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Objective

Have fun at work while developing my skills and acquiring new knowledge.

Language

Swedish - mother tongue
English - fluent, written and spoken
German - conversant

Experience

2007-05 - current *mental images GmbH (Berlin, Germany)* *Software Developer*

mental images (<http://www.mental.com>) provides rendering and 3D modeling technology for entertainment, computer-aided design, scientific visualization, architecture, and other industries that require sophisticated images. I am working in the core networking and cluster group coding C/C++, mostly contributing to RealityServer which is a product for scalable server-based 3D rendering. Some specific things I have been doing at mental are:

- Designed and implemented video streaming support in RealityServer which required implementing Adobe's RTMP protocol including AMF (Action Message Format 0 and 3) and reverse engineering how to encapsulate H264 and Sorenson encoded video within RTMP Video packets.
- Implemented a shared library authentication scheme which included implementing SHA265 and HMAC-SHA256 from the Wikipedia pseudo code.
- Implemented the RealityServer cluster TCP layer and the cluster detection module, using multicast, for automatic population of host lists for TCP unicast clusters.
- Added IPv6 support to RealityServer, mental ray and tools, including IPv6 multicast and link-local support.
- .NET hosting/integrations for shaders in unmanaged and managed code with vtable-fixups and IL code generators.
- Implemented an in-memory DLL loader for Windows.
- Added upload support to the in-house written HTTP-server following RFC standards.

2006-09 - 2007-04 *Univits International AB (Stockholm, Sweden)* *System Developer*

Univits is a small software developing company concentrating on doing products for the financial markets, mostly betting, asset management and stock exchange software.

At Univits I was doing

- consultancy for Enecto (<http://www.enecto.com>) integrating their webservices with a CRM system called Salesforce (<http://www.salesforce.com>) using WSDL, Java and Application servers.
- consultancy for a customer (NGM Stock Exchange), improving throughput in their trading platform.

2005-09 - 2006-09 *Cubical Solutions Oy (Helsinki, Finland)*

Systems Specialist

Cubical is a software developing company developing in-house products and doing consulting for companies as Nokia and Fujitsu mostly in the telecom area. Within my first two months I became the maintainer for a customer product (C++) designed for performance and regression testing of VoIP server systems as well as the project owner of eBSD, Cubical's proprietary UNIX-like operating system. Some of the things I have been doing at Cubical are:

- design and start with the implementation of writing ISDN PRI and BRI controlling software using SANGOMA Wanpipe API and the isdn4linux interface running on Red Hat Enterprise Linux.
- maintaining and enhancing a load generator tool for the Nokia PoC (Nokia's Push to Talk solution) systems written in C++ and utilizing the QT GUI framework.
- installed and set up a complete PoC system for Cubical used for testing, bug verification and development before shipping new releases. Through this I have had to read and learn RFC and OMA specifications on RTP, RTCP and SIP for verifying behaviour, fixing bugs, reading network traffic and developing new code.
- integrate and maintain a H323 library into Cubical's embedded Unix platform. This required adding partial POSIX pthread cancel support to the thread library in eBSD.
- Installed and configured ISDN \leftrightarrow H323 software gateways, Isdn4gw and Asterisk. Performed pre-studies at Fujitsu premises testing compatibility between H323 libraries and Cisco VoIP gateways.
- Debugged and implemented a new interface/implementation for a SIGCOMP library (RFC 3320) used by several of Cubical applications. Added support for SIGCOMP over TCP/IP.
- Maintainership of the internal embedded Unix platform based on FreeBSD 4.5 which includes applying security fixes, shipping binary patches, building new releases and adding new hardware drivers. Among others sold by Fujitsu as part of a firewall/callsign solution.

2000 - 2005 *Univits International AB (Stockholm, Sweden)*

System Developer

Univits is developing electronic marketplaces and asset management systems in C, Java, C++ and Perl. I have had a major influence on the three main marketplaces we have built since I joined Univits: Swedens second equity and derivatives exchange NGM (<http://www.ngm.se>), a no longer active energy broker exchange called PowerITS and ATFox (bought up by MTS) which was trading OTC derivatives.

The NGM (and its NDX-market) has Market and Back Office Feeds to Reuters, SIX and Ecovision. I was maintainer for the Market Feed Server for a year giving me a good overview of the protocol and the issues and problems one can encounter providing financial feeds.

I ordered, assembled, installed and configured fully redundant automatic fail-over firewalls with Soekris and OpenBSD (CARP and pfsync) for ATFoxs LIVE and DEMO market spread over London, Milan and Stockholm.

Other examples of responsibilities I have taken at Univits are:

- co-designing the protocols and APIs used internally in the Univits platforms.
- developed and maintaining an API implemented in Java for the ATFox market customers.
- designing and implementing a distributed surveillance system handling start-up, shutdown and monitoring of the system modules. It parses the module output and notifies the support desk of warnings and events. It is written in Java using RPC calls (RMI) for communication between the nodes in the system.

