Sébastien Nicoud

Web Developer, Software Architect, Linux Sysadmin

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Full stack web developer with 3 years of experience creating map and database-heavy web sites for the USGS.

Software engineer with 15 years of experience architecting and developing low-level software diagnostics in C++ and manufacturing processes for the Workstation manufacturing industry at Hewlett-Packard.

Proven strength in software engineering, from requirement analysis to maintenance.

Favorite languages: Java, Groovy, C++, Perl, and JavaScript.

Master's Degree in Computer Science. Red Hat Certified Engineer. Open Source software contributor and supporter. Fluent in French and English.

TECHNICAL SKILLS

Programming	ANSI C, C++, Java, Groovy, JavaScript, Perl, Bash
Frameworks	Grails, Yeoman, GNOME, MFC, UEFI
Web Technologies	Grails, HTML5, CSS3, JQuery, AngularJS, AJAX, Esri ArcGIS JS API, GIS for web maps, REST, PHP
Databases	MySQL, PostgreSQL, MongoDB interfaced with PHP, GORM, ElasticSearch
Networking	TCP/IPv4, DHCP/PXE, (T)FTP, HTTP, SSH
Concepts	Design Patterns, Agile Scrum, UML, OMT
Software	Vim, Eclipse, Spring Tool Suite (STS), IntelliJ IDEA, Visual C++ Studio IDE's Subversion, Git, CVS, MS/Open/Libre Office suites, wikis, GIMP Unidata NetCDF, NCO Atlassian JIRA, Confluence
Operating Systems	Red Hat Enterprise Linux system administration, Fedora, HP-UX, Unix
Other	Assembly, set up and repair of PC compatible hardware Limited proficiency with Pascal, CAML, PrologIII, List, Basic, asm 68000, asm x86 Micro-kernel (CHORUS) programming

PROFESSIONAL EXPERIENCE

Senior Software Engineer at the United States Geological Survey

Dec. 2011 - present

Cherokee Services Group System Specialist contractor for the USGS Fort Collins Science Center, Web Applications team.

Established in 2005, *Cherokee Services Group*'s (CSG) team of more than 200 employees delivers best-value IT solutions for commercial and government clients across the U.S. The company specializes in software and application services, network infrastructure services, and business process services. Headquartered in Tulsa, Oklahoma, CSG has a regional office in Fort Collins, CO, and 22 additional offices nationwide. Wholly owned by the Cherokee Nation, CSG is part of the Cherokee Nation Businesses family of companies.

Highlights

Created a Perl script to run a climate prediction model from the USGS Powell Center and NREL at CSU, using climate datasets from the ORNL such as Daymet as input. The script is designed to run on a Linux supercomputer (HPC), and uses a MySQL database to manage its current state and distribute work between the cluster nodes.

Created the Core Research Center Well Catalog, a web interface to the US core database, featuring a map-based search, as well as a full admin interface not accessible from the public.

Created the NCCWSC project management tool suite, including the Request For Proposals system, the Data Management Plan Editor, the Project Tracking Dashboard, and DEPTH, an AngularJS front-end for the USGS's ScienceBase repository.

Created the USGS Fort Collins Science Center project management and tracking system.

Created the Landscape Field Guide web site, featuring a map-based search.

Worked on several other web sites, such as the USGS Bat Population Database, the Western Energy Citation Clearinghouse, the USGS Magnetometer Observatories web app (not opened to the public).

Worked on the USGS web, RSS, and database search engine powering the public and internal USGS-wide searches.

Environment, Technologies

Linux, Apache Tomcat web container
Grails, Groovy, GSP, Java, HTML5, CSS3, JavaScript, jQuery, AngularJS, ArcGIS, AJAX, REST, JSON, XML
Spring Tool Suite (STS), Grails Groovy Tools Suite (GGTS), IntelliJ IDEA IDEs, Yeoman, Firebug
Subversion, Git, Grunt, Bower, ssh
Atlassian JIRA, Confluence
PostgreSQL, MySQL, MongoDB, ElasticSearch
C, Perl, bash
Unidata NetCDF, NCO
Agile (Scrum) project management

Software Architect at Hewlett-Packard

Jul. 1996 - Dec. 2011

Sogeti LLC (Cap Gemini Group) contractor to Hewlett-Packard Co.

