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JAVAOS™: THE STANDALONE JAVA™ APPLICATION PLATFORM

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JavaOS™ 1.0 Ships to Licensees!

The JavaOS operating system, a small and efficient operating system that executes Java applications directly on hardware platforms, has been released to Sun's JavaOS licensees. A dynamically extensible operating system, JavaOS brings the design advantages of the Java program language platform to an operating system. As perhaps the smallest and fastest OS that runs Java, JavaOS enables the Java platform on a broad range of devices.

JavaOS for SPARC, x86, and StrongARM are available for licensing directly from Sun Microsystems.

About JavaOS

JavaOS™ provides organizations of all sizes with a small and efficient standalone Java application platform. Designed for affordable Java intranet, Internet, and embedded devices, JavaOS substantially reduces client system administration while enabling users to log-in anywhere on the network and still use their familiar workspaces.

JavaOS also provides the capability to customize the interfaces and feature sets of the HotJava™ and HotJava Views™ environments, and customize the features of each to meet specific enterprise requirements. Users can run popular applications designed for JavaOS on a wide variety of other computing platforms.

Simplifying Complexity: The JavaOS Advantage

Today's real-world computing environments consist of many different and often incompatible hardware systems, operating systems and product versions running on client/server networks. As a result, MIS professionals face daunting obstacles in deploying, updating and maintaining applications on all the clients and servers across their enterprises.

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JavaOS has been designed to help overcome these obstacles. Integrated networking support eliminates the need for client administration, freeing individual users from having to back up their own data or manage new software updates. The most current versions of JavaOS and its associated applications are always available, since it is continually updated on the servers. In addition, JavaOS has been licensed by many leading hardware and software companies and is being ported to a range of enterprise and consumer products, providing users with an array of choices.

Layered Architecture Provides Flexibility and Ease of Use

JavaOS employs a layered architecture, whereby each layer can be independently updated. The JavaOS architecture consists of a microkernel and memory manager, device drivers, the Java Virtual Machine, the JavaOS Graphics and JavaOS Windowing systems, networking classes and support for the full Java application programmer's interface (API). Applications written for JavaOS can also run using Java-enabled browsers and operating systems.

The Benefits Tell the Story

Tuned Java Performance. JavaOS has been designed specifically to support Java and Java applets without having to provide backward compatibility with other legacy applications. This approach improves performance by eliminating needless layers of software and enabling the operating system to run in minimal memory configurations.

Portability. As an open, extensible and broadly licensed platform, JavaOS enables users to run the same applications across many different hardware platforms, including the x86, SPARC™ and ARM microprocessor architectures. And because JavaOS device drivers are written in Java, they can easily be ported or dynamically extended.

Simultaneous Operations. JavaOS supports the Java language's multi-threaded capabilities and tailored memory management, enabling it to run multiple threads at the same time so that users can download networked information while also running Java applications.

Flexible Network Centricity. JavaOS paves the way for low-cost, minimal-memory Java products that can be booted from ROM, over a network, or from hard disks. Network computers can boot JavaOS and download it into memory from a server, while handheld products can embed JavaOS into ROM for instant-on capabilities.

The JavaOS Layered Architecture

The JavaOS layered architecture is divided into platform-specific and platform-independent code. The former, which is compiled to the native code, consists of the kernel and the Java Virtual Machine. The platform-independent portion of JavaOS - written in Java - contains the JavaOS Window and Graphics systems, JavaOS Device Drivers

and the JavaOS Network Classes

The JavaOS Microkernel supports booting, interrupt handling, multiple threads, traps and DMA handling, enabling users to run multiple applets at the same time or download information while running a Java application.

The JavaOS Virtual Machine supports the Java bytecode interpreter loop, execution handling, memory management, threads, class loading, and a bytecode verifier. JavaOS extends the memory model to optimize memory usage and accommodate low-memory conditions.

JavaOS Device Drivers are written in Java and are portable and extensible.

Network Classes in JavaOS, also written in Java, include industry-standard networking protocols such as TCP/IP, UDP and ICMP for basic transport and routing. Both DNS and NIS are used for looking up host names and supplying user names and passwords during log-in. JavaOS supports bothReverse ARP and DHCP for discovering network addresses and eliminating client administration. And JavaOS enabled clients can access files on an NFS server and be managed using SNMP.

The JavaOS Window System manages all drawing to the screen, implements user interface components - such as buttons, menus and scrollbars - and handles management of overlapping windows.

The JavaOS Graphics System supports all common graphic calls, including draw, fill, lines, arcs and polygons and font rendering. Both the graphics and window subsystems are crafted to support Java's Abstract Windowing Toolkit (AWT) in a memory-efficient way.

Java Application Environment (JAE) Support enables the same applets and applications to run on other servers or platforms running the Java Virtual Machine.

HotJava™ and HotJava Views™ Support enables these highly intuitive and easy-to-use Java environments to run on top of JavaOS, facilitatingand enhancing the overall experience of NC users.

Hardware Support Specifications

JavaOS has been ported to several different processor architectures. A complete network computer implementation - including the HotJava browser, class libraries and over a megabyte of fonts - requires 4MB of disk space or ROM, and 4MB of memory. JavaOS and HotJava use less than 2.5MB of RAM, leaving more than 1.5MB to handle the caching of pages, images or client applications.

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(888) 843-5282 (North America)
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