



## NETSCAPE AND SUN ANNOUNCE JAVASCRIPT, THE OPEN, CROSS-PLATFORM OBJECT SCRIPTING LANGUAGE FOR ENTERPRISE NETWORKS AND THE INTERNET

### 28 INDUSTRY-LEADING COMPANIES TO ENDORSE JAVASCRIPT AS A COMPLEMENT TO JAVA FOR EASY ONLINE APPLICATION DEVELOPMENT

MOUNTAIN VIEW, Calif. (December 4, 1995) – Netscape Communications Corporation (NASDAQ: NSCP) and Sun Microsystems, Inc. (NASDAQ:SUNW), today announced JavaScript, an open, cross-platform object scripting language for the creation and customization of applications on enterprise networks and the Internet. The JavaScript language complements Java, Sun's industry-leading object-oriented, cross-platform programming language. The initial version of JavaScript is available now as part of the beta version of Netscape Navigator 2.0, which is currently available for downloading from Netscape's web site.

In addition, 28 industry-leading companies, including America Online, Inc., Apple Computer, Inc., Architext Software, Attachmate Corporation, AT&T, Borland International, Brio Technology, Inc., Computer Associates, Inc., Digital Equipment Corporation, Hewlett-Packard Company, Iconovex Corporation, Illustra Information Technologies, Inc., Informix Software, Inc., Intuit, Inc., Macromedia, Metrowerks, Inc., Novell, Inc., Oracle Corporation, Paper Software, Inc., Precept Software, Inc., RAD Technologies, Inc., The Santa Cruz Operation, Inc., Silicon Graphics, Inc., Spider Technologies, Sybase, Inc., Toshiba Corporation, Verity, Inc., and Vermeer Technologies, Inc., have endorsed JavaScript as an open standard object scripting language and intend to provide it in future products. The draft specification of JavaScript, as well as the final draft specification of Java, is planned for publishing and submission to appropriate standards bodies for industry review and comment this month.

JavaScript is an easy-to-use object scripting language designed for creating live online applications that link together objects and resources on both clients and servers. While Java is used by programmers to create new objects and applets, JavaScript is designed for use by HTML page authors and enterprise application developers to dynamically script the behavior of objects running on either the client or the server. JavaScript is analogous to Visual Basic in that it can be used by people with little or no programming experience to quickly construct complex applications. JavaScript's design represents the next generation of software designed specifically for the Internet and is:

- designed for creating network-centric applications
- complementary to and integrated with Java
- complementary to and integrated with HTML
- open and cross-platform.

Java, developed by Sun, is an object-oriented programming language that operates independent of any operating system or microprocessor. Java programs called applets can be transmitted over a network and run on any client, providing the multimedia richness of a CD-ROM over corporate networks and the Internet. Java has been widely hailed by programmers because it eliminates the need to port applications, and by managers of information systems for its potential to lower the costs of distributing and maintaining applications across the network.

With JavaScript, an HTML page might contain an intelligent form that performs loan payment or currency exchange calculations right on the client in response to user input. A multimedia weather forecast applet written in Java can be scripted by JavaScript to display appropriate images and sounds based on the current weather readings in a region. A server-side JavaScript script might pull data out of a relational database and format it in HTML on the fly. A page might contain JavaScript scripts that run on both the client and the server. On the server, the scripts might dynamically compose and

format HTML content based on user preferences stored in a relational database, and on the client, the scripts would glue together an assortment of Java applets and HTML form elements into a live interactive user interface for specifying a net-wide search for information.

Java programs and JavaScript scripts are designed to run on both clients and servers, with JavaScript scripts used to modify the properties and behavior of Java objects, so the range of live online applications that dynamically present information to and interact with users over enterprise networks or the Internet is virtually unlimited. Netscape will support Java and JavaScript in client and server products as well as programming tools and applications to make this vision a reality.

"Programmers have been overwhelmingly enthusiastic about Java because it was designed from the ground up for the Internet. JavaScript is a natural fit, since it's also designed for the Internet and Unicode-based worldwide use," said Bill Joy, co-founder and vice president of research at Sun. "JavaScript will be the most effective method to connect HTML-based content to Java applets."

