

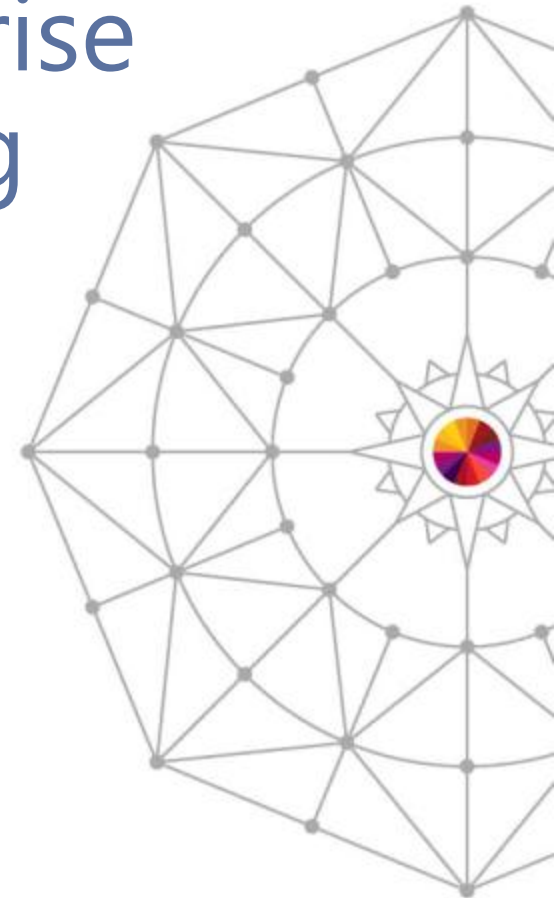
The Basics of Enterprise Mobile Computing



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Thursday, March 13, 2013
Session 15039

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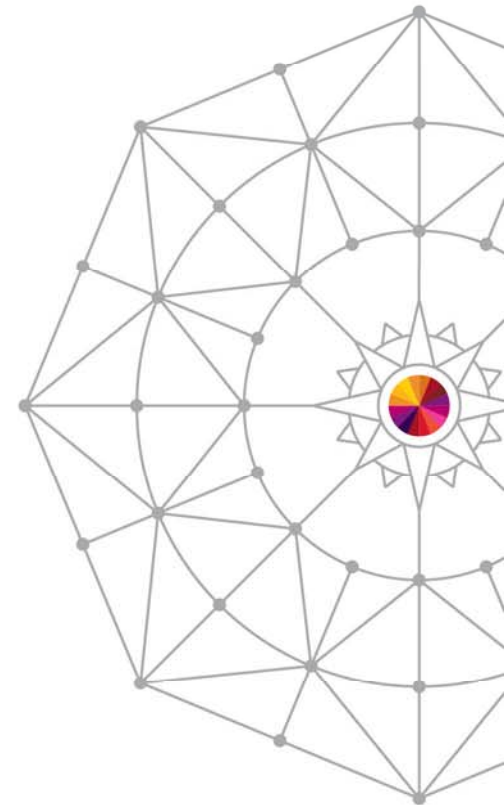
Content

- Mobile Trend: Mobile is Everywhere
- Enterprise and Business on the Move
- Transform your Business to a Mobile Business
- Introducing IBM MobileFirst Platform
- Extending the Value of zEnterprise
- Demos



[MobileFirst](#)

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Mobile is Everywhere



Mobile is the next evolution for connecting to the Data Center

91%

mobile users keep their device within arm's reach 100% of the time

75%

mobile shoppers take action after receiving a location based message

96%

year to year increase in mobile cyber Monday sales between 2012 and 2011

90%

users use multiple screens as channels come together to create integrated experiences

900%

increase of global machine-to-machine connections by 2022 (2 billion in 2011 to 18 billion at the end of 2022)



But Mobile Also Brings Business and IT Challenges



Mobile devices are shared more often

- Personal phones and tablets shared with family
- Enterprise tablet shared with co-workers
- Social norms of mobile apps vs. file systems



Mobile devices have multiple personas

- Work tool with BYOD
- Entertainment device
- Personal organization
- Security profile per persona



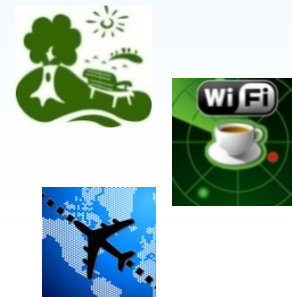
Mobile devices are diverse

- OS immaturity for enterprise mgmt
- BYOD dictates multiple OSs
- Vendor / carriers dictates multiple OS versions



Mobile devices are used in more locations

- A single location could offer public, private, and cell connections
- Anywhere, anytime
- Increasing reliance on enterprise WiFi



Mobile devices prioritize the user

- Conflicts with user experience not tolerated
- OS architecture puts the user in control
- Difficult to enforce policy, app lists



Client Drivers for Mobile Solutions Span all Industries



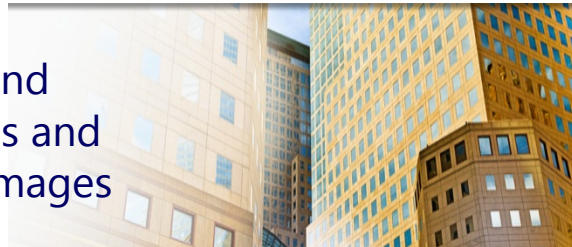
Finance & Banking

Manage their investment portfolios and accounts from anywhere for complete bank transactions



Insurance

File, process and manage claims and document damages



Travel & Transportation

Provide up to date information specific to their itineraries and location and enable customer self-service



Construction & Manufacturing

Manage complex projects and operations on site and streamline survey and work order processes



Retail

Engage shoppers in new ways and intelligently target personalized and location sensitive marketing offers



Cross-Industry CIO's Office

Empower employees with anytime, anyplace access to dashboards and critical information



Enterprise/Business on the Move



- Interact with Anyone
 - Customers, partners or employees
- Extend to Anything
 - Instrumented machines and a broad spectrum of smart devices
- Do Business Anywhere
 - With ubiquitous, trusted and secure transactions
- IT Challenges
 - Distributed vs. centralized
 - Security and compliance demands
 - Performance, throughput, and scale



And even more challenges for the data center

- **Inconsistent peaks 24/7 are common**

- Peaks of data can occur any time of day as well as exploding micro activity levels and difficult to predict

- **Increased system load.**

- Increase in data access

- **New versions**

- Customer demand

- **Development of multiple devices**

- Users are using multiple devices

- **Employees are bringing their own device to work ("BYOD")**

- 200 Million employees do so today with access to confidential data

- **Security is paramount**

- Data must be secured from device to data

Top Three Mobile Adoption Concerns
Security and privacy
Cost of development
Integrating with cloud

18M

People use mobile devices for bank transactions making up 8% of bank transactions

41%

of the money is spent for mobile computing

90%

of the phones in Africa are mobile with deposit of money to mobile devices anywhere

Transform Your Business to a Mobile Business

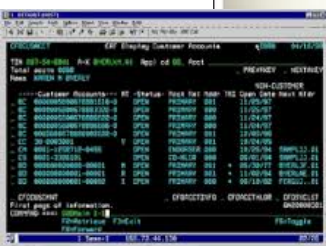


“The mobile revolution will extend your business model faster than the web did...Mobile engagement empowers people to take the next most likely action in their immediate context and in their moments of need.¹”

-Thomas Husson, Forrester Research



Information developed
and controlled by users
for mobile devices



IBM Has Been Building Up Our Mobile Enterprise Capabilities



10

acquisitions to strengthen our position in mobile since 2006

125+

patents for wireless inventions in 2012, bringing the total to 270

Doubling

2013 investment in mobile solutions

200+

IBM Software apps available in app stores; ~ 1M downloads

Leader

in app design and managed services by Forrester and Gartner

1Q2012

IBM Worklight

IBM Cast Iron

IBM Endpoint Manager

Worklight



3Q2012

Tealeaf CX Mobile



1Q2013

New IBM MobileFirst Portfolio

IBM MobileFirst

2Q2012

IBM Mobile Foundation



IBM Interactive Named Leader in App Design

IBM INTERACTIVE

Managed Mobility and MAPM services

IBM Security Access Manager for Cloud and Mobile



4Q2012

IBM Mobile Development Lifecycle Solution



IBM Connections Mobile



IBM MobileFirst Platform

Shaping Enterprise Mobility



A Smarter Planet
IBM MobileFirst

1

The Broadest
Portfolio of
Mobile Solutions

2

The Deepest Set
of Services Expertise

3

New Industry
Partnerships and
Resources for

IBM MobileFirst Platform offers:

