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Introducing Mobile JavaTM Technology-Based Widget Development

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Agenda

- > Background
- > Approach
- > Components
- > The Widgets
- > ODP SDK
- > Q&A



Background

- > Carriers are looking for ways to increase data revenue from their feature phone handsets
- > Driving usage by bringing an On Device Portal (ODP) experience to the handset's idle screen
- > Opening the network to 3rd party applications and web 2.0 content
- > Smart phone experience on feature phones
- > Today's solutions are based on proprietary scripting languages with a small developer base
 - Cost of creating new services is very high
 - Lack of variety and compelling content available

What is a Widget?

- > **Beer** - a device placed in a container of beer to manage the characteristics of the beer's head.
- > **TV Series** - a 4 feet tall, purple alien from the Horsehead Nebula who could shapeshift
- > **Video game** - action-platforming video game created for the Nintendo Entertainment System in 1990 (based on the TV series)
- > **Economics** - a placeholder name for an object or, a mechanical or other manufactured device
- > **Marvel Comics** - a fictional character in the Marvel Universe

What is a Widget?

Computer related context

- > An element of a graphical user interface (GUI) that displays an information arrangement changeable by the user (GUI widget - *Wikipedia*)
- > A small specialized GUI application that provides some visual information and/or easy access to frequently used functions (desktop widget - *Wikipedia*)
- > An interactive single purpose application for displaying and/or updating local data or data on the Web, packaged in a way to allow a single download and installation on a user's machine or mobile device. (W3C)

Widget vs. Application

- > Widgets are “small” applications – key differences between widgets and applications are:
 - Small footprint (in mobile <200K)
 - Traditionally 20% of the functionality of a full blown app. Covering 80% of the usability
 - Simple User Interaction (1 – 2 screens)
 - Widgets Run within a context
 - Many widgets can share the same screen
 - Always on
 - Focused on UI and information, less on logic
 - Quick and streamlined installation process

What is a Mobile Java Widget?

Powered by Java!

- > Full Java ME capabilities!
 - PIM, LBS, Multimedia
- > Plugged into Java tools
- > Interact with Java and native applications (advanced version)

Simple

- > Dynamic installation
 - Minimal user interaction
- > Easy to develop
- > Lightweight (50K-100K)

Challenges of a Java ME Widget Platform

- > Reflection / ClassLoader override
 - No dynamic loading of Java ME code
- > Concurrency and multi processing
 - Widgets need to provide data in zero time
- > Sharing the screen real estate
 - Widgets need to share the display
- > Sharing system resources
 - Limited # of network connections
 - Persistent memory

