



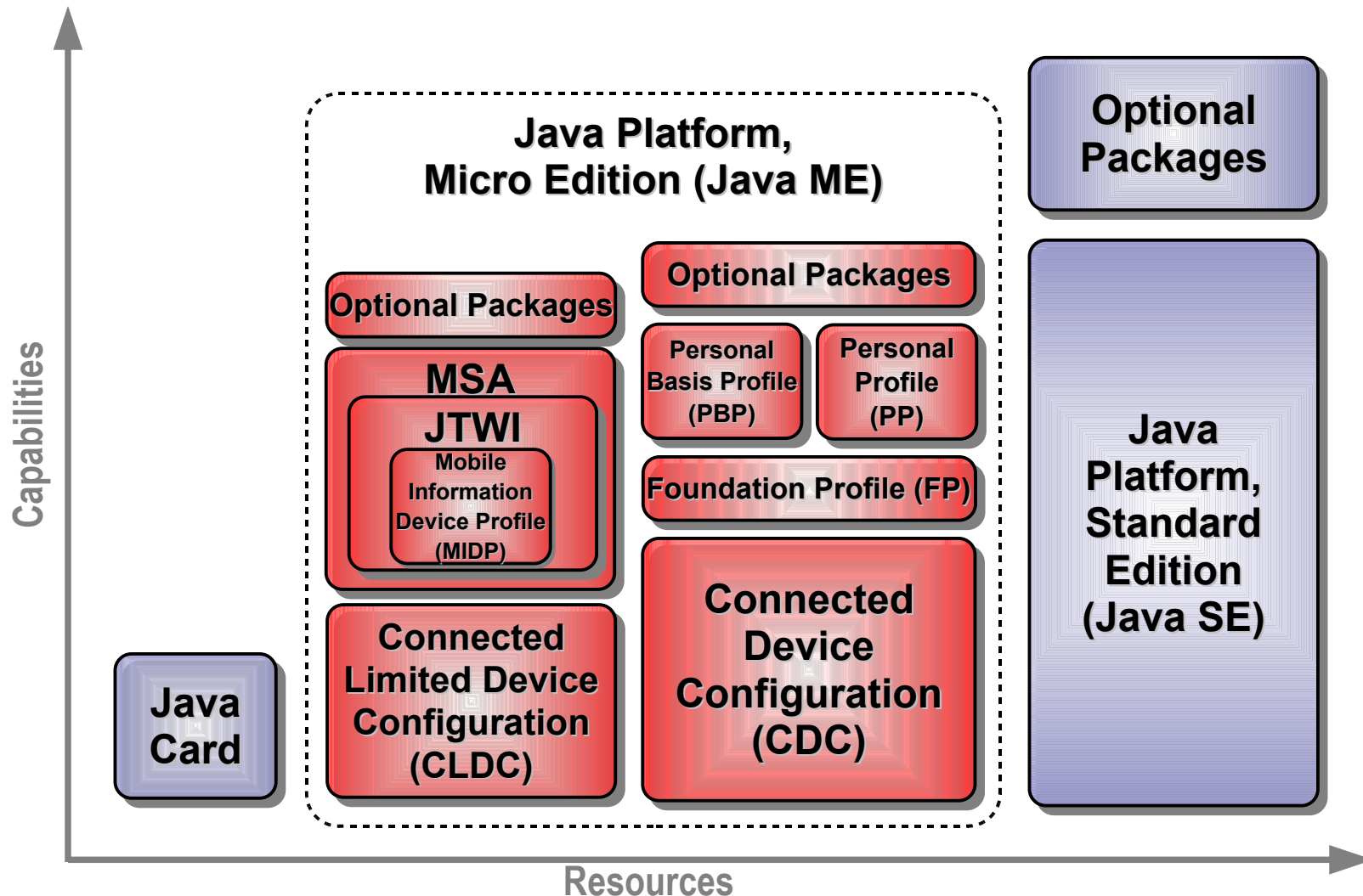
phoneME: High-performance, product-quality GPLv2 CDC + CLDC stacks

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Java Mobile & Embedded Community
Sun Microsystems