Native, web, or hybrid **App development**

Tools to build & test high quality apps for **many devices**

Management, security, continuous delivery & distribution of apps

Easy connectivity to existing data & services for mobile usage

On-premises or managed service delivery

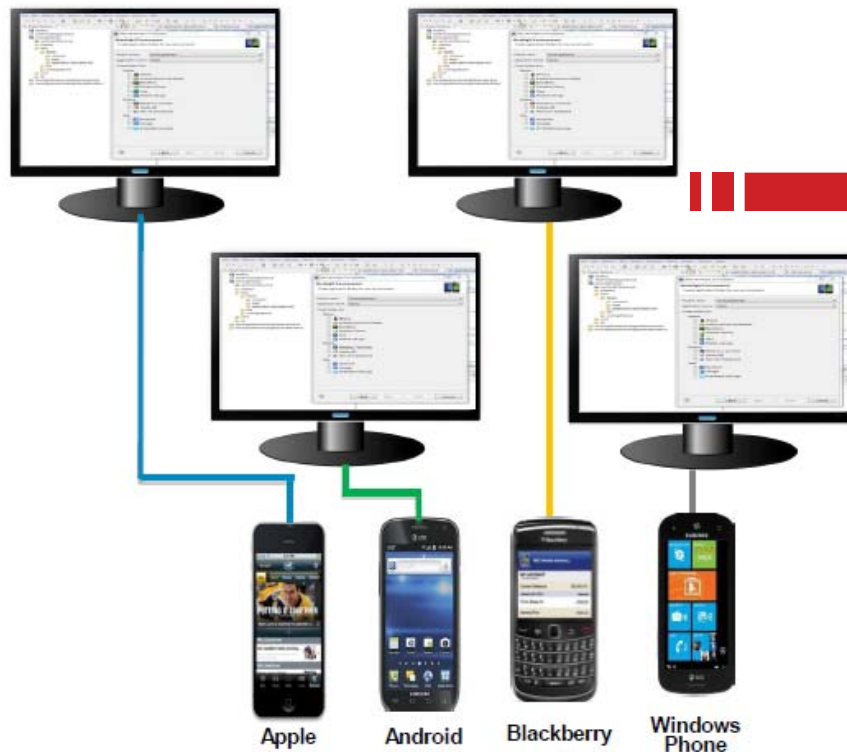
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Multi-platform Development Using a Single Shared Codebase

The complexity of many

- Multiple sets of tools & frameworks
- Four codebases to develop and maintain



Without Worklight

The simplicity of one

- One development environment
- One codebase to develop and maintain



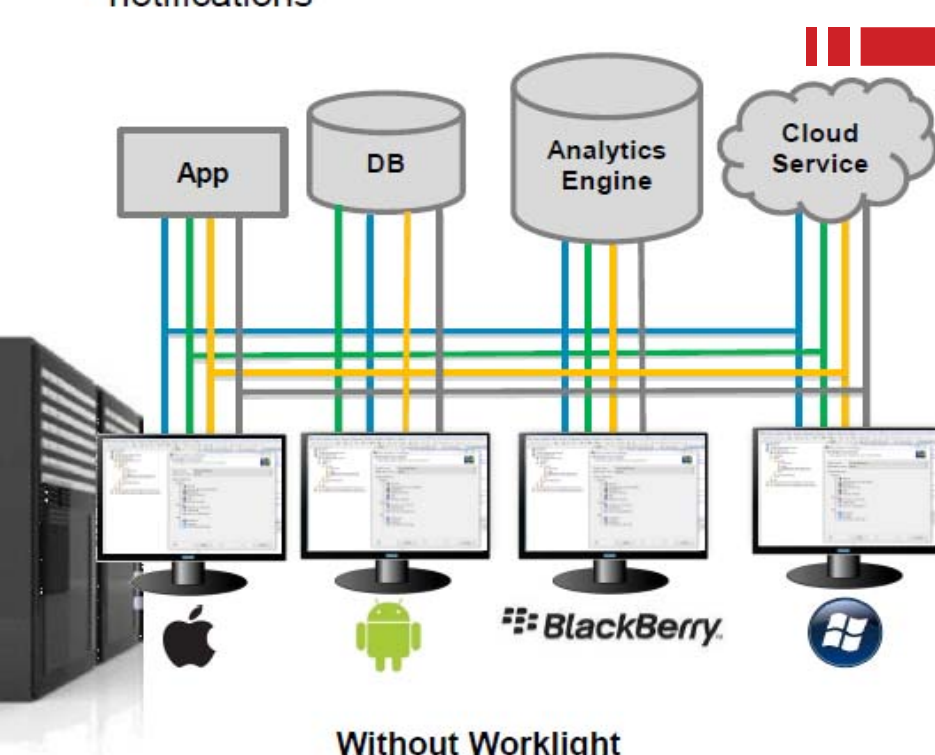
With Worklight

Extending the Value of Existing Investment



The complexity of many

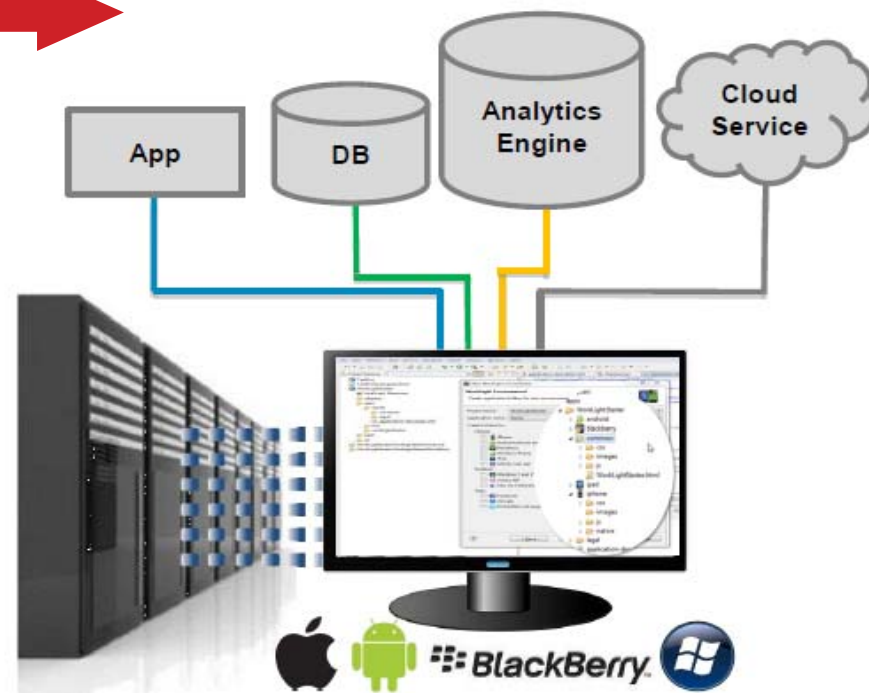
- Multiple sets of back-end integrations to build and manage
- YOU manage caching, authentication and single sign-on, service interruptions and push notifications



Without Worklight

The simplicity of one

- One adapter per resource
- Worklight Server manages caching, authentication and single sign-on, service interruptions and push notifications



With Worklight

IBM Worklight Approach to Mobile Apps



Hybrid Apps –Mixed

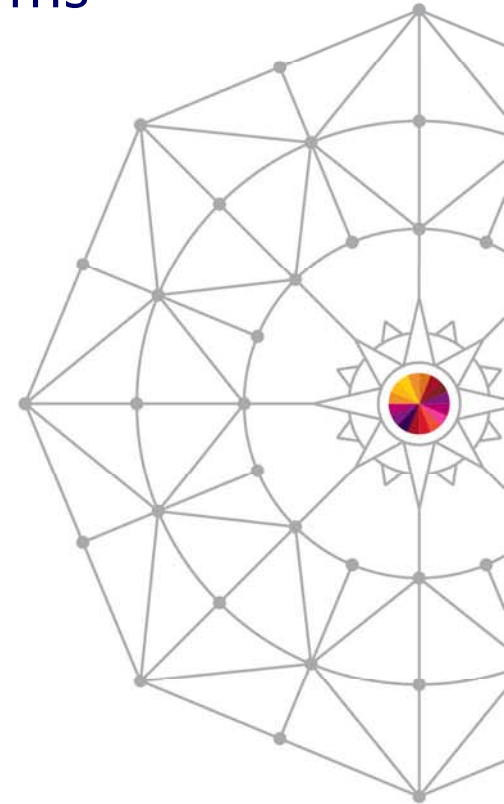
you can create applications that use a container to access device capabilities, but also use other native, platform-specific components such as libraries, or specific user-interface elements to enhance the mobile application.



