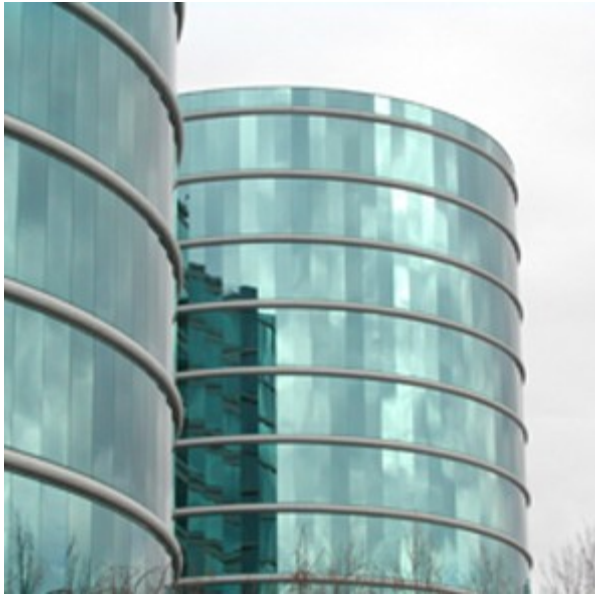


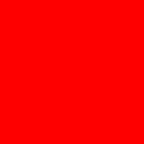
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# Java ME Evolution

Craig Gering  
Vice President Java Development  
7/26/10





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# Agenda

- Who's asking for what
- Java ME Today
- Java ME Evolution
  - Common updates to CLDC and CDC
  - CLDC Evolution
  - CDC Evolution
  - Expanding the Platform
- Q&A

# Developers Ask for...

- More re-use
  - Library code – common across client types and servers
  - Programming skills – no dumbing down for Java ME
  - Tool leverage – use the same tools for clients, servers
- Programming power – Java language features
- Access to phone/device features – sensors, events, etc.
- Robustness – reliable and predictable software, fewer differences between devices
- Provisioning – one stop certification, distribution, revenue model, ...

# OEMs Ask for...

- Low cost with good features
- Quick time to market
- Flexibility in implementing interfaces to OS functions
- Support for more platforms – not really a JCP issue

# Operators Ask for...

- Features that differentiate
  - Customization of look, feel, user experience
  - Security policy management of sensitive features
  - Branding of device, application store and applications
- Continued ROI in applications and infrastructure
- Service infrastructure
  - Operator services
  - Payment
  - Sync and backup
  - etc.

# Java ME Today

- CLDC Platform
  - Minimal Subset of JDK 1.4.2
  - Profiles - MIDP 2.1, MIDP 3.0
  - 18 Optional Packages
  - Platforms - MSA 1.1, MSA 2.0
  - MSA 2.0 update in progress since 2007
- CDC Platform
  - Subset of JDK 1.4.2
  - 3 Profiles, FP, PBP, PP
  - 6 Optional Packages (AGUI, JDBC, RMI, JAAS, JSSE, JCE)
  - Platforms defined by vertical markets (TV, Blu-Ray, etc.)
  - CDC/FP/... last updated August 2006



# Proposed Java ME Direction

- Phase I - Modernize ME platform
  - Adopt/Incorporate platform/language enhancements from jdk 1.5, 1.6
  - Preserve CLDC/CDC split, but drive for larger common ground between them
- Phase II - Expand ME Platform
  - Many requests for additional APIS/Capabilities, prioritize and include as part of platform, optional packages.
- Phases can be performed sequentially or in parallel

# Java ME Evolution (Phase I)

- Common updates to both CLDC and CDC
  - Java Language
  - Java Virtual Machine
  - Java Runtime Libraries
- No business disruption
  - Keep backward compatibility
  - Application ecosystem stability
- Optional Packages
  - Backwards compatible
  - May be updated to use Common Language, VM, Libraries

# Common Language Enhancements

- Compatible with the Java Language Specification
- JSR 14: Add Generic Types To The Java™ Programming Language,
- JSR 41: A Simple Assertion Facility\*
- JSR 175: Annotations, and
- JSR 201: Extending the Java™ Programming Language with Enumerations, Auto-boxing, Enhanced for loops and Static Import

\* CDC Supports full Annotations, CLDC supports a subset due to the absence of reflection

# Common VM Enhancements

- Compatible with the VM Specification
- JSR 133: Java™ Memory Model and Thread Specification Revision,
- JSR 202: Java™ Class File Specification Update
- JSR 292: Supporting Dynamically Typed Languages on the Java™ Platform

# Common Library Enhancements

- Update APIs already in CLDC to Java 6
- Updates to primitive type support
  - `java.lang.String` – extended to full Java 6 Strings
  - Math functions – Trig, `BigDecimal`, etc.
- NIO Buffers
- Create common specification for Generic Connection Framework (GCF)

# CLDC Evolution

- Common enhanced language, VM, and Libraries
- Retain equivalent level of functionality
  - Security model (same as CLDC 1.1.1)
  - No dynamic loading of classes
  - Generic Connection Framework for files, networking, etc.
  - No reflection
- Update MSA2 w/ CLDC.next

# CDC/FP Evolution

- Common enhanced language, VM, and Libraries
- Combine CDC and FP (No separate FP)
- Updates
  - Security,
  - Unicode,
  - JSR 51: New I/O APIs for the Java™ Platform,
  - Networking,
  - Logging

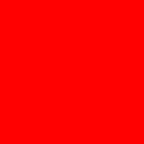
# Expanding the Platform (Phase II)

- Evaluate and Add capabilities in existing optional packages or define new where appropriate
- User Interface
  - Multi-touch, Gestures, Virtual keyboard control
- Persistent database support
- UPnP and DLNA integration with remote media
- Ajax, JSON support for Web 2.0
- Speech output
- Social Networking integration API
- Search (platform wide integration)
- Etc.



# Next Steps

- Feedback
- Timeframes
  - Target JSR in next 3 months



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