

J C Lawrence

- Builds cost-effective massively-scalable systems.
- Customer-oriented and results-driven with 10+ years of engineering leadership.
- Full system and product life-cycle experience for both Software Engineering and Operations.

YouSendIt – Campbell, CA

Senior Staff Engineer, Storage Architect Dec 2009 – Jan 2012

- Architected and implemented scaling from ~1.5 million transactions/day and 500TB of storage to 25+ million transactions/day and 4PB of storage.
- Led the reduction of transaction error rate by 80% and site escalations from 3/week to under 2/year.
- Architected & implemented standardized engineering deliverables, build environments, build processes, product packaging, configuration management, and standardized deployment methods, initially for the storage tier and ultimately for all server-side products.
- Built a strong relationship between Engineering and Operations at all levels.
- Assorted technical deliveries: 64bit port of the storage tier, specified & moved the storage tier from DASD to a shared horizontally-scalable storage cluster model, re-implemented the storage tier as light-weight WSGI web services instead of a costly custom Apache module, multiple large customer saves for Sales and Customer Support, etc.

Skills used: Apache, Apache modules, API design, AWS/S3, build & release, C/C++, concurrent programming, engineering lead, distributed systems, GPFS, incident response protocols/teams, gevent/libevent, Luwak, master-less clusters, PDLC and engineering process, product architect, Python, Riak, SaaS, scalability, schema-less/no-SQL databases, storage systems & networks, technical leadership, web services, WSGI, virtualization and VM-based clusters

PayPal – San Jose, CA

Lead Engineer, Manager, Product Architect June 2005 - Nov 2008

- Acted as lead engineer and manager for the Developer Services team, responsible for the PayPal web-services platform (\$30B+/year), IPN (API callbacks) and Sandbox test systems.
 - Re-implemented merchant APIs to use name-value pair POSTs instead of SOAP. Within 6 months two thirds of all new merchant integrations were using NVP.
 - In parallel with the payment-method development teams, rewrote the web-services platform for all payment and merchant APIs, moving it from a monolithic CGI-BIN/server pair to a light-weight dispatcher model routing requests to business-logic servers with good code & deployment isolation.
 - Led the rollout of the new web-services tier with no unplanned downtime or lost transaction volume.
 - Moved the Sandbox from a 4-system cluster in San Jose to a 100-system cluster in Denver.
- Acted as lead engineer and manager for the Merchant On-boarding team, responsible for merchant-acquisition and merchant-configuration systems. Built and trained the QA team for my group. With a local team and a team in India delivered over a dozen features including rewriting the boarding flow with a 70% reduction in fall-off rate, hierarchal sub-account management and channel boarding APIs.
- As Product Architect for the internal “TurboRoller” release-orchestration tool, developed and got funded a full web-services/work-flow based replacement architecture with a roadmap to get there from the current system.
- Part of the team that implemented STSI, a rescue re-architecture when internal or external dependencies fail, including the site’s Oracle database (which was near crashing from load). I was responsible for parts of the payment methods and the daemon that replayed transactions received during the outage.
- Recognized for exceptional ability to work through others and consistently moving the company forward to both fix the problem and ensure it didn’t recur.

Skills used: Apache, product architect, business coordination, C/C++, distributed systems, engineering lead, manager, offshore engineering coordination, security analysis, technical leadership, web services, workflow automation

Pfizer Research & Development – Groton, CT

Product Architect, June 2003 – May 2005 (contract)

- Wrote and executed massively parallel custom applications to analyze –omics data (proteomics, genomics, etc).
- Using Open Source tools and components, designed and delivered an agent-based distributed heterogeneous computational router/framework for non-programmer computational statisticians to express common computational methods and non-statistician/non-programmer research scientists to use work-flow tools to assemble & use those methods for their research analysis.
- Collaborated on distributed computational statistics projects for Pfizer with research groups at Yale and Seattle universities.

Skills used: academic partnerships, architect, ad-hoc heterogeneous clusters, distributed computation, distributed systems, message busses, message passing networks, parallel computation, performance analysis, Python, scientific computing, tuple spaces, web services, workflow automation, virtualization, XML, Zope

Sun/Cobalt – Santa Clara, CA

Staff Engineer, April 2002 – July 2003 (contract)

- Implemented support for new Squid features and transferred maintenance to in-house staff.

Skills used: C/C++, Linux, PHP

2Wire – Milpitas, CA

Senior Staff Engineer, April 2001 – December 2001

- Reverse engineered and implemented proprietary VoIP protocols (Dialpad).
- Implemented POSIX thread support and logging systems.
- Analysed and scoped full PKI/IKE/CA infrastructure for home gateway product.

Skills used: C/C++, distributed systems, pSOS, SSL, VoIP, POSIX, reverse engineering, security analysis

Maxtor, Network Services Advanced Technology Group – San Jose, CA

R&D Team Lead, December 2000 – March 2001 (contract)

- Lead R&D team & researched and advised on future NAS and storage technology directions.
- Delivered core product performance enhancements (eg block assignment strategies, predictive read-ahead etc).

Skills used: algorithm design, architect, C/C++, engineering lead, performance analysis, project management, Python, reverse engineering, technology evaluation

Nuron – Santa Clara, CA

Senior Staff Engineer, August 2000 – November 2000 (contract)

- Assisted in design/development of a Linux-based FPGA-based memory-module device driver aimed at the SSL acceleration and image processing markets.
- Architectural adviser for other Linux-related efforts.

Skills used: apache module, architect, cryptography, C/C++, device drivers, Linux kernel, performance analysis, Python, security analysis, SSL

Critical Path – San Francisco, CA

Senior Staff Engineer, October 1999 – July 2000 (contract)

- Designed and implemented a mail aggregator for wireless (WAP) device email delivery.
- New product development relating to MIME and Document Object Model (DOM) support for Critical Path's core webmail product.

Skills used: Apache, C/C++, Linux, Perl, Python, Solaris, SQL, XML

VA Research/VA Linux – Mountain View, CA

Senior Staff Engineer, Project Manager, February 1999 – October 1999

- Project manager and coordinator for the Linux/IA64 project (porting Linux to Itanium/IA64).
- Established seven-company consortium for that project (CERN, Cygnus, HP, IBM, Intel, SGI, VA).
- Drove development efforts from two months behind schedule to over three months ahead of schedule in less than 6 months.

Skills used: C/C++, engineering lead, Linux, Linux kernel, project management, PHP, Python, SQL