Popular Mobile Application Development Platforms



- Open Source and Free Technologies / Platforms
 - Adobe – PhoneGap, Cordova
 - JQueryMobile
 - Dojo
 - Sencha
 - Development toolkits
 - Google, Apple, etc.
- IBM Worklight uses and integrate with the above and more

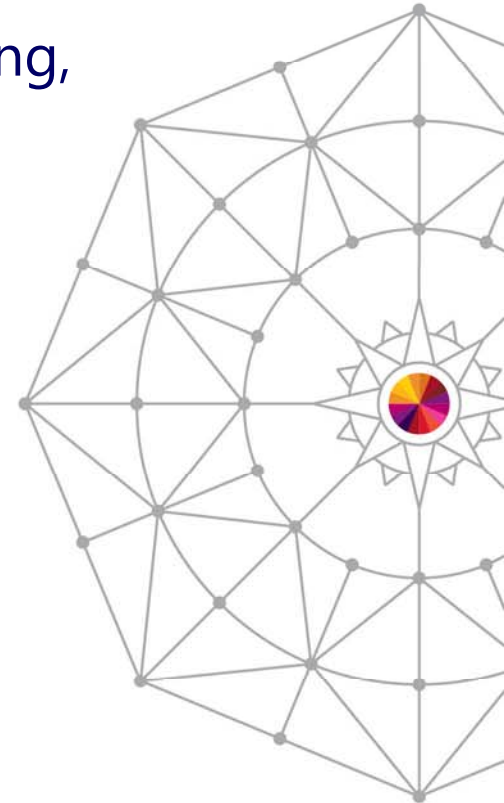


IBM Mobile Foundation Overview

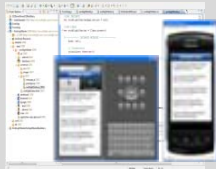
Build, connect, manage and secure your mobile enterprise



- **IBM Worklight Server V6.1**
 - Mobile app dev environment and server running, runtime is a Java app
- **IBM WebSphere CastIron Integration**
 - Cloud connectivity appliance
 - Physical, virtual or cloud service
 - Connectivity for cloud services
 - Physical or virtual appliance
 - 3rd party cloud appliance
 - Linkage to 3rd party products
- **IBM Endpoint Manager for Mobile Devices**
 - Mobile device management
 - Windows servers and Linux Intel support in 1H2013



IBM Worklight Mobile Application Platform



Studio (Eclipse based)

Leading tools for cross platform hybrid development that maximize code reuse and enable per-device optimization



Operational console (of Server)

Operational management for deployments, concurrent versions, and infrastructure access. Operational analytics provide real-time insight into application usage



Application center (on Server)

A cross-platform private mobile application store focused on the needs of a development organization or a team



Application runtime (Java Server + Device “middleware”)

Cross platform services for the mobile channel (client & server componentry). Client APIs are introduced for both pure **native** as well as **hybrid** development

New to Worklight V6

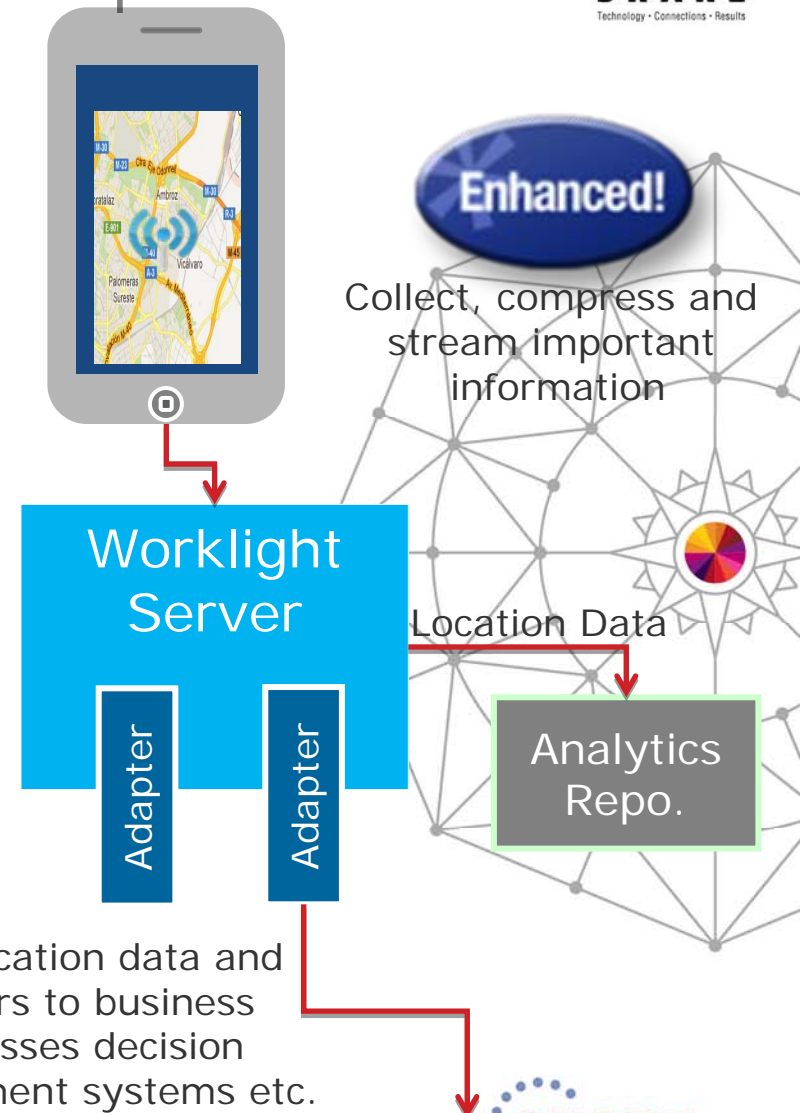
Geo-Location Sense and Response



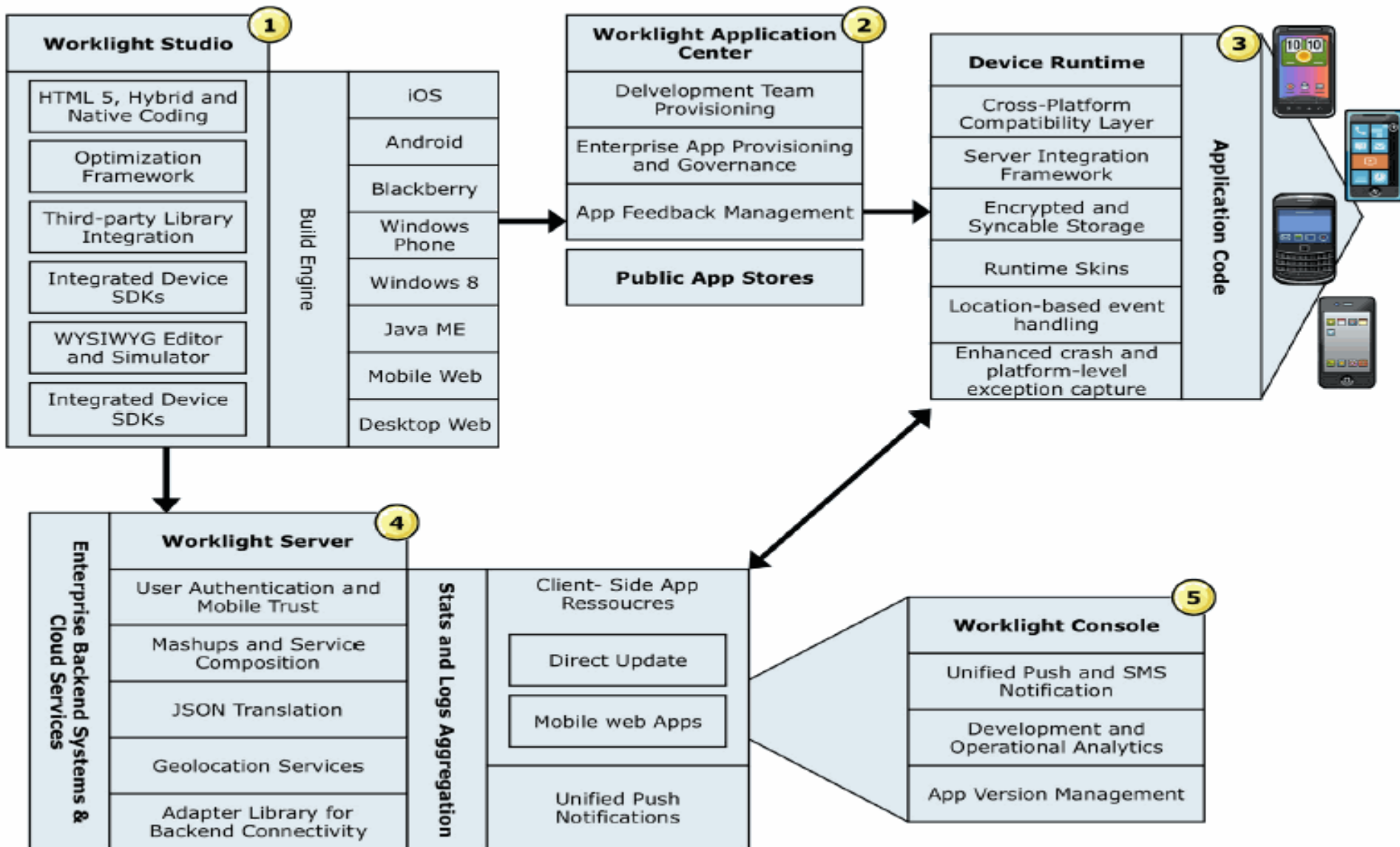
- Transform business processes with integrated geo-location awareness
 - Create location-based business triggers that leverage both GPS and wifi coordinates
- Mobile device – provide simple APIs to easily capture, trigger and transmit context information (Geo and WIFI)
 - Efficient sampling and transmission of collected context
- Server side – maintain an evolving context that is available for all adapter procedures
 - React to important geo events
 - Enrich with business data
 - Integrate context information with business processes

