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Objective

To obtain a position of a software developer which requires high skills in various problem investigation and solving.

Summary

- 10+ years of experience in Windows system and application development
- 10+ years of experience in Linux system development
- 10+ years of experience in networks (ethernet, TCP/IP, PCI…)
- 6 years of experience in open source development
- 5 years of experience in embedded development
- Work effectively with users, peers and upper management to define scopes and solve problems

Technical Skills

- Languages: C/C++ (10+ yrs), Forth, Assembler, JScript, python3, shell
- Platforms: Linux RHEL/SLES/Ubuntu/Debian (10+ yrs), WindowsNT/2003 (10+ yrs)
- Virtualisation: Linux KVM, QEMU, PCI pass-through (VFIO), SR-IOV.
- Networking: TCP/IP - HTTP/FTP/DNS/Socks/SNMP (10+ yrs), WinInet, IIS ASP
- Firmware: U-Boot, Open Firmware IEEE1275
- Microprocessors: Atmel AtMega, Renesas H8
- Embedded technologies: IPMI, PICMG ATCA/AMC/MicroTCA platforms
- Hardware emulators: BDI2000, AVR ISP/JTAG/STK, Renesas E10A
- Peripherals: PCEe, SR-IOV, I2C, UART, SPI, 100Mb/10Gb Ethernet, Flash, SAS, SCSI.

Work experience

08.2010 – present
IBM Australia, http://www.ibm.com http://ozlabs.org
Linux kernel engineer

Implemented emulated PCI devices support in QEMU-ppc64 in full emulation.

Ported x86-VFIO host system driver to PPC64 and implemented PCI pass through in QEMU, including MSI-X and SR-IOV.

Implemented PCI pass through support for NVLink and NVLink2 on POWER8 and POWER9 NVLink-enabled platforms, including coherent memory and ATS.

Implemented number of KVM guest migration fixes.

Maintained of an internal QEMU repository for IBM linux distributions.

Maintainer of SLOF – a system firmware for IBM PPC64/server guest systems. Implemented slim shim VOF firmware for QEMU/PPC64.

Implemented PPC64 support for Syzkaller (Google created community driver system calls fuzzing test suite).

Implemented LLVM LTO (link time optimization) support for Linux on PPC64.

02.2007 – 08.2010
IBM EastEurope/Asia, http://www.ibm.com
Software engineer

IEEE1275 compliant host firmware for the CellBE-based BladeServers QS21/QS22 - the servers which made bigger part of the IBM RoadRunner - the first computer reached 1 Petaflop performance. Implemented

a SAS disc and 10Gb Ethernet drivers to boot the server from SAS storages and 10Gb Ethernet networks in different chassis, in Forth and C languages.

QS21/QS22 servers Last Level Support. Implemented set of PCI scan and diagnosis tools for the host firmware, installed and administered the local infrastructure, and made various investigations and fixed defect coming from the customer side.

zHybrid network project. Such networks are designed to use a combination of IBM zSystem reliability with IBM BladeServer unique performance. Implemented various network configuration tools for managing Junuper Ethernet and IBM BladeCenter switches, developed a network monitoring tool which detects and shows in a human-friendly form all the faults happened in the zHybrid network. The project works in Linux environment and makes use of C++, Java, perl, shell and IBM-designed COM-alike object model.

01.2005 – 02.2007
Emcraft Systems http://emcraft.com (for Pigeon Point Systems http://www.pigeonpoint.com)
Software engineer

Reference board design and flexible firmware for a service processor for telecommunication blade servers designed by ATCA/mTCA standard (based on IPMI). Developed the firmware for the Atmel AtMega microcontroller and ported it to a more powerful and featured Renesas H8 microcontroller. Implemented new ATCA/mTCA protocol features, supported various hardware (I2C EEPROMs, fan control and tachometry, flash programming, power and thermal management etc). Designed Ethernet/IP/UDP stack.

Supported clients in the firmware configuration and performed remote firmware and hardware debugging.

ATCA/mTCA chassis management module called "ShMM". This module is what the blade server service processor communicates with and this module makes decisions regarding the whole chassis work and intercommunication. Fixed defects in the host firmware and the management software running on the module.

10.2004 – 01.2005
Zenfolio http://www.zenfolio.com
Sr. software engineer on a part-time project
Designed and developed the ActiveX/IE6+ control for previewing and uploading JPEG/TIFF photos with EXIF metadata to the http/https server. Developed test scripts for client and server sides.

02.2004 – 10.2004
Medialooks Company http://medialooks.com
Sr. software engineer on a part-time project
Designed and developed set of various Microsoft DirectShow filters - capture, transform and renders, including AppleQuicktime, and a reliable 24x7 capture application with guarantied no frame drops.

03.1999 - 12.2004
Agava Company http://www.agava.com
Software engineer, team lead

Internet downloads manager. Developed a Win32 application which supports downloads, uploads, FTP folders, HTTP sites (like wget), an advanced dial-up manager, a powerful task scheduler.

Designed and developed a tiny download library (Win32 dll) to use in third products for their updates.

Designed and implemented core application of a protected read-only mail client. Investigated and implemented rendering of the Microsoft Office, Acrobat, HTML, media files in the application with no copy enabled. Implemented encryption filter on the sender's side.

Designed and implemented software to execute Linux-x86 ELF binaries from the Windows file system "as is" without recompilation. Implemented video, mouse, keyboard, ISO9660, harddrive drivers, worked on the kernel design and system calls implementation.

DVD-to-AVI converter which implemented a legal DVD copying. Designed the core application and optimized video capturing speed.

In last 2 projects I acted as a team lead and carried all negotiations with a customer regarding the projects.

09.1997 - 03.1999
Comteco Ltd http://www.comteco.ru
Software engineer
Ported from MSDOS to Win32 and developed software for local petrol companies (maps, databases, printing library), used Watcom C++/DOS4G/VESA SDK.

Education
09.1992 - 07.1997
Moscow state university of railway engineering (MIIT) http://www.miit.ru
Master of Science degree in Computer Science
U.S. Equivalency – Bachelor's and Master's degree (www.wes.org, ref#2178381)

Open source projects participation

Linux kernel:

https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/log/?qt=author&q=aik%40ozlabs.ru

System emulator QEMU:

https://git.qemu.org/?p=qemu.git&a=search&h=HEAD&st=commit&s=aik%40ozlabs.ru

PPC64 pSeries guests system firmware (SLOF):

https://git.qemu.org/?p=SLOF.git&a=search&h=HEAD&st=author&s=aik%40ozlabs.ru

PPC64 PowerNV system firmware (Skiboot):

https://github.com/open-power/skiboot/commits?author=aik