Paul Hyde

Programix Incorporated
www.programix.com

OBJECTIVE

Seeking an exciting position on a Java-centric project acting as a software architect, hands-on developer, and mentor to junior Java developers. Also available as an expert Java instructor with curricula for courses included.

SUMMARY

- **13 years** of *intensive* Java-specific experience.
- **18 years** of professional software development experience.
- Author of the book: *Java Thread Programming*.
- Adjunct Professor of Computer Science.
- **Sun Certified Web Component Developer** for **J2EE**.
- **Sun Certified Programmer** for Java 2 Platform.
- 13 years of part-time (evening) and some full-time training experience.
- Developed curricula and taught: Core Java, JDBC, Threads, XML, Servlets/JSP, EJB, Java Web Start, JavaEE, Struts, Swing, UML, Object Oriented Design Patterns, and HTML classes.
- Author of SimpleServlets open-source library.
- Author of ProgramixGenericLib open-source library.
- 12 years as President and Senior Consultant for Programix Incorporated.
- **Master of Science** in **Computer Science**.
- **Bachelor of Science** in **Electrical Engineering**.

SKILL SUMMARY

Java Certifications
- Sun Certified **Programmer** Java 2 Platform **1.4** [SCJP - Aug 22, 2003]
- Sun Certified **Web Component Developer** Java 2 Platform, Enterprise Edition [SCWCD - Aug 21, 2003]
- Sun Certified **Programmer** for the Java 2 Platform [SCJP – Feb 8, 1999]
- Sun Certified Java **Programmer** 1.1 [SCJP – May 5, 1998]
- Sun Certified Java **Programmer** 1.0 [SCJP – May 2, 1997]

Java Technologies
- Java Web Start – JNLP
  - standalone applications
  - n-tier C/S applications
- Java Servlets
- JavaServer Pages – JSP
  - Struts
  - JSTL
  - Custom Tag development
- JDBC
- XML (SAX, DOM, JDOM)
- Enterprise JavaBeans – EJB
- JNDI
- Multithreaded applications
- RMI
- Swing toolkit
- Custom GUI Component design in AWT & Swing
- TCP/IP Sockets
- Java Applets
- Collections API
- Java2D API
- Reflection
- Printing (1.2)
- SmartCard technology
- Java EE and Java SE
- JUnit

Other Languages
- XML (including: DTD, XML Schema, XSL, & XSLT)
- UML (with Rational Rose and Visio)
- HTML, XHTML, CSS
- JavaScript
- C programming
- Bash, Korn shell, & AWK scripts

Databases
- PostgreSQL
- Oracle (including using Java *inside* the database)
- Microsoft SQL Server
- Sybase (SQL &Transact-SQL)
- Informix (SQL, 4GL, ESQL/C, & SPL)
- hsql (Hypersonic-SQL)

Design
- Software design and processing distribution
- Database design and data modeling
- Graphical User Interface design

Operating Systems
- Linux – Kubuntu, Ubuntu, Fedora
- Solaris Unix and other Unix flavors
- Windows 95/98/NT/2000/XP/Vista

Tools
- BEA WebLogic Server
- JBoss
- Apache Tomcat
- Jetty
- EntireX
- Apache Ant (including writing custom tasks)
- Apache Xerces, Xalan
- Rational Rose
- Eclipse
- JBuilder (incl. WebLogic Ed.)
- Visual SlickEdit
- JCreator
- Vim, Vi
- CVS, WinCVS, SmartCVS, CVSNT
- Subversion
- MKS Source Integrity
- Visual SourceSafe
- JClass libraries
- JThreadKit
- SimpleServlets
- ProgramixGenericLib
- Dash-O Pro
- JProfiler

BOOKS PUBLISHED

Java Thread Programming
- Published by Macmillan Computer Publishing, August 1999.
- Comprehensive coverage through Java 2 - 510 pages, over 19,000 copies sold.
- Book has received 25 perfect 5 out of 5-star user ratings on Amazon.com.

