

Adam Fritzler

588 Sutter St #438, San Francisco, California, USA
mid@zigamorph.net | AIM: midendian
KJ6DYS

Scope

I am interested in the area where system operations and engineering overlap: maintaining, scaling, and improving the availability of applications regardless of platform and location. This is often grouped into operations engineering or devops, but a good analogy to what I do is the auto mechanic: every manufacturer and engineering organization does things differently and I have seen, worked with, and fixed systems from a good number of them, for a broad, pragmatic perspective on building and repairing new systems.

Experience Summary

- Knowledge of Linux, perl, C, GNU tools, and the UNIX mindset.
- Strong belief in using instrumentation and monitoring to improve development and meet business goals.
- Development and operation of every level of programming, from embedded firmware to Java servlets.
- Expertise in the areas of mobile communications, instant messaging, peer to peer, and geographic information.
- Frequent work with users and developers in worldwide development teams.

Technical Expertise

Languages	perl, C, HTML/CSS, javascript, python
Protocols	Ethernet, Token Ring, IP, TCP, UDP, DNS, SSH, LDAP, BitTorrent
Software	gcc, binutils, Linux kernel, make, autoconf/automake, Apache, bind, nagios, ganglia, svn, slapd, mysql, postgres/postgis
Systems	Linux (Debian preferred), MacOS X, Microsoft Windows, NetBSD, FreeBSD
Platforms	x86, Amazon EC2, Macintosh, Sun3/4, DEC
Network kit	Foundry ServerIron, Netscreen firewalls (ScreenOS) and DX, Juniper routers and switches (JunOS), Force10, Cisco firewalls and routers, Isilon

Professional Experience

TiVo, Inc, Alviso, CA

Server Software Engineer (2009-present)

- Develop and maintain server installation, upgrade, and data migration procedures.
- Lead the resolution of issues discovered in deployed production systems, including data analysis, designing fixes, and writing deployment risk assessments.
- Build monitoring and system analysis tools.
- Maintain and add features to in-house distributed configuration management system.

Operations Consultant, various companies (2009-present)

- Specialize in migration to cloud hosting, automated system building, and system monitoring/instrumentation infrastructure.

BitTorrent, Inc, San Francisco, CA*Operations Engineer (2006-2007)**Operations, Director (2007-2008)**Operations (Consultant) (2009-present)*

- Managed operations team in day to day operations as well as strategic architectural decisions.
- Built sophisticated application instrumentation infrastructure to deliver real-time metrics to meet both engineering and business needs.
- Developed various systems for monitoring and characterizing the agents and traffic flow in the BitTorrent network.
- Assisted with architecting a 300-machine datacenter build-out, including configuration of multi-homed Internet connections, layer 4 load balancers, and a multitier switch fabric.
- Automated the installation and monitoring of the various components of the BitTorrent Entertainment Network and BitTorrent DNA services.
- Oversaw the reorganization of data center resources as business plans evolved, as well as building a backup data center in Tokyo.

Integrated Media Measurement Inc, San Mateo, CA (2006)*Consultant (Network Operations)*

- System performance testing and comparison to certify new hardware for computation nodes and database servers
- Built new development cluster, including network, VPN, central authentication, and QA support tools
- Assist developers in fault-tolerant cluster design and automation.

Rojo Networks, Inc. / Six Apart Ltd, San Francisco, CA (2005-2007)*Operations Engineer, Consultant*

- Deploy and maintain several different Tomcat and PHP-based websites in fault-tolerant configurations.
- Built out datacenter cage from scratch, including network and automated installation of new machines.
- Assist developers with code instrumentation, statistics, and lower-level tasks.

Blue Iraq FZE, Balad, Iraq / Dubai, UAE (2004-2005)*Co-founder, Chief Technology Officer*

- Oversaw the maintenance and expansion of the company's satellite IP network based on iDirect technology.
- Managed end-user Voice over IP network and connectivity to public telephone networks.
- Developed techniques to improve the ongoing performance of voice and data traffic over satellite IP links.

