SECURED BY DESIGN

Always A Target,

Never The Victim

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Secured By Design

A collection and sharing of experiences and “Best Practices” for building & Securing Information Technology Systems

First Edition

Dedications Page

In my career as a technology professional, I've had the opportunity to meet and work with people from the United States and from all around the world. I've made many friends in my travels, all with vastly different skill sets and approaches to solving problems.

I'd like to dedicate this writing to all those professionals who have inspired me to look at things through their perspectives and have learned so much from them along the way. What I have learned the most from these innovators is there are no limitations to solving many of the same challenges. Learning how my colleagues have used the same technologies to solve the same problems across the different organizations has kept my mind wide open towards the possibilities.

I would like to name many of my friends and their companies but cannot as I'm required to maintain their confidentiality. To all my professional contacts I say THANK YOU for what I learned from you because you've made me a better professional !!!!!!

And to those Vendors who allowed me to use their software for the development of contact for this book, I say THANK YOU. It is my sincere hope that companies try and implement your companies software and engage your implementation teams. You folks made it possible to complete this publication.

Hands down, the most fulfilling part of my career working with people from all over the world was getting to know where they came from, their customs and traditions, and for that I am a better person. I've made many friends over my years in consulting and support and your friendship will be cherished, always !!!

About the Author

My career began in the Aerospace industry with the title of Software Engineer. Key tasks undertaken were systems administration, documentation preparation, device driver development, systems programming, embedded systems development, and application software development in multiple languages such as COBOL, Fortran (Formula Translation), Basic Assembler Language (BAL), Macro-11, Macro-32, VAX Macro, PL/1, BASIC, Pascal, ADA, C & C++.

Systems being used for the various projects were the Systems Engineering Labs (SEL) 3277, Digital PDP-11 Series (23, 34, 70, 84) Q-Bus and Unibus, Digital Equipment Corporation VAX 11/x series, Intel 8086/8274/8088, IDM database machine, IBM 360, and the IBM 4341. If you're lucky, you may be able to find these systems in a museum someplace as they were the foundation for modern computing. What I did not know at the time, and did not appreciate, was the exposure I had been given to what made computers function and at all their respective levels.

Around 1991 or so, my employer purchased a chemical analysis system that was hosted on an Intel 486 based system. The operating system was SCO Unix, and relational database was the Oracle database version 6.0.83. I had not had access to a UNIX operating system or the Oracle database on anything before this. The task of educating myself involved purchasing Linux Operating system Administration and Oracle DBA books. There was no web applications tier per se as the application was written in PRO*C and connected directly to the database. Since becoming fluent with the Oracle RDBMS, I've added MS SQL Server, PostgreSQL, MySQL, and IBM's DB2 to the list of RDBMS engines supportable.

Having been a system programmer on platforms that were losing adoption in the market, regardless of their technical prowess, it did not take much time to realize I had struck technology gold and that the decision to remain relevant was in my hands. This

was an easy decision, not one that involved a great bit of thought that database technology was the path forward. As it turned out, this decision was one of the best conscious decisions I've ever made.

System security was not much of a consideration at that time because network computing was not what it is today. I've since migrated to current technologies across the entire stack.

Hands down, the biggest change since I started has been the move from proprietary hardware and vendor specific UNIX operating system to "commodity" hardware with Linux as the operating system and Intel Xeon or AMD CPU's. Barring something substantial, this combination will be the platform of choice for the foreseeable future.

Next time you're on a commercial aircraft, keep an eye on the in-flight entertainment system. It is run using Linux. So for an "old hat" like me, things are much simpler as in less choices for building and deploying systems today.

Table of Contents