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## Value Proposition

I am fully qualified to size up your current NonStop infrastructure in context of all enterprise systems and network infrastructure; then formulate a cost-effective, incremental strategy that addresses all aspects of architecture, project planning, skills assessment, development, testing, deployment, and integration of next-generation systems. Recent focus has been on systems modernization, and SQL database tools development using intercept technologies, in partnership with HPE strategic partner TANDsoft. My ideal position is a hands-on systems architect in a small-to-large sized company, a C-level IT executive in a small-to-medium sized company or as a senior IT team member where I can utilize my proven abilities to help you construct new systems, modernize existing systems and/or infrastructure to leverage devOps, security, fault tolerance and disaster recovery as key attributes, or help enhance operational stability.

## Skills Summary

**Over 38 years systems and applications development experience** building complex multi-threaded device drivers, event dispatchers, message switches, SQL servers, SOAP and REST microservices, real-time enterprise integration, highly scalable distributed systems and deep porting of world-class products.

**Over 29 years as systems and/or applications architect** on 15 occasions; responsible for the planning, architecture, design and development of several complex commercial and proprietary products.

**Direct sales, promotion and marketing experience** as well as chairing of industry panels at recognized trade shows. Makes poised and confident presentations to diverse audiences. Has exceptional written and verbal communications skills.

**Broad and deep experience**; building systems for many business verticals (banking, brokerage, retail, public sector, health care, software products, inventory control, message switching, message-oriented middleware), operating systems (NonStop, UNIX, Windows, MSCS, Stratus, VAX-VMS, RSX-11M-Plus, DOS), programming languages (C++, C, COBOL, TAL, pTAL, BASIC, VAX Assembler), network protocols (TCP/IP, X.25, SNA, LU6.2, 3270, 3780, SOAP, REST, LDAP) and project and resources management. Extensive NonStop systems administration and DBA experience, including sys-gens and IPM patching. Founded and owned a satellite internet business with VoIP franchise in Costa Rica in the 2006-2010 timeframe.

## Essentials:

Thirty-eight years of progressive experience as developer, analyst, operational support and applications/systems architect. Have held 15 positions as architect since 1992. My OLTP engines have moved trillions of messages and quadrillions of dollars at thousands of TPS for decades with no loss or duplication of transactions.

Chaired three panels at COMDEX Canada on Message Oriented Middleware (MOM), and am recognized as a pioneer in this technology:

- Comdex '94 - Client Server Middleware
- Comdex '95 - Messaging Alternatives
- Comdex '96 - Message Oriented Middleware

Pioneered three ground-breaking technologies; first commercial wireless WAN, first fault-tolerant shared-memory implementation and first commercial Active NonStop fault-tolerant servers. I have been working on birthing my fourth – ENSCRIBE-to-SQL/MX middleware.

Co-wrote with Justin Simonds (Master Technologist at HPE) a three-part series of articles titled "How Will NonStop Fit into the Internet of Things?" for HP's *The Connection* magazine. Find these and other published works at:

http://www.caleb-ltd.com/Media/

## Education:

Computer Programmer Diploma - With Honors (3.6 GPA); graduated 2nd in class from Seneca College of Applied Arts and Technology, Toronto 1985

Prognosis Certification (enterprise systems and applications monitoring)

Golden Gate Certification (database replication)

## Work History

**Hewlett Packard Enterprise** *Consultant* **April – June 2023**

*NonStop J-Series, NonStop L-Series, TACL, COBOL, Java, RMS*

- Was engaged to help one of their clients accelerate their migration from J-Series to L-Series by analyzing runtime java code and compiler errors and warnings on the theory that they are the result of Guardian changes; an incorrect assertion. The main issue is that the client did not keep up with Guardian changes.
- Analyzed a failing jar file that could not communicate with L-series servers because of obsolete Java release code. Made recommendations that led to resolving the runtime issue.
- Produced detailed critical path analysis identifying scope of work to fix migrated programs for project plan.