Outdoors retail demo

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Worklight Components



Worklight Capabilities Summary

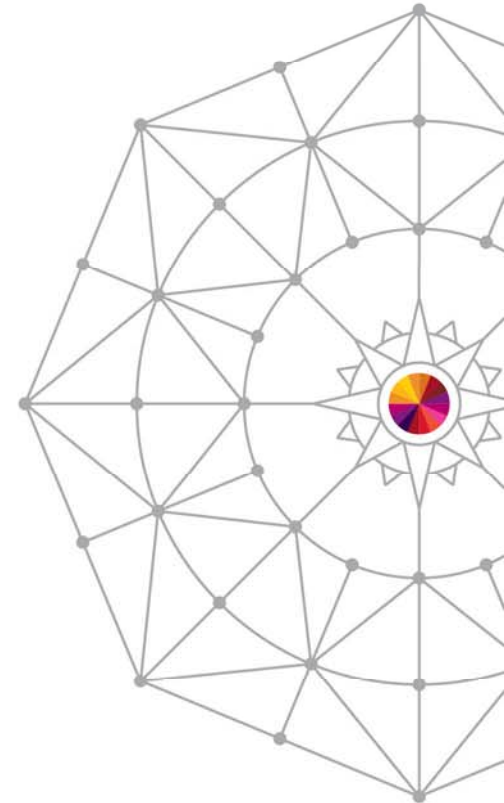
- With Worklight, businesses are able to:
 - Support multiple mobile operating system environments and devices
 - Connect and synchronize with enterprise data, applications and cloud services
 - Safeguard mobile security at the device, application and network layer
 - Govern the mobile application from one central interface
 - Test applications by recording and playing back a process or function on a mobile device or emulated mobile environment



WebSphere CastIron Studio



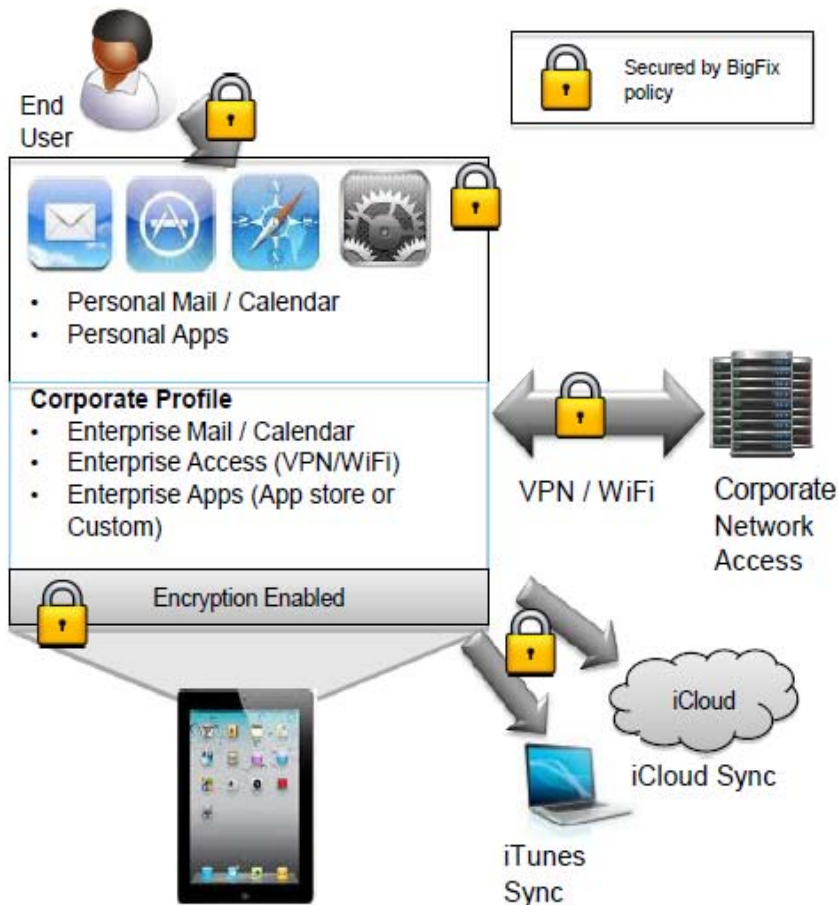
- Provides an integrated development environment (IDE) for creating, configuring, publishing integration projects, and orchestrations
- Integration Appliance
 - GUI to the integration appliance is the web management console (WMC) via a browser
 - Remote monitoring
- Deployment Option
 - Physical appliance
 - Virtual
 - Cloud option, the delivering model



Integrating Cloud and On-Premise
Applications with Cast Iron

IBM Endpoint Manager for Mobile Devices

Centralized Management of all Enterprise Devices



Client Challenge

Manage and secure all enterprise devices – desktops, laptops, servers, smartphones, and tablets

Key Capabilities

- Enable password policies
- Enable device encryption
- Force encrypted backup
- Disable iCloud sync
- Access to corporate email, apps, VPN, WiFi contingent on policy compliance!
- Selectively wipe corporate data if employee leaves company
- Fully wipe if lost or stolen

Mobile Security

More than Just the Device

At the Device

Manage device

Set appropriate security policies •
Register • Compliance • Wipe •
Lock

Secure Data

Data separation • Leakage •
Encryption

Application Security

Offline authentication •
Application level controls

Over the Network and Enterprise

Secure Access

Properly identify mobile users
and devices • Allow or deny
access • Connectivity

Monitor & Protect

Identify and stop mobile threats
• Log network access, events,
and anomalies

Secure Connectivity

Secure Connectivity from
devices

For the Mobile App

Secure Application

Utilize secure coding practices •
Identify application vulnerabilities
• Update applications

Integrate Securely

Secure connectivity to enterprise
applications and services

Manage Applications

Manage applications and
enterprise app store



Mobile Security

More than Just the Device

At the Device

**Endpoint
Manager for
Mobile**

Trusteer

WorkLight

Over the Network and Enterprise

Secure Access

**Access
Manager for
Mobile**

Monitor & Protect

**zSecure &
QRadar**

For the Mobile App

Secure Application

**AppScan for
Mobile**

Integrate Securely

WorkLight



Internet



Enterprise
Intranet



Mobile Security: AppScan

Prioritized security and privacy throughout the mobile app lifecycle to protect sensitive business systems

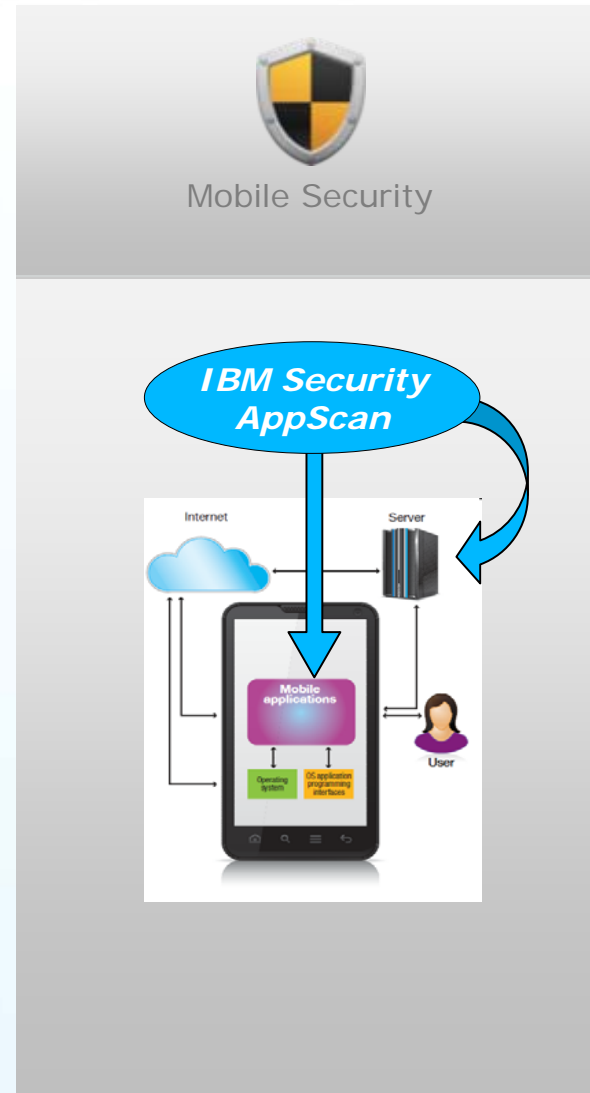
IBM Security AppScan 8.next

What's New

- **Accelerates the use of iOS** in an Enterprise setting
- **Native security scanning of iOS applications** built in Objective C, Java or JavaScript
- **Facilitates a "secure by design" process** in the software development lifecycle for mobile applications
- Addresses requirements for **usage in the US Federal Government**

[AppScan Video](#)

