

# JOHN Y. RODGERS

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## EXPERIENCE

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### Viasat

Software Engineer

San Diego, CA

August 2018 - November 2023

#### Connection Management C++ Library

- Ensured compliance with rigorous security standards in cross-virtual machine communications by designing and owning a C++ library that managed **OpenSSL**-secured **DTLS** connections.
- Prioritized developer convenience with argument-based configuration, allowing simple setup of encryption, timeout, SSL roles, and peer addresses, abstracting away the complexities of the underlying implementation.
- Enhanced connection stability by integrating multi-threading for efficient and reliable heartbeat monitoring, facilitating automatic re-establishment of SSL connections as required for continuous operation.
- Boosted efficiency and throughput by employing a multi-threaded approach to queue and send packets, optimizing network performance and data handling.

#### Fault Diagnosis Library

- Enhanced fault diagnosis & system reliability with C++ library that created files detailing recent activity from failed **Docker/Kubernetes** containers, enabling more precise troubleshooting and system insights.
- Optimized log management using circular buffers for priority-based storage, implemented **multi-threading** for enhanced performance, and established **IPC**-based communication to coordinate across multiple containers.

#### Data Publishing Microservice

- Enhanced alerting and monitoring by developing data publishing microservice that streamed critical data from containers leveraging **gRPC** for transmission, **Fluent Bit** for filtering and enrichment, **Kafka** for publication.
- Improved communication efficiency and response handling by developing a C++ client library with auto-generated **gRPC** sources, simplifying client initialization, request creation, and stub method invocations.
- Optimized data processing workflows using **Fluent Bit** for advanced filtering/enrichment, leading to efficient, content-based routing and improved data stream management with Stream Processor.

#### Intern Optimization Project

- Significantly reduced application suite build/test times by **>3 hours** through proposing, planning, and leading a summer intern project focused on process optimization and efficiency in a containerized build environment.
- Dramatically reduced the number of files compiled by implementing modern **CMake** practices, resulting in a significant improvement in build efficiency and a more streamlined development workflow.
- Accelerated development by implementing ccache in **Docker** build environment, cutting down data transfer with **volume mounts** to the host, resulting in over 95% faster build times on Apple chips.
- Optimized efficiency by integrating external libraries into base **Docker** images, drastically reducing download and build times, while also simplifying the process of configuring and managing different library versions.
- Effectively managed and mentored participants, providing guidance through the project's technical and operational complexities, ensuring successful project completion and a valuable learning experiences.

#### Scrum Master

- Boosted team velocity by 25% over three-year tenure as a **Scrum Master** for 8-member development team, all while excelling in my primary role as a developer.
- Successfully drove project outcomes by streamlining project workflows, efficiently managing tasks in **JIRA**, facilitating productive meetings, and fostering collaboration with leaders across various teams.

#### Code Review Process Enhancement

- Accelerated code review completions and development quality by revitalizing processes and training, fostering clear communication, faster issue resolution, and increased team knowledge.
- Expedited merges by broadening reviewer pool using a PR template that captured crucial details, ensuring the clarity for all skill levels to contribute, increasing overall knowledge and preserving a valuable historical record.

- Enhanced quality of collaborative development resulting in improved code quality, faster issue resolution by delivering code review training that emphasized effective communication and providing thorough feedback.

### Peer Education Programs

- Lowered dependency on individual expertise by initiating peer education program, conducting needs assessments, mobilizing subject matter experts, and creating a comprehensive video knowledge base.
- Boosted technical proficiency of junior developers by holding regular skill-up sessions resulting in a knowledge base of **Zettelkasten** and **Diátaxis** based notes populated with **C4**, **Sequence**, and **State** Diagrams.

### Varied Achievements

- **Deployed**, debugged and administered **Linux-based VMs** using **Jenkins** to develop, test, and deploy **Docker/Kubernetes** containers.
- Ensured rapid issue resolution and system reliability through critical **on-call technical support**, demonstrating a deep understanding of system architecture and cross-team product integration.
- Streamlined artifact synchronization between legacy **Perforce** and host build system using dedicated **Docker** container. Implemented **Bash** scripting and **volume mounts** for efficient file transfer.
- Eliminated **cybersecurity** risks by monitoring vulnerabilities using **Blackduck** and **Security Scorecard**, **JIRA** tracking of resolution, leading to a perfect security assessment for the project.
- Mastered complex **regular expressions** for file identification by name and content with tools such as **find**, **ripgrep**, and **ag**, applied techniques for mass text editing in **Vim** and **Obsidian**.
- Deep intellectual curiosity and passion about learning through **methodical study**, **organized note-taking** using **Zettelkasten** method, systematic reviews using **spaced repetition flashcards**.

### Viasat

*Software Engineer Intern*

San Diego, CA

June 2017 - August 2017

- Collaborated with an interdisciplinary team to consolidate multiple hardware testing tools into a single server rack, automating modem testing processes.
- Created equipment tests using **C++**, automated tests and reporting of results using **Python**, ensuring seamless communication and compatibility between devices.
- Performed extensive debugging and optimization of the automated system, ensuring robust performance in diverse operational conditions.

### United States Navy

*Information Systems Technician*

2007 - 2012

- Obtained **TS/SCI/NSA Security Clearance**, demonstrating a commitment to stringent security protocols and a proven track record of trustworthiness and reliability in handling classified information.
- Configured, maintained, and monitored ship-wide **local-area network** including **servers**, **firewalls**, **routers**, and **switches**.
- **Supervised** five-member team of diverse backgrounds and life experiences through daily operations by focusing on respect, communication, and motivation.

### SKILLS

Artifactory, Bash, C++, CMake, Cap'n Proto, Confd, Consul, Docker, Docker-compose, Fluent bit, GDB, Google Test, Graphana, gRPC, Helm, JIRA, Jenkins, Kubernetes, OpenSSL, Python, Redis, Splunk, Terraform, Valgrind, Vault

### EDUCATION

#### University of California San Diego

*Jacobs School of Engineering*

BS in Computer Science

- Coursework: Object-Oriented Programming; Advanced Data Structures; Theory of Computability; Software Engineering; Computer Architecture; Artificial Intelligence: Search & Reasoning; Computer Operations & Product Engineering
- Organizations: **Vice President** of Student Veterans Organization where I advocated for student veterans and organized events including Raytheon Resume Panel & Networking Event, and Amazon Alexa Hackathon.