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Sprint Titan (JSR 232 OSGi): Bringing Mobile into the Mainstream

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Sprint & Openstream

www.sprint.com www.openstream.com

Current Java Mobile SW Platform

- > **Most Mobile devices today are built on an old style Static SW Stack**
 - Applications are very monolithic
 - No new sharable APIs after manufacturer releases phone
 - Can't easily customize API set to target markets
 - Long upgrade cycle
 - Not "Open" for Loadable Middleware Industry
 - No Service Oriented Architecture
 - No Real Component Model
 - SW Management is Difficult and Intrusive

MIDlets with LCDUI GUI

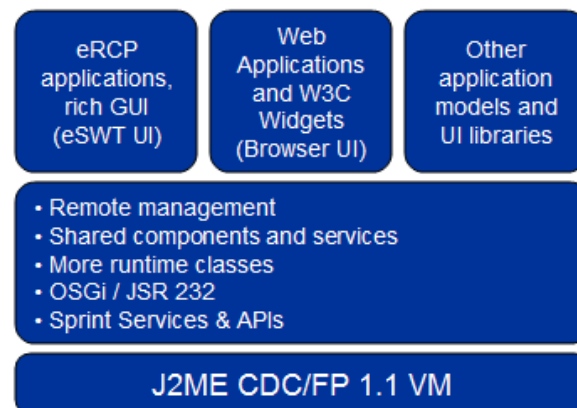
- Game features
- Small set of runtime classes
- Various JSRs
- Sprint Services & APIs

J2ME CLDC VM

Sprint Titan™ Overview

Titan is a next generation Java platform for Sprint mobile devices. Titan is an “OPEN” and standards based framework for developers who wish to take advantage of Sprint’s device portfolio and high speed data network.

- > A full OSGi component based service (“middleware”) platform – Just like the big Servers!
- > Mainstreams the mobile by using OSGi (Open Services Gateway initiative) to deliver **SOA** design and development capabilities to the mobile environment
- > Remote management support via OMA-DM/DL (Open Mobile Alliance)
- > **R**ich **I**nternet **A**pplication model for mobile
- > Enables “server in your pocket” capabilities
 - http and Java Servlet Server
 - Managed Web App Server
- > Designed to support the **harvesting** and **reuse** of existing resources and toolchain assets

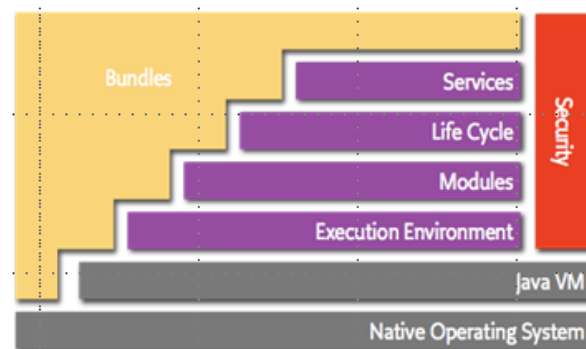
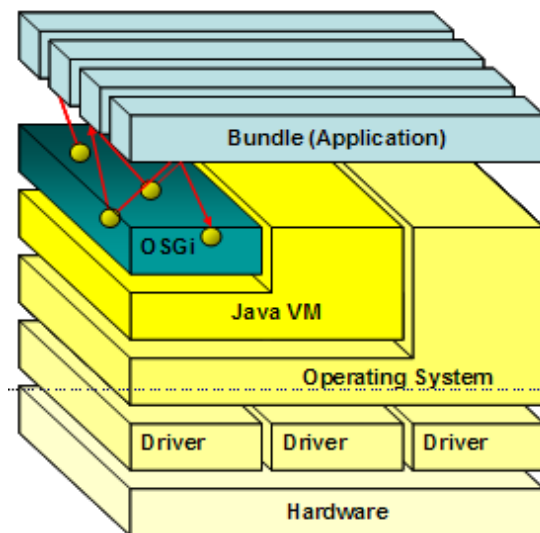


Sprint Titan™ brings the Java Mobile, Java Server and WEB communities together in the mobile space!

