Summary of Qualifications

Experienced software engineer bringing to the table a wide range of knowledge and expertise in software development, and devops. Projects have ranged from large complex distributed systems to tiny, embedded real-time platforms. Deeply involved in designing and building release, deployment and monitoring infrastructure for large commerce sites, as well as overseeing operations of same.

Software development

Ruby, C, C++, Python, Node.js, ColdFusion, Lua, C#, PHP, Java, Fortran, A number of assembly languages, including Intel 80XXX, PIC, 8051 and variants, along with some exposure to Motorola 68XXXX. Some exposure to Scala, Erlang and a few oddball languanges like CLIPS.

Rails, Sinatra, Django CSS, HTML, Javasript Game Engine: Unreal and Torque

DevOps

Years of experience building scalable systems with AWS. Demonstrated mastery of ec2, s3, etc.

Extensive work with Postgres 8.3 and 9x as well as some SQL Server and some MSQL. Proficient generally in SQL, Have deployed and maintained large postgres clusters in advanced configurations. Production work with Mongo and Redis. Some hands-on with Cassandra and Riak.

Elasticsearch – both deployment and development

Advanced Puppet

Automated deployments across environments with LXC, Puppet and git Monitoring and instrumentation with Graphite, Nagios. Plenty of hands on experience with external tools like Webmetrics, Gomez, Monitus and more.

Apache, Nginx, HAProxy

Work Experience

2012 - Present | Turbosquid, Inc. | Senior Engineer

Turbosquid (https://www.turbosquid.com) is the world's largest publisher of 3d models. My current resposibilities primarily involve around designing and coding Turbosquid's next-generation content store, as well as a 3d content production, rendering and publishing toolchain. Much of this work involves moving building a new production infrastructure on Linux instances running in AWS. Technology includes:

- Masterless provisioning with Puppet LXC Container-based deployment (instead of code-based deployment)
- Service discovery and distributed configration with zookeeper
- Continuous intergration testing
- git push-based deployments

- Monitoring with graphite, statsd and collectd
- AWS multi-region failover and content replication
- Sharded and replicated NoSQL using postgres 9.3 along with Elasticsearch as a backend NoSQL store (HStore and plV8)
- Coded primarily in Ruby, Rails, Rails-Api and Node.js
- Traffic routed mailnly through HAProxy and Nginx

2009 - 2012 | iSeatz, Inc. | Senior Engineer, Director of Operations

iSeatz provides turn-key, high-availability multi-lingual travel websites and services for major airlines, banks and other partners. Duties at iSeatz spanned a wide variety of areas, including systems architecture and administration, booking, webservices architecture and coding, and front-end development. iSeatz is an Agile shop, with most coding done in Ruby/Rails, with deployment over clusters of Amazon EC2 instances running CentOS Linux. The database in use is a cluster of postgres9 servers running over EBS volumes in a raid 1+0 configuration.

Highlights from iSeatz include:

- Oversaw expanding IT staff as manager and Director. Responsibilities in addition to day-to-day management included Disaster Recovery Planning, PCI compliance (external audit), interfacing with clients and partners, etc.
- Hotel booking web services architecture and coding. Responsible for this complex, multi-supplier real-time hotel availability and booking engine. Ruby, Rails.
- Back-end systems scaling, optimization and fail-over. Oversaw EC2 production presence grow from a couple of instances, to a large, dynamic stack of load-balancers, front-end servers, large application and database server clusters. Wrote substantial management code in Ruby.
- Payment processing. Designed and coded the multi-currency payment back end. The payment system was built to be relatively resilient to fraud, and fully PCI-compliant. The payment processor also provided the ability for our customer service representatives to do full or partial refunds, and supports a detailed audit trail for all credit card transactions. (Ruby, Rails) Systems and database administration. Postgres 8 and 9.

2005 - 2009 | Turbosquid, Inc. | Senior Engineer

Served in a variety of capacities on a number of key projects utilizing an array of technologies. Duties at TurboSquid ranged from design and coding through technical supervision of overseas teams. Major projects and roles included:

- The GameFlood website. GameFlood is dedicated to delivering third-party game content (“mods”) to gamers in a simple and unobtrusive way. The site also allows online “mashups”, where users can assemble their own unique content. Duties included design and implementation of the Ajax-based Mashup web-interface, the Search and Game invite systems, and much more. Other aspects of the system were implemented by an offshore team under my technical supervision. Finally, I designed and developed a content-delivery system, described below, used by the site to download and install game content.