ActiveBuddy, Inc., Sunnyvale, CA (2000-2003)*Senior Software Engineer*

- Designed ActiveBuddy Interactive Agent hosting platform and coded the dispatcher and message router components.
 - Involved designing a UDP-based inter-node protocol to exchange dynamic routing updates and maintain a stable cluster topology after host failover.
- Wrote components to connect to over a dozen different instant messaging networks, most requiring reverse-engineering.
- Led technical side of the BuddyScript Connectivity Services for wireless connectivity hosting
 - Started IMDSR project, including core and several modules utilizing a variety of devices to provider connectivity to GSM and Mobitex networks.
 - Developed client software to bring ActiveBuddy Interactive Agents to the RIM wireless email/PDA devices

TerraFone, Inc., Berkeley, CA (1999)*Software Engineer*

Ported a real-time operating system from its native platform (the fixed-point Analog Devices ADSP-2181) to

the next-generation floating-point ADSP-21065L SHARC platform.

- Wrote a series of tools to trap the execution of older, unsupported instructions and flag them
- When possible, allowed instructions to be automatically replaced with their SHARC equivalents without interrupting execution
- Kept within timing constraints for attached bit-banged serial devices and codecs.
- Wrote adpsim, a software simulator for the ADSP-2181, as an intermediate tool

Patents

- (Application Pending) A1-20030131061: *Transparent proxy server for instant messaging system and methods*

Free Software Projects

timps (2004-present) - Transparent instant messaging proxy server
Creator, Maintainer, Primary Contributor

- Developed modular architecture for IM routing and application hooks, including an RPC mechanism for use between peered servers.
- Wrote support for AOL Instant Messenger, MSN/Windows Messenger, Yahoo Messenger, and IRC, among others.
- Designed inter-server message routing architecture and protocol for use in building trusted networks of IM users.

libfaim (1998-present) - Library to support AOL Instant Messenger protocol
Creator, Maintainer, Primary Contributor

- Reverse-engineered the AIM protocol, examined packet traces and built tools to provoke the official clients into behaving in certain ways to provide useful traces.
- Provided freely available documentation on the protocol, in both code and prose.
- Designed the libfaim API to track a changing client user base as instant messaging gained widespread acceptance in free software world.

libnbio (2001-present) - BSD socket wrapper library
Creator, Primary Contributor

- Light-weight, minimalist library for easing the use of non-blocking BSD sockets.
- Supports Linux and FreeBSD quirks.
- Winsock2 (Win32) sockets supported using event object notification with the same API as UNIX.
- Included in Debian/Ubuntu.

intermobi (2001-2003) - Independent TCP/IP implementation (*project abandoned*)
Creator, Sole Contributor

- Specifically targeted for the RIM wireless device using Mobitex as a link-level transport.
- Implemented support for:
 - IPv4 (minimum Host Requirements, multiple interfaces)
 - ICMP (echo and basic errors)
 - TCP (passive and active connects)
- Includes a simple web server.

rimsim (2001) - RIM pager simulator for UNIX (*project abandoned*)
Creator, Primary Contributor

- Parses the dynamic link tables from the RIM application binaries and binds them to an emulated API, all other code runs natively on the host CPU.
- Used as a testing and development platform for intermobi and other RIM projects.

tms380tr (1999-2000) - Linux driver for the Texas TMS380 Token Ring COMMprocessors (*maintainership transferred; in mainstream kernel*)
Maintainer, Primary Contributor

- Transformed the SysKconnect driver into a generic core and card-specific modules.
- Wrote modules to support Madge and Olicom brand devices
 - Required reverse-engineering for initial support
 - Extensive lobbying to those companies brought publicly available programming documentation

adpsim (1999) - Simulator of Analog Devices ADSP-2181 (*project abandoned*)
Creator, Sole Contributor

- Implemented opcode-level simulator of ADSP-2181 fixed-point digital signal processor for UNIX platforms.
- Supports DSP code profiling
- Offers hooks for emulating serial-port and memory-mapped devices

Non-Professional Interests

- GIS, digital cartography, and geocoding
- Cycling and bicycle building
- Amateur packet radio
- Aviation, air traffic control, and airfield operations
- High-altitude balloons and amateur near-space technology
- Landscape, low-light, aerial, and aviation photography