

BRETT BERGQUIST

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Summary

A time tested and results proven Principal Software Engineer/Architect with skills that span the spectrum from Java EE technologies to embedded software with C/C++ in the telecommunications field. Strong in problem analysis and design strategies to define and implement custom solutions. Highly skilled in Java EE, Relational Databases, C/C++, XML/XSL, and Networking.

Proficient in requirements specification, Object Orient Design and Implementation. Highly capable of analysis of existing software including database platforms and application servers to be able to extend and correct when needed.

A small entrepreneur in developing a Metro North Train Schedule application for the iPhone using XCode, Objective C, SQLite and Core Data.

Experienced in:

- Java EE development from data persistence using Java Persistence (JPA), external system connectivity implementing Java Connector Architecture (JCA), Enterprise Java Beans (EJB), and Java Server Faces (JSF)
- Representational State Transformation (REST) design and implementation for existing systems.
- Networking Protocol implementations including SNMP, IP, VLAN, SYSLOG, SNMP, RADIUS,
- Virtualization including Solaris Zones, Linux Containers, Virtual Box and vmWare ESXi
- Working in an open source environment having contributed to multiple open source projects including Apache Derby, IZPACK, Glassfish, and Java Syslog Client
- Continuous Build environment including GIT/CVS, Apache ANT/IVY, Jenkins
- Embedded software development including implementing networking services, flash-based logging, high performance data collection,
- Leading multiple projects simultaneously and providing the direction and guidance for other engineers
- Analysis and Design to integrate systems with other vendors to provide an integrated solution to very large customs
- Working in a fast paced, minimal supervised environment

Experience

Principle Software Engineer/Architect – 2000 to Present

Canoga Perkins, Chatsworth CA

Responsible for analysis, design and implementation of all Network Management Systems for Canoga Perkins with the two largest installations being Verizon and Bell Canada with systems managing nearly 200,000 Network Interface Devices collectively.

Accomplishments this past year include:

- Developed a virtualization layer for the NMS to allow older JSF/Java EE applications to be run unchanged on Glassfish/Payara 5 while providing a migration path and support for the future. This involved allowing JSF 1.2 applications using old Sun Woodstock component library and old ICEFaces 1.8 component library to run in a JSF 2.x environment to preserve the investment in these tested and deployed applications.
- Implemented a complete security upgrade to the Canoga Perkins NMS for Verizon's CPI-810 security requirements by replacing the existing Glassfish v2.1.1 application server with a Payara 5 application server and implemented audit logging and reporting of all system access including change details using a custom JAVERS solution.
- Performed analysis with Bell Canada and Juniper Networks to define, design, and implement a REST interface to Canoga Perkins EMS to allow flow through provisioning from Juniper's Cross Provisioning Platform to Canoga Perkins Network Interface Devices to allow a single seat experience to network operators.
- Designed and implemented a North Bound interface (NBI) from the Canoga Perkins NMS to Bell Canada's Customer Portal system to transport Service Activation Testing information using an XML interface and native support for PDF generation using JasperReports
- Migrated all development to GIT from CVS and introduced an enterprise repository (Artifactory 4.x) and dependency management using Apache IVY to our ANT based builds.
- Built a VM server including procuring and assembling the hardware and ESXi VM hypervisor that is used to host virtual machines for continuous build testing and customer system simulation.
- Built a 17TB SAN server including procuring and assembling the hardware and FreeNAS as the SAN software which provides storage using iSCSI to the VM server and Solaris M3000 server using a 10G interface. The storage is also used for very large database simulation of customer sites.
- Designed and Implemented a firmware Mass Upgrade system to update tens of thousands of Network Interface Device firmware in Bell Canada's network without network operator manual intervention.

Current Work Includes:

- Designing and implementing a Groovy scripting interface to the Canoga Perkins EMS to provide the ability to extend and enhance the EMB for customer requirements. This will allow a controlled library of scripts to be assembled and provided to the customer while ensuring the scripts are unmodified and secured.