- Design and implementation of the GameFlood content delivery system, an intelligent mod download and installation engine. This system utilizes a ColdFusion-based back end and an intelligent C++ client to allow automatic download and installation of third-party game content (“mods”). In addition to supporting features like automatic failover and bandwidth optimization, the system is able to install arbitrary content for arbitrary game titles using dynamically downloaded plugins, which encapsulate game and content-specific installation intelligence. The plugins are written in a simple, but complete scripting language, allowing TurboSquid to leverage less expensive development resources to quickly add support for new titles and content.
- Embedded storefront design and development. Developed and implemented key technologies used to embed TurboSquid and GameFlood storefronts into third-party programs, including both computer games and 3d-modeling software. We have been able to combine C++ frameworks with Gecko rendering engines and Flash/Flex to yield storefronts with the both the functionality of C++ programs and rich interfaces that are simple and inexpensive to develop. In addition to design and coding, these projects required close technical supervision of offshore teams.
- SEO analysis suite. Duties included developing a suite of tools used to optimize TurboSquid page data for Google page rank. Created tools that use sophisticated NLP techniques to analyze incoming Google referrals and determine optimum page SEO data. Also developed tools to determine keyword rankings vis-a-vis our competitors to provide ongoing business intelligence, as well as feedback used to optimize our SEO strategy. General TurboSquid website development. Led numerous projects on main TurboSquid website, including the development of an entirely ajax-based storefront and personal asset manager/publisher, as well as a reimplementation of the site search. These typically involved design and coding, as well as extensive supervision of overseas teams.

2001 - 2005 | Lewis Computer Services | Contractor

Responsible for design and implementation of various aspects of a large SQL distributed database application for use by home healthcare providers. Responsibilities include implementation of numerous system data access objects, business objects (objects that overlay business rules on an underlying SQL database), and infrastructure as well as architecture and implementation of a robust loosely synchronized data replication subsystem. This critical subsystem includes such features as automatic conflict resolution, auditability, error recovery and more.

Other responsibilities include automation of certain aspects of code production, documentation and miscellaneous subsystem design. SQL Server 2000, Win32, C++, and Com/Com+ used extensively.

1998 - 2001 | Netpro Computing, Inc | Principal Engineer

Responsible for technical research and new product architecture. Produced code to serve as core technology of NT Active Directory monitoring products. Wrote and designed extensively using COM, WMI and XML to build a distributed and extended infrastructure for AD monitoring products.

Duties also included research into emerging technologies for possible new product direction for company. These areas included wireless network management and security for 802.11B and Bluetooth Scatternets. Co-architected and coded the ground-breaking Directory Analyzer Active Directory Monitoring service. Some aspects of this large distributed system architecture have been granted a patent (USP# 6,249,883). Architected and prototyped a network troubleshooting tool using NASA- developed expert system technology (CLIPS) to assist administrators in troubleshooting and diagnosing network failures.

Pursued and prototyped advanced technologies for gathering network and directory performance data from Microsoft Windows 2000 domain controllers, including TDI monitoring, NDIS intermediate driver data capture, Network Packet Provider (NPP) monitoring and real-time Event Subsystem capture. Much of this research and the resulting code became central to new products.

1994 - 1998 | Netpro Computing, Inc | Senior Engineer

Key architecture and coding for in-house cross-platform distributed service framework, ERIS. Designed and architected networking-enabled in-situ debugging systems, as well as a robust publisher-subscriber messaging system (the ERIS Publisher). This system became a core component of Directory Analyzer (see above).

Key architect and programmer for DS-Expert, a multi-agent Netware NDS monitoring system. Robust monitoring system for Netware Directory Services featuring distributed agents, automatic agent updates, redundant data collection points and more.

Developed in-house programming, testing and documentation standards

1992 - 1994 | BROM Partnership | Partner/Developer

One of two partners in this software development enterprise based in New Orleans, LA and Scottsdale, AZ. Primarily developed and maintained a virus scanning system for VINES/386 servers. Designed and coded both service and client, and ported and debugged the underlying McAfee scan engine, a difficult and convoluted piece of code at its best, on a monthly basis.

Developed a number of VINES server-based utility services including server-side scripted agents capable of automating repetitive administrative tasks.

Continued to consult, primarily with Compaq Computer Corporation, during this time. Developed, documented and maintained a modem-based wide-area sales information system under OS/2.

1987 - 1992 | COMPAQ Computer Corp | Engineer, Tech Writer

Developed a variety of small manufacturing systems software under DOS, Windows, Unix and HP-3000. Systems coded included an RF-based inventory system, a small DOS multi-tasking system as well as user-friendly front-end interfaces to HP-3000 mini computer-based manufacturing systems. Also developed an email-based wide-area messaging system used in a number of corporate purchasing and requisition applications.

Wrote the user manual for the Vendor Quality System. A complex HP-3000 – based manufacturing system used to track failure rates on out-sourced components. Responsible for a number of other pieces of manufacturing systems documentation

Selected Patents and Publications

Robot DNA: Building Robot Drive Trains (book with Dennis Clark, ed. Gordon McComb), McGraw-Hill Professional, October 2002.

Co-inventor, US Patent No. 6,249,883, System and Method for Monitoring Domain Controllers