

NATHAN KEIR EDEL

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Location: San Mateo CA

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Summary:

- 15 years of Software Engineering, primarily in large Java systems
- Extensive experience with back-end and business logic development in Java/JVM applications,
- Extensive Linux experience as user, developer and administrator
- Other highlights:
 - 3 years building storage-related systems software in C
 - performance tuning/debugging performance problems in Java applications, including garbage collection issues
 - making commodity hardware perform well under extreme workloads.

WORK EXPERIENCE

Roblox

Jan 2018 – Mar 2018

Senior Software Engineer

- Back-end web development

Technologies used: *a non-Java (Microsoft) platform, REST, SQL, Redis, some AWS services*

Zipcar

Mar 2016 – Jan 2018

Software Engineer

Zipcar is car-sharing company; the Bay Area office also created the Local Motion fleet management service.

As a subsidiary of Avis Budget Group, Zipcar also provides technology to the larger rental-car business.

- Part of a small team building a new distributed fleet management system for Zipcar and Avis.
- Back-end development: both extracting services them from an older, monolithic application for the Local Motion service, and writing new ones to support the Zipcar/ Avis use cases.
- Built a service to process, store and query high-volume GPS and vehicle sensor data.
- Built a caching and search service used by the web UI and mobile apps.
- Converted the activity log/audit trail out of the monolithic application onto its own service.

Technologies used: *Java, Groovy, PostgreSQL, MongoDB, RabbitMQ, REST, JSON, SQL, Cassandra, Docker, some AWS services, Gradle*

Facebook

2014 – 2015

Software Engineer

- Back-end and infrastructure development, primarily in Java

Technologies used: *Java, Hadoop/HDFS, HBase, IPv6*

Guidewire Software

2006 – 2014

Senior Software Engineer

Guidewire builds software for the global property/casualty insurance industry. Their core systems for claims, policy, and billing are deployed at some of the world's largest insurance carriers.

2012 – 2014: Suite Performance team

- Developer for internal "performance harness" application used for benchmark/scalability tests, cluster management, and performance analysis.
- Escalation point for performance-related bugs. Worked with application developers on all three core products and platform team to find and fix performance and scalability issues
- Responsible for making our application run quickly for large customers.
- Ordered, deployed and tuned Guidewire's first SSD-based database servers for performance testing. Accelerated two separate major proof-of-concept scalability tests, on two different products, each by more than a month.
- Other tasks include benchmarking, coding, scalability testing and tuning to optimize all layers of the stack, including Application/JVM/OS/hardware.

- Responsible for evaluating, recommending and tuning servers/storage and OS/software configurations for application benchmarking/ testing.
- Responsible for a major expansion of shared storage for Oracle RAC testing; wrote requirements and budget request, co-lead vendor evaluation.

2011 – 2012: DevIT/DevOps team

- Managed servers, OS and storage for performance testing and continuous integration clusters.
- Deployed first major shared storage for development servers; wrote requirements and budget request, conducted vendor evaluations and lead deployment of storage.
- Responsible for liaison between development and IT groups.

2006 – 2011: Product/Platform teams

- Implemented an internal build of iSCSI shared storage using commodity hardware to support an increase of scale on Oracle RAC testing. Evaluated multiple open-source iSCSI targets, network topologies, and kernel tuning for file system/block layer/network.
- Implemented proximity-search using geocoding, and maintained the feature through multiple release cycles. Rewrote the underlying library for 10x greater performance.
- Developed a Review feature, which allowed users to author surveys, collect replies, and analyze the results. This project required a substantial integration between multiple existing products, using new Web Services.
- Implemented many new information and instrumentation pages to support internal benchmarking and to allow customer support to collect data for analysis from the field.

Technologies used: *Java, Linux, SOAP/REST, Tomcat, Servlets/JSP, Oracle, RAC, SQL, Perl, some Gosu. SSH, Virtualization, iSCSI, NFS, CIFS, Apache httpd, SSD, RAID*

Panta Systems

2004 – 2005

Software Engineer

Panta was a hardware startup, building High-Performance Computing clusters.

- Created a Linux kernel VFS wrapper to assist with NFS fail-over in high availability clusters.
- Wrote tools to automatically manage and configure storage server hardware and OS.
- Evaluated, benchmarked and deployed various storage technologies and hardware.

Technologies used: *C, various scripting, VFS, Linux Kernel, SCSI/SAS, RAID, Infiniband, pxe, NFS*

University of California, Santa Cruz

2002 – 2004

Regents Fellowship/Graduate Student Researcher

- Research topics included file/storage systems applications for MRAM/other upcoming NVRAM technologies; two conference papers accepted and published.
- Developed a novel scheme for compressing inodes.
- Developed compressing in-memory file system, first in user space and then for the Linux VFS.

Technologies used: *C, Java, Linux kernel/VFS*

Kana Software

1999 – 2002

Software Engineer

Technologies used: *Java, Perl, Servlets/JSP, Swing, SMTP, XML/DOM, SMTP/MIME/POP/IMAP*

EDUCATION

University of California, Santa Cruz

2011

M.S. in Computer Science

- Thesis: "MRAMFS: A Compressing File System for Byte-Addressable NVRAM"
- Advanced seminars included Operating Systems, Storage Systems and Archival Storage
- Regents Fellowship; TA for CMPS115 *Software Methodology*

Dartmouth College, Hanover, NH

1999

- B.A. in Anthropology. Computer Science Minor.

PUBLICATIONS

Nathan K. Edel, Deepa Tuteja, Ethan L. Miller, and Scott A. Brandt, "MRAMFS: A Compressing File System for Non-Volatile RAM," *Proceedings of the 12th IEEE/ACM International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS 2004)*, Volendam, Netherlands, Oct. 2004

Nathan K. Edel, Ethan L. Miller, Karl S. Brandt, and Scott A. Brandt, "Measuring the Compressibility of Metadata and Small Files for Disk/NVRAM Hybrid Storage Systems," *Proceedings of the 2004 International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS'04)*, San Jose, CA, Jul. 2004

ACTIVITIES & INTERESTS

- Photography
- Travel and Frequent Flyer miles

RELEVANT SKILLS

Languages: (*proficient-to-expert*) Java including JDK8
(*comfortable*) C, Gosu, Groovy, Kotlin, Perl, SQL

Application/Web Server: Jetty, Tomcat, Apache httpd, *basic familiarity with NGINX*

Technologies/APIs: Servlets/JSP, Linux kernel APIs (VFS especially), JSON, REST, email protocols (MIME, SMTP, IMAP, POP3), RabbitMQ, *some familiarity with other J2EE technologies, with XML/DOM, and with SOAP/WSDL/web services*

Development Tools: IntelliJ IDEA, gradle, git/BitBucket/GitHub, Jira, gcc/gdb, *some familiarity with Eclipse, maven, perforce*

Operating Systems: Linux (*20 years+ from SLS & kernel 0.99*), Windows (end-user-only)

Databases: *developed applications on top of* Oracle, mysql, MS SQL Server, PostgreSQL, MongoDB, Cassandra, HBase, and Redis, *including some familiarity with operational aspects of each, but definitely not a DB expert*

Other Networking: MIME, SMTP, IMAP, POP3, SSH, Postfix, spam/email virus scanning

Storage: SCSI/SAS/SATA, RAID, LVM, NAS/NFS/SMB, iSCSI, SAN/Fiber channel, *some familiarity with cluster file systems including Ceph and Lustre*

Hardware: extensive familiarity with commodity servers and storage hardware; some exposure to datacenter networking