**Pape Group** *Development Team Consultant* **February 2021 – February 2023**

*NonStop L-Series, SQL/MP, Pathway, ENSCRIBE, TACL, c, COBOL, OSS, UNIX shell scripting, TCP/IP, Safecom, SoapUI, NuWave SOAP & REST, Netbatch, SqlExpress, TOPS, ControlCS*

- As part of a team of 4 developers, wrote 45 Pathway micro-servers, mostly with embedded static SQL/MP.
- Set up new NonStop server to do a menu-driven automated server startup and shutdown.
- Wrote most of the code for an automated parts reordering system that integrates with John Deere.
- Wrote most of the code for new warehouse inventory counting system.
- Did analysis and wrote white paper for enabling over 1000 programs and hundreds of both ENSCRIBE and SQL/MP files and tables to utilize TMF without having to change source code or recompile same.

**Sogeti/Wesco Distributors** *Development Team Consultant* **February2020 – February 2021**

*NonStop L-Series, SQL/MP, Pathway, ENSCRIBE, TACL, C, Cobol 85, TCP/IP, Safecom, SCF*

- As member of a team of 10 developers, have been working to automate many operational functions.
- Set up new configuration-driven framework that was used to migrate 11 Distribution Centers to 4 new L-Series servers with a single set of scripts. Have built on this framework to automate many manual operations tasks and dispatch timely emails to investigate when jobs fail.
- Set up their entire NETBATCH environment, including standards document, comprehensive TACL macros and 22 operations automations that saves at least 30 man-days a year and significantly reduces probability that exceptions are missed by adding alerts and email notifications. Also set up Enterprise Web Viewpoint alerts to capture NETBATCH job abends, and trained staff in its use.

**Target Corporation** *Development Team Consultant* **June 2019 – December 2019**

*NonStop I Series, SQL/MP, Pathway, Control-M, PCL, TACL, C, Cobol 85, XPNET, Jira, Confluence, continuous development*

- As member of a team of 5 developers, did 2nd level support by turn, resolved production issues, made program enhancements, set up and maintained Control-M batch jobs and job streams.
- Set up an alternate EMS distributor and collector to deliver filtered events to a Prognosis threshold to page on-call 2nd level support of critical application events.
- Set up a library of Confluence pages to document recovery procedures and assist in diagnosing issues.

**Stored Value Solutions** *Systems Administrator* **May 2016 – February 2019**

*NonStop I and X Series, SQL/MX, SQL/MP, Pathway, NetBatch, Spoolers, TACL, OSS, SysGens, all aspects of systems administration*

- Wrote complex TACL macros to extract Itanium Catalogs, schemas, aliases, and both SQL/MP and SQL/MX tables from SQL/MX and generate scripts to recreate them on X86 servers.
- Did several NonStop X-series sysgens from L15.08 to L16.05 and then a follow-up to apply another 52 SPRs. This included CLIM and iLO and firmware upgrades.
- Set up new tape backups for four servers and did RFP process for its replacement, saving SVS over $100K.
- Lead initiative to better utilize XyPro security products, implementing LDAP integration & keystroke logging.
- Did considerable analysis on several aspects of older Itanium systems and application configurations to improve them on new X-series servers. Summarized findings in a white paper that specified a road map to modernizing SVS NonStop applications. Also researched and proposed new blockchain-based product.

**Envoy Technologies** *Architect – InfiniBand Enhancements* **June 2014 – November 2019**

*NonStop, NSDEE 5.0, NSX-7, TACL, TCPIP, Microsoft Office 2013, c*

- Ported Envoy Technologies XIPC TNS code to native-mode on Itanium and NSX-7 servers. This is the only product in the industry that has fault-tolerant shared memory, semaphores and memory queue messaging that can be accessed by any NonStop process running in any CPU of an EXPAND network and it can also be accessed by Windows and UNIX servers as well.
- Did several demonstrations to prove the capabilities of the product.
- Designed enhancements to enable: i) LDAP-hosted authentication and authorization framework for secure shared memory across multiple processors on NonStop, Windows and Unix servers, ii) DNS/like discovery of

shared-memory instance resources, iii) XML/JSON metrics and analytics framework, iv) InfiniBand integration and iv) Browser-based remote monitoring of shared-memory resources of any supported server.

- Framed porting strategy for TCP/IP based implementations of product on Windows and Linux servers using Mellanox VMA open-source library over OFED protocol stacks.

