

JOHN CARL ZEIGLER

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Enterprise Systems Engineer

Expert in software development across a wide variety of application and computing architectures with a proven track record of accomplishment and technical excellence. Often called upon to help turn around troubled development efforts or to improve poor systems performance.

SKILLS SUMMARY

Approach:

- Managed expectations are better than surprises.
- The user may not know exactly how to describe it, but they know what they want.
- Bugs in other people's code is no excuse for failure.
- Write the test, then write the code.
- The fundamental software development cycle is: Listen, Code, Demonstrate, Repeat.
- You have to make it work correctly before you can make it work faster.
- Always think about what it is that you are asking the system to do will do to the system.
- Good enough never is; excellence often is.

Technical Skills:

- Comprehensive technical knowledge of application architecture, operating systems, software engineering, networking and database technologies, specifically:
 - Coding in C, C++, Java, SQL, C#, PHP, Python, Perl, and other programming languages.
 - Web Services and hosted applications development using MS WCF or J2ee (Tomcat, JBoss, Glassfish, and Web Sphere) based platforms.
 - Cross Platform Clustering using SAS/Grid.
 - Data Visualization using 3D Geo-Spatial display systems such as SkyLine TerraExplorer.
 - Distributed Sensor Data Acquisition for display and analysis.

Recent Works:

- Developed a web-based application for performance monitoring and operational data acquisition for a mobile power generating station. The system was developed to use wind, solar, and propane power sources to supply remote installations.
- Developed a system for data acquisition and visualization from a variety of sensors and surveillance systems intended for a major airport. The system provides a 3D geo-spatial display of correlated sensor data to provide immediate situational awareness. The sensors include SureTrak Radar, maritime AIS data, access controlled doors, fire alarms, video surveillance analytics, HVAC, and MIS systems.

EXPERIENCE

11/2013 - Present

Neany Inc, California, MD

Neany Inc. provides UAV systems to NAVAIR. I performed a variety of task, including managing a project to build 150 weather balloons for John Hopkins APL, and a variety of data acquisition systems, including acquiring engine performance data and auto pilot logs from a Piccolo auto pilot.

LMS Hosting Inc, Asheville, NC

7/2005 - Present

LMS has performed a variety of assignments for USG agencies and commercial clients. LMS operates from the facilities of ERC Broadband, within the Veach-Baley Federal Complex in Asheville, NC. LMS provides custom application hosting, software development, and enterprise architecture consulting.

Key projects:

- Provided support to the US Census for the development of Steps II, a **SAS** based analytical application used to provide all the national economic reporting used by the US Congress and the Executive to allocate population based funding and implement domestic policy. As part of a major expansion of Census' capability, SAS Institute requested I help demonstrate the effectiveness of their clustered products. My contribution was to demonstrate the use of **SAS/Grid** running in a clustered environment and prototype the new application in that environment.
 - Configured a **cluster of Red Hat UNIX servers running SAS/Grid**. Systems configuration, **Bash Scripting**, **SAN integration**, **storage design**, and application scheduling.
- The American Community Survey is the most comprehensive survey of household population data produced by the US Census. The data preparation step involved the aggregation of over 24 gigabytes of survey data that took many days to run, making it difficult for them to meet reporting deadlines. The Census requested that I examine the application and make recommendations for improving the performance. I was able to reduce the processing time to just a few days, saving the Census millions of dollars in operating costs.
 - Used various tools to collect performance data on a long running and large data analysis system.
 - The job control and data distribution components comprised about 5000 lines of **Perl** code, and similar amount of **Base SAS** Code.
 - Identified the bottlenecks and developed low level coding techniques using **C and SAS** integration techniques to improve throughput and avoid the bottlenecks.
- At the request of SAS, I completed a successful DIACAP certification process for **SAS Business Intelligence** software used by TRICARE (DOD) for quality control. This certification allowed the application to remain in operation, and was close to being denied when I was brought in to complete the work.
 - This work involved a significant amount of **JavaScript** and **Jakarta Struts** technical skill, as I had to resolve all the vulnerabilities discovered in testing against the DOD Info Sec standards.