Netscape's authoring and application development tools -- Netscape Navigator Gold 2.0, Netscape LiveWire and Netscape LiveWire Pro -- are designed for rapid development and deployment of JavaScript applications. Netscape Navigator Gold 2.0 enables developers to create and edit JavaScript scripts, while Netscape LiveWire enables JavaScript programs to be installed, run and managed on Netscape servers, both within the enterprise and across the Internet. Netscape LiveWire Pro adds support for JavaScript connectivity to high-performance relational databases from Illustra, Informix, Microsoft, Oracle and Sybase. Java and JavaScript support are being built into all Netscape products to provide a unified, front-to-back, client/server/tool environment for building and deploying live online applications.

Java is available to developers free of charge. The Java Compiler and Java Developer's Kit as well as the HotJava browser and related documentation are available from Sun's web site at <http://java.sun.com>. In addition, the Java source code can be licensed for a fee. Details on licensing are also available via the [java.sun.com](http://java.sun.com) web page. To date, Sun has licensed Java to a number of leading technology companies, including Borland, Macromedia, Mitsubishi, Netscape, Oracle, Silicon Graphics, Spyglass, and Toshiba. Sun's Workshop for Java toolkit is scheduled for release in Spring 1996. Sun's NEO product family, the first complete development, operating and management environment for object-oriented networked applications, will also use Java-enabled browsers as front-ends to the NEO environment.

Netscape and Sun plan to propose JavaScript to the W3 Consortium (W3C) and the Internet Engineering Task Force (IETF) as an open Internet scripting language standard. JavaScript will be an open, freely licensed proposed standard available to the entire Internet community. Existing Sun Java licensees will receive a license to JavaScript. In addition, Sun and Netscape intend to make a source code reference implementation of JavaScript available for royalty-free licensing, further encouraging its adoption as a standard in a wide variety of products.

Netscape Communications Corporation is a premier provider of open software for linking people and information over enterprise networks and the Internet. The company offers a full line of Netscape Navigator clients, Netscape servers, development tools and Netscape Internet Applications to create a complete platform for next-generation, live online applications. Traded on Nasdaq under the symbol "NSCP", Netscape Communications Corporation is based in Mountain View, California.

With annual revenues of \$6 billion, Sun Microsystems, Inc. provides solutions that enable customers to build and maintain open network computing environments. Widely recognized as a proponent of open standards, the company is involved in the design, manufacture and sale of products, technologies and services for commercial and technical computing. Sun's SPARC(TM) workstations, multiprocessing servers, SPARC microprocessors, Solaris operating software and ISO-certified service organization each rank No. 1 in the UNIX(R) industry. Founded in 1982, Sun is headquartered in Mountain View, Calif., and employs more than 14,000 people worldwide.

Additional information on Netscape Communications Corporation is available on the Internet at , by sending email to [info@netscape.com](mailto:info@netscape.com) or by calling 415-528-2555. Additional information on Sun Microsystems is available on the Internet at <http://www.sun.com> or, for Java information, <http://java.sun.com> Netscape Communications, the Netscape Communications logo, Netscape, and Netscape Navigator are trademarks of Netscape Communications Corporation. JavaScript and Java are trademarks of Sun Microsystems, Inc. All other product names are trademarks of their respective companies.

#### WHAT COMPANIES SAY ABOUT JAVASCRIPT

"JavaScript brings the power of rapid multimedia application development with cross-platform mobility at both the operating system and architecture level. We are pleased to integrate this powerful language into our Developer's Program."  
Mike Connors

President  
America Online Technologies

"JavaScript will allow us to easily create personalized applets for the Excite service. These applets, combined with the rich functionality of the Excite service, will integrate more fully into the users experience as they explore and navigate the Internet."

Graham Spencer  
Chief Technology Officer  
Architext Software

"AT&T's support for JavaScript is more than support for cool technology -- it is support for an open standards process. Open standards are and will be as important to the success of the Internet as open connectivity."

Tom Evslin  
Vice President, Gateway Services  
AT&T

"JavaScript and Java represent important steps in the evolution of the Internet and Intranets for business computing. JavaScript allows Internet applications to easily connect to production databases such as CA-OpenIngres, while Java allows easy-to-use, multi-platform Web clients for CA-Unicenter and business applications such as CA-Masterpiece, CA-ManMan/X and CA-Accpac."

Nancy Li  
Executive Vice President and CTO  
Computer Associates

"Tools like JavaScript will unleash a new wave of creativity and transform the Internet in ways no one can predict. JavaScript and other developments will demand increased system performance, ideally met by Digital's Alpha systems architecture."

