JWAVE™ 3.5
Web-based Visual Data Analysis

JWAVE™ is the PV-WAVE® Web Development Environment for network-based visual data analysis applications. With JWAVE's multiple graphics and visualization techniques, users can rapidly analyze, visualize and share critical information across the organization, regardless of the computer platform.

How JWAVE Works

JWAVE is based on a multi-tiered architecture that enables developers to easily create applications that embrace open standards. Whether developing applications using the Java programming language or HTML and Java Server Pages, JWAVE lets users perform numerical analysis and visual interpretation of large, complex data-sets.

JWAVE SERVER

The JWAVE server is a high performance engine that provides all of the computational and visualization strength for JWAVE applications. It can be used as a centralized repository for updating and maintaining applications, as a storage facility for all application logic and to handle very large data-sets. The JWAVE server provides the flexibility developers need to integrate easily with their existing network. From the simplest CGI connection to the most sophisticated J2EE environment, the JWAVE server will integrate quickly and easily.

JWAVE CLIENT DEVELOPMENT KIT

The JWAVE Client Development Kit is an extensive set of predefined JavaBeans, Java classes and Java applets for developing client-side interfaces. JWAVE incorporates advanced graphics features that greatly expand the client-side interaction. Among these features is the ability to zoom in or zoom out of a chart, profile a row or column across an image, select a point on a chart, and interactively rotate a 3D chart.

ENHANCED WITH THE POWER OF PV-WAVE

PV-WAVE is the array-oriented scripting language used to develop the analysis and visualization functions of a JWAVE application. PV-WAVE provides a powerful combination of functions and language features that support the rapid development of networked applications. PV-WAVE supplies a full suite of graphical functions and a comprehensive set of analysis routines using the industry-standard IMSL™ Numerical Libraries.

USING JWAVE WITH CGI
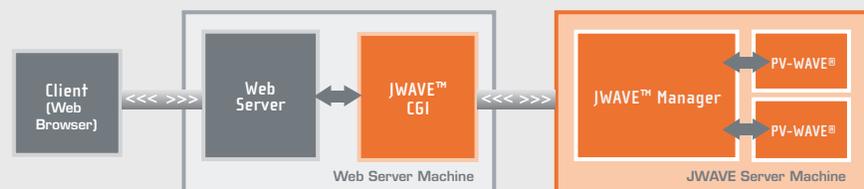
Open Architecture Supports Multiple Standards

OPEN SYSTEMS ARCHITECTURE

- Hardware and software interoperability
- Leverages existing technology investments
- Open and extensible framework
- Scalable and available applications

JWAVE™

FLEXIBLE ARCHITECTURE
- Integrates with most enterprise information architectures
- Supports applets and servlets
- Scales from small applications with just a few users to large applications with hundreds of users

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SUPPORT FOR JAVA SERVER PAGES (JSP)
- Little or no Java development is required
- The client does not require a Java Virtual Machine (JVM)
- Multiple plots can be generated and displayed in a single web page

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USER INTERACTION
- Zoom in and out of any chart
- Create rollovers for quick access to information
- Row or column profiling across an image
- Select an individual point or group of points on a chart
- Interactively rotate a 3D chart or image

Visual Numerics®

MULTI-TIERED ARCHITECTURE

- Consists of the JWAVE Server, JWAVE Client Development Kit and PV-WAVE
- Includes predefined JavaBeans, Java classes and Java applets
- Allows easy development for client interface
- Enhanced by the strength of PV-WAVE
- Includes advanced data analysis and visualization tools
- Provides flexibility to configure and deploy applications across enterprise

USING JWAVE WITH JAVA SERVER PAGES
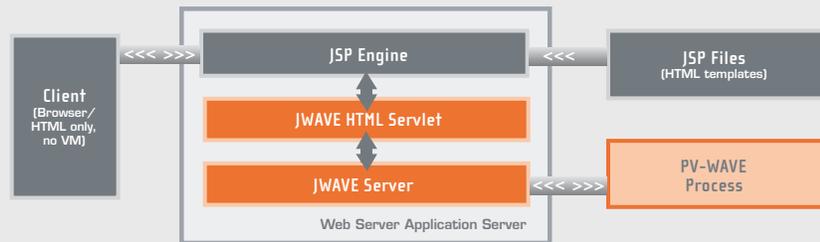
Advanced Visualization, Graphics and Numerics

SOPHISTICATED VISUALIZATION

With JWAVE's multiple graphics and visualization techniques, users can quickly create 3-D surfaces, X-Y plots, polar plots, animations, contours, bar charts, histograms and more. Once generated, these charts are streamed to the browser for instantaneous analysis and examination. JWAVE's powerful image processing and display routines enable users to smooth, sharpen, filter and fine-tune images.

POWERFUL GRAPHICS ENHANCED WITH PV-WAVE

JWAVE's graphics components can easily create data visualization applications written in Java. Data and graphics commands are sent to the JWAVE server from a Java client or Java Server Page. PV-WAVE then generates a graphics file that is returned to the Java applet or servlet and displayed. JWAVE also includes JWAVE Beans for producing the following graphics: X/Y plots, histograms, contour plots, surfaces, shaded surfaces and pie charts.

If these plot components do not suit your needs, design your own. The Java source code and PV-WAVE procedures for the Visual Numerics' components are available to copy and use as a template for creating new, custom plot components.

ADVANCED NUMERICS ACCESSED FROM THE IMSL NUMERICAL LIBRARIES

JWAVE's numerics components, accessed from the IMSL Numerical Libraries, send commands and data from a browser to the JWAVE server. Results are then returned to the client. Users can transfer any number of variables of any data type between PV-WAVE and the Java applet or servlet. With JWAVE, users can access existing PV-WAVE code and perform all of the operations normally performed with PV-WAVE.

Expert Professional Services

Augment development productivity by utilizing Visual Numerics' Professional Services team to help find the best solution to any problem and deliver the support needed to ensure continued success. The highly skilled technical experts in Visual Numerics' Professional Services organization collaborate with customers to identify specific application requirements at the initial phase of every project. Visual Numerics consultants provide all levels of support from custom algorithm development to simply helping customers better understand their analysis and visualization needs. Customers can rely on Visual Numerics technical expertise and dedicated, hands-on help to achieve the highest return on investment.