Bennett C. Baker

B::Ware

OVERALL SUMMARY

Graduate of MIT.

Co-developer of several patents.

Over 25 years of experience in software development, from deep engine code to user interfaces, with a wide variety of languages, operating systems, and technologies.

Looking for challenging development work in an intellectually stimulating environment.

SKILLS SUMMARY

Management and Leadership Skills

- Managed a team of in-house developers and external consultants to bring up an e-commerce facility from scratch in 3 months, and then managed the newly-build IT infrastructure with a small in-house team.
- Built the development team for a startup using Domino and J2EE in it's product line, and managed that team.

Technologies

- J2EE: Helped to design a product which integrates a full J2EE stack (servlets, JSP, EJBs) with the security and services infrastructure provided by the Lotus Domino system and by WebSphere. Participated in the implementation of a large-scale petrochemical storage and transport scheduling application using Tomcat and WebSphere J2EE engines and Hibernate and Struts technologies.
- General Client-Server architectures: Extensive experience developing and extending client-server architecture of a group scheduling product. Developed several web-based client-server applications.
- System Administration: Prior experience deploying and managing Solaris-based ERP systems and Windows NT-based CRM systems, and with managing the IT infrastructure for a web-based retail establishment. Also ongoing experience managing Linux-based SOHO and WAN servers.
- Databases: Experienced with JDBC-based integration to Oracle and SQL Server systems, and with Oracle and Microsoft tools for database management. Also experienced with various open-source databases such as MySQL and PostgreSQL, and the tools used to manage them.
- GUIs: Extensive experience with Windows, Macintosh, and OS/2 Presentation Manager APIs. Familiar with the Java Swing, GTK and QT APIs.
- Networking and Telecommunications: Extensive experience with TCP/IP, IPX, and Ethernet, as well as with ISDN protocol stacks and T1/E1 protocols. Familiar with Token Ring, ATM, Frame Relay.
- Device drivers: Extensive experience with real-mode x86 device drivers. Familiar with protected-mode device drivers.
- Embedded systems: Extensive experience with several different embedded OS's and multiple chip families.

Languages

- Extensive experience with high-level languages Java, C++, C, Perl, PHP, JavaScript, various SQL dialects, and shell scripting in Unix/Linux, Windows, and DOS environments.

- Java experience includes extensive experience working with the Eclipse IDE and the jUnit, Struts, and Hibernate frameworks, as well as some experience with RMI, JMS, JMX, and other extensions.
- Some experience with Python, Visual Basic, WinBatch, Smalltalk, Basic, Fortran, Pascal, and PL/1, and with assembly language on the PowerPC family.
- Extensive experience with assembly languages for the 80x86, 320C30, 320C25, 8080/8085/Z80, 6502, and 8051 families.

Operating Systems

- Extensive development experience with Linux, Windows (3.x through XP), Mac OS (pre-X), OS/2, DOS, Netware 3.x/4.x, CP/M, and several embedded operating systems.
- Extensive user experience with above systems plus Mac OS X, Solaris 2.6, other Unix flavors, VMS, and Multics.

Hardware Design

- Extensive experience with the 8-bit families listed above.
- Experienced with emulators, logic analyzers, and other hardware development tools.
- Many years of experience working as a liaison between "pure" hardware and software engineering divisions.
- Experienced with schematic capture and PCB layout tools for personal hardware designs.

AWARDS and PATENTS

1987 PC Magazine Product of the Year Award for EMS 4.0.

U.S. Patent #5280481 for "Local area network transmission emulator"

U.S. Patent #5321694 for "Method and apparatus for reducing the transmission of repetitive broadcast datagrams over communications links"

U.S. Patent #5323388 for "Local area network transmission emulator"

U.S. Patent #5539745 for "Method and apparatus for reducing the transmission of repetitive broadcast datagrams over communication links".