Sogeti is part of the international *Capgemini SA* organization, one of the world's leading providers of consulting, technology and outsourcing services with 75,000 people worldwide and global annual revenues of 7.7 billion euros. Sogeti delivers practical services, built on more than 35 years of global experience.

Worked 15 years in many different divisions and projects at Hewlett-Packard in France and in the United States.

Software Architect at Hewlett-Packard PSG DTO

2010 - Dec. 2011

Sogeti LLC contractor to HP Vision Hardware Diagnostics for Manufacturing, Field, Fort Collins, CO, USA

My function consisted in overseeing all sub-projects, proposals, development, and maintenance tasks related to the HP hardware diagnostics suite for both manufacturing and field, fixing problems, and architecting better solutions for all.

Highlights

Discovered a solution to boot Windows 7 on diskless systems.

Ported offline Field diagnostics image to Windows 7 WinPE.

Fully automated creation of both Online and Offline Field images.

Architected and developed a suite of UEFI-based diagnostics replacing or complementing the Windows based ones. Created developement framework and libraries. Created an UEFI test executive "sequencer" offering full control and reporting of all the manufacturing process steps.

Environment, Technologies

Microsoft 32 and 64 bit Windows 7, WinPE systems, WAIK 3.x
Visual Studio 2003, 2005 C++, Visual Studio 1.52 C (for 16 bit apps)
Java 6 with Eclipse Helios, Swing, Ant
BIOS interfaces and internal tables, low-level motherboard programming
Perl scripting
Subversion, SourceForge
XML
Unified Extensible Firmware Interface v2.3 (UEFI) internals and protocols
All UEFI diagnostics written in C, UEFI Shell scripting, UEFI Python

2009 - 2010

Software Architect, Team Leader at Hewlett-Packard CPC Division

Sogeti LLC contractor to HP Vision Hardware Diagnostics suite, Fort Collins, CO, USA

Leader of the 3-developer team that architected and developed the HP-branded graphical user interface for the system diagnostics installed on every HP Consumer class PC. The diagnostic suite, called HP Vision Hardware Diagnostics is available "online", on the user operating system partition as a preinstalled application, and "offline", on a downloadable CD image booting WinPE.

Highlights

Wrote all scope, specification and architecture documents.

Architected and developed Java GUI.

Responsible for project Quality, Process Compliance and Improvements.

Developed the WinPE-based bootable HP Diagnostics CD image.

Fully automated image build processes.

Environment, Technologies

32 and 64 bit Windows 7, WinPE systems
Java 6 with Eclipse Galileo, Ant
Perl scripting
Subversion, SourceForge
Microsoft WAIK
XML
The GIMP for all custom graphics and icons

2006 - 2009

Senior Software Engineer at Hewlett-Packard WGBU, bPC, Notebooks Divisions

Sogeti LLC contractor to HP Diagnostics For Windows (DFW), Vision, and Vision Field Diagnostics, Fort Collins, CO, USA

Design, development and support of DOS and Windows based factory diagnostics for HP Notebook, Business PC, and Workstation products. Part-time project leader of team of 4 people. GUI Java Architect of the HP customer diagnostics.

Highlights

"Vice-team manager", acting as team leader when needed.

Architected and developed Java GUI.

Responsible for project Quality, Process Compliance and Improvements.

Created project change and development processes.

Created test qualification, build and release tool, increasing quality and decreasing time to bring diagnostic software to factory test integrators.

Maintenance of DOS Memory Diagnostics (MDIAG), featuring 64 bit addressing, hyper-threading and defective DIMM identification.

Expertise on processor and memory diagnostics.

Wrote developer guides documentation.