Complete your session evaluations online at www.SHARE.org/Anaheim-Eval

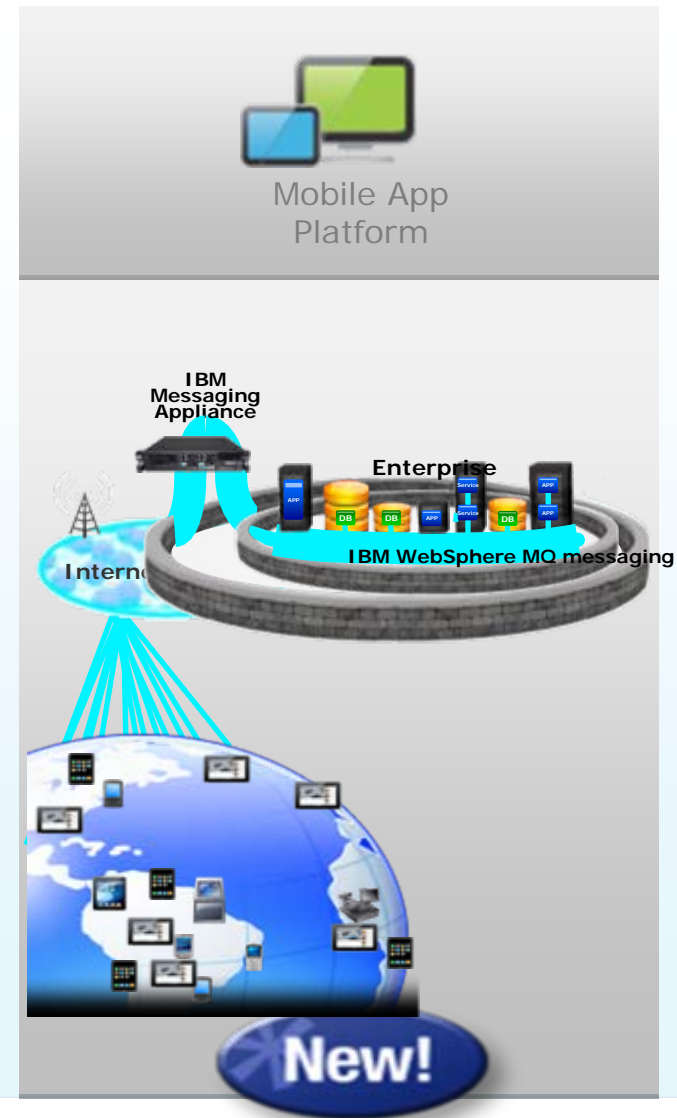


Mobile first organizations need real-time application messaging between enterprise systems and millions of connected devices

IBM Messaging Appliance

IBM Messaging Appliance plans to scale to millions of concurrent connections to capture insights from interactions in real-time, and transform them into business opportunities. Planned capabilities include:

- **Large scale connectivity** to reach items such as mobile devices, machine-to-machine, telemetry, telematics, and sensors
- **Messaging optimized for wireless** to support extreme transaction rates and predictable, consistent low latency
- **Provides reliable bi-directional messaging and pub/sub capabilities** enabling intelligent decisions based on real events
- **Ability to snap onto existing environments** with built-in IBM MQ and Message Broker connectivity



IBM statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.



IBM MobileFirst Analytics



For Clients That Need To:

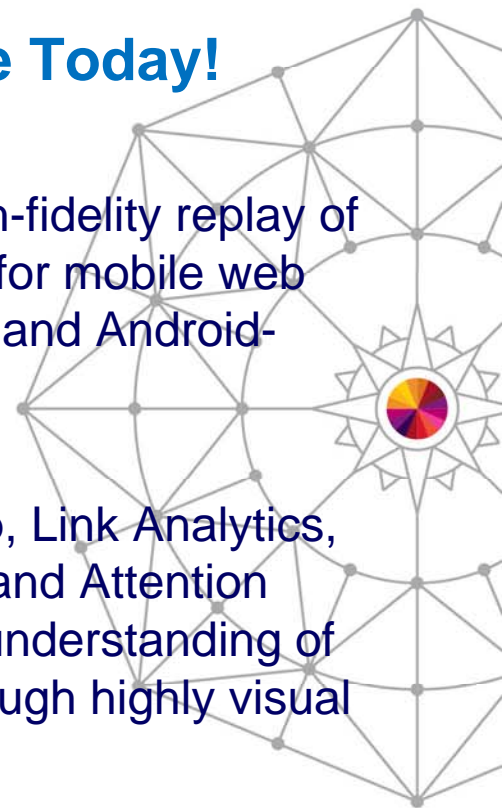
- Optimize digital & mobile experiences to drive online conversion
- Analyze mobile behaviors and quantify business impact of user struggles
- Improve customer service resolution and drive loyalty

IBM MobileFirst Analytics Offers:

- ✓ Automatic detection of customer issues through user and mobile device data
- ✓ User behavior drill down with high fidelity replay & reporting of the user experience
- ✓ Correlated customer behavior with network and application data
- ✓ High conversion and retention rates with quantifiable business impact analysis

Available Today!

- Capture and high-fidelity replay of mobile gestures for mobile web sessions on iOS and Android-based devices
- Add-on Heatmap, Link Analytics, Form Analytics, and Attention Maps for better understanding of users' intent through highly visual analytics



Tealeaf CX Mobile

Capture Mobile Experience through the eyes of individuals to improve their engagement and optimize their return on experience



Tealeaf cxMobile



Automatically detect mobile obstacles and issues

- Understand the user across mobile web, native, hybrid and HTML5 apps and the desktop web site
- Automatically detect customer obstacles and issues without having to re-launch your service
- Isolate problems and quantify users impacted to prioritize key decisions



Capture rich, in-screen information

- In-screen actions, including orientation, pinching, and scrolling
- Device-level data, such as device type, browser version or operating system



Obtain complete visual replay

- Enhanced mobile browser replay provides the context needed to re-create problems and optimize functionality

A Mobile Enterprise Needs...

High quality mobile apps built and tested for a rapidly evolving mobile infrastructure

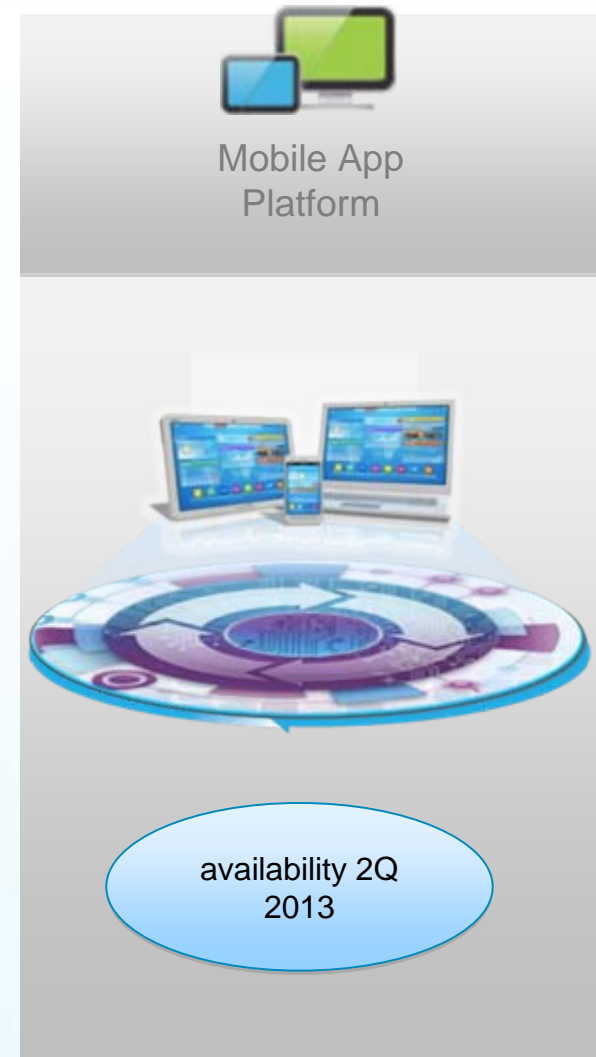
IBM Rational Test Workbench

▪ Mobile Test Automation

- Support for native and hybrid applications running on Android and iOS
- Natural language test and visual test editing
- Simplified IDE and mobile device clients for test authoring, execution, and reporting

▪ New Eclipse Client integrating

- Mobile Test Automation
- Support for Selenium web GUI test automation
- Multi-channel test scenarios
- Integration with Rational Quality Manager and the IBM Worklight mobile development platform



How IBM Embrace Mobile Technology: BYOD



- The need
 - With employees driving the adoption of personal mobile devices into the business computing ecosystem
 - IBM needs a security-rich, flexible way to provide access to enterprise data and applications
- The solution
 - An open, security-rich environment that supports employees using a variety of consumer technologies for business purposes
- The benefit
 - Increased employee productivity and satisfaction, faster response to client needs and rapid return on investment
- IBM mobile apps can get you connected on-the-go
 - IBM Connections
 - IBM Sametime
 - IBM Cognos Mobile
 - IBM Business Process manager
 - IBM Notes Traveler