**Wells Fargo** *Operations Support* **October 2014 – April 2016**

*NonStop, Eclipse, TACL, sh, TCPIP, Microsoft Office 2010, Measure, ENSCRIBE, SQL/MP, Java, RMS, IR Prognosis*

- Consulting engagement where I provided operational support for all aspects of OSS and Web-based services; including Node.js scripts, COBOL web page generation, Java servlets, J2SE, TACL and shell scripting.
- Established release management standards and framework for OSS code deployments.
- Developed and deployed a COBOL/SQL program to automate the archiving of stale customer records.
- Wrote Prognosis displays and reports and created database collections to gather metrics for QA and production analysis of performance and to identify problems.
- Wrote white paper recommending how to better leverage Prognosis across the enterprise.

**CGI** **Architect of New Technology** **June 2012 – March 2014**

*NonStop, c & c++, ecobol, eptal, NSDEE 4.0, TACL, TCPIP, Microsoft Office 2010, Measure, ENSCRIBE, SQL/MP, SQL/MX, comForte CSL Studio with SOAP, LDAP*

- As Architect of New Technology, wrote white papers, did requirements analysis, designed, developed initial releases as POC and lead teams of up to 10 developers as hands-on thought leader.
- Migrated BESS product (i.e. over 600 COBOL programs and 160 ENSCRIBE files) from TNS-ENSCRIBE-COBOL85-Guardian to Native Mode-SQL/MX-c++-OSS for BESS 21.5, 22.0 and 22.5 releases.
- Wrote the foundational SQL/MX DLL libraries that serve as the template for migrating all the ENSCRIBE files to SQL/MX tables and mentored developers on proper use of same.
- Introduced Eclipse NSDEE 3.0 as the shop's development seat using Subversion for code management; designed the SVN repository and mentored all staff in use of both tools. Later upgraded to NSDEE 4.0.
- Wrote complex TACL and OSS macros/scripts to automate the deployment of BESS developer sandboxes that can easily be upgraded with new releases and customized for each user with a single configuration file to drive the installation and upgrades from a single code base with referenced database and reference data.
- Converted conventional BESS application security to LDAP for user authentication and roles authorizations.
- Analyzed SQL/MX query plans to identify database I/O bottlenecks and tune to eliminate inefficiencies.
- Performed POC during BESS release 22.0 to integrate SWIFT transactions asynchronously between BESS and CGI Intelligent Gateway using SOAP. This included evaluation of several SOAP solutions.
- Defined, developed and implemented BESS enterprise workflow integration framework sufficient to meet planned BESS product and customer needs and did substantial development of OO.
- Did requirements analysis and design of BESS queue subsystem for performance improvement.
- As management team member, helped define the BESS five year roadmap.
- Composed and conducted WebEx presentations to introduce the products I built to BESS Customers.

**Hewlett-Packard** *Senior Systems Consultant* **June 2010 – May 2011**

*Golden Gate, Prognosis, TACL, TCP/IP, Microsoft Office 2010, Measure, systems tuning, SQL/MP, all aspects of operations*

- Initially engaged to stabilize Prognosis environment for DirecTV account (see related work 2007-2008) and integrated it with new blades systems.
- Became a member of the operations team responsible for maintenance and support of 5 NonStop Blades systems and Prognosis repository servers. Environment was comprised of Tuxedo, SQL/MP, SQL/MX, TCP/IP, Expand, ODBC, XP SAN storage arrays, VTS, OSS (i.e. SVR4-compliant UNIX), NetBatch, shell and TACL scripting, Prognosis and Golden Gate.
- Was project lead for designing and implementing Disaster Recovery solution for DirecTV. Solution involved replicating a 2.4 TB production database on XP20000 to remote system across an OC3, and then keeping it synchronized using Golden Gate. This was a complex and challenging endeavor.
- Designed and implemented a high-performance Golden Gate solution that was tightly coupled to TMF audit trails and thus well balanced data replication across GG trails.