Environment, Technologies

16 and 32 bit Windows systems
BIOS interfaces and internal tables, low-level motherboard programming
Visual Studio 2003 C++, Visual Studio 1.52 C, Borland C++ 3 and 5.01
Java 6 with Eclipse Ganymede
x86 assembly, Perl scripting
VSS, Subversion, SourceForge
XML

2000 - 2006

Senior Software Engineer at Hewlett-Packard WGBU

Cap Gemini contractor to HP manufacturing, CMStar and Revolution based diagnostic integration, Fort Collins, CO, USA

Conception, development and support of diagnostic test packages and processes for the manufacturing and software preload of 32bit (Intel, AMD), 64bit (Intel Itanium) and 64bit PA-RISC HP Workstations.

Highlights

Created package qualification, build and release tool, dramatically decreasing time while increasing quality to bring diagnostics to factories.

Designed, developed and maintained full factory diagnostics for HP diskless blade client.

Designed and developed new sequencer used in all Workstation test packages.

Developed manufacturing solution based on PXE in order to get rid of boot floppy disks.

Evolved and enhanced HP's own test executive by adding functionality and improving robustness. Designed a common test API used by both Workstation and Server divisions.

Introduced use of Concurrent Versioning System (CVS) within HP division.

Remote and on-site support of the HP manufacturing sites, located in the USA, Germany, Japan, Singapore and Thailand. Visited US factories for local setup, training and support.

Wrote technical documentation to capture process architecture, process flow, release cycles, release changes and support processes.

Environment, Technologies

HP/Compaq Revolution, CMStar proprietary test executives
32 and 64 bit HP-UX UNIX, Linux and Windows systems
C/C++, Perl, DOS batch and K-Shell scripting
CVS, VSS
EFI (Extensible Firmware Environment)
PXE, bootp, FTP, TFTP, telnet, NFS, DHCP, Samba, TCP/IP networking

1996 - 2000

Software Engineer at Hewlett-Packard BDD

Cap Gemini contractor to HP Chanel Assembly Program, E-Link, Grenoble, France, and Denver, CO, USA

Conception, development and support of processes for the manufacturing and software preload of 32bit (Intel Pentium) HP workstations and high-end PCs. The Channel Assembly process allowed 3rd party wholesalers to securely download software from HP databases to their production sites through WAN (ISDN, T1) and Ethernet networks, in order to build and sell fully configured HP PCs, on customer demand (Build To Order).

Highlights

Embedded software security, using MD5 & DES libraries from UNIX.

Designed and implemented tools to monitor and perform automated software updates to the worldwide servers.

Contributed to backup and disaster recovery procedures.

Deployed server & networking hardware, installed OS's, setup networks in many Europe and USA factories.

Remote server administration of a dozen manufacturing sites.

Worldwide help-desk support with critical response times.

Ensured good communication and team work between French and American teams.

Environment, Technologies

DOS and Windows systems
C/C++, DOS batch files
Visual Source Safe
DHCP, TCP/IP networking, ISDN routers

Freelance Projects

1999 - present

Created the Boxcars Limo Service web site, a Limousine Rental service.
CSS3, HTML5

Created web site for the CSU Wilusz Laboratory.
CSS3, HTML4

Created several tools and scripts released to the open source community under GPL license (sebseti, potos.php).
PHP, Perl

Created and licensed several Linux games under GPL license, of which one of them received highest reviews from users and game critics (gnommind, gno3dtet).
C/C++, Linux, SDL, GTK/GDK/glib open source libraries, gcc/egcs compilers, RPM for packaging

EDUCATION

Red Hat Certified Engineer (RHCE)

October 2007

Engineer's Degree in Computer Science

1991 - 1996

Institut National des Sciences Appliquées (National Institute of Applied Sciences), Rennes, France

Equivalent to the US Master's Degree.

Knowledge acquired in

Software engineering
Data structures, algorithmic and compiling
Operating systems and distributed systems (UNIX, CHORUS)
Parallel programming (ADA, PVM)
Neural networks and fuzzy logic
Relational databases (SQL)

MISCELLANEOUS

Dual French-American nationality - fluent in both French and English
Authorized to work in Canada (permanent residence permit)
References available upon request