEMS/VA RESEARCH (FEB 1999 - OCT 1999)

Established and staffed the then abandoned Linux/IA64 project (porting Linux to Merced/IA64), and became project manager of same. Helped establish the seven company consortium that formed "Project Trillian" (CERN, Cygnus, HP, IBM, Intel, SGI, VA). Built the initial secure network for the project. Drove development efforts from two months behind schedule to over three months ahead of schedule. Coordinated project development with investors via regular project reviews (VA was pre-IPO). Linux/IA64 was the one of the first two OSes to boot on Merced first silicon. Designed and wrote a Yahoo superset which supports user reviews, local page mirrors, and user submissions under Apache, PHP and MySQL for Linux.Com.

SGI (FEB 1998 - JAN 1999)

Maintained, extended and handled the testing and release of the Impressario, PrintTools, and Colour Management System (printing interface, printer drivers, print spooler, scanning, and color management) products for IRIX versions 6.5 through 6.5.4. Reviewed and wrote a white paper on the security, performance, and functionality of the LPRng spooler as compared to the System-V-like PrintTools spooler with a view to the value of making it the default spooler in the PrintTools package. Ported and packaged a variety of freeware packages to IRIX for distribution on CD with IRIX (rman, glimpse, TkMan, queso, analog, webalizer, etc).

SUN/SUNSOFT (OCT 1997 - FEB 1998)

Designed, wrote, documented, trained the end users on, and supported a regression test harness to automate testing of Sun's EFS firewall products, with particular attention paid to packet filtering, proxies, encryption (SKIP), Virtual Private Networks (VPN's via encrypted wrapping), authentication, and Network Address Translation (NAT). The resultant harness supported random test order execution, automated the process of configuring the firewall(s) for a test, running the tests, trapping network activity during test execution, and comparing the logged results (network packets and test execution) against rule-based definitions of correct behaviour with results reported in a standardised manner.

HEWLETT-PACKARD (MAY 1997 - SEPT 1997)

As a member of a three man team designed and wrote assertion based regression tests to test XOPEN compliance of the HP-UX Curses library with special attention paid to multi-byte and wide-character support.

Designed, wrote and documented an exhaustive assertion based regression test library to excercise the standard C library str*() and mem*() APIs with special attention paid to standards compliance, HP-UX's memory model, and possible API performance optimisation flaws (ISO/ANSI, look-ahead, pointer alignment, memory page limits, early termination conditions, etc).

Designed, wrote and documented a performance test library for HP-UX's standard C library to be used in performance tuning of those API's across multiple OS releases, patches, 64 and 32 bit, and PA RISC versions.

CHARLES SCHWAB (FEB 1997 - APR 1997)

Programmed, tested, and documented a real-time market data server under AIX. Resultant server significantly exceeded performance criteria.

HEWLETT-PACKARD (JAN 1996 - FEB 1997)

Consistently placed on urgent projects with tight deadlines.

Built, debugged, code reviewed, regression tested, corrected/extended the regression tests and integrated (build, control, and test) the VXFS journalling file-system backup commands into HP-UX 10.20. Analyzed and reported on the comparative path and line coverage, and value of the HP developed regression tests versus the Veritas developed tests for the VXFS backup commands. Mentored the New Jersey HP Lab engineers when the backup commands were transferred to that lab.

Year 2000 impact surveyed the HP-UX performance and backup commands, followed by transitioning the resultant work to the New Jersey HP Labs and mentoring them through the code changes.

As effective leader of a team, 64bit cleaned and ported, ANSI-C cleaned, debugged, and code reviewed old K&R kernel tests detailing shared memory, signals, process model, process environment, and POSIX compliance covering Process Model and Virtual Machine standards to exercise 32/64bit paths through the kernel. Compared and corrected the same kernel tests to the standards they were ensuring.

Defined, established, maintained and operated high-availability (HA) clusters of 32bit and 64bit HP systems and disk arrays (NIKE, AutoRAID, EMC) for testing LVM (Logical Volume Management), Shared LVM, multiple initiator SCSI handling, and the underlying NIO and GSC+ SCSI drivers for HP-UX 10.30. Ran, diagnosed, maintained, debugged, enhanced, and reported on tests run on the same clusters. Established a rote system for running the same (manual) regression tests against new HP-UX kernel and integration builds. Automated many of the previously manual tests. Engineered a test server to automate building and running test machines against new HP-UX kernel and integration cycles.