Platform Scalability and Evolution



Java Mobile & Embedded Community

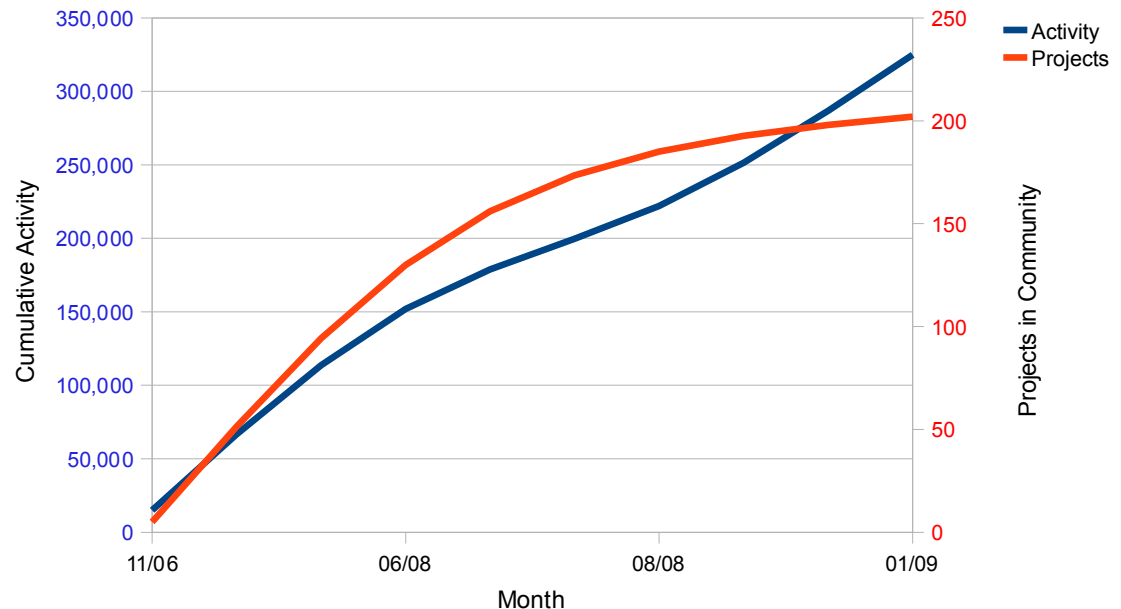
welcome
to the Mobile
& Embedded
Community



www.mobileandembedded.org

- Hub for blogs, industry news, and resources
- Exceeds 20,000 activities/month
- Home of phoneME, LWUIT, and 200 other community projects

Java Mobile & Embedded Community Growth



Vibrant community with deep mobile and embedded Java expertise

At a Glance


java.net
MEMBER

[java.net > Community >](#)


Mobile & Embedded Home

Community Resources

- Founding Principles
- Governance
- Vision
- Community Participation Handbook
- FAQs
- Blogs
- Podcasts
- TWikis
- Forums
- Community Stars
- Twitter

Projects

- Community Projects
- phoneME
- cqME
- ME Application Developers
- SunSPOTs
- openCable
- Incubator projects
- Request A Project

External Links

- Java Community Process
- Sun Developer Network
- Sun Mobile Partner Initiative
- Mobility Topics
- NetBeans Mobility Pack
- Java ME Products



welcome


Platforms


Applications


Testing

The Mobile & Embedded Community is a gathering place that enables and empowers developers to collaborate and innovate, driving the evolution and adoption of the Java(TM) Platform, Micro Edition (Java ME) for mobile and embedded devices. Here you can be a part of a robust culture of developers and technology experts and find people with similar interests and goals. For more information, see our [community vision](#).



Register now!
Mobile, Media, and eMbedded Developer Days



JavaFX 1.0 is here!



Lightweight UI Toolkit is now open source



Java on Windows Mobile

Features

Kick it, baby Java ME tweeter



The Java application receives the sensor values and analyzes them. When a kick event is detected, a Twitter message is posted via the Twitter API. I chose to use Twitter because it is easy to initiate an SMS message to any mobile phone when a kick is detected. It also acts as a data log that can be accessed programmatically for visualization or archiving.

—
(Dec 12, 2008)

Free Frosty! Free Frosty! Free Java ME on the iPhone too!

Steve J. is a grinch! There will be no Java ME technology or Flash on the iPhone this Christmas. Bah Humbug! — hinkmond

—
(Dec 11, 2008)



Community Log-In

User ID:
Password:
[Register](#) | [Login Help?](#)

Community Contacts

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Twitter Updates

- Mob_Em (Mobile and Embedded): Six weeks to M3DD. Read all about in the first of six newsletters. See <http://tinyurl.com/6pqyot>

- binkyscave (binkyscave): #Mob_Em Six Weeks to M3DD. Read all about in the first of six newsletters. See <http://tinyurl.com/6pqyot>

- Mob_Em (Mobile and Embedded): LWJIT half day tutorial announced.M3DD attendees can register at the same time. see <http://tinyurl.com/6rdrcq>