Rose Ann Giordano  
Vice President, Internet Business Group  
Digital Equipment Corporation

"JavaScript is an exciting technology because it represents the next generation of software designed specifically for the Internet. Hewlett-Packard is committed to open standards and is a supporter of JavaScript because it complements Hewlett-Packard's open systems architecture."

Jan Silverman  
Director  
Hewlett-Packard

"We plan to integrate our automatic document indexing and abstracting technology to leverage the power and functionality of JavaScript. The power and use of our technologies greatly enhances the server and its delivery of timely and valuable documents for web clients."

Robert Griggs  
Vice President, Sales and Marketing  
Iconovex Corporation

"JavaScript empowers developers to create a powerful new class of multimedia rich applications in a platform-independent development environment. Illustra's unique extensible Object-Relational architecture makes it an ideal intelligent queryable store for content management applications using Java and JavaScript objects."

Dr. Michael Stonebraker  
Founder and Chief Technology Officer  
Illustra Information Technologies

"JavaScript will benefit users by enabling live online applications. These applications need a powerful database engine for content management. Informix's OnLine Dynamic Server is uniquely suited for these applications. By partnering with Netscape, we are bringing the best in online database and live, interactive technology to web users."

Phil White  
Chairman and CEO  
Informix Software

"Intuit will take advantage of JavaScript and Netscape's authoring and application development tools to create compelling

online financial services. Netscape's open, cross-platform environment allows Intuit to efficiently develop and deploy online applications."

Bill Harris  
Executive Vice President  
Intuit

"JavaScript is a great way to get cross-platform scriptable access to databases and move the resulting data into Macromedia Shockwave, where it can be rendered, animated and made into live interactive multimedia for the Internet. JavaScript is also a promising core technology for the new multimedia publishing tool that Macromedia is building."

Bud Colligan  
President and CEO  
Macromedia

"The creation of a general, standard scripting language for Java development will accelerate adoption of this new, exciting technology for delivering dynamic, live content to the consumer. Metrowerks will support JavaScript as part of our effort to deliver tools for Java as the programming platform of choice for new Internet development."

Greg Galanos  
President and CEO  
Metrowerks, Inc.

"Paper Software plans to use JavaScript as the glue which lets our development partners couple Java, plug-ins, and Paper's multi-dimensional VRML user interfaces within a distributed, online application."

Mike McCue  
Chief Executive Officer  
Paper Software

"JavaScript is a perfect complement to the software Precept is developing to let the Internet and corporate Intranets effectively handle real-time multimedia traffic. By serving as a means to integrate our products into web solutions, JavaScript will enable a wide range of web-based software to take advantage of real-time audio and video."

Judy Estrin

Precept Software

"SCO looks forward to supporting the JavaScript language on both our OpenServer and UnixWare product lines. JavaScript will enable developers to create substantially more stimulating and interactive web-based applications than ever before, giving them the edge they need to compete for the attention of the increasingly sophisticated population of Internet users."

Richard Treadway  
Vice President, Layered Products  
SCO

"JavaScript is an exact match for Silicon Graphics suite of content creation and application development tools. This combination will benefit the industry by enabling the development of a richer set of interactive applications."

Tom Jermoluk  
President and COO  
Silicon Graphics

"Spider will integrate open and emerging Internet standards such as JavaScript into our product offering. Spider is committed to providing the most advanced solution for visual development and high performance deployment of commercial Web/database applications."

Zack Rinat  
President and CEO  
Spider Technologies

"The Java and JavaScript languages will serve an important role in allowing Internet applications to take advantage of enterprise client/server computing. Sybase will enable our customers to utilize these languages as one of several ways to provide Internet access to the entire Sybase architecture in a high performance, customer-centric, safe environment."

Mitchell Kertzman  
Executive Vice President and CEO  
Sybase's Powersoft Division

"Java is tremendously interesting to Verity as a powerful tool to provide dynamic display capabilities and client-side manipulation of results from our Search and Agent platforms. Configurability is a key strength of Verity servers, and the availability of JavaScript provides an ideal tool for non-programmers to harness the power of Java objects to customize the look and feel of their Verity applications."

Steve Zocchi  
 Director, Internet Marketing  
 Verity

"The client-server, multi-vendor, cross-platform nature of JavaScript is a natural fit with the Vermeer FrontPage web authoring system. Tracking innovative, enabling Web technologies is an important priority for Vermeer, and we are moving quickly to incorporate the JavaScript language into Front Page and future products."

John R. Mandle  
 Chief Executive Officer  
 Vermeer Technologies

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