E.Sun Bank Secures IMS Information for Mobile Banking



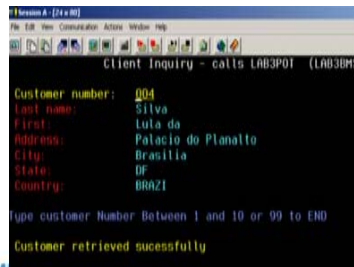
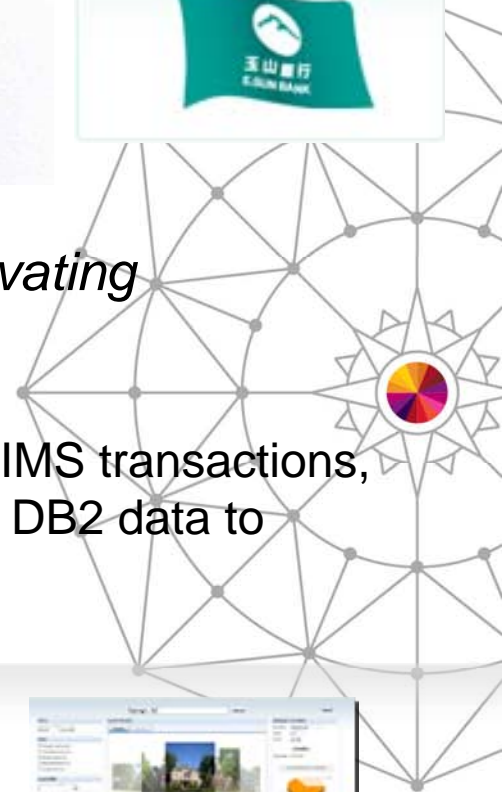
Meeting client demands and continually innovating

Banking information on diverse platforms

Mobile phone banking and cloud management for customers as an alternative from traditional banking

IBM Solution

WebSphere drives IMS transactions, accessing IMS and DB2 data to mobile devices



SHARE
in Anaheim

University of Florida Goes Mobile



Enabling 50,000 students, 5,400 faculty members and staff access to online features anytime, anywhere

Data provided to students real time

Mobile formatted information of class schedules, textbooks, academic dates, grades, emergency information and campus map

IBM Solution

Accessing CICS with System z information via smartphones

Up to 1M transactions/day

Integrated Student Information System (ISIS)



Complete your evaluations online at www.SHARE.org/Anaheim-Eval

City and County of Honolulu Keeps Citizens Informed



Technological transformation to increase citizen participation

Real time information for citizens

Mobile formatted information of government data from department budgets to planning and permitting

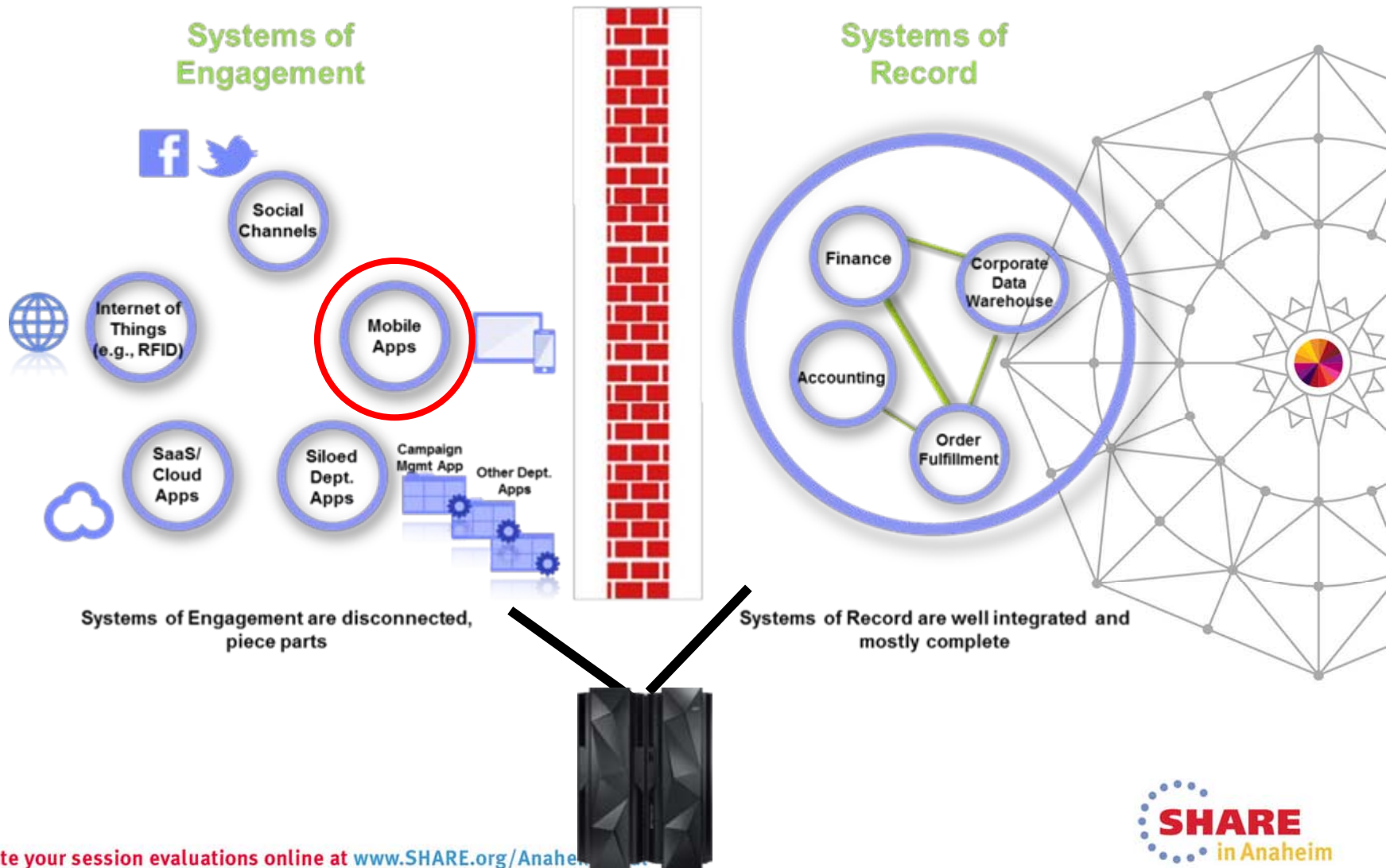
[Video](#)

IBM Solution

IFLs deploying Linux on zEnterprise 114 to cloud-oriented applications using Maximo to help citizens report city problems and schedule work

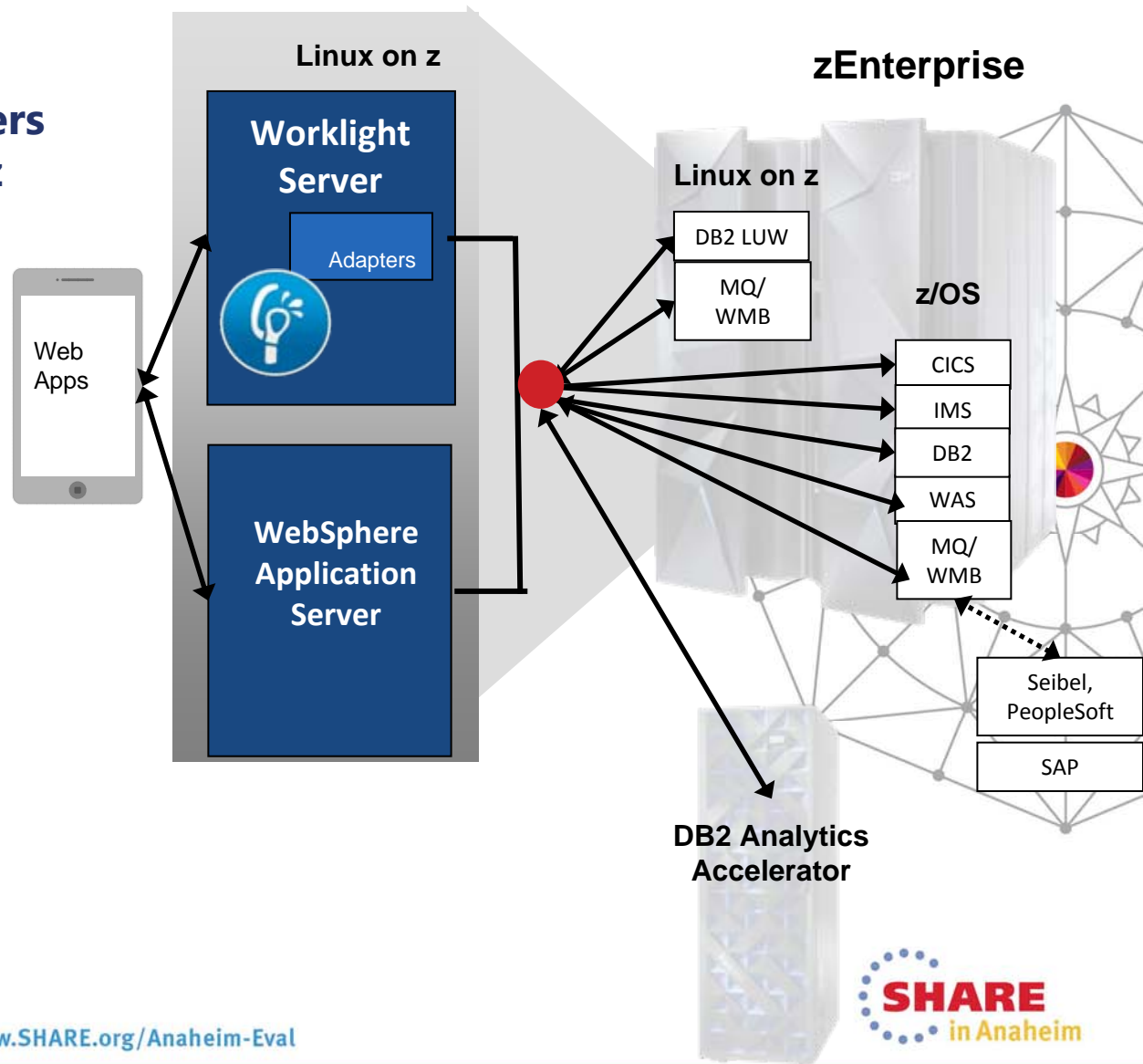


System z Bridging Systems of Record with Systems of Engagement



Connecting Mobile Apps on the zEnterprise

- **Server side software components and adapters for channeling System z to mobile devices** with IBM Worklight Server
- **Mobile application support** with WebSphere Application Server on System z
- **Mobile protocol connectivity with core System z applications** including CICS, IMS, TPF, MQ, WMB and DB2