- Mob_Em (Mobile and Embedded): Contrarian Minds: Eric Arseneau - Go Small or Not at All. See <http://research.sun.com/minds/2008-1210/>

- Mob_Em (Mobile and Embedded): Java Mobility Podcast 63: Sprint Titan (JSR 232 OSGI) see


1.0

Lightweight UI Toolkit (LWUIT)

- Lightweight library bundled directly with the application
- Peerless widget set inspired by Swing
 - > Optimized for mobile and embedded
- Compelling UI, consistent across platforms
 - > CLDC 1.1/MIDP 2.0 or
 - > CDC/PBP or Java SE 1.4
- Minimal requirements, highly portable
 - > CLDC 1.1/MIDP 2.0 or
 - > CDC/PBP or Java SE 1.4
- GPLv2 + Classpath Exception
 - > Encourages wide adoption and commercial use



Overview of phoneME Project

- **The** OSS implementation of the Java™ ME platform
- Dual-licensed: GPLv2 and commercial license
- Hosted in subversion on java.net
 - > <https://phoneme.dev.java.net/source/browse/phoneme/>
- Actually two distinct stacks
 - > phoneME **Feature** (CLDC/MIDP stack)
 - > phoneME **Advanced** (CDC stack)
 - > Shared code for common JSRs and functionality
- *Not just for phones!*

phoneME Feature

- Highlights
 - > OSS version of commercial “Sun Java Wireless Client”
 - > Shipping on millions of mass-market feature phones
- Features
 - > Product-quality CLDC/MIDP stack
 - > High performance with hotspot compilation and many other optimizations
 - > Advanced MIDlet multitasking (isolates), advanced resource mgmt
 - > Modular, portable design
 - > MSA 248 ready (supports most MSA 248 JSRs)

phoneME Feature (2)

- Features cont'd
 - > ARM DBX (separate license) and RTC support
 - > Advanced on-device debugging and logging
 - > ROMization
 - > AOT support – precompilation of Java classes
 - > Advanced performance for start-up and interactive use
 - > Multitude of configuration options
 - > Extensive documentation
- Base for JavaFX Mobile

phoneME Feature (3)

- Specs
 - > Target platforms
 - > Linux/ARM (OMAP 3), Windows/x86, Linux/x86
 - > Minimal OS requirements (single native thread)
 - > Runs well on 40+ MHz CPU, < 1 MB RAM (2 – 4 MB typ.)
- Used in
 - > Emulator core (CLDC) of the Java ME SDK
 - > midPath: A desktop MIDP emulation
 - > Common code and libraries used in SunSPOT & Squawk
 - > Sony PlayStation Portable PSP port
 - > Embedded Java applications

phoneME Advanced

- Highlights
 - > OSS stack for advanced phones and consumer devices
 - > Shipping in commercial products
- Features
 - > Product-quality CDC/FP/PBP/PP stack, Java SE 1.4.2-compliant
 - > High performance with hotspot compilation and other optimizations
 - > Multi-VM support, advanced application management
 - > Dual-stack support (“MIDP-on-CDC”), API hiding
 - > Supports OSGi

phoneME Advanced (2)

