JAVA™ 2 PLATFORM, MICRO EDITION

THE MARKET NEED

In the post-PC era, the market for network-connected devices continues to grow at an enormous rate. While new classes of devices like smart cellular telephones, pagers, and PDAs proliferate, traditional consumer electronics including televisions, VCRs, CD players, and game machines are also becoming smarter and gaining new capabilities. Whether these devices are new or just more powerful versions of existing products, all are becoming increasingly interconnected across a network.

In the six years since Sun's introduction of the Java™ platform, Java technology has become an essential component for getting work done on the network. With the advent of PersonalJava™, EmbeddedJava™, and other Java technologies, the benefits of the Java platform are being extended to screen phones, set-top boxes, and even deeply-embedded devices. In order to provide compelling Java technology solutions for manufacturers building devices across the spectrum from palmtops to desktops, Sun introduced Java™ 2 Platform, Micro Edition (J2ME™) software.
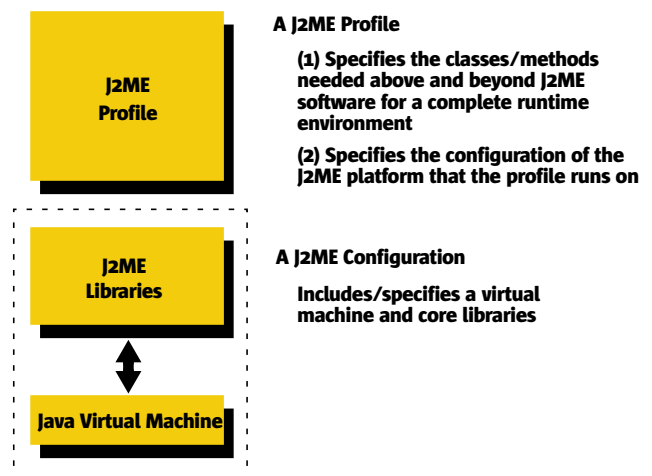
THE JAVA 2 PLATFORM, MICRO EDITION SOLUTION

J2ME is a new, very small Java application environment. It is a framework for the deployment and use of Java technology in the post-PC world. Sun will provide J2ME software in configurations suitable for a variety of market segments.

CONFIGURATION

A configuration is comprised of a virtual machine, core libraries, classes and APIs. Currently, there are two J2ME configurations: the Connected Limited Device Configuration (CLDC) and the Connected Device Configuration (CDC).

CLDC is designed for devices with constrained CPU and memory resources. Typically, these devices run on either a 16- or 32-bit CPU and have 512 Kbytes or less memory available for the Java platform and applications.

J2ME Profile

J2ME Libraries

Java Virtual Machine

A J2ME Profile

(1) Specifies the classes/methods needed above and beyond J2ME software for a complete runtime environment

(2) Specifies the configuration of the J2ME platform that the profile runs on

A J2ME Configuration

Includes/specifies a virtual machine and core libraries

HIGHLIGHTS

- Provides Java technology solutions for building devices across the spectrum – palmtops to desktops

- Simple for consumers to use, programmers to develop to, and service providers to deploy

- Delivers the foundation for intelligent and dynamic networked content

- Offers a technology framework focused on any device utilizing it

- Provides the networked consumer with a technology framework that crosses the device spectrum

- Enables anytime, anywhere deployment of services

CDC is designed for next-generation devices with more robust resources. Typically, these devices run on a 32-bit CPU and have 2 Mbytes or more memory available for the Java platform and applications.

Built into this core platform is the capability to receive not just application code, but libraries that form part of the Java 2 platform, itself. This enables a J2ME environment to be dynamically configured to provide the environment that the consumer needs to run an application, regardless of whether all the Java technology-based libraries necessary to run the application were present on the device when it shipped. Configuration is performed by server software running on the network. The network architecture and configurability of J2ME software, combined with Java technology's inherent ease of development, simplifies the creation and deployment of intelligent, dynamic Java content.