Java ODP Platform Components

> Java ODP Client

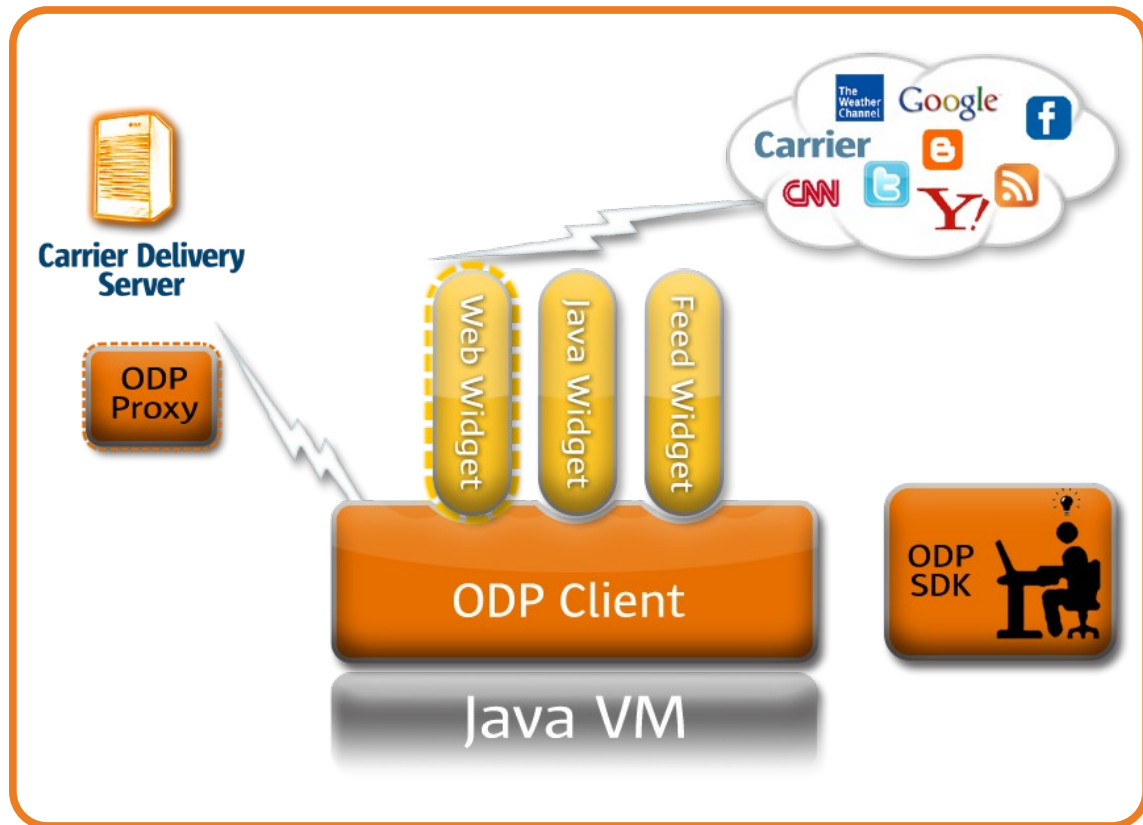
- Standard
- Advanced

> Java ODP SDK

- Java ME SDK plugin
- Feed creator
- Designer Tool

> Java ODP Proxy

- Widget Catalog server



Java ODP Client

- > Installed on the device
- > Provides rich and personalized user experience
- > LWUIT based UI
- > Open to 3rd party content with no back-end requirements
- > Two flavors
 - Standard
 - Advanced



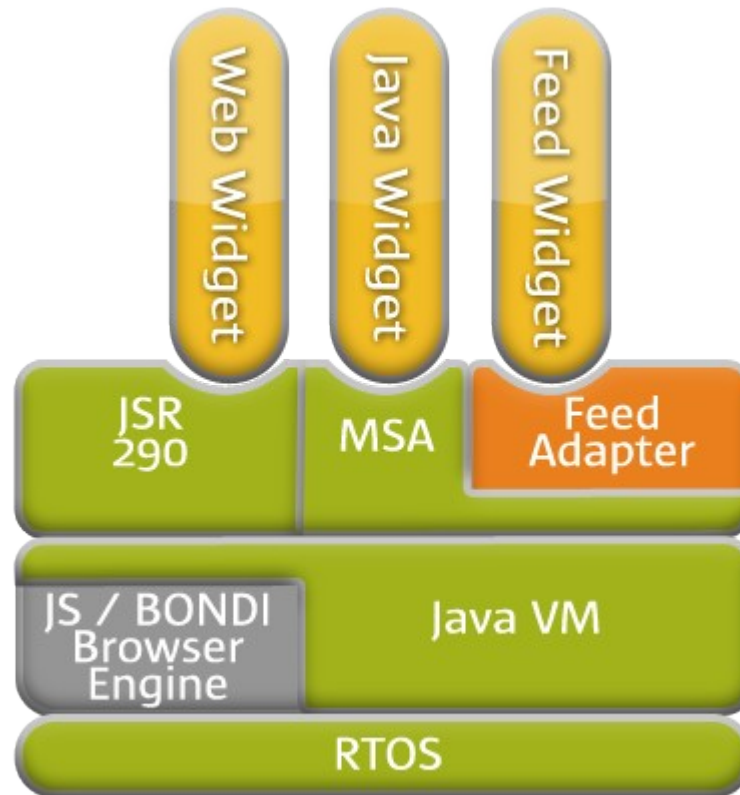
Java ODP Client Flavors

	Standard	Advanced
Platform Requirements	<ul style="list-style-type: none">• JTWI• Standard VM• Standard AMS	<ul style="list-style-type: none">• JTWI + AMS extensions• Java - Native integration
Dynamic Download	<ul style="list-style-type: none">• Feed Widgets• Javascript Widgets*	<ul style="list-style-type: none">• Feed Widgets• Java Widgets• Javascript Widgets*
Provisioning	<ul style="list-style-type: none">• Downloadable	<ul style="list-style-type: none">• Preloaded on the device
Idle Screen Integration		

* Requires JSR 290

Java ODP Client

The widget platform



Java ODP Client



What is a Feed Widget?

