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Operating Systems: Linux (PowerPC and x86), AIX, other Unix variants
Platforms: PowerPC, x86, Cell Broadband Engine
Languages & Technologies: C, C++, TCP/IP, Java, SQL, PowerPC Assembler
Skills: Performance analysis and optimization, parallel, distributed and multi-threaded programming, debugging cross-platform applications, network applications, SIMD/Vector programming, operating system development

Related Experience:

IBM, August 2006 – Present: Lab Services Linux and Cell Broadband Engine Team Lead

I currently lead a team of twelve developers that works on a variety of high performance computing projects. Improved skills on the team by providing education and mentoring which improved customer satisfaction and revenue. Reduced risk and cost to IBM on external contracts by working with the contracts team to ensure the terms and scope of the contracts were appropriate. Defined the long term direction of the team (commercial high performance computing), defined critical skills to support that direction and worked with the team and management to build those skills.

In my primary role I provided support for IBM and independent software vendors who were introducing the Cell Broadband Engine (Cell BE) to the market. Cell BE is a leading edge processor that is multi-core, provides SIMD/Vector capability on each core, and provides exceptional streaming data support. Generated revenue for IBM by performing highly technical presales work that often led to hardware sales and billable services engagements. Raised awareness of the product by teaching formal classes on the CPU architecture and how to exploit it to internal and external audiences. Improved the skills of a much larger distributed team by mentoring and training them, not just on the Cell BE but on general high performance computing tricks and techniques.

Projects I was personally involved in include developing a Fast Fourier Transform library for the IBM Cell BE software development kit, debugging and testing real-time Linux for use in a military application, designing and implementing a streaming data analysis solution for a large bank, improving the performance of scientific codes used in oil exploration and architecting a new risk management system for a large insurance company. I have consulted on many other projects as well.

IBM, February 2003 – March 2006: Developer, BlueGene L Supercomputer

BlueGene L is a massively parallel supercomputer with 65536 compute nodes and 1024 input/output (I/O) nodes that held the title of the most powerful supercomputer in the world from November 2004 to June 2008. The machine is comprised of custom hardware running a Linux-like compute node operating

system, Linux I/O nodes that provide I/O support to the compute nodes, and several conventional service machines.

Supported our customer (Lawrence Livermore National Laboratory) with a 128 node Linux cluster running a hardware simulator until BlueGene L hardware was available. Designed, implemented and delivered the debugger interface to the machine ahead of schedule while collaborating with an external ISV. Dramatically improved the performance and reliability of the end user job submission utility. Provided internal and external support for debugging problems and improving customer satisfaction.

IBM, December 2000 – February 2003: Performance Consultant

Worked directly with customers and business partners performing custom programming and performance analysis of AS/400 and iSeries midrange computer systems. Specialty areas included DB2 performance analysis, Java performance analysis and Linux performance analysis. Improved customer satisfaction and directly impacted IBM revenue by reacting quickly to solve a wide variety of performance problems in real world applications.

IBM, December 1999 – December 2000: Operating System Developer

Owned and maintained the task dispatcher component of the OS/400 operating system. The task dispatcher is a critical part of any operating system, especially for a midrange machine with up to 24 processors and tens of thousands of active jobs. Responsibilities included maintenance of existing code and adding new function for logical partitioning.

IBM, March 1998 – December 1999: Operating System Performance Analyst

Performed performance analysis and tuning for the AS/400 operating system. Responsibilities included working with operating system developers to improve the performance of targeted components, working with engineering to process and understand low-level hardware trace data, defining and driving requirements into future versions of the product, and setting and achieving benchmark targets on industry recognized benchmarks. Helped set performance targets for the AS/400 24 processor system and helped set performance goals and instrumentation requirements for the Power4 architecture.

IBM, September 1992 to March 1998: Operating System Developer

Performed a variety of porting, design, implementation and debug tasks in the OS/400 operating system.

Education:

Bachelor of Arts Degree in Computer Science, State University of New York College at Oswego
Masters Degree in Computer Science, University of Minnesota Twin Cities Campus

Patents:

Pending: “Methods and Arrangements for Multi-buffering Data”

US 7,363,617 “Database breakpoint apparatus and method”, April 22nd, 2008

US 7,137,120 “Dynamic Diagnostic Program For Determining Thread Wait Time”, November 14th, 2006

US 6,757,785 “Method and System For Improving Cache Performance In A Multiprocessor Computer”, June 29th, 2004

Professional Organizations:

Association of Computing Machinery
IEEE Computer Society