- The resolutions consisted of either a fix that removed the vulnerability or a detailed technical document that successfully made the case that the vulnerability was actually a “false positive”.
- As a consultant to Abeo Technical Solutions, I was responsible for delivering upgrades and enhancements to the automated surveillance systems in use at the Joint Base Anacostia in Washington DC. This was a web application which, based on the Knowledge Switch (see below), that integrated the various facilities protection systems used on base, such as video analytics, license plate readers and an automated water craft recognition system. The system had many failures but we were able to get the operations center running after identifying all the issues and resolving them.
 - The various components were written in **Visual Basic, C#, and MS SQL running under Windows, and Java and Shell** scripts running under **Red Hat Linux and the JBoss Application server**. It involved the integration of a facility-wide digital video surveillance system with 85 cameras. I had to rewrite about 20,000 lines of Visual Basic code to get the center operating again. Also debugged and fixed problems with the **JBoss application** and the **My SQL database** that supported it.
 - I spent 2 months on site at the Joint Base testing the various systems, reconfiguring the video analytics server, replacing cameras and fiber optic connections, as well as climbing on roofs and light poles to re-aim antennas and fix cabling problems.
- As a consultant to Medcotek Inc., I helped to commercialize certain medical imaging patents held by the University of New York, Buffalo. I was responsible the development of the prototype application based on the patents and coding work done by a team graduate students.
 - Medcotek was a joint venture between the University of Buffalo and an investment group set up to commercialize their algorithms in medical image scanning.
 - I wrote **JavaScript** and **Java** based Browser Plug-ins to provide interfaces into the code base developed by the research group in the Department of Computer Science.
 - I developed **C++** code to expose interfaces into the code base developed by the research group in the Department of Computer Science.
 - I installed and configured an **Oracle Application Server and Database** to support the prototype on a **Red Hat Server**.
- Performance enhancements of weather data analysis for Barron Meteorological Systems. Barron is the weather data and forecasting provider for Viper Weather (about half the TV weather reporting market.) and the XM radio weather channel (at that time). I made significant reliability enhancements to a critical component of the weather data flow that was very old and had no source code.
 - I wrote a set of **C programs** and **Bash Scripts** to wrap a 20 year old **FORTRAN** program with appropriate job control and high-availability features. This work saved Barron from having to rewrite the analytical code from scratch, yet improving their customer service and product quality.

Independent Contractor, Asheville, NC

5/2004 – 7/2005

I participated in the various economic development agencies representing Western North Carolina. With a group of local investors, I formed *The D.A.T.A. Center LLC*. This was a business incubation fund

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dedicated to attracting Software and IT services to the Asheville area. Helped place over \$750,000 in angel investment for two companies. The first, Meal Portal, was sold to a group of investors in Raleigh. The second is LMS Hosting.

Knowledge Vector Inc., Durham, NC
Chief Technology Officer

8/2002 – 4/2004

Knowledge Vector Inc. developed the Knowledge Switch. This is an information router that correlates disparate data from various sensors into 'action-able' intelligence and delivers it to first response personnel and surveillance management systems. I led the development of the proto-type funded by a BAA grant that was demonstrated to the client agency at the 2003 Intelligence Community Conference.

- I wrote a significant amount of **C++** code to interface the messaging system to a radio-telephone device. I also led the design a **WebSphere** and **Oracle** based application using **Java**, **Jakarta Struts**, and **C++**.

11/1997 – 8/2002

Midway Airlines Inc., Morrisville, NC
Chief Information Officer

Midway Airlines was a regional airlines based at the Raleigh Durham International Airport, NC. Midway flew over 4 million passengers a year. I was brought into Midway by Jim Goodnight, the founder of SAS, after he bought the airline. I was responsible for all the IT and communications systems, and managed a budget of over \$2 Million and a staff of 29. The airline stopped flight operations the day of the 9/11 attacks, and though it did last another year, it was unable to recover from that loss.

