



Build and Connect Apps, Devices and Data: Take Your Enterprise Mobile

Tony Duong, IBM
qcduong@us.ibm.com

Monday, February 4, 2013 4:30 – 5:30 PM
Session 12635



Agenda



- Mobile Transformation of CICS Applications
- Worklight Overview
- Mobile Demo
- Additional Worklight Functionality
- Summary

Mobile is a mandatory transformation

10 Billion devices
by 2020

61% of CIOs put
mobile as priority

45% increased productivity
with mobile apps



IBM Comprehensive Mobile Strategy

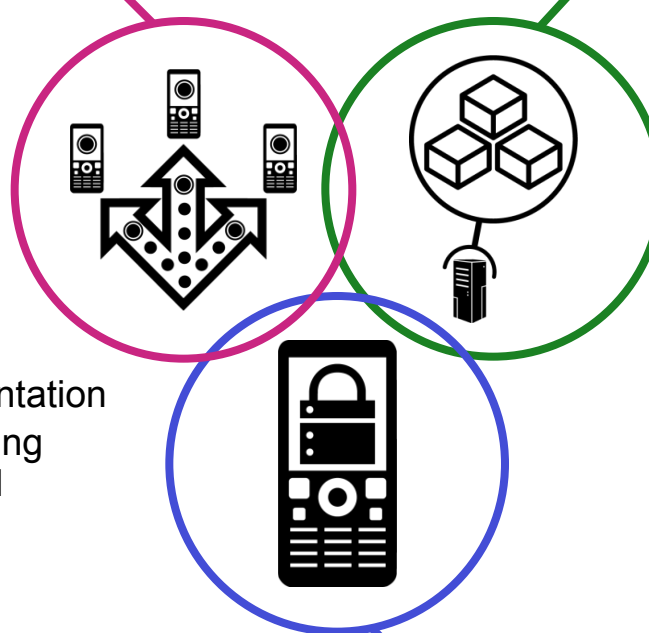
Extend & Transform

Extend existing business capabilities to mobile devices

Transform the business by creating new opportunities

Key Capabilities

- Strategy, planning and implementation
- Mobile-enabled solutions including analytics, commerce, and social business
- Mobile as a service



Build & Connect

Build mobile applications

Connect to, and **run** backend systems in support of mobile

Key Capabilities

- Multiplatform mobile web, hybrid and native app development
- Enterprise data, service, and application integration
- Iterative teamwork

Manage & Secure

Manage mobile devices, services and applications

Secure my mobile business

Key Capabilities

- Mobile Governance
- Device analytics and control
- Secure network communications & management

Mobile is a significant component in the evolution of computing



Complete your sessions evaluation online at SHARE.org/SFEval

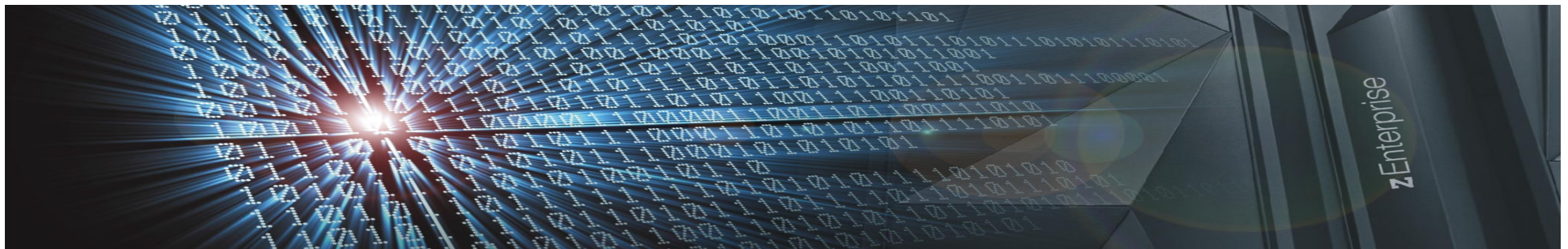
CICS z Enterprise Background

- CICS TS is designed to enable customers to create and maintain a competitive advantage
- CICS Transaction Server continues to deliver innovative and essential technology to enable customers to deliver on their business imperatives, now and into the future