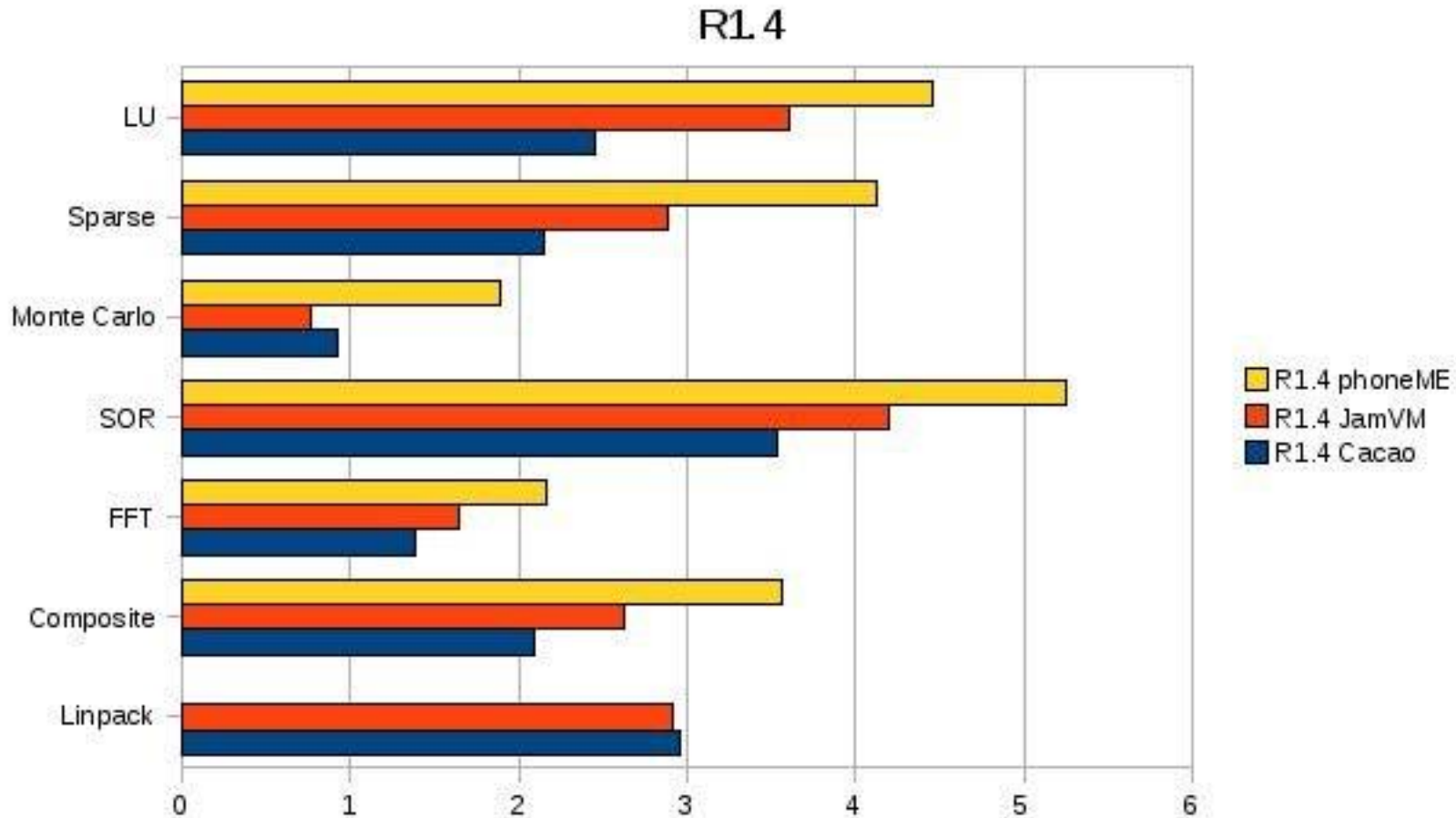
- Features cont'd
 - > JSR 75 (PIM), JSR 82 (Bluetooth), JSR 205 (WMA), JSR 135 (MMAPI), JSR 172 (Web Services), JSR 226 (SVG)
 - > JVMTI - debugging and profiling
 - > Growable/shrinkable Java heap
 - > ROMization
 - > AOT support – precompilation of Java classes
 - > VM inspector – navigate and inspect VM data structures
 - > Extensive documentation
- Base for JavaFX Mobile

phoneME Advanced (3)

- Specs
 - > Target platforms
 - > Linux/ARM, Windows/x86, Linux/x86, Windows Mobile 5.0/6.0 in beta
 - > Requires OS with process and address space support
 - > Runs well on 200 MHz CPU, > 2 MB RAM (4 – 16 MB typ.)

phoneME Advanced (4)