**Fidelity National Information Services** *Senior Systems Consultant* **May – July 2009**

*NonStop, WebSphere MQ, Prognosis, C, TACL, Parallel TCPIP, Microsoft Office 2007, Measure, systems tuning*

- Upgraded, tuned and stabilized WebSphere MQ queue managers for core processing.
- Set up Prognosis Windows enterprise repository with Web reporting and displays.
- Tuned KMSF and disk cache on eight production servers after writing Prognosis automation to quickly analyze configurations and generate focused monthly analysis reports.
- Assisted in quickly identifying and resolving several production incidents by using advanced skills in Prognosis to quickly identify the root cause.

**Bowden Systems Inc.** *Senior Architecture Consultant* **November 2008 – March 2009**

*NonStop, Windows Vista, OSS (i.e. SVR4-compliant UNIX), C, noft, nld, TACL, UNIX shell scripts, TCPIP, Microsoft Office 2003, UNIX to NSK porting*

- Ported open source prngd program (random number generator) from UNIX to Guardian. The program was stress tested, measured, benchmarked and ported to Itanium.
- The next task was to modify sendmail (Open Source POP3 email server) to manage mailbox file space more efficiently. Designed high-performance SETMODE-141 file system to leverage NonStop technology's fastest file I/O technology and used linked lists and algorithms similar to hard disk sector management.
- Wrote an API that implements UNIX sockets, IPC and terminal file I/O on Guardian that is similar to UNIX with select() to facilitate easier porting of UNIX applications to Guardian.

**DirecTV Inc.** *Senior Architecture Consultant* **November 2007 – August 2008**

*NonStop, Windows XP, Windows Server 2003 with MSCS, Prognosis, GoldenGate , Visual Studio .NET 2003, ETK, OSS (i.e. SVR4-compliant UNIX), C, Visual Inspect, noft, nld, TACL, UNIX shell scripts, SQL/MP, SQL/MX, Parallel TCPIP, Microsoft Office 2003, Visio, Subversion, ant*

- Was initially engaged to tune 48-CPU NonStop environment comprised of two clustered pairs of nodes with RDF-synchronized databases. Found performance problems with SQL queries and made recommendations to redistribute DP2 processes to more evenly spread load. Also helped shape roadmap for future upgrades and software/hardware architecture.
- Spearheaded initiative to acquire Prognosis for performance monitoring and capacity planning. Did all work to implement product from POC to production and development deployment. Implemented the first fully fault tolerant Prognosis deployment on Windows Servers clustered with MSCS and SAN storage that can survive any single point of failure. Implemented historical data collection that will save performance data for years. Developed web dashboard, several extractors and dozens of displays and implemented thresholds.
- Constructed a fully automated application build with ETK that takes the entire suite of 150+ Tuxedo servers and libraries from Subversion source code base to SQL-compiled and deployed to multiple production servers as labeled releases – complete with all startup and shutdown scripts. This solution separates packaging from configuration so that code can be seamlessly deployed to multiple code bases with the same common scripts and assets using an "overloading" methodology. Deployment reliability was significantly improved.
- Was technical lead on $3M hardware upgrade initiative that was completed in under four months.

**Sabre Holdings Inc.** *End-to-end Engineer* **October 2005 – January 2007**

*NonStop, Linux, Windows XP, Prognosis, WebSphere MQ, Visual Studio .NET 2003, ETK, OSS (i.e. SVR4-compliant UNIX), C, Visual Inspect, noft, nld, TACL, UNIX shell scripts, SQL/MP, SQL/MX, Java, Pathway, Parallel TCPIP, XyPro, Microsoft Office 2003, Visio, ClearCase*

- Key integration role, responsible for operational health, architecture and integration of all applications through a complex environment of mainframes, UNIX Servers, NonStop servers, CORBA, J2EE, WebSphere MQ; with particular focus on NonStop systems and their integration with these other entities.
- Involved with vendor and product selection in evolving infrastructure, teamed with system owners.
- Significant contributions in helping development teams achieve an operational continuous integration environment and implementing a workable reusable code infrastructure.

**TSYS Inc.** *WebSphere MQ Architecture Consultant* **March 2005 – April 2005**

*NonStop, Windows XP, WebSphere MQ, Visual Studio .NET 2003, ETK, OSS (i.e. SVR4-compliant UNIX), C, Visual Inspect, noft, nld, TACL, UNIX shell scripts, nmcobol, SQL/MP, Pathway, Parallel TCPIP, Microsoft Office 2003*

- Installed, configured and tuned WebSphere MQ middleware on the HP NonStop servers to handle huge volume of traffic and provided stress-testing to verify and validate capacity interfaces with mainframes.
- Implemented proof of concept to migrate enterprise traffic from LU6.2 proprietary messaging infrastructure to WebSphere MQ over TCP/IP.

