Thomas Pfau

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C++ Software Engineer | Technical Lead

I have many years of experience developing programs using asynchronous communications, networking, and multithreading on OpenVMS and Linux systems. I have led small teams to deliver industry leading software with quality and time to market exceeding management expectations. I am seeking a position where I can assist and mentor other programmers while designing and implementing robust and efficient solutions.

Technologies: OpenVMS, Linux, C/C++, Perl, DCL, bash, zsh, TCP/IP, SQL, Postgresql, Redis, Google Protocol Buffers, Kafka, Git, WASD, Apache, HTML, CSS, CGI, Javascript, SDLC, Agile, Jira, GoogleTest

Experience

Technical Lead, 7/11 to present | CME Group (formerly Nex Group, ICAP), Parsippany, NJ

Cross Venue Risk Team

I work with a team of developers who maintain and enhance a set of components that comprise the CME Group's credit monitoring system. The group implements a CI/CD environment using Git (Bitbucket), Bamboo, Maven, Nexus Repository, Jenkins, and other tools. Projects and issues are tracked using Jira. My main responsibilities involve supporting a multithreaded C++ program that interfaces to several other systems using Kafka, Redis, Protobuf, JSON. The system has extensive unit tests using Google Test and an acceptance test suite written in Java using Cucumber.

EBS BrokerTec

I enhanced and supported the matching engine, market data platform, and logging and reporting systems for the company's FX trading platform. The software is C and C++, handles hundreds of concurrent client TCP connections, and interfaces to Redis and Postgresql.

I worked with product and architecture teams to design new products and enhancements to existing products. I worked alone or led small teams during implementation. I worked with QA and production staff to ensure end product was high quality and supportable.

I maintained the build procedures and Jenkins installations that built the software from source code and packaged it for delivery to target systems. I setup and maintained the Git repositories used for our components. I maintained the migration of code from our old Perforce code repository to Git.

Major accomplishments:

I ported most of the EBS trading system from OpenVMS to Linux.

I split the matching logic in the trading system into three threads – input, matching, output – resulting in a large increase in throughput and improved latency.

I implemented a simulation system that predicted market reaction to proposed system changes using production logs as input.

I led a team of developers to implement the company's new multicast market data system. The team completed the work well ahead of schedule and with few problem reports.

I worked on several proof-of-concept systems to test various design changes for their impact on system throughput and latency. Many of these design elements were later made part of the production trading system.

Director of Technology, 8/09 to 6/10 | Vintner's Circle Franchising, Hackettstown, NJ

The company provided technology and operations support to its chain of stores. Customers made wine in the store or purchased supplies to make wine at home. I maintained, enhanced and supported the web site (OS Commerce, PHP, MySQL) that was used by the franchisees to run their stores.

I developed inventory management extensions to allow stores to manage orders with vendors, receive shipments, manage invoices and payments, and track store assets. I implemented a calendar module that allowed stores to track customer winemaking sessions and special events. I implemented routines to calculate and report sales summaries and royalty payments due.

Lead Analyst, 5/03 to 9/09 | Schering-Plough Corp. (now Merck), Kennilworth, NJ

I supported and enhanced the software that runs the automated hi-rise warehouse. This is a regulated and validated system that runs on OpenVMS servers, written in C using DECforms and Datatrieve.

I worked closely with warehouse management and users to understand their workflow so that system enhancements would integrate smoothly with existing warehouse procedures. I worked with QA and warehouse personnel to update procedures and maintain life cycle documents.

I proposed and later executed a port of the system from OpenVMS VAX to OpenVMS Alpha to achieve speed improvements and cost savings. I developed DCL procedures and Perl routines that interfaced with DEC CMS and MMS to manage development projects. I implemented a web-based system that displayed active orders on a large monitor in the warehouse area for the fork lift operators and allowed planners to see near real-time order status using a web browser. I implemented, documented and tested several changes to the system software to improve material handling or accommodate changes in the physical space of the warehouse.

Programmer, 1/03 to 5/03 | NetProfits Internet Consulting, North Brunswick, NJ

I assisted in the development of an internet sales web site (ASP, SQL Server).

I assisted in application and database design. I implemented business logic modules and database access routines.

Programmer, 9/01 to 12/02 | emCrit Corporation, Morristown, NJ

emCrit Corporation (previously Rane Technologies) was a startup attempting to develop a phone system switch suitable for provisioning multiple customers in a shared building environment. The system was written in C++ and Java, ran on Windows Server and used a Postgresql database.

I designed and implemented a layered Java application used to administer the product. I designed CORBA interfaces used by the administration program and other modules to communicate with database access programs. I designed and implemented system, network, and database access modules.

Manager, R&D, 6/96 to 9/01 | Maher Terminals, Millburn, NJ

Maher Terminals is one of the largest multi-modal terminal operators in the New York/New Jersey region.

I designed and implemented interfaces in C to allow the COBOL programmers to access vendor supplied systems. I designed and implemented a communications gateway involving vendor supplied cameras, ticket readers, and intercoms with X-terminals. I designed and implemented multithreaded server that connected yard equipment with server applications. I ported the corporate web site from Cold Fusion/Oracle to Perl allowing direct access to live data from the OpenVMS servers. I designed and implemented a program for editing a graphical representation of a multi-modal terminal as part of the company's terminal management system.

Systems Analyst, 10/94 to 5/96 | Toys 'R' Us, Parsippany, NJ

I worked with a team of developers that maintained the internally developed communications subsystem. Components were written in C or VAX Macro.

I wrote a terminal emulator program that allowed multiple users at stores, warehouses, or corporate offices to interact with the corporate Burroughs mainframe eliminating the need for an inefficient third party package and dedicated hardware. I designed and implemented a multi-platform communications subsystem and API which would allow application programmers to easily write client/server applications across the TCP/IP network.

Software Specialist/Consultant, 7/83 to 10/94 | Digital Equipment Corporation, Parsippany, NJ

I worked on many projects and assignments involving customer software development on OpenVMS and RSX-11M+ systems and OpenVMS system tuning. I managed several OpenVMS and RSX-11M+ systems in the office. I supported sales staff with setup and tuning of demo software. I won an Excellence Award in 1987 for having implemented solutions for several difficult pre-sales and customer situations.

Field Service Engineer, 9/81 to 7/83 | Digital Equipment Corporation, Parsippany, NJ

I was responsible for maintenance of VAX and large PDP-11 systems and associated peripherals.

I developed a parts order system for the logistics manager automating a manual procedure that saved him several hours each week.

Education

Associates Degree, Electronics Technology, 9/79 to 9/81, Metropolitan Technical Institute, Saddle Brook, NJ

High School Diploma, 9/76 to 6/79, Fair Lawn High School, Fair Lawn, NJ

Personal Projects

I wrote a set of routines called FTPlib that allow a program to interface with an FTP server. This library has been used on VMS, Linux and Windows systems.

I have written several Perl modules that are available on CPAN. Most of these are interfaces to OpenVMS system services or layered products.

Personal Interests

I was a member of the board of directors of Spirit Life Fellowship Church in North Brunswick, NJ during 2018. I play guitar and bass and have been a member of the worship team at several churches.