# Mobile Platforms and Java 2 Platform Micro Edition

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## Objective

- The Objective of this presentation is to introduce some mobile platforms and J2ME technology. After this presentation, you will know today's mobile platforms and what the J2ME platform is.

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## Agenda

- Motivation
- Mobile Platforms
- J2ME Platform
  - Configuration
  - Profile
  - Virtual Machine

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## Agenda for Final Presentation

- Project
- Technology Overview
- Motivation
- Problems
- Programming
- ?

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## Motivation

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- Mobile Platforms
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## Motivation

There are over
**One billion cell phone users**
worldwide.
They would like to use
your applications.

## Motivation

- Wireless Revolution
  - Growing number of wirelessly connected information appliances
    - But, how much?

## Motivation

- The Fact Sheets
  - Mobile phone makers are expected to sell 670 million handsets to distributors this year, up from around 530 million units in 2003 (IDC).
  - Worldwide PC unit shipments in 2003's 154.5 million units. IDC predicted shipments of 170 million units in 2004 (IDC).

## Mobile Platforms

- Motivation
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## Mobile Platforms

- OS Independent
  - JAVA
    - Sun Microsystems
    - J2ME : http://java.sun.com/j2me/
    - Supported by Nokia, Motorola, Samsung, SonyEricsson and 20+ companies
    - Supported devices : http://jal.sun.com/webapps/device/device

## Mobile Platforms

- OS Independent
  - C/C++
    - Qualcomm
    - Brew : http://brew.qualcomm.com/brew/en/
    - Supported by
      - Kyocera Wireless : http://www.kyocera-wireless.com/support/brew-developers.htm
      - Verizon Wireless : http://getitnow.vzwshop.com/
      - AU(KDDI) in Japan : http://www.au.kddi.com/

## Mobile Platforms

- OS Independent
  - Flash
    - Macromedia
    - Flash Lite
    - Supported devices : http://www.macromedia.com/mobile/supported_devices/flashlite/

## Mobile Platforms

- OS Dependent
  - C++
    **symbian**
    - Symbian : Seriese60, Seriese90, 9200Seriese, UIQ
      http://www.symbian.com/phones/index.html
    - Palm : Treo600
    - Windows Mobile : MPx220

## J2ME Platform

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## J2ME Platform

- Why J2ME and not other platforms?
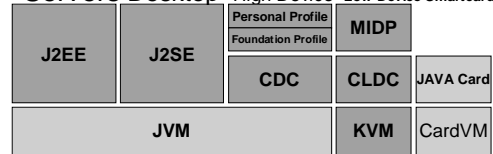  - Number of devices
  - Java based
  - End to end solution

## J2ME Platform

- Java 2 Platforms

Servers  Desktop  High Device  **Low Device** Smartcards

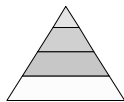| J2EE | J2SE | Personal Profile / Foundation Profile | **MIDP** | |
|---|---|---|---|---|
| | | CDC | CLDC | JAVA Card |
| JVM | | | KVM | CardVM |

**Java 2 Micro Edition**

## J2ME Platform

- J2ME consists of
  - Configuration
  - Profile
  - (Optional Package)
  Over the Virtual Machine

## J2ME Platform

- J2ME Platform Components

| MIDP | Additional libraries (GUI,Storage) |
| CLDC | Smallest common libraries |
| KVM | The execution engine |
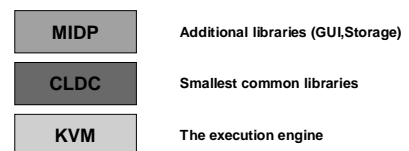
## J2ME Platform
### Virtual Machine

- Motivation
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  - Configuration
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## J2ME Platform
### Virtual Machine

- What is a KVM?
  - The KVM (also known as the K Virtual Machine) is a compact, portable Java virtual machine intended for small, resource constrained devices such as cellular phones, pagers, personal organizers, mobile Internet devices, point-of sale terminals, home appliances, or other embedded devices.

## J2ME Platform
### Configuration

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## J2ME Platform
### Configuration

- What is a J2ME Configuration?
  - A configuration defines the minimum Java technology that an application developer can expect on a broad range of implementing devices (CLDC, CDC)
  - Configurations are specified via the Java Community Process (JCP) initiative
  
  (Sun Microsystems)

## J2ME Platform
### Configuration

- Connected, Limited Device Configuration (CLDC)
  - Targeted at devices with:
    - 160KB to 512KB total memory available for Java technology
    - Limited power (battery), connectivity (often intermittent), UI (small screen)

## J2ME Platform
### Profile

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## J2ME Platform Profile

- What Is a J2ME Profile?
  - □ Java technology which supplements a configuration to provide capabilities for a specific vertical market or device type
  - □ Defined through Java Community Process initiative
  - □ Subject to compatibility tests
  - (Sun Microsystems)

## J2ME Platform Profile

- J2ME Profiles
  - □ J2ME Mobile Information Device Profile (MIDP)
    - Application runtime environment for wireless devices based upon CLDC
  - □ J2ME Foundation Profile
    - Base profile for non-GUI networked devices based upon CDC

Thank you.