U.S. Patent #5577033 for "Local area network transmission emulator"

CONTACT INFORMATION

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HISTORY of B::Ware CONSULTING

I founded **B::Ware** in January 1994 as an independent consulting company providing services for software, network, and communications development, systems integration, and hardware development. It was in that capacity that I was involved in several of the engagements below; those engagements are marked with an "(B::Ware consulting)" tag in the title

EMPLOYMENT HISTORY

Aspen Technology (B::Ware Consulting)
January 2005 to June 2005

Aspen Technology is a world leader in Process Control Software for the Petrochemical and Pharmaceutical industry. I was a member of a small team which was tasked to produce a J2EE-based client-server application which could be used to schedule and track petroleum shipments around the world. The project was developed on individual machines running Tomcat and SQL Server, and was to be deployed on machines running WebSphere and Oracle. The development environment was Eclipse, and all developers were expected to create unit tests using the jUnit framework. My tasks there included:

- Writing Java code to run on the server back-end and in JSPs. We used Struts and JSTL on the JSPs, the Junit framework for unit and composite testing, and Hibernate for the persistence layer. All of this was integrated into the Eclipse development framework.
- Writing JavaScript and HTML code in the JSP pages.
- Adding and modifying Hibernate configuration code and/or Java/SQL statements depending on the stage of the development and the specific database access requirements of the moment (which were in a state of flux during my stay with the project).
- Creating a "master configuration" process to allow the product to run on either a SQL Server or Oracle database. This involved creating master SQL script files which were translated via XSL/XSLT into product-specific script files, and integrating the entire process into the master build process. The master build process was itself based on Ant, with XLS/XSLT processing to select between debug and non-debug builds.

B::Ware (B::Ware Consulting)
July 2003 to December 2004

Developed a PHP-based automobile mileage tracking web application for use in managing and verifying low-mileage automobile insurance deduction claims.

Provided IT services and developed a several applications in C++, Java, HTML, PHP, and JavaScript for several individual clients.

Brightline Technology, Inc.
19 Elwyn Road
Rye, NH 03870
January 2003 to June 2003

- Created network infrastructure for the organization.
- Hired initial development team for a Lotus Domino based Java project.
- Created initial product specifications and schedules for the project.

I was the first employee after the founder. My first major task was building out the hardware and software infrastructure of the company; this was mostly a Red Hat 7.2 installation (because that is the Linux version blessed for Domino) with Windows workstations, Samba providing Windows/Linux file sharing, and a Domino domain with

several Domino servers running on multiple machines. My second major task was staffing the development team.

I also wrote the initial product and functional specifications, and worked with the members of the development team that had been hired to develop a task list and schedule for the technical aspects of the product itself. The product itself finally ran on both the Domino and WebSphere servers.

B::Ware (B::Ware Consulting)
February 2001 to January 2003

Provided IT services and developed a several applications in C++, Java, HTML, and JavaScript for several individual clients.

e-Dialog (B::Ware Consulting)
August 2000 to January 2001

e-Dialog is a precision e-mail marketing firm which provides e-mail distribution and processing for its customers. My tasks there included:

- Creating a next-generation system for processing the incoming mail. This system consisted of several modules written in Perl, Linux shell script, and Java, and was responsible for pulling information out of the incoming mail and then sending that data to an Oracle or SQL Server database.
- Upgrading the address management tools for maintaining alias lists on multiple email servers. This project was a series of Linux shell scripts, along with a Perl module for initial database creation.
- Evaluating 3rd-party products for use in upgrading their existing in-house Client Services interface.
- Maintaining legacy C code for processing incoming mail.

Dan's Chocolates (B::Ware Consulting)
August 1999 through January 2000

Dan's Chocolates was a start-up founded in early 1999 to sell high-quality, freshly made chocolates over the internet. I was brought in by the CTO to assist in the initial technology deployment, which had to be completed by Thanksgiving of 1999.

- I led the technical team which implemented the entire e-commerce back end, including 3rd-party ERP and CRM, in 3 months. The product went on-line on schedule.
- After deployment, I managed the IT group of 4 people. My responsibilities were making sure that site updates went smoothly, and that the corporate IT infrastructure adapted smoothly and quickly to changes in environment.