When I was brought in the airline was experiencing system failures daily. I had to become the 24x7 technical support resource while I leaned the business and set up a proper IT operation. By the time of the bankruptcy in 2001, the Midway Airlines IT Department had the best operational record in the industry.

Key Accomplishments:

- Engaged IBM Global Services to build a SAS and Oracle based data warehouse for finance and operations. The use of this system was instrumental in renegotiating credit card hold backs that freed up over \$4 million in operating cash.
- Re-engineered the call center applications and systems, including telephone contracts and interfaces to the SABRE reservations and distribution systems. Doubled the capacity while reducing the cost to operate the call center by over 50%. This resulted in a savings of several million annually.
- Re-engineered flight operations, including the construction of a Network Operations Control Center. (For flight operations and ground operations at Terminal C of the Raleigh Durham Airport.) This work helped keep Midway's operational reliability the highest in the industry.
- Built a nation-wide VHF radio-telephone network that saved the Airline money and improved in-flight communications with the aircraft. (Call costs dropped from \$12.00/minute to \$0.08/minute.)
- Developed the Airline's website for online booking as well as managing the technical aspects of passenger loyalty and code-sharing arrangements with Northwest Airlines and US Airways.
- Provided IT support for all Midway destination airports.

- Built a crew training center with computer based training as well as a fuselage simulator for Cabin Crew training. This facility provided flight crew, cabin crew and ramp operations training.
- Re-engineered the aircraft maintenance records system, the crew scheduling system, and pricing system, to be more reliable, provide more effective business support, and run at lower operating cost.
- Implemented an automated a Time and Attendance system in compliance with a complex set of union work rules for Ramp and Maintenance personnel.

Critical Technical Skill Used:

- When I started at the Airline, we had 2 people in the IT department. **I was the 24x7 technical support line** for the first six months while I learned the business and began planning the IT related portions of the Airline's Business plan. I had to restart/repair/configure, basically providing all levels of IT support to the operation of 7 aircraft with one server.
- As the airline grew, I built a staff of 29 IT professionals responsible for supporting all the IT systems, including a proper 24x7 help desk. We supported 27 aircraft and 3.8 million passengers' per year.
- I oversaw about \$12 Million in capital expenditures, including a data center complete with redundant power, HVAC, and communications.
- During the bankruptcy from 2001 to 2002, I was again one of just six people providing all technical support, and also wrote specific data mining tools that enabled the airline in bankruptcy to successfully claim over \$4 million in Credit Card holdback. Those tools were written in SAS and Oracle SQL.
- During the bankruptcy from 2001 to 2002, I provided support and bug fixes for our online reservation system allowing it to continue after a sudden reengineering of our passenger processing services.
- Moved the entire Call Center and reengineered all IT systems in one month to support a much smaller airline in a much smaller facility.
- Rebuilt the Midway ticket counter at Regan National Airport prior to the reopening of that facility, including laying optical fiber between operations and the counter and installing the passenger processing equipment.

DB Star Inc., San Francisco, CA

1/1997 - 11/1997

Director of Engineering

DB Star was a software company specializing in metadata discovery and data migration tools for legacy systems. The founders of the company recruited me to help them commercialize their product and close on a \$4 million investment by GE Capital, which was done. I led the turn-around and expansion of the engineering department. This resulted in a more commercially oriented development, delivery, and support process. DB Star was eventually sold to Accenture.

- Hired and managed a staff of 7 software and QA engineers, including being the systems administrator for the development environment. This involved **C++, Java, SQL, and COBOL** programming as well as basic **Solaris Systems Admin** tasks.