- designing, implementing and maintaining the distribution server, a central part of the infrastructure in Univits Systems. It is written mostly in Perl with protocol handlers in C for speed. The protocol handlers uses an in memory tree constructed from an XML-document describing the protocol syntax. The perl part handles logins, queries and filtering for Trading clients as well as multiplexing trade and exchange information from the main server. It uses an event driven subsystem called POE.
- installing and configuring firewalls, DNS, mail exchange machines and other services that make up Univits internal infrastructure and security.
- assisting our CTO in interviewing and selecting new technical personnel.
- order and trade statistics for all markets with graph generation and data processing of financial data. Written in Gnuplot, Bourne shell and Perl.

1999 - 2000 *Centrum NTR, later Starlife Consulting AB Consultant, System Developer, System Administrator*
 Centrum NTR was pushing Digital TV in Sweden. I was employed as a consultant. Worked at Univits, 70% of the time. At Centrum NTR I

- took part in evaluating several Java Application Servers for potential use in client projects.
- assisted in several Web-projects built with Perl CGI scripts.
- was responsible for purchasing new servers, installed and maintained the firewall, mail and ftp servers.

1999 - 1999 *Vogon* *System Developer*
 VOGON developed the first version of the NGM Marketplace on behalf of Univits. I became employed following a period as a hired consultant. At Vogon I

- designed and developed the first version of a distribution server for the NGM Marketplace using POE, XS, C and expat. The NGM Marketplace consisted of four different modules with heavy interaction and its development demanded good communication between the responsible persons for each module.
- had chief responsibility for the twenty distribution nodes and market feed servers deployed at the different banks and stock traders.

1999 - 1999 *Quad Solutions* *System Developer and part owner*
 Started Quad Solutions, a software consultancy firm, together with three fellow students. As an employee and owner I had various tasks but some of them were

- developing Web-solutions with Perl CGI with underlying MySQL databases
- developing a Quake Mod of the HiTech-building in Stockholm complete with new skins, textures, weapons and voices. Changed the behavior of the "monsters".

1996 - 1998 *ICL* *Technical Helpdesk (part-time)*
 Telephone helpdesk for GE/Capital bank, JC, Åhlens, and Gardermoen's train system. Used IBM Tivoli as one of the monitoring and remote configuration systems.

1996 - 1996 *TietoEnator* *Computer Technician*
Worked at the PC/LAN department for nine months placed at Nyman & Schultz. I Installed, configured and maintained their hybrid environment of Novell/Mainframes/UNIX-machines and PCs. We migrated their Token Ring network to Ethernet and their old terminal systems to the new Amadeus-system and aided the incorporation of Lotus Notes into the company.

Education

1996 - 1999 *The Royal Institute of Technology, Stockholm* *Bachelor of Science*
Three year Computer Science studies with focus on software engineering.

1992 - 1996 *Åsö Gymnasium, Stockholm* *Technical College*
Technical studies with focus on electronics plus an extra year studying computer networks.

Career related

ABC-Klubben - Swedish computer club with about 1000 members

System administrator. Active member since 1996 and chairman between 2002 and 2005. Specific experience gained:

- Veritas NetBackup Businessserver, Legato Networker, Solaris 6,7,8 and 9 systems on Sparc and UltraSparc-machines.
- installing, configuring and hacking sendmail, bind (with DNSSEC), apache, IMP, MySQL, INN (InterNetNews), IPV6-tunnels, Ascend and Cistron-Radius.
- leadership and board work.

Stacken - Computer club of the Royal Institute of Technology

Active member since 1998.

Other, non-affiliated work

Submitted accepted patches for Arla (AFS Client developed at KTH), POE (Perl Object Environment), OpenBSD and Privoxy.

Knowledge

Fluent in programming C, C++, Java, Perl and sh. Experience of OCaml, Erlang, haskell, python, javascript and Visual Basic. JSP/Servlets-development in application server environments using WSDL/webservices. Project documenting with T_EX and Gnuplot. .NET hosting and IL generators in Unmanaged C++ and in Managed code.

Fourteen years of UNIX-experience, mostly OpenBSD, Linux and Solaris.

Building infrastructure, including wiring patch-panels, with DNS, DNSSEC, Mail, Web, News, IPSEC, Kerberos (MIT and Heimdal), Radius (Ascend and Cistron) and firewalls. This implies troubleshooting of SMTP, HTTP, NNTP, TCP/IP, UDP, ICMP, SSL and so on with ssldump, tcpdump, snort and ethereal (WireShark).

Architectures like Sparc, UltraSparc, i386, PowerPC and Alpha.

Installation, maintenance and use of all Microsoft OS from DOS to Windows XP, MacOSX, Novell 3.12, Novell 4.1, Solaris 2.6, 7, 8 and 9, Redhat, Fedora, SuSE, Debian, Slackware och OpenBSD 2.6-4.7.

Programming towards databases in C, Java and Perl. Mainly MySQL, PostgreSQL and MS SQL.

Been using and administrating CVS for over eight years. At mental images I worked with Git locally against the central SVN repository. Also used SVK, OpenCM, Mercurial and RCS in various projects

References

Not available in the online PDF version but will be provided on request.