System z Mobile with Worklight Server



Linux on z

z/OS



Linux on z

Worklight Server in WAS

Server-side Java
App Code -- WAS

Application Center
Enterprise App Store

Worklight Console

JSON Translation

Push Notifications

Authentication

Analytics

Adapter Library

SAP

SQL

WMB

SOAP

HTTP/REST

Cast Iron

z/OS

CICS

Application Code

Device

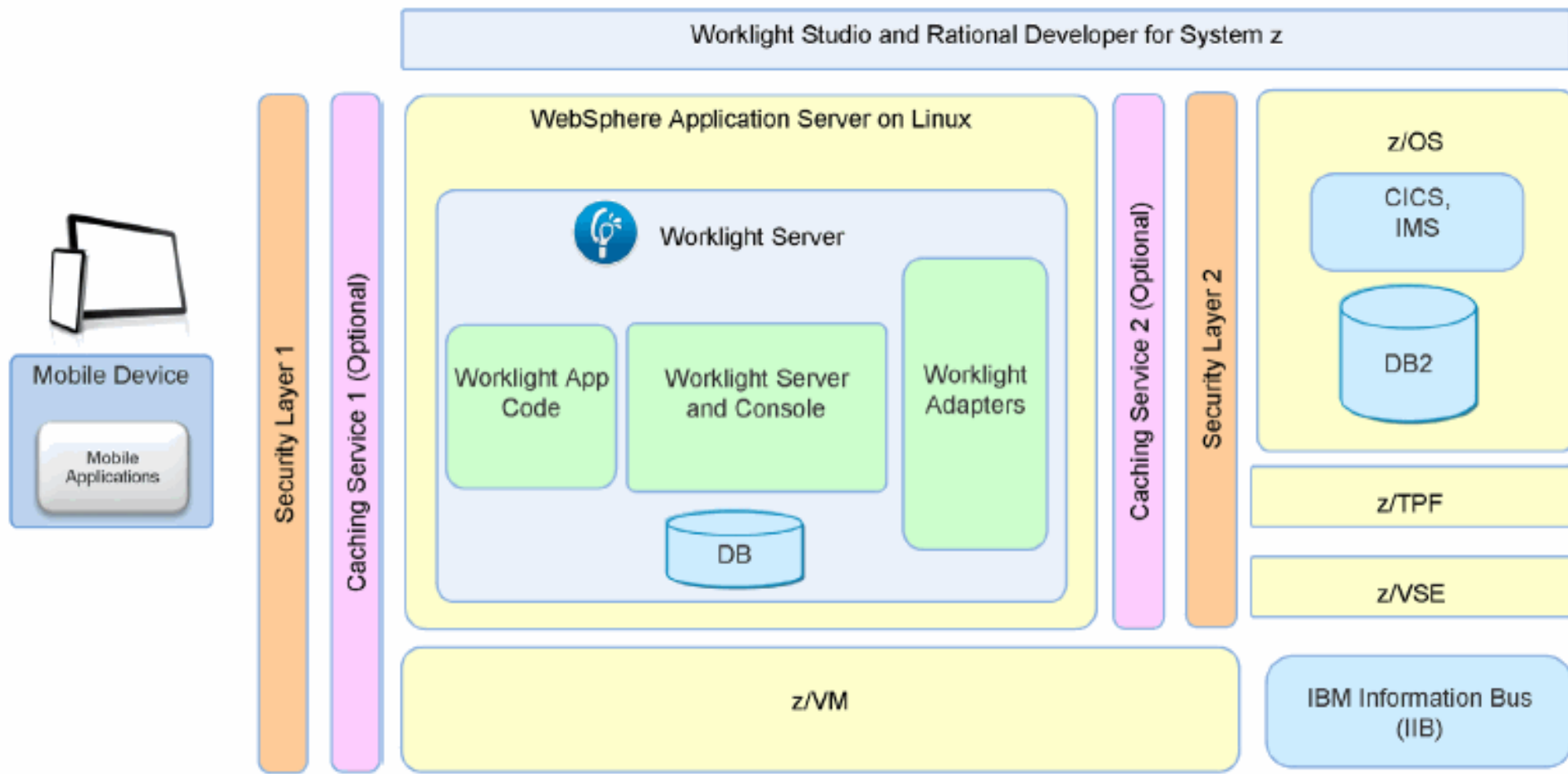
PhoneGap

Worklight

- Security and Authentication
- Back-end Data Integration
- Caching and local data

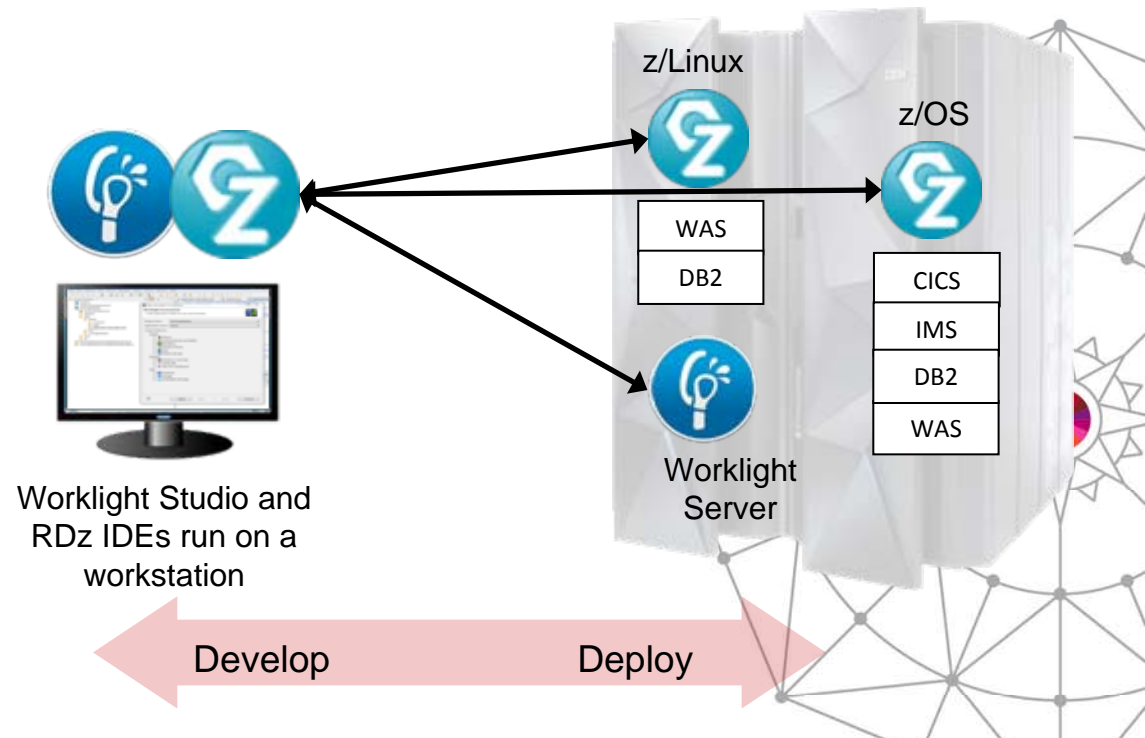
Mobile Environment on System z

Architecture Overview



Building Mobile Apps on the zEnterprise

- **Eclipse-based IDE for creating mobile applications** with IBM Worklight Studio integrated with Rational Developer for z (RDz)
- **Developer mobile tools with programming models** and web support with WAS Developer Tools for Eclipse (WDT)
- **Enterprise mobile application development for WebSphere** Application Server with Rational Application Developer (RAD)
- **Determine which apps need to be modified to support mobile** with Rational Asset Analyzer

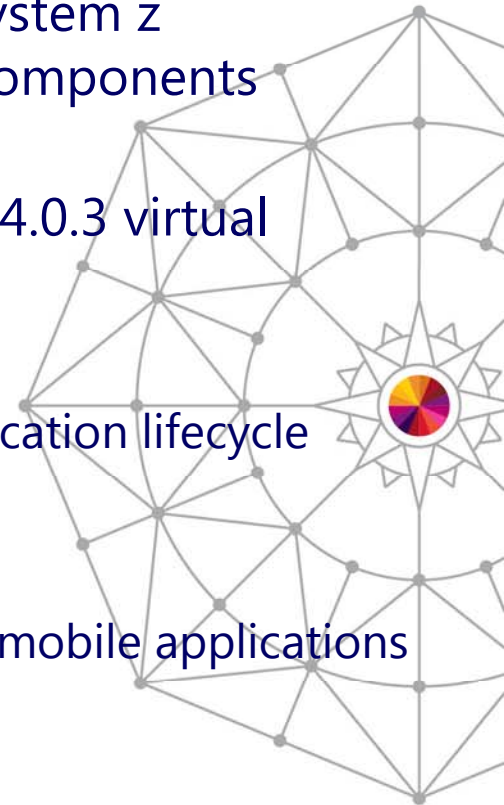


IBM Worklight - an open, comprehensive and advanced mobile application platform to build, run and manage mobile applications