- Designing and implementing an interface to Canoga Perkins Network Interface Devices to allow network packet capture and transport to the Canoga Perkins EMS and provide the captured data in a format that Wireshark supports.
- Implementing an updated North Bound interface to Bell Canada's monitoring system for supplying Service Testing data using XML and transformation to CSV using XSLT.

Past Accomplishments Include:

- Designed and Implemented an embedded high-performance network test result collection system in Canoga Perkins Network Interface Devices to Metro Ethernet Forum (MEF) standards. The system currently collects approximately 10,000,000 test results per day from Verizon's network and provides this data through North Bound Interfaces to internal Verizon monitoring and analysis systems. This included both the protocol and the embedded firmware and the Java EE application. The data is stored in an Apache Derby database with a home-grown data partitioning system to allow the volume of data to be handled transparently without DBA intervention and automatic cleanup.
- Designed and implemented an FTP/SFTP file-based interface to allow Verizon's provisioning system to provide provision request files that are processed by the Canoga Perkins EMS. This involved using the JSCH client library for SSH/SFTP access and Apache FTP client library for FTP access. A custom Java EE JCA Connector was developed to implement the FTP/SFTP file-based processing.
- Implemented and Export/Import interface to the Canoga Perkins EMS to allow Bell Canada to transition from one model of Network Interface Device to another depending on customer requirements and growth. This was done using XML in a neutral format conforming to a custom designed XSD Schema and XSLT to transform the XML into the required format to be imported.
- Designed and implemented a mechanism to customer a Network Interface Device UI and SNMPv3 security using a downloadable Capabilities file. This allows the customers to define security groups and access controls to their requirements and provision the Network Interface Devices
- Designed and implemented a SNMP access for the Canoga Perkins EMS as a JCA connector to allow easy and transparent use by other engineers by defining a JPA similar set of annotations and annotation processing engine.
- Implemented a DROOLS Rules Base system to determine root cause analysis for event fault indications from network equipment. This involved defining the rules base as well as the interaction with the EMS for creation and storage of generated alarms.

Principle Software Engineer/Architect – 1996 to 2000

ACT Networks, Camarillo CA

Designed and implemented the infrastructure for ACT Networks NMS used to provision and managed Frame Relay Access Devices (FRAD) that was used for Voice over Frame Relay as well as a data transport.

The NMS was PC based solution implemented using Visual C++ using Common Object Model (COM) for component technology.

Designed and implemented an embedded Web manager used to natively managed an individual FRAD using Rapid Logic embedded Web solutions.

Principal Software Engineer – 1989 to 1996

General DataComm, Middlebury CT

Designed and implemented the infrastructure for General Datacomm Manager of Managers (MOM) as well as a modem product family specific NMS.

The MOM and NMS were a Sun Unix based solution implemented with C++, Tcl/Tk and [incr tcl] with integration into HP OpenView.

Designed and implemented an active Network diagram tool using DataViews scalable vector graphics that dynamically updated and control active network elements.

Technologies and Tools

Languages: Java, C/C++, Objective C, PERL, SQL, Groovy, JavaScript, Python, Tcl/TK, [incr tcl]

Technologies and Tools: Java EE, JSF, Ajax, XML, XSL, XSLT, CSS, ANT, IVY, Maven, Make, GIT, CVS, Bugzilla, Jenkins, ICEFaces, Artifactory, REST, Jersey, XWiki, Derby, MySQL, VirtualBox, ESXi, LXC, Docker, NetBeans, Eclipse Workbench, Spock, Geb, JUNIT, Sed, Awk

Platforms: Solaris, Linux, Windows, VxWorks, Nucleus, OSX

Education

Bachelor of Science in Computer Science – 1980 to 1984

University of New Haven, West Haven CT

Graduated Summa Cum Laude