OSGi is the Core of Sprint Titan

Broadly accepted community standard: JSR 232 and JSR 247 Adopted by the mobile, desktop and server communities

- > A Real Service Oriented Architecture
- > Powerful Services Infrastructure
- > Component Management
- > Developer Tools



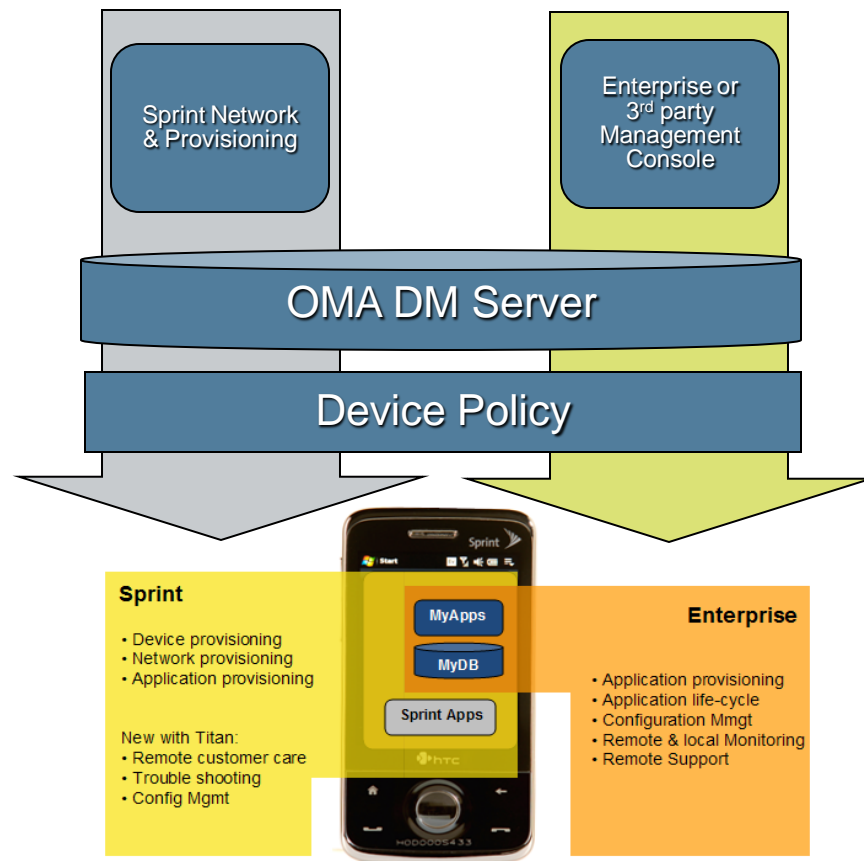
Key SW Platform Benefits for Developers?

- > Loadable Middleware Allows Deep Customization at the API level
- > Support for Offline & Intermittently connected applications
- > Secure access to data makes the platform attractive for data sensitive applications
- > Reduced footprint through reuse of components by several applications
- > W3C Multimodal & Speech Mashup capability to create next-generation mobile applications / interaction
- > Support for WEB/Widgets integration for Web2.0 services
- > Mobile device can now be the Web Server: Allowing the device to be a content supplier not just a content consumer.
- > Enables the creation of Rich Next Generation Internet Applications for Mobile

Device Management & Security

Device Management and a new level of control is now enabled by the Sprint Titan framework

- > Device Policy is now remotely manageable
- > Security model based on proven Java 2 and OSGi security technology
- > Remote control provides for easier lifecycle management



Sprint Titan - The True Open Mobile Platform

- > Leverages Open Standards and Open Source to protect investments
 - Java Community Process (JCP)
 - OSGi Component and Middleware platform
 - eSWT and eRCP support
 - Eclipse and Netbeans IDE's
 - OMA open management protocol
 - Java MIDP for backwards compatibility
- > Open for Resources leveraging existing
 - People and skills
 - Tool-chains
 - App code and Web code
 - Middleware and Frameworks
- > Open for innovation
 - On device Web Application Server
 - Java, JavaFX, Browser and W3C Widget UIs
 - W3C Multimodal & speech mashups
 - Web Rich Internet Application Model
 - New Services Marketplace (Middleware)



Challenges for mobile in mainstream

- Low user adoption due to less usable mobile interfaces
- Cumbersome application & device management
- Difficulties in leveraging all device features like camera, card reader, scanner
- No uniform way of mobile enabling both consumer and enterprise applications
- Need to re-author web/portal applications to serve heterogeneous devices and form factors



Courtesy: Dave Raggett, W3C

On-the-move input/output challenge

Multimodal extensions for Titan™ OSGi platform : *Heralding next generation mobile applications*

Openstream® cue-me™ on Sprint Titan™ provides Application Developers a combination of tools and resources to rapidly develop and deploy next generation multimodal applications.

Unique Compelling Features

- Provides multiple modes of input and output (i/o)
- Tools and resources to create multimodal applications across all devices
- Uniform Integration capability for all on-device peripherals such as camera, GPS
- Remote administration, monitoring and updation of applications

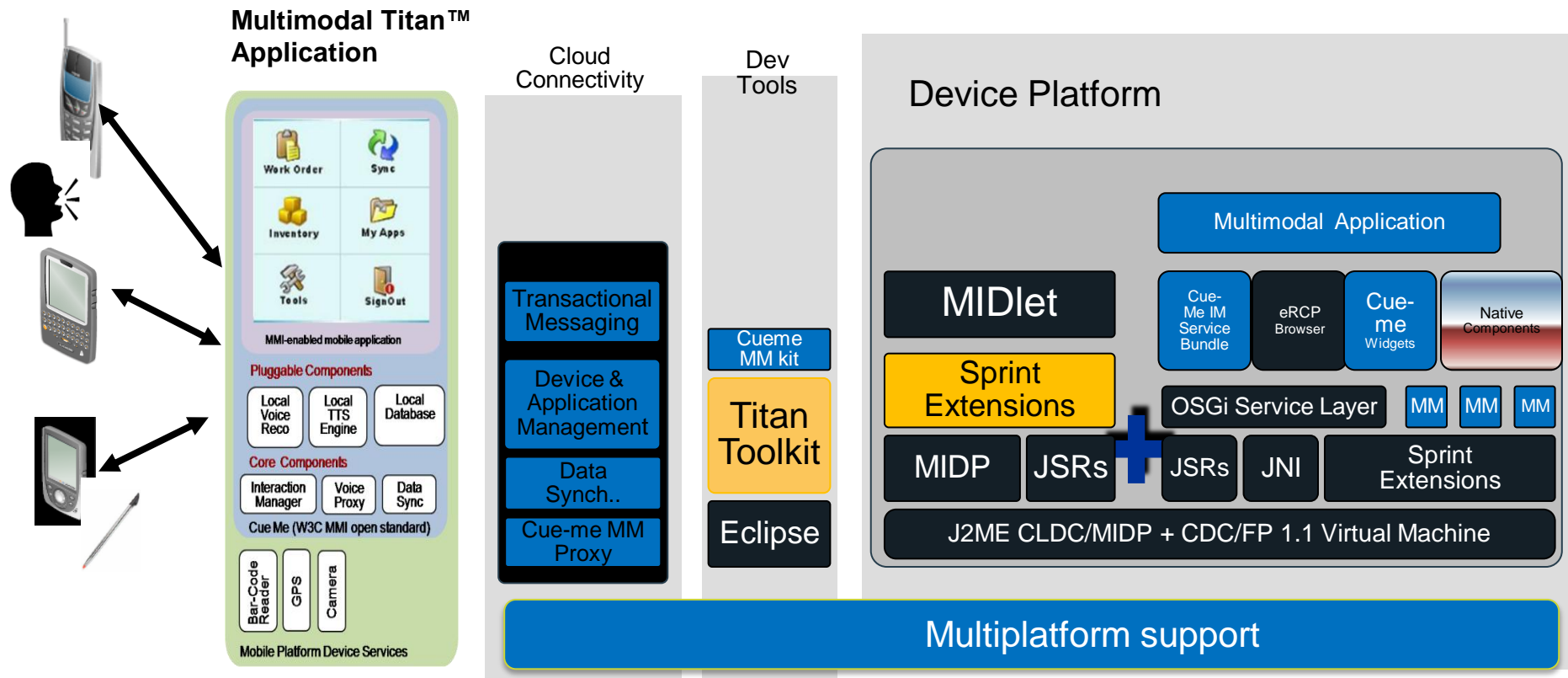
Benefits to Application Developers

- Compelling user interaction paradigm to promote usability and adoption
- Develop once and deploy to multiple devices
- Easily extensible platform based on W3C standards for 3rd party component developers
- Ability to derive immediate value by multimodal-enabling existing enterprise web applications (such as CRM etc.)



- Cue-me is a multimodal platform that runs on Titan, it:
 - Extends the eSWT Browser widget
 - Interaction Manager component may be an OSGi service
 - Runs web applications but adds speech, digital ink, SMS, and other modalities
 - Interaction Manager can be used to invoke other services, make phone calls, etc.

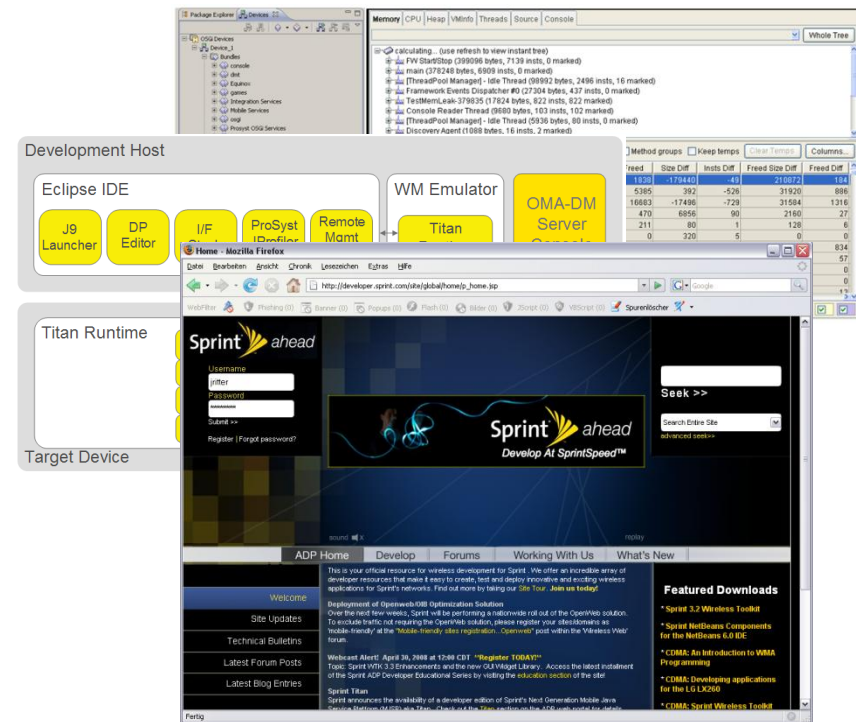
Qme + Titan Multimodal Architecture



Open Tools for Developers

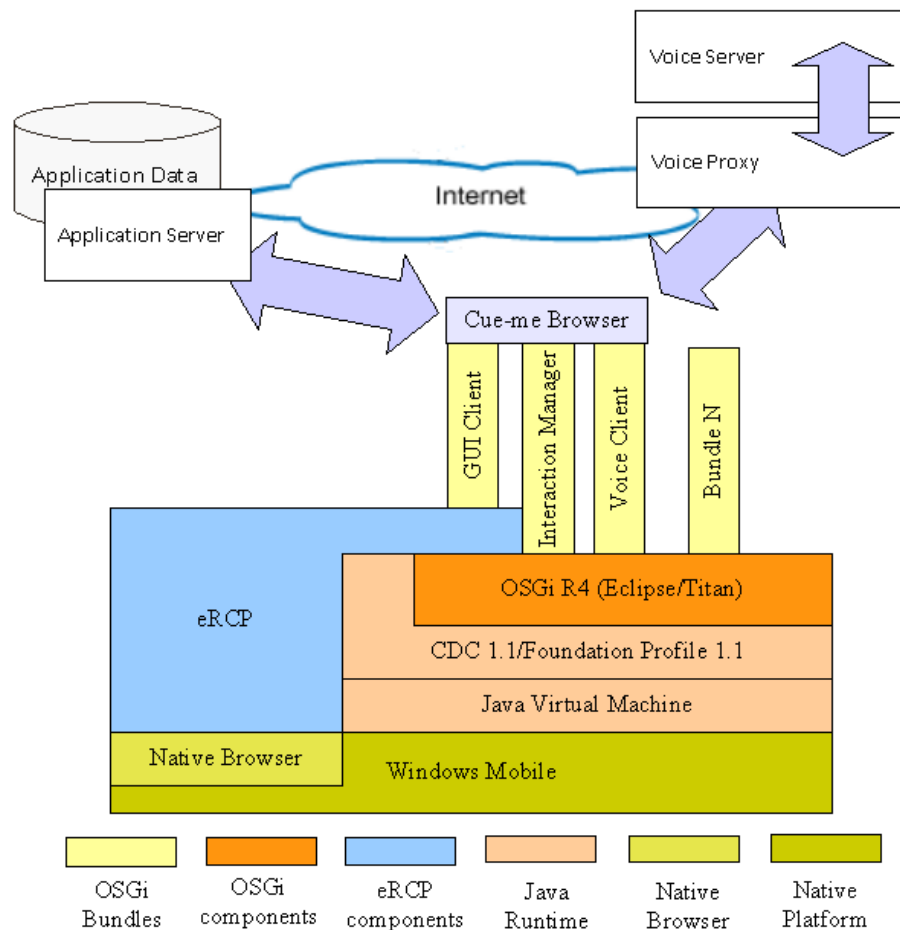
Sprint Titan eco-system allows access to a wide range of tools for developers

- > Industry standard tools
 - Full Eclipse IDE integration
 - Full Netbeans Sun IDE integration
 - > Application development
 - > Application deployment
 - > Debugging & Profiling
 - > On-device development
 - > Emulator development
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- > Sprint ADP Team and Online Developer Support
 - Development tools
 - Documentation
 - Webcasts
 - Forum and blog



A W3C standards-based architecture:

<http://www.w3.org/TR/mmi-arch/>



Cue-Me & Titan Multimodal Applications

Demo :

- > Mobile News Assistant (remote & local speech)
- > Mobile Force Automation
- > Mobile HealthCare (camera, INK, Speech)

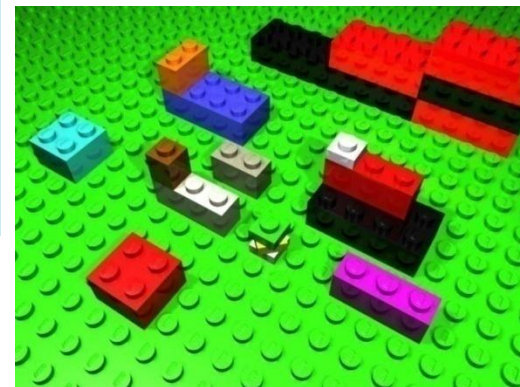
How can Titan help you?

- > Mobile developers don't have to be experts in everything anymore
- > Next generation multimodal interfaces & speech mashups
- > Ability to publish useful, robust services & plumbing for others to re-use
- > Same set of familiar tools for mobile development & desktop
- > Applications can now integrate with servers in the cloud or on the device
- > Opens up the mobile device for innovation that wasn't possible before Sprint Titan

"If I have seen farther it is by standing on the shoulders of giants"

Bill Joy commenting on the value of Reusable, Combinable Components

Applications built from combinable components





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Thank You

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Link for Download: <http://developer.sprint.com/titan>