**Home Depot, Inc.** *WebSphere MQ Architecture Consultant* **June 2004 - October 2004**

*NonStop, Windows 2000, WebSphere MQ, Visual Studio .NET 2003, ETK, OSS (i.e. SVR4-compliant UNIX),C, C++, Visual Inspect, ControlCS, noft, nld, Java, CGI, TACL, XML, UNIX shell scripts, ITP WebServer (Tomcat), COBOL85, nmcobol, SQL/MP, Pathway, Parallel TCPIP, Enable, Microsoft Office 2003, Visio*

- Installed, configured and tuned WebSphere MQ middleware on the HP NonStop server to handle huge volume of traffic and integrated it with existing systems.
- Completed tasks ahead of schedule, thereby saving the company two months of man-hours.
- Set up a master build workstation, creating a fully automated master build using ControlCS software (which I installed and configured), documenting the process and training staff.

**ITS Incorporated** *NonStop ZLE Architecture Consultant* **June 2003 - March 2004**

*NonStop, Windows 2000, ZLE, Visual Studio, ETK, OSS (i.e. SVR4-compliant UNIX), C++, JTS/OTS, TMF, Visual Inspect, noft, nld, ClearCase, Rational Rose/UML, TACL, XML, UNIX shell scripts, CORBA, SQL/MX, SQL/MP, ODBC, Measure, Pathway, Microsoft Office 2003, Visio, DOCSYS*

- As one of five members of the Architecture Team responsible for migrating Shazam EFT/POS network from IBM to NonStop, I was given the initial mandate to implement a fully-integrated metrics subsystem.
- Created architecture and design documents of the Metrics Subsystem using Rational Rose and UML. I then implemented the Metrics Subsystem client component.
- Integrated ClearCase release management software with daily-build automation and complex UNIX and TACL scripts to deploy fully implemented sandboxes, complete with RDBMS catalog, Pathway environment, properly configured CORBA and catalogued network resources.
- Participated in architecture brainstorming sessions and document reviews to help shape team deliverables.

**McKesson Corporation** *WebSphere MQ Architecture Consultant* **October 2002 - June 2003**

*NonStop, Windows 2000, WebSphere MQ (WebSphere MQ), C, nmcobol, Java, TACL, SQL/MP, Pathway, Microsoft Office 2003*

- Installed, configured, secured and tuned WebSphere MQ on production and development servers; created middleware to simplify integration with existing COBOL servers and documented all deliverables.
- This deliverable had already slipped badly on the project schedule, and the client was very apprehensive. By my quickly evaluating and addressing architecture flaws, participating in the weekly status meetings, creating a well-defined set of deliverables, and exceeding deadlines, satisfied the client's concerns.

**Hewlett-Packard** *NonStop Software Engineering Consultant* **February 2002 - March 2002**

*NonStop, Windows 2000, Java, TACL, XML, OSS (i.e. SVR4-compliant UNIX), UNIX shell scripts, ITP WebServer (Tomcat), Pathway, Parallel TCPIP, Microsoft Office*

- As this client (Continental Airlines) had little in-house experience with the NonStop platform, my mandate was to help them set up and integrate the various systems.
- Mentored both development and systems personnel.
- On first arriving, we identified the need to install SAMBA so developers could access the NonStop OSS (i.e. UNIX) file system from their desktops. We then configured the Pathway environment to run the Java servers they had developed on PC and did performance testing to demonstrate the linear scalability of the NonStop platform.

**Sprint Corporation** *Software Engineering Consultant* **October 2001 - November 2001**

*NonStop, Windows 2000, OSS (i.e. SVR4-compliant UNIX), C, noft, nld, ClearCase, TACL, XML, UNIX shell scripts, CORBA, SQL/MP, Pathway, Microsoft Office*

- Was subcontracted to find memory leaks in their call records capture system
- There was a lot of code to review and only six weeks to find the leaks.
- Out of three production programs with memory leaks, resolved two. Due to the low business impact, Sprint decided not to apply additional resources to resolve the third.