On Technology (B::Ware Consulting)
January 1998 to August 1999

Created a native interface to the Palm Pilot synchronization engine to allow synchronization between the Palm Pilot and Meeting Maker's date book, address book, and notepad. This interface ran on both the PowerMac and Windows32 versions of Meeting Maker and the Palm synchronization engine.

On Technology (B::Ware Consulting)
August 1996 through August 1997

- Ported the Meeting Maker UI to the Win32 GUI (for Windows 95 and NT).
- Created the Address Book functionality for the Meeting Maker product. This involved work on both the User Interface (Windows, Mac, and Unix) as well as the underlying cross-platform engine code.
- Created an interface to allow Palm Pilot synchronization of the Meeting Maker date book based on the Intellisync API for the Win32 version of the product.

Natural Microsystems (B::Ware Consulting)
July 1995 through July 1996

Natural Microsystems creates telephony and telecommunications products used by companies all over the world. My work there was:

- Evaluating 3rd party IDSN protocol stacks for inclusion into the existing embedded environment on the NMS T1/E1 interface card.
- Integrating the 3rd party ISDN protocol stack into the existing embedded environment on the T1/E1 interface card.

On Technology (B::Ware Consulting)
August 1994 though June 1995

On Technology created and marketed Meeting Maker, a cross-product group scheduling product which was quite featureful and flexible. The work there was actually 3 separate contracting jobs there, each spanning approximately one year and and separated from each other by several months.

- Ported the Meeting Maker server code from a Mac/Win16 code base to the Netware NLM platform.
- Assisted in the effort to port their Mac/Win16 product Instant Update to DOS.

B::Ware (B::Ware Consulting)
August 1993 through August 1994

Created HexEdit/2, a shareware OS/2 binary file editor. It was based on the OS/2 Presentation Manager, and had a CUA interface, full help and on-line documentation, and numerous display options.

Extension Technology Corporation
30 Hollis St.
Framingham, MA 01701
March 1991 to August 1993

- Co-designed network interface which uses the circuit-switched ISDN to emulate a physically-connected Ethernet network; received several U.S. patents.
- Developed Q.931 and Q.921 protocol state machines for ISDN products.
- Developed Network Interface Card (NIC) drivers and Netware Load Modules (NLM) for Novell Netware.
- Developed device drivers for providing client-side NIC drivers with control and status APIs.

Extension Technology Corporation (ETC) was in the business of providing Ethernet access over the ISDN switched telephone network. The initial ETC product is a card that plugs into an ISA or EISA machine and software that allows a Novell Netware DOS workstation or Netware 3.x server to use the ISDN as an Ethernet-compatible twisted-pair medium. Both the workstation and server drivers conform to the ODI protocol stack specifications, and as a result provide transparent IPX access across the ISDN; customers can use the same software to communicate with the Netware server down the hall or across the country. The design was made flexible enough to provide similar services for Appletalk and TCP/IP, and was awarded U.S. Patent #5,280,481 for "A Local Area Network Transmission Emulator" (it was subsequently awarded several other patents, enumerated below).

Primary responsibility (besides co-development of the design) was implementation of the host-side Netware device drivers for both DOS workstation and Netware server. These device drivers were written in assembly language (16-bit for the DOS workstation, 32-bit for the Netware server). Along with these device drivers, also wrote several support utilities for both Server and Workstation; these utilities were written in 16-bit and 32-bit

C. The Server utilities were written as NLMs, using the Watcom compiler and the Novell libraries.

Subsequent primary responsibility was maintaining the on-card software for the ISDN card itself. The ETC ISND card is an intelligent card with a TMS 320C30 DSP, 512KWords (32-bit) of RAM, and ISDN support chips, running embedded system software which implements the ISDN protocols and some higher-level functions. This software as originally inherited by ETC had numerous flaws in its Q.931 and Q.921 implementations which had to be discovered and fixed. In addition, ETC had to make several changes to the overall structure and function of the on-card high-level interface to make it more compatible with the Network Emulator design.