EXPERIENCE

Programix Incorporated, Plymouth, MN   **July 2007 – present**
Java Consultant and Mentor, Garmin – Digital Cyclone, Minnetonka, MN
- Worked on the architecture, design, and development of the *Image Server 2* project for generating images for My-Cast and Pilot My-Cast on cell phones. This system is used to visually depict weather-related and aviation-related data on generated maps including sprite animated hurricane forecast tracks, Doppler radar images, graphically drawn National Weather Service warnings, watches, and advisories, satellite images, and much more. There is extensive use of the Java 2D API for rendering images, use of map projections to mathematically transform latitude and longitude data into x/y space for the generated images, advanced multithreading and concurrency control, dynamic generation of maps, and the creation of tile base imagery to allow for efficient user panning.
- Designed and implemented a Java Web Start status and administration client and a modular framework to facilitate the decoupling and addition of other modules. Designed and developed a high-speed ImageIndexer which is a RGB to byte-indexed BufferedImage converter that picks exact colors in the destination color model and avoids dithering. Designed and developed advanced curve fitting and specialized drawing along the curve.
- The architecture consists of cell phone clients applications communicating over HTTP to the servlet-based Image Server 2. Image Server 2 reads and processes data files and data from internal servers to produce images. In addition, there is a Swing-based Java Web Start (JNLP) client that serializes objects over an HTTPS connection to servlet-base middle tier for remote administration and status.
- Used Java EE and Java SE technologies: Java 2D API, JNLP, Java Web Start, Swing, Object Serialization, XML, Java Servlets, JUnit, advanced multithreading; ProgramixGenericLib toolkit; SimpleServlets framework; UML diagrams for design; Eclipse 3.4 for editing; CVS, WinCVS, SmartCVS, and Subversion for version control; and Ant for builds. Team used Agile software development techniques.

Programix Incorporated, Plymouth, MN   **July 2004 – June 2007**
Java Consultant and Mentor, Minnesota Department of Human Services, St. Paul, MN
- Architected, designed, and led development of the *MEC² Integration Project* for childcare assistance. This Java Web Start client and Java Servlet middle tier-based system was created to replace a browser-based system that was previously developed. This system is used by both county and state workers in Minnesota to determine eligibility for child care assistance, fight fraud by both families seeking assistance and by childcare providers, and to streamline the process from initial family application through provider payment.
- The architecture consists of a Swing-based Java Web Start (JNLP) client that serializes objects over an HTTPS connection to a Java Servlet middle tier. The middle tier connects through EntireX a mainframe running Natural code which talks to an Adabas database that contains both this new child care information and information on other Department of Human Services programs.
- Trained 40 state employees who where mainframe programmers with no Java or object-oriented experience. These employees were trained in Java, UML, JDBC, XML, Serlvets and JSP's, and Java Web Start part-time during normal business hours over several months. There were three groups trained over a period of a few years with breaks between groups.
- Mentored the newly trained state employees in Java as they developed the new child care assistance application.
- Encouraged the use of open-source tools to save the taxpayers' money, including the use of Eclipse, Ant, Tomcat, Linux, CVS, and Subversion.
- Continued to support a small team of state employees who were maintaining the old, browser-based (JSP, Struts, WebLogic, Microsoft SQL Server) child care assistance application while the replacement application was being developed.
- Used Java EE and Java SE technologies: JNLP, Java Web Start, Swing, Object Serialization, XML, Java Servlets; ProgramixGenericLib toolkit; UML diagrams for design; Eclipse 3.0, 3.1, and 3.2 for editing; CVS, WinCVS, SmartCVS, CVSNT, and Subversion for version control; and Ant for builds.

Metropolitan State University, St. Paul, MN   **August 2004 – present**
Adjunct Professor – Information and Computer Sciences Department – Evenings
- Taught *ICS 462 – Operating Systems* semester-long course.
- Taught *ICS 492 – XML and Java* three-evening seminar.

Programix Incorporated, Plymouth, MN   **March 1998 – present**
Java Instructor – Evening, Weekday, and Weekend classes, Twin Cities, MN
- Instructor for both Java Standard Edition (Java SE) and Java Enterprise Edition (Java EE) training courses.
  - Java SE courses: *Intro to Java (Java I)*, *Advanced Java (Java II)*, *Core Java – Part A, Core Java – Part B,* and *Threads and Java.*
  - Java EE courses: *Database Access with JDBC, XML and Java, Java Servlets and JSP, EJB – Enterprise JavaBeans,* and *Java Web Start & Advanced n-tier Development* classes, *Java EE Compressed, Struts.*
- Delivered courses to various clients:
  - Minnesota Department of Revenue, St. Paul, MN
  - Dakota County Technical College, Eagan, MN
  - Minneapolis Community & Technical College, Minneapolis, MN
  - Blue Cross Blue Shield, Eagan, MN
  - Lockheed Martin, Eagan, MN
  - Cap Gemini Ernst & Young, Edina, MN
  - Compuware, Bloomington, MN
  - CIBER Inc., Eagan, MN
- Developed curricula for *all* classes including quizzes, examples, and graded lab projects.
- Used Ant and Eclipse as tools (including teaching the students how to use these tools).
- Consistently received outstanding student evaluations.