A data feed is all you need!

- > No need to write code
 - Uses the Feed Creator tool
- > Atom/RSS feeds
- > Pre-built layouts
- > Dynamic installation
 - Minimal user interaction
- > Easy to build
- > Lightweight (25K-50K)

A sample XML template Widget

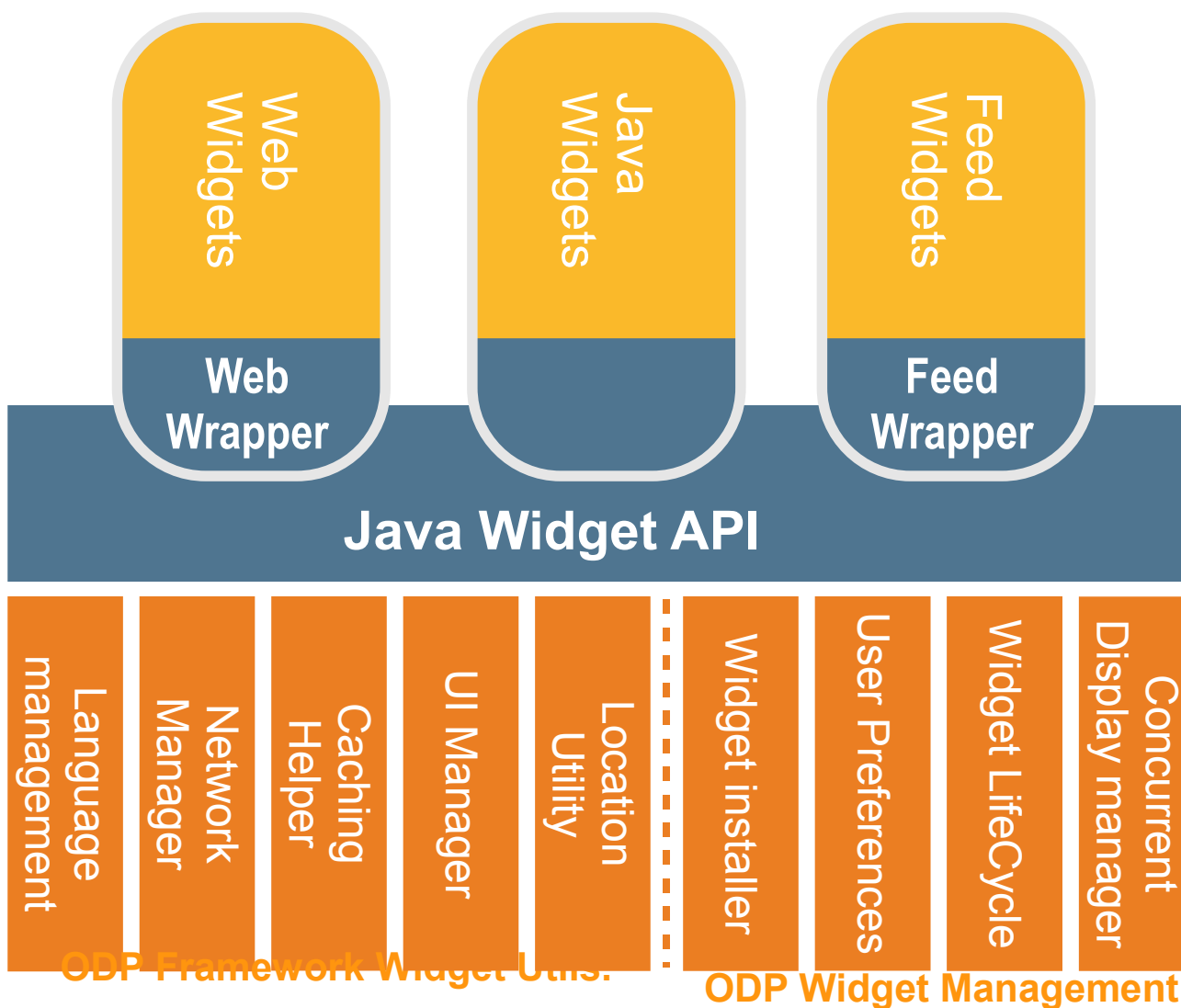
What is a JS Widget?