Miscellaneous responsibilities included setup and maintenance of the corporate Novell network, management of the ISDN switch emulators, product testing, customer support, and purchasing.

Extension Technology was acquired by Microcom Inc. in 1995.

Voice Processing Corporation
1 Main St.
Cambridge, MA
April 1988 to March 1991

- Developed real-time multi-processor kernel environment for embedded system speech recognition machine.
- Designed and developed myriad TSR's, device drivers, command-line utilities, etc. for in-house use and for distribution with standard products.

Voice Processing Corporation (VPC) manufactures advanced speech recognition systems, using a proprietary technology that allows real-time recognition of speaker-independent continuous speech. This technology is sold as a board-level product directly by VPC, and is also incorporated into the designs of several leading telecommunications equipment vendors. The current implementation of the design runs on a two-processor platform (an 80386 and a 320C25 DSP chip) as an embedded system.

The initial task at VPC was to port the recognition technology (then in a demonstration stage) to the newly developed DECvoice card. The DECvoice card is a Q-Bus device with an embedded proprietary operating system, and which supports DTMF detection, the DEC text-to-speech code, and other voice response modules. This job required modularization of the recognition code, adaptation of the code to the DECvoice operating environment, and performance enhancements to speed up the algorithm enough to operate in the new environment (DECvoice uses an 80186, not an 80386).

The next task was to transform the recognition software into standard production software, with a consistent interface, enhanced robustness, and the other trappings of a true product. This system was co-designed with the company's chief scientist, and then implemented and tested. The design has proved robust enough to support several enhancements without any conceptual redesign for two years.

Further tasks ware maintenance of the recognizer software, and maintenance of the corporate 3COM LAN.

At the time of departure VPC was designing a next-generation speech recognition platform, which was to incorporate 4 next-generation DSP chips on a single card, thus quadrupling the current recognizer-to-card ratio. Was closely involved in the specification and design of that product.

Voice Processing Corp. was acquired by VCS Corporation in 1996.

Lotus Development Corp.
55 Cambridge Pkwy.
Cambridge, MA
January 1984 to April 1988

- Co-developed Lotus-Intel-Microsoft Expanded Memory Specification (LIM EMS); received PC Magazine Product of the Year award.
- Co-development of several of the Lotus family of spreadsheet products, including multiple versions of 1-2-3 and Symphony.

Originally hired to write device drivers for the soon-to-be-released Symphony product. After Symphony 1.0 shipped, worked in (and eventually led) Symphony 1.1 development group, and after that led the Symphony 1.2 development group.

Was the main Lotus engineer involved in the creation of the original Lotus-Intel-Microsoft (LIM) Expanded Memory Specification (EMS), and was responsible for integrating EMS into the 1-2-3 and Symphony product lines. Received a PC Magazine Product of the Year Award in 1987 for this work.

One of the original members of the 1-2-3 version 3 software design and development team, and remained with the team up until departure from Lotus.

When IBM decided to make a big promotional push for the PC/Jr (for Christmas 1984) they requested a port of 1-2-3 into PC/Jr-compatible ROM cartridge. Original time budget was 3 months; project was completed in 2 months. This product was remarkable in a number of ways, not least that it produced the first IBM advertisement with another company's logo (Lotus') showing.

Lotus Development Corporation was acquired by IBM in 1995.

ADT/New England Research Lab
840 Memorial Dr.
Cambridge, MA
February 1982 to January 1984

Designed and developed hardware and software for a network data acquisition subsystem based on 8051 single-chip microcomputer, using a round-robin polling algorithm and an RS-422 hardware interface.

Also designed and developed a software interface to operate under the Intel iRMX86 Operating System to interface this network processor via the Multibus/iSBX bus to an 8086-based access-control security system.

The New England Research Lab was dissolved by the ADT parent corporation in December 1985.

Distron Corporation
161 North Ave.
Newtonville, MA
April 1981 to February 1982

Designed and built a Z80-based front panel controller for a new copier designed by the Nashua Corporation.

Also designed and built (again around a Z80) a demonstration real-time general-purpose data acquisition and analysis instrument.