Programix Incorporated, Plymouth, MN   **October 2003 – June 2004**
Java Consultant and Mentor, Minnesota Department of Human Services, St. Paul, MN
- Participated in the development of the MEC^2 childcare assistance project. This J2EE and browser-based system is used by both county and state workers in Minnesota to determine eligibility for child care assistance, fight fraud by both families seeking assistance and by childcare providers, to streamline the process from initial family application through provider payment, and much more.
- JSP's, Struts, internally developed Custom Tag Libraries, JSP Standard Tag Libraries (JSTL), HTML, and JavaScript are used for the pages viewed by a browser-based client.
- BEA WebLogic Server is used on the middle tier where EJB's, JDBC, and SQL are used to talk to Microsoft SQL Server.
- Java applications utilizing Java I/O, JDBC, and SQL are used to do batch processing of data feeds into and out-of the system. Encouraged an eventual migration to using XML for these data files.
- Acted as a designer and a developer to track down and fix tough bugs and to add enhanced functionality and new features throughout the system.
- Acted as a mentor to four State of Minnesota employees (with no Java experience) to educate them on the Java technologies used in this application and to cultivate them into full Java developers capable of supporting and extending the system.
- Enabled the four state employees to take over full application responsibility—including the ability to add new functionality—from an expensive outside consulting company resulting in huge cost-savings for the State of Minnesota.
- Encouraged the migration to open-source tools to save the taxpayers' money, including the use of Eclipse instead of JBuilder, CVS and WinCVS instead of Microsoft Visual SourceSafe, and JBoss instead of WebLogic.
- Used J2EE technologies: JSP's, Struts 1.0 and 1.1, custom JSP tags, JSTL, HTML, JavaScript, Servlets, and EJB's running on BEA WebLogic; SimpleServlets toolkit; ProgramixGenericLib toolkit; JDBC and SQL to talk to Microsoft SQL Server; UML diagrams for design; Collections API; JBuilder WebLogic Edition and Eclipse 3.0 for editing; WinCVS, SmartCVS, CVSNT for version control; Microsoft Visual SourceSafe for version control; Ant for builds; Real VNC for support of telecommuting developers.

Programix Incorporated, Plymouth, MN   **September 2002 – November 2003**
Java Consultant, WACS, Brooklyn Park, MN
- Architected, designed, and developed the *AMR Navigator* 3-tier interactive configuration, status, and reporting system. This system is used by electric and gas utility companies to monitor product usage, infrastructure events (like power outages), live polling of individual meters, and many more tasks to add efficiency to the utility companies' operations and demand planning.

- Java Web Start was used on the client tier to build a highly interactive client which utilized multiple threads for simultaneous background tasks, custom graphical components, and the HTTP protocol to serialize objects up to (and back from) a Java Servlet middle-tier.
- Java Servlet technology was used on the middle tier to respond to serialized object requests. The servlet had extensive security and server-side session storage to streamline communication with the client tier.
- JDBC was used by the servlet to communicate with an Oracle database.
- Used Java Web Start (JNLP technology); J2EE Servlets running on Tomcat, JRun and BEA WebLogic; JDBC and SQL to talk to Oracle; Java stored procedures inside the Oracle database; UML diagrams for design; Swing; Reflection API; Serialization; Collections API; TCP/IP socket networking; Java 2D API for printing; extensive multithreading; JClass libraries; Vim and Eclipse for editing; CVS and WinCVS for version control; Ant for builds.