UTG was a consortium of the major systems suppliers who licensed the UnixWare operating system from Novell, as well as the major independent software companies that wanted to be involved in setting the direction of the UnixWare product line. The membership of UTG included IBM, NCR, Sun Microsystems, Data General, Digital Equipment Corp, Pyramid, Convex, Hewlett-Packard, Olivetti, Fujitsu, and other system suppliers. The software companies included Oracle, Ingres, Sybase, and SAS Institute Inc.

I was responsible for establishing the collaborative process among the membership to set standards for the UnixWare source and binary products. Just after taking the position, Hewlett Packard and SCO Inc. bought the UnixWare business from Novell which eliminated the long term need for this position.

Key Accomplishments:

- I spent one year helping SCO Inc. absorb its part of the \$85 Million dollar purchase of the UNIX business from Novell and integrate the functions of UTG into their organization.
- I led the completion of current standards for 64-bit multi-processor systems and cluster processing.
- I led the completion the Intel ABI standard, which continues to be the base for binary compatibility among Intel based Linux and UNIX operating systems.
- I led the completion the Large File Specification. This provided for arbitrarily large files in UNIX file systems that are compatible across any CPU data bus width. This allows for differently sized processors to share the same file system, and for application files to be moved from system to system.

Critical Technical Skill Used:

- In this job I was involved in the **detailed technical aspects of the UNIX System Standards** involving File System architecture, Symmetric Multi-Processor support, 64-bit Architecture Support and Programming Language Runtime support. The most critical skills were coordinating the technical requirements of a large and diverse constituency for the UnixWare binary product.

Manager, Open System R&D

SAS Inc. (then called SAS Institute Inc.) provides the data integration, management, analysis, and reporting application platform used by education, government, and most of the fortune 1000. As manager, I was responsible for the development of the SAS System for UNIX and Open Systems. The UNIX based products grew to an annual revenue stream of \$110 million by the end of 1995.

Key Accomplishments:

- Managed the development, testing, and 3rd level technical support for all UNIX based platforms.
- Made contributions to the design and implementation of our highly successful "Multi Vendor Architecture".
- Started and grew the Open Systems Development R&D and testing groups in Cary, NC; Austin, TX; and Heidelberg, DE to a staff of 45 developers, testers, and systems administrators.
- Worked closely with the World Wide Marketing and Sales organizations on understanding the benefits of the product line and matching the development efforts to marketing requirements.

- Sponsored the Intel ABI and MIPS ABI binary interface standards.
- Represented the SAS Institute and other Independent Software Vendors to such international standards organizations as The Open Group, OSI, X/OPEN, UniForum, IEEE, ISO, and UTG.

While still completing my BS degree in Computer Science at NCSU, I was recruited by SAS Institute as an associate systems developer in the Portable Systems Group.

- Developed the internal source code management system, migrating the development environment from MVS to a network of Apollo Workstations.
- Demonstrated the feasibility of using computer aided code translation to reengineer the PL/1 source code of the SAS System to the C Programming language. This work saved millions in the cost of re-engineering the mainframe oriented SAS System for delivery across a variety of platforms such as VAX/VMS, Unix, OS/2, Windows 3.5, NeXT, Apple Macintosh, and others.
- Supported the roll-out of hundreds of Apollo and other UNIX based workstations as a replacement for our IBM MVS based development environment.

Critical Technical Skill Used:

- C programming, Shell Script Programming, UNIX applications development, SAS, Network programming, and much more...

EDUCATION

North Carolina State University, Raleigh, NC

Bachelor of Science, Major in Computer Science

- Just as I matriculated I began working for the University as a Systems Programmer with the Computer Science and Electrical Engineering Departments as part of a team supporting data collection and analysis automation for research groups across the campus.

We performed systems administration and application development on these systems:

VAX VMS

IBM MVS and TSO

IBM System 7

IBM AS 400

Unix Version 6

System 5 UNIX

Data General MV8000

RSTS/11