

**Resume for Eric R. Brodeur**  
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**SUMMARY:**

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Experiences include diagnostic and manufacturing testing of:

ATM switching fabrics, network processors, SONET hardware, various networking and routing ASIC designs, supercomputer architectures, shared memory architectures, clustered disk storage systems, manufacturing systems testing.

Previous programming environments include:

C, Assembly (x86, i960, PPC), Python, Bash, Linux, FreeBSD, RTOS (VxWorks, OSE), ClearCase, CVS, Subversion.

Additional experience includes: Ada, BASIC, Fortran, Mathematica, Pascal.

**EDUCATION:**

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1989 – 1993	B.S.E.E. Magna Cum Laude, Rose-Hulman Institute of Technology	Terre Haute, IN
1993 – 1995	Course work towards M.S.E.E., Northeastern University	Boston, MA
1995 – 1996	Course work towards M.A., Education, University of Massachusetts	Amherst, MA

**WORK HISTORY:**

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11/05 –	<b>Isilon Systems, Inc</b>	<i>Software Development Engineer</i>
	Manufacturing test code development, support for Isilon IQ Clustered Storage systems	
02/04 – 11/05	<b>Cray Inc</b>	<i>Software Engineer</i>
	Diagnostics development and hardware debug on Red Storm, XT-3 Supercomputer	
08/03 – 02/04	<b>Mangrove Systems</b>	<i>Diagnostic Engineer</i>
	Diagnostics development for early prototype hardware (Linux drivers, Python scripts)	
06/03 – 08/03	<b>CIENA</b>	<i>Senior Lead Diagnostic Engineer</i>
09/01 – 06/03	<b>WaveSmith Networks</b>	<i>Principal Diagnostic Engineer</i>
	WaveSmith Networks was acquired by CIENA in June, 2003	
	Diagnostics development for various switch fabric and PHY modules	
09/00 – 09/01	<b>Lucent Technologies, INS</b>	<i>Principal Diagnostic Engineer</i>
03/00 – 09/00	<b>Lucent Technologies, ONG</b>	<i>Senior Diagnostic Engineer</i>
05/99 – 03/00	<b>Ignitus Communications</b>	<i>Senior Diagnostic Engineer</i>
	Ignitus was acquired by Lucent Optical Networking Group in March, 2000	
	Led initial diagnostics development for Ignitus 3500 switch	
	After Lucent ONG cancelled Ignitus project, transferred back to Lucent InterNetworking Systems to return to previous Cascade / Ascend group. Initially worked on MSC25000, then led diagnostic development for the GX550 OC48c BIO module.	
11/96 – 05/99	<b>Cascade / Ascend / Lucent Technologies, INS</b>	<i>Senior Diagnostic Engineer</i>
	Diagnostics development for CBX500, GX550, GX250, and MSC25000 projects	

References Available Upon Request

<http://www.chezbrodeur.net/erb/resume/>

## **MAJOR TASKS / PROJECTS:**

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### **Isilon Systems Inc Manufacturing Testing**

Maintained and enhanced manufacturing test suite for entire Isilon IQ product family, working with Manufacturing team and Contract Manufacturer to quickly adopt new hardware and features, resolve problems on CM test floor impacting production, and improve test coverage, reliability, and quality. Hardware includes various vendor motherboards, 3Ware / LSI / Vitesse disk controllers, PATA / SATA / SAS hard drives, Gigabit Ethernet and InfiniBand network technologies, proprietary Isilon PCI hardware cards.

### **Cray Inc XT3 Supercomputer**

Worked with CRMS / RAS Team (Cray RAS and Management System; Reliability, Availability, Serviceability). Provide diagnostics for the compute processors (AMD Opteron processors), and the SeaStar high speed router ASIC. Many of these diagnostics were ported from DV test suites used by the hardware and design teams. Helped debug systems in-house and at customer sites.

### **WaveSmith / Ciena DN-2100 / 4100 / 7100 / 8100, CFM, HCFM**

Worked on various switching fabrics for ATM / Multiservice architectures, including Lucent / Agere APC OC12-thread traffic manager, Vitesse PaceMaker 2.5 / 3.0 OC48-thread traffic manager, proprietary FPGA-based fabrics, and IBM PRS-64Gu 40G+ fabric. Diagnostic development and card bringup for DS3 IMA PHY card.

### **Ascend GX250 PHY Shelf (aka Lucent GX550 Shelf Extender)**

Wrote low-level interrupt-driven message-passing protocol and driver for passing commands, status, and data over an optical FPGA-controlled "fiber channel." Added functionality to i960 boot ROM of a "slave" device such that the "master" platform could update FLASH application code over fiber channel / protocol.

### **OC48c BIO Board for Lucent GX550**

Ported code elements from various other projects to create a patchwork diagnostic for board in minimal time, since board was already in-house and needed debug, but no diags were available. Worked on this board, and corresponding test-card for next-generation GX550 OC48c-thread based switch fabric, for the bulk of the time spent at Lucent (Westford INS), from 9/00 to 9/01.

### **Ignitus 3500 ATM / SONET Metro Switch**

Wrote diagnostics using 860, 750 PPC processors; RTOS (VxWorks); SONET ADM technology; Lucent / Agere APC traffic manager. Developed CLI / menu / scripting shell, and manufacturing diagnostics infrastructure; some system level sync, messaging, etc. on Ethernet layer.

### **Ascend / Lucent MSC25000**

Assisted in early architecture phase of next-generation multi-protocol product, contributing to online fault detection discussions. Wrote Diagnostic Architecture and Functional Specs for system testing approach of switch.

### **Ascend / Lucent GX550 Switch Fabric Module**

Wrote suite of tests and utilities with HW Engineer for HVT / Manufacturing purposes for Lucent "Atlanta" ASC/ACE based 25 Gbps switch fabric. Programmed testing HW designed with ASIC, FPGA, ATMizerII, XBERT chips for full 100% HW testing with greater control than using GX550 Base IO (BIO) units directly. Tests included: Thread To Thread; Cell Path; Multicast; Many-to-One; Backpressure; False Backpressure; Latency; Congestion; Full Bandwidth. Testing approach: Wrote "generic" SW / HW interface to facilitate test writing, modification, allowing user to "write their own tests" by setting SW parameters and "programming" the HW. Wrote menu / cursor based UI for this purpose. Error logging routines needed to be modified to handle the volume of possible errors during a single test run. Development and debug time of mfg diag test suite was ultimately minimized with this "generic" testing approach.

### **Cascade CBX500 "Cell-Frame-Cell" (CFC) Module**

Wrote Shared Memory testing with Intel i960, 2 LSI ATMizerIIs, and 2 Motorola PPCs; SMEM "Virtual UART" command-passing protocol for the five processors; "Sleep/Awake" procedure with VUART for shared memory testing by individual processors. Updated ATMizerII boot ROM code for new hardware cards, mostly with respect to shared memory code, and bootstrap procedure for booting in Cell Buffer RAM.

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