**Compaq Computer Corporation** *NonStop ZLE Architecture Consultant* **October 2000 - June 2001**

*NonStop, Windows 2000, ZLE, Visual Studio .NET 2003, ETK, C++, Visual Inspect, noft, nld, TACL, OSS (i.e. SVR4-compliant UNIX), UNIX shell scripts, TMF, CORBA, SQL/MP, ODBC, Pathway, ftp, TCP/IP, Microsoft Office 2003, Visio*

- This global technology leader had a $50 million contract with Target Corporation ($50 billion in revenue) to implement the first Zero Latency Enterprise (ZLE) by tying seven operating companies together into a single operational data store (seven terabytes) to give a single system view of the customer. My mission was to tune the 48-CPU production servers.
- The client was so impressed that I was asked to take over the role of Compaq's on-site advisory architect.
- Assessed the data loader server code as unsalvageable, wrote a reference loader CORBA/C++ program that had 60% fewer lines, and provided a great deal of reusable code.

**Network Concepts, Inc.** *Software Architecture Consultant* **July 2000 - September 2000**

*NonStop, Windows 2000, VPN, Borland C cross compiler, C, noft, nld, TACL, UNIX shell scripts, ENSCRIBE, Pathway, Microsoft Office, Visio, NonStop process pairs*

- Assisted in porting their UNIX code base for their ControlCS code management software to the OSS (i.e. SVR4-compliant UNIX) environment of Tandem NSK and integration with the Guardian file system.
- Resolved security issues, process identities, application repartitioning, properly configuring the environment, and enabling UNIX BSD sockets.

**Philadelphia Stock Exchange** *Software Engineering Consultant* **February 2000 - May 2000**

*Stratus, Windows NT, VOS, Command Macros, C, Microsoft Office*

- My mandate as a consultant was to help them convert from fractional pricing to decimalization.
- Developed price encapsulation routines used by the rest of the team and conversion of the Quotes Processing subsystem that applied OPRA and local options quotes as well as underlying securities pricing from NASD to the PHLX market database.
- The engineering team adopted my proposed solution on how to properly represent decimal data without losing precision between the Stratus and Sun systems.
- Actively participated in the design, development and code reviews of core system components.

**NHIC (EDS)** *Software Engineering Consultant* **Nov. 1999 – Feb. 2000**

*NonStop, Windows NT, Borland cross compiler, C, TMF, noft, nld, nmcobol, TACL, SQL/MP, Pathway, Microsoft Office*

- Mandate was to help tune SQL queries for the State of Texas Medicaid/Medicare billing system.
- Analyzed complex query explain plans and applied techniques for improving performance.

**Candle Corporation** *WebSphere MQ Consultant and Team Lead* **April 1999 - August 1999**

*Solaris, Windows NT, WebSphere MQ, C++, C, POSIX Threads, UNIX, UNIX shell scripts, Sybase SQL, TCP/IP, Microsoft Office, Visio*

- Subcontracted to act as architect and project lead over a team of five people. The mission was to port a TAL/NonStop application onto Sun Solaris and make it fault-tolerant with a budget of $300,000, to be completed within 90 days for their client, the Chicago Board of Trade. Options trades from the automated trading system were formatted into billing records, put on a WebSphere MQ queue for delivery to the back office IBM mainframe, and a backup message was put on another queue on a hot-standby Sun Solaris server. Additional software was needed for the hot standby to do failover detection and recovery. The solution was required to ensure no loss or duplication of messages. Project was on time and on budget.
- Brought in key team members of my choosing, produced a design, and constructed the application.
- Wrote the functional specification and design documents.

**ORBCOMM, L.P.** *First Architect* **October 1998 - February 1999**

*HP-UX, Windows NT, UNIX, C, UNIX shell scripts, Oracle/SQL, TCP/IP, Microsoft Office, Visio*

- My mission was to design a guaranteed delivery message switch (GMSS) capable of sustaining fifty 1Kbyte messages per second on a HP-UX 7000 series server that would be scalable to 500 messages per second.
- Supervised a team of five engineers
- Designed a message switch that was predicated on ServerNet and MyraNet high speed bus technologies. Produced a verified design capable of sustaining tens of thousands of transactions per second.