Programix Incorporated, Plymouth, MN   **July 2000 – November 2006**
Chief Architect, Designer, & Developer for JThreadKit
- Architected, designed, and developed *JThreadKit* multithreading utilities commercial product (see jthreadkit.com). JThreadKit is a collection of Java API's which greatly accelerate the development of solid, thread-safe applications.
- Designed and developed the all classes and interfaces in the library.
- Architected, designed, and developed the custom *software key* system that allows for developers to use a fully functional version of JThreadKit for up to 30 days. After 30 this free trial period, the libraries go into a lockout mode until a purchased software key is input. After the software key is validated, the libraries return to a fully operational mode.
- Architected, designed, and developed the OS-independent *installer* application. Developers download a single executable jarfile containing the installer and all of the supporting libraries and documentation. Once downloaded, this jarfile is simply run by double-clicking the file. The installation process asks questions, requires the acknowledgement of the license agreement, and optionally accepts a license key or installs for a 30-day evaluation.
- Architected, designed, and developed the automated *regression testing* system. This Swing-based graphical module runs thousands of regression tests in parallel using multiple threads and helps ensure the quality of each release of JThreadKit.
- Architected, designed, and participated in the development of a *site builder* application that is used to regenerate the web site pages quickly and efficiently while adding the header, trailer, and navigation bar. This site builder tool runs in two modes, one mode to generate the web site for upload to the web server, the other mode to generate a portion of the site for the documentation that gets put on the developer's machine during the installation process.
- Handled the business-side of JThreadKit including marketing, advertising, and the outsourced connection for the e-commerce purchase of software keys.

Programix Incorporated, Plymouth, MN   **January 2001 – November 2002**
Java Consultant, Simplex Technology, Culver City, CA
- Architected, designed, and developed multiple business computing modules using Java Web Start technology and plain Java Applets for web-page delivered simplicity.
- Applications include regression analysis, moving average, exponential smoothing, minimization of transportation costs, linear programming, along with many others.
- Created client-side graphs of data and results using Java2D API.
- Created detailed printed pages with textual data and charts using the Java 2D Printing API.
- Used Java Web Start (JNLP) technology, Swing, and Visual SlickEdit.

Programix Incorporated, Plymouth, MN   **June 2001 – December 2001**
Java Consultant, Circus Software, Edina, MN
- Participated in the analysis, design, and development of the RingMaster system.
- Architected, designed, and developed the client side of this n-tier product, which is a Swing-based application that makes extensive use of the drag-and-drop idiom.
- Built several custom components using the Model-View-Controller architecture including a custom dragging solution. Explored use of Java Web Start and EJB technologies.
- Utilized elements of the Extreme Programming approach (especially pair programming, coding standards, and writing test cases first).
- Used Java Web Start (JNLP technology); UML diagrams in Visio for design; Swing—extensively; Reflection API; Serialization; Collections API; multithreading; JClass libraries; Vim and Visual SlickEdit for editing; CVS and WinCVS for version control.

Programix Incorporated, Plymouth, MN   **October 2001 – November 2001**
Java Consultant, Notiva, Bloomington, MN
- Participated on the architecture and design of Notiva's business-to-business system for streamlining the reconciliation of invoices, purchase orders, and other billing processes.
- Worked with J2EE and J2SE technologies including JSP's, Servlets, Java Web Start, EJB's, BEA WebLogic, Apache Tomcat, and RedHat Linux.

Programix Incorporated, Plymouth, MN   **June 2001 – September 2001**
Java Instructor, Minnesota Midrange Solutions, Plymouth, MN
- Instructor for *Swing, HTML, Servlets/JSP, Unified Modeling Language (UML), and Object-Oriented Design Patterns* classes.
- Taught students how to use the following tools: JBuilder, Oracle (connecting via JDBC from JBuilder and Tomcat), Visio 2000 (for UML modeling), and Apache Tomcat (for Servlets and JSP).
- Received excellent student evaluations.

Programix Incorporated, Plymouth, MN   **May 2000 – March 2001**
Java Consultant, Digital Cyclone, Minnetonka, MN
- Participated in the development of the My-Cast.com local weather forecasting system.
- Worked extensively with Java 2 including threads, TCP/IP sockets, Swing, Java 2D, Java Servlets, and JDBC on the Solaris Unix platform along with the Oracle RDBMS.
- Designed and built a high-availability middle tier that cached *hundreds* of megabytes of data. This data was refreshed at 3-hour intervals. A key element of the design was to recycle large data structure objects to ease the burden on the garbage collector (without the recycling, garbage collection would sometimes freeze up the application for long periods of time - up to ten minutes!). This server was multithreaded and was able to quickly and safely handle simultaneous data requests coming in over TCP/IP socket connections.
- Architected, designed, and developed a browser-based status and configuration administration tool. This Java Servlet-based tool generated forms and HTML pages used to convey the current status of various servers behind the scenes in the My-Cast system. The servlet also facilitated the on-the-fly changing of some configuration parameters of the servers being monitored.
- Architected, designed, and developed a browser-based load-testing tool. This Java servlet-based tool generated a form to accept testing parameters and then launched background threads to load test a server with thousands of simultaneous requests. The timing results of the load testing were calculated and displayed by the servlet.
- Used J2EE Servlets running on Tomcat and iPlanet; JDBC and SQL to talk to Oracle; extensive multithreading and TCP/IP networking; Swing; Reflection API; Serialization; Collections API; Java 2D API; Sun's Solaris Unix for the development environment, Vim for editing; CVS for version control.