High performance, small footprint



See <http://community.buglabs.net/kschultz/posts/>

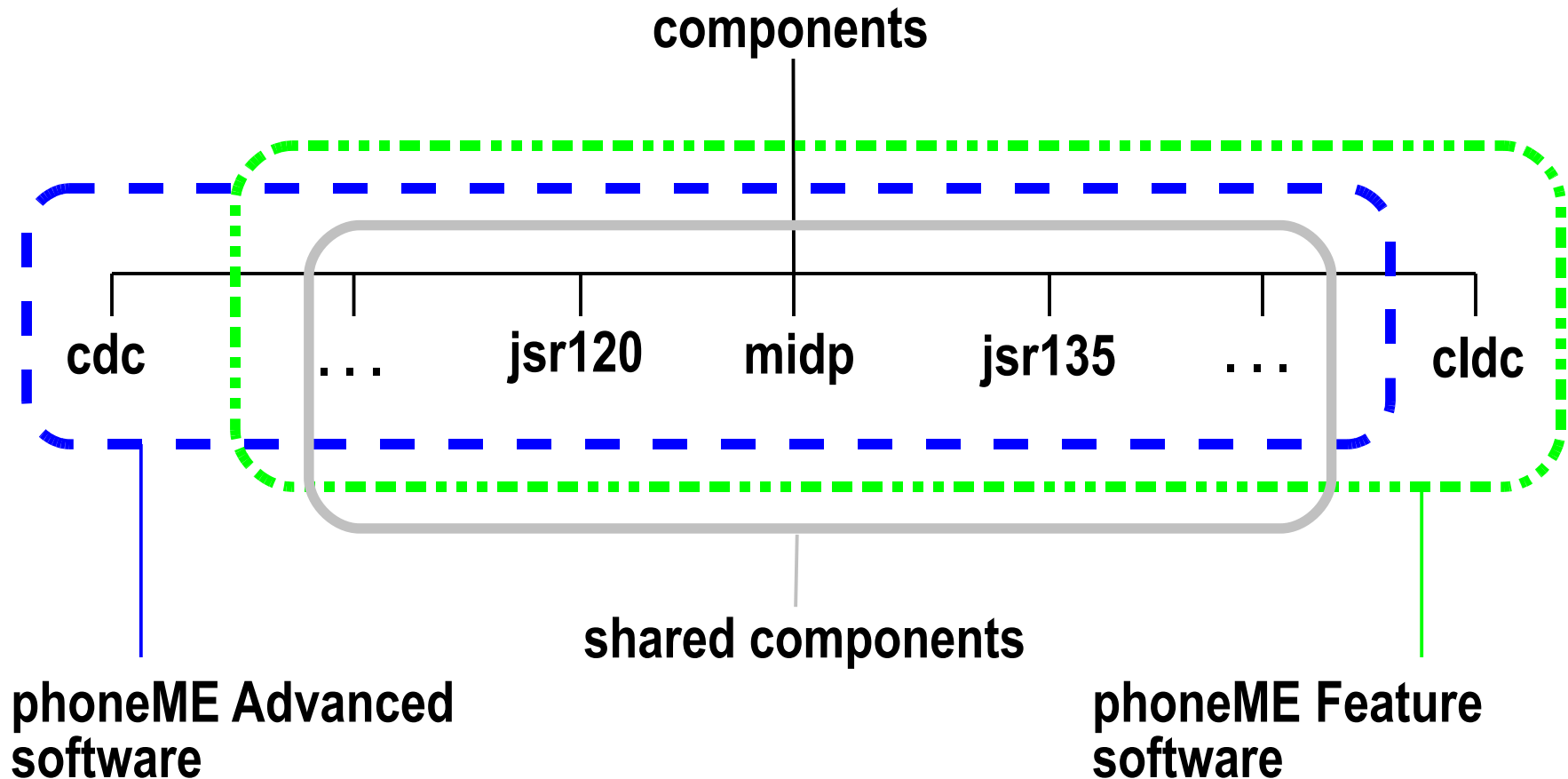
phoneME Advanced (5)

- Used in
 - > Emulator core (CDC) of the Java ME SDK
 - > Embedded Linux: Jalimo/OpenEmbedded recipes
 - > CDC for Nokia N770/N800/N810
 - > BUG: Configurable consumer electronics device
 - > OpenCable (OCAP): Set-top box middleware
 - > Cineca.tv: Interactive TV platform
 - > Core of Amazon Kindle and Kindle 2
 - > PalmOS port in the works
 - > Likely RI for Brazilian SBTVD Digital TV standard

Source Code at Java.Net

- Snapshots available as source code bundles
 - > https://phoneme.dev.java.net/downloads_page.html
- Source code can be retrieved from svn repository
 - > <https://phoneme.dev.java.net/svn/phoneme>
- Atypical repository structure
 - > Lots of branches, tags, and supertags
- Detailed “Getting Started Guides” & wikis:
 - > <http://wiki.java.net/bin/view/Mobileandembedded/PhoneMEFeature>
 - > <http://wiki.java.net/bin/view/Mobileandembedded/PhoneMEAdvanced>

Repository Layout: Components



What's Next & Resources

- Explore the wealth of information and projects
 - > <http://www.mobileandembedded.org>
- phoneME is **the** open source Java ME reference
 - > Play with it: Download, build, modify, run it
- **Join the community**
 - > Sign up as a member
 - > Participate in the forums, ask questions, help others
 - > Write a blog or articles
- Start coding: Bug-fixes, improvements, applications
- Use phoneME and LWUIT for your own projects

Thank You!



One URL to remember
www.mobileandembedded.org