**Seer Technologies Inc.** *Middleware Architecture Consultant* **October 1996 - July 1998**

*NonStop (was also systems administrator), Windows NT, Solaris, OSS (i.e. SVR4-compliant UNIX), C, NFS, Hummingbird (X-windows and NFS), sccs, noft, nld, TACL, TMF, UNIX shell scripts, nmcobol, TAL, pTAL, SQL/MP, Pathway, TCP/IP, sockets, SYSGEN, COUP, EXPAND, NFS, Safeguard, QIO, SCF*

- Engaged to port their NetEssential and HPS-Server 4GL components to the NonStop OSS (i.e. SVR4-compliant UNIX) platform.
- Performed all operations and systems administration support on two NonStop development servers.
- Set up NFS, wrote all TCP/IP sockets and CPIC LU6.2 listener and middleware software, established security policy in our distributed environment, wrote automation software that generated NSK platform-specific source code, wrote data marshalling routines, and participated in all architecture reviews.
- Constructed release packaging with automated and comprehensive deployment wizards, developed sandboxes, and automated daily builds with integrated regression testing.

**AMSYS North America Inc** *Chief Architect* **January 1996 - October 1996**

*NonStop (was also systems administrator), Windows NT, Microsoft Visual C++, DWF, SourceSafe, TACL, ENSCRIBE, Pathway, TCP/IP, sockets, SNAX, ICE, SYSGEN, COUP, EXPAND, NFS, Safeguard, QIO, SCF, Microsoft Office, Visio*

- Ported the IBM Mayflower UNIX (WebSphere MQ) reference code base to the NonStop platform, did detailed analysis, design and substantially shaped architecture in brainstorming sessions with two other senior engineers.
- Mentored the team of 12 developers on how to leverage NonStop architecture fundamentals, supervised three of them, built several key subsystems myself and contributed 26 key architecture innovations.

**Momentum Software Corp** *Middleware Architecture Consultant* **December 1994 - December 1995**

*NonStop (was also systems administrator), Windows NT, Solaris, VAX-VMS, HP-UX, C, TACL, ENSCRIBE, Active NonStop C, TCP/IP, sockets, DIVER, SYSGEN, COUP, Safeguard, QIO, SCF, Microsoft Office*

- Was contracted to port their product onto the Tandem NonStop server platform. This small venture capital startup was a pioneer in MOM technology with their XIPC product. This product went on to become the foundational plumbing of Microsoft's MSMQ on all non-Microsoft platforms and was marketed by Level 8 Inc. (who subsequently acquired Momentum) as Falcon-MQ.
- Negotiated their Tandem Alliance Strategic Partner agreement, uncrating and completely configuring the NonStop development server, all architecture, design, development (including writing first ever Active NonStop C servers) to implement fault-tolerant shared memory, integration, and technical support across multiple CPUs and across Expand.

**Ministry of the Solicitor General** *Network Architect* **October 1993 – November 1994**

*NonStop, Windows 3.1, Microsoft C, TACL, TMF, ENSCRIBE, Pathway, TCP/IP, sockets, WinSock, SNAX, ICE, Safeguard, QIO, SCF, Microsoft Word*

- Implemented the world's first wireless wide-area network, which involved connecting 50 workstations operated by Ontario Provincial Police, four regional police forces, Ministry of Health Ambulance Services, and Ministry of Transportation (MTO) Carrier Enforcement Division to several host computers concurrently.
- Was one of two key architects responsible for shaping requirements and evaluating telecommunications technology. I identified the critical success factor – the wireless message switch – and made sure it was properly identified as a mandatory RFP requirement.
- To achieve a seamless applications interface to the network, I designed and developed a Middleware API. The applications deployed included Computer Aided Dispatch (i.e., OMPPAC, PRC and Intergraph), Electronic Ticketing, Criminal Offenses Database, MTO proprietary systems and ARIS.
    - Received Certificate of Appreciation from the Government of Ontario. See: http://mobileinfo.com/Case_Study/PublicSafety_Law_Fire_Amb/gov_public%20_safety.htm