Programix Incorporated, Minneapolis, MN   **January 1998 – May 2000**
Java Consultant, Sylvan Prometric, Edina, MN
- Collaborated in the design of a distributed, n-tier Client/Server application. Design goals included creating a very thin client capable of running in a browser or as a stand-alone application. Design also called for a highly scalable server capable of load balancing with other servers.
- Worked extensively with Java 1.1 and 1.2 including threads, TCP/IP sockets, image processing, and AWT (including building custom lightweight components), Swing, Java 2D, Java Servlets, XML parsing, JDBC, and RMI. Explored early EJB technologies. Explored early Java Web Start technology.
- Used Object Oriented Analysis (OOA) and Object Oriented Design (OOD) techniques using Unified Modeling Language (UML) and Rational Rose.
- Used JBuilder, Kawa, Vi, Vim, MKS Source Integrity, and Sybase RDBMS.
- Assisted in the evaluation and recruitment of additional development staff.

Programix Incorporated, Minneapolis, MN   **May 1997 – January 1998**
Java Consultant, TECo Incorporated, Edina, MN
- Coded Java applications on both client-side and server-side using JDBC, RMI, TCP/IP sockets, and advanced multithreading.
- Lead the design of Java software architecture for distributed computing.

AT&T and Lucent Technologies, Whippany, NJ   **February 1995 – January 1997**
Head Software Designer and System Architect, Environment and Safety Systems Development Group
- Led investigation of distributed processing model to support a Graphical User Interface for new applications.
- Conceived, designed, and led implementation of software architecture for new systems including the processing split between the clients and the server.
- Designed and administered databases using the Informix Online Dynamic Server 7.1.
- Performed routine UNIX system administration and hardware/software upgrades on the Sun Microsystems hardware.
- Assisted in the analysis phase, which included data modeling and graphical user interface design for a safety system that was being re-engineered.
- Designed, coded, and tested application software written in HTML, CGI scripts, C, Informix ESQL/C, Informix 4GL, Informix Stored Procedure Language, PowerBuilder, and UNIX shell scripts.
- Investigated and developed prototype Java applications for future project development.
- Led development team in software engineering principles.

The Chubb Institute, Parsippany, NJ   **December 1995 – February 1997**
Client/Server Curriculum Instructor - Evenings
- Instructor for Sybase, UNIX, and C courses in the Client/Server curriculum.
- Developed 250-page student guide for Sybase class.

AT&T, Whippany, NJ   **July 1992 – January 1995**
Software Developer, Environment and Safety Systems Development Group
- Designed, coded, and tested application software in C, Informix ESQL/C, Informix 4GL, and UNIX Korn shell scripts.
- Conceived, proposed, and led migration of applications from Amdahl mainframe to a Sun Microsystems SPARCserver 1000 for a significant cost savings and performance improvement.
- Configured, assembled, and cutover to Sun 1000 running the Solaris 2.4 UNIX System V Release 4 operating system.
- Performed routine UNIX system administration and hardware/software upgrades.

AT&T, Newark, NJ   **July 1990 – June 1992**
Support Engineer, Northeastern Regional Technical Assistance Center
- Provided 24-hour support of 5ESS Digital Switching System to NYNEX, Southern New England Telephone, Rochester Telephone, and AT&T Installation. Worked to provide customer approved solutions. Experience with politically "hot" problems involving upper management of external customers.
- Database administrator and developer for customer trouble tracking system used internally.

EDUCATION

- **Master of Science in Computer Science**, Stevens Institute of Technology, Hoboken, NJ, May 1994.
- **Bachelor of Science in Electrical Engineering**, Lehigh University, Bethlehem, PA, June 1990.

AFFILIATIONS

- Member - Institute of Electrical and Electronic Engineers (IEEE)
- Eta Kappa Nu - Electrical Engineering Honor Society
- Tau Beta Pi - Engineering Honor Society
- Phi Eta Sigma - Freshman Honor Society

REFERENCES

- Available upon request