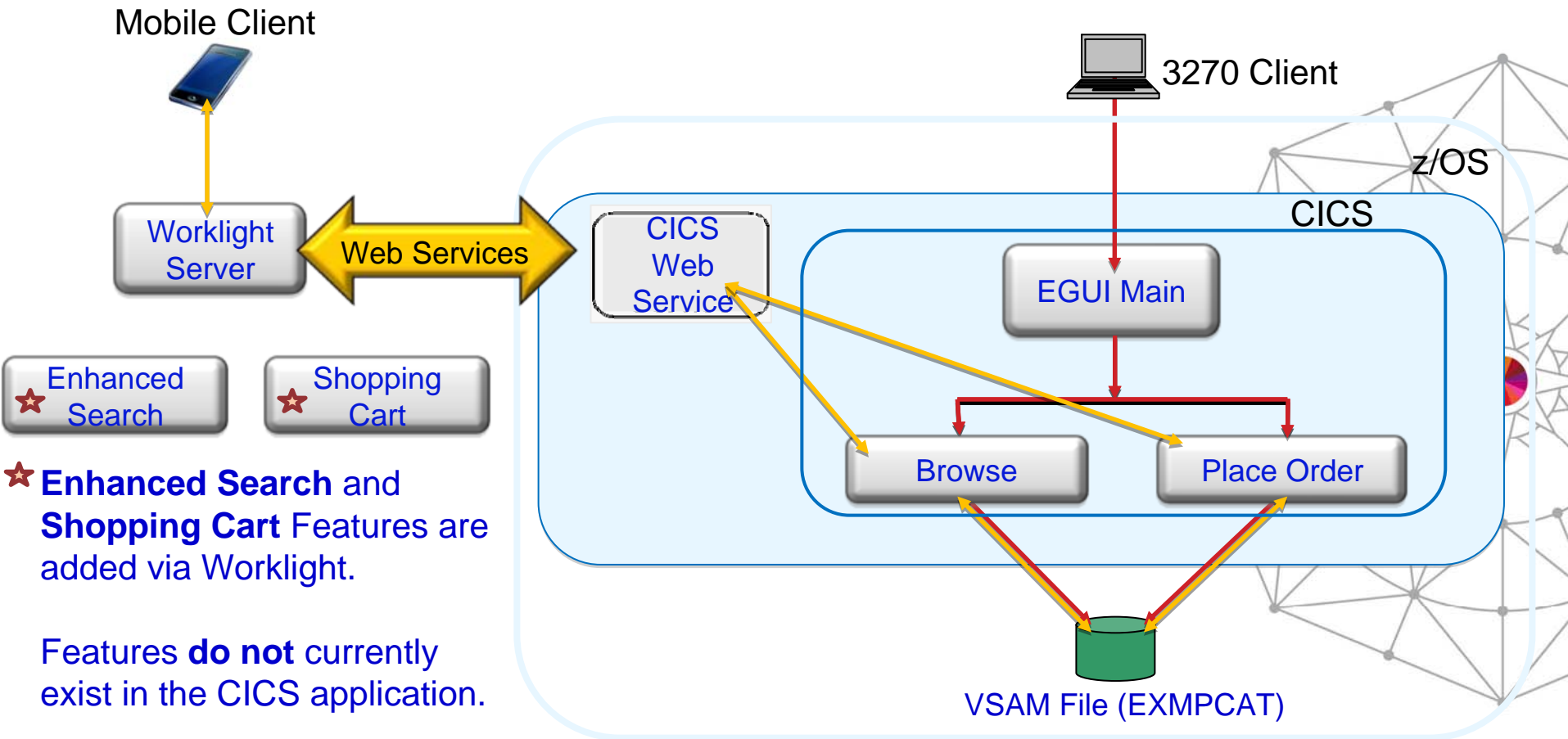
Rational Development Platform



- Rational Developer for System z (RDz)
 - Helps develop and maintain application code for System z environments along with the code for the mobile components (includes embedded Worklight Studio)
- Rational Test Workbench version 8.5 and Android x86 4.0.3 virtual machine
- Collaborative Lifecycle Management (CLM)
 - Helps improve development team productivity with application lifecycle management capabilities integrated with Worklight
- Rational Host Access Transformation Service
 - Helps transform legacy system applications into modern mobile applications (includes embedded Worklight Studio)
- Optimized for IBM middleware
 - Including the new, lightweight Liberty Profile, the full WebSphere Application Server profile, the IBM WebSphere Portal Server and IBM Workload Deployer



IBM Worklight Enhances the CICS Web Service Enabled App



Demo

IBM's Worklight Enhance and Extending Your Investment in Legacy Applications



- No change to CICS applications are required
- Enhance and extend CICS applications with new capabilities for mobile users NOT available in traditional 3270 based applications
- Leverage CICS Connectivity options to access applications and data Leverage CICS security
- Maximize 24x7 availability and z/OS QoS for mission critical applications
- Develop mobile applications and interfaces once and deploy to multiple device types with the Worklight Studio
- Manage initial mobile application deployment and subsequent updates at an enterprise level with the Worklight Server



IBM GENAPP Mobile Application Sample for CICS TS

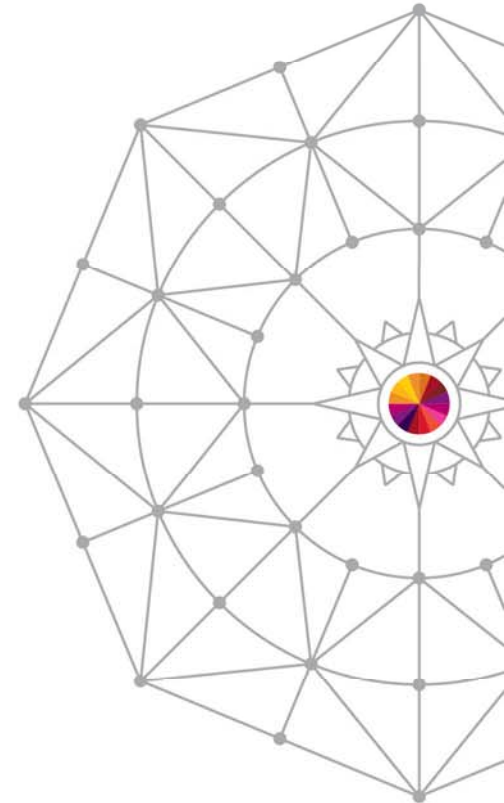


- GENAPP Mobile Application Sample Code
 - <http://www-01.ibm.com/support/docview.wss?uid=swg24035181>
 - Based on CICS SupportPac (CA0D) used to demonstrate how to expose a legacy CICS TS for z/OS application to a mobile front-end by leveraging IBM Worklight mobile framework
 - *CICS TS Feature Pack for Mobile Extensions V1.0*
 - Support the following operation systems:
 - *Google Android – example using the Google Android cloud notification framework (C2DM)*
 - *RIM BlackBerry OS*
 - *Apple iOS - example using Apple iOS framework (APNS)*
 - *Microsoft Windows Phone*
- CICS SupportPacs Home Page
 - <http://www-01.ibm.com/support/docview.wss?uid=swg27007241>



Pre-reqs for GENAPP Sample

- [CICS Explorer SDK V5.1, or later.](#)
- [CICS SupportPac CB12: GENAPP \(General Insurance Application\)](#)
- [Eclipse \(Juno\) 4.2.2 SR2](#)
- [IBM 64-bit SDK for z/OS, Java Technology Edition Version 6.0.1](#)
- [IBM Worklight Developer Edition V6.0](#)



CICS Mobile Extension Feature Pak - free download

Useful Links



- IBM MobileFirst:
 - <http://www.ibm.com/mobilefirst/us/en/>
- IBM Worklight:
 - <http://www-03.ibm.com/software/products/us/en/worklight/>
- Extending Your Business to Mobile Devices with IBM Worklight
 - <http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/SG248117.html>
- Redbook: Implementing CICS JSON web services for mobile applications
 - <http://www.redbooks.ibm.com/abstracts/sg248161.html>
- IBM Mobile application development
 - <http://www-01.ibm.com/software/rational/mobile/products/>
- ITSO Point-of-View (PoV)
 - <http://www.redbooks.ibm.com/abstracts/redp5088.html?Open>
- Rational Developer for System z (RDz)
 - <http://www-03.ibm.com/software/products/us/en/developerforsystemz/>
- Youtube video on Rational Test Workbench for
 - Android
 - <http://www.youtube.com/watch?v=kPiVpl8Ibjw>
 - iOS
 - <http://www.youtube.com/watch?v=0o8ctAMcoWM>



Thank You!



IBM

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