- > Template Java Widget
- > Use existing Javascript/HTML/CSS widgets
- > Leverages JSR 290
- > Pure web technologies based (no JME required from widget developer)
- > Currently in development

The Java Widget API

- > Preview screen
- > Commands
- > Lifecycle
- > Event Manager
- > Network access wrapper
- > Advertisement API framework
- > And much more ...

Java ODP Client Framework



Java ODP SDK

ODP Feedlet Creator

NAME it

Service ID:

Name:

Description:

Icon:

Focused Icon:

Feed URL:

Server URL:

Category:

Featured ☐

STYLE it

Text feed

Is recommended for anything from personal Blogs to news feed. Any sort of text heavy feed can be easily viewed this way.

New Project

Steps

1. Choose Project
2. ...

Choose Project

Categories:

- Java Card™ 3 Platform [Conne
- Java
- Java Web
- Java EE
- Java ME
- PHP
- Ruby
- Groovy
- C/C++
- SOA
- NetBeans Modules
- Examples

Projects:

- Mobile Application
- Mobile Class Library
- Java ODP Widget
- Mobile Project with Existing MIDP Sources
- Import Wireless Toolkit Project
- CDC Application
- CDC Class Library
- Import CDC Pack 5.5 Project
- Import CDC Toolkit Project
- Mobile Designer Components

Description:

This creates a sample widget demonstrating an application of the Sun Java Open Device Portal. The project that is created includes the source files and resources of a mobile data application, a streaming stock ticker widget for a handset. The project also includes the classes of the Sun ODP Software Developer's Kit.

< Back Next > Finish Cancel Help

Java ODP SDK

- > For Developers (creating Java Widgets)
 - Simple plug-in to Java ME SDK and Netbeans
 - Quick & easy Java Widget creation
- > For Feed Owners (creating Feed Widgets)
 - Using the web based Java Feed Creator Tool
 - Feed Widget creation in a matter of minutes
- > For Designers (creating themes)
 - Using LWUIT's designer tool

Java ODP Proxy

- > Widget Catalog Server
 - Application server hosting the Java ODP's
- > Feed Server
 - Proxy between the feed owner to the Feed Widget format
 - No need for XML parsing on the device
- > Widget Management Server
 - Enables carriers/end users to manage their selection of widgets on the Java ODP Client

Java ODP Widgets - Examples

- > Infotainment
 - Weather, Stocks, News
- > Shopping
- > Communication
 - Email, IM, Instant SMS, Visual voice mail
- > Media
 - Music player, Video, TV
- > Social networking
 - Facebook, MySpace, LinkedIn
- > PIM

Sneak Peek... Java ODP DIY



The screenshot displays the Java ODP DIY Widget Builder interface. At the top, there are tabs for 'Widget Gallery' and 'Widget Builder'. The main area is divided into several sections:

- Categories:** A sidebar on the left lists categories: Featured Widgets, News Widgets, Photo Widgets, and Sports Widgets.
- Widget Grid:** A central grid of widget icons with 'Add?' buttons. The widgets include: Stocks Widlet, World Clock, Preferences Widlet, Shopping Widlet, Blip Widlet, Weather Widlet, and MobiTV.
- Stocks Widlet Preview:** A detailed view of the Stocks Widlet at the bottom, showing a list of stock prices (JAVA, GOOG, YHOO) and a description: 'This is the Stocks Widlet description'.
- Handset Preview:** A mobile phone handset on the right showing a list of installed widgets: World Clock, MobiTV, Weather Widlet, and Stocks Widlet.
- Remove Button:** A 'Remove' button with a trash icon is located at the bottom right.
- Instructions:** A text box at the bottom right states: 'When your finished press the button to add the widgets to your handset.' with a handset icon.

For More Information

- > The Java ODP Product Page:
 - <http://java.sun.com/products/java-odp/index.jsp>
- > LWUIT Home
 - <http://lwuit.dev.java.net>

Q & A





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Thank You

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