PROFILE
To further enhance the value of the J2ME environment and assure its ability to provide a focused solution to particular device categories and industries, Sun allows industry groups to define Java technology-based profiles specific to their industry. These profiles are specifications that define a Java technology-based platform suited to a specific industry or class of device. Industries benefit from the extensive flexibility in defining only what they need for a class of device.

A profile targeted at the wireless market and utilizing CLDC can retain a very small footprint, consume little power, and provide as much capability as is needed for handheld devices.

Devices that require more capable environments can receive profiles that provide additional functionality and are based on CDC. All profiles share a J2ME base as well as the ability to safely download code onto a device and configure the Java environment.

Profiles are defined through the Java Community Process[SM], and may be initiated by industries without Sun's direct involvement. Tailored Java environments can be extended to diverse device types and industries not addressable by a single company or group of companies.

From PDAs to desktops, the reach of Java technology across the device spectrum and the simplicity of J2ME device-based deployment is key to Sun's strategy of enabling anytime, anywhere service deployment.

FOR MORE INFORMATION
To learn more about the Java 2 Platform, Micro Edition and other Java technologies, please visit:
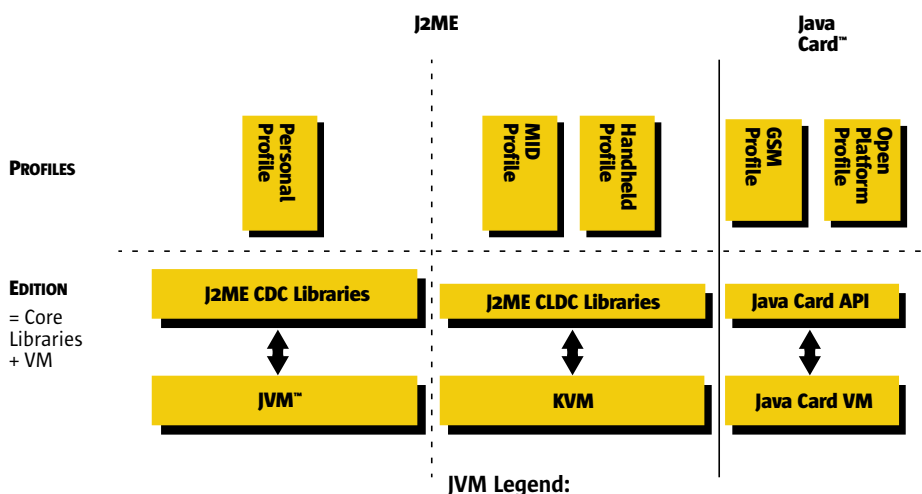
The Java 2 Platform, Micro Edition:
http://java.sun.com/j2me/

CLDC and the K virtual machine (KVM):
http://java.sun.com/products/cldc/

CDC and the C virtual machine (CVM):
http://java.sun.com/products/cdc/

PersonalJava:
http://java.sun.com/products/personaljava/

EmbeddedJava:
http://java.sun.com/products/embeddedjava/

The Java Community Process:
http://java.sun.com/aboutJava/communityprocess/
http://www.sun.com/communitysource/j2me/

.

.

PROFILES

EDITION
= Core Libraries + VM

J2ME

Personal Profile

MID Profile

Handheld Profile

Java Card™

GSM Profile

Open Platform Profile

J2ME CDC Libraries

J2ME CLDC Libraries

Java Card API

JVM™

KVM

Java Card VM

JVM Legend:
config1 = Connected Device Configuration (CDC)
config2 = Connected, Limited Device Configuration (CLDC)

Example J2ME Environment

Profiles Existing or Underway:
Personal Profile
Next-generation PersonalJava technology

Wireless Profile
Mobile Information Device (MID)

Other Profiles
Example profiles from industries participating in defining J2ME

Sun microsystems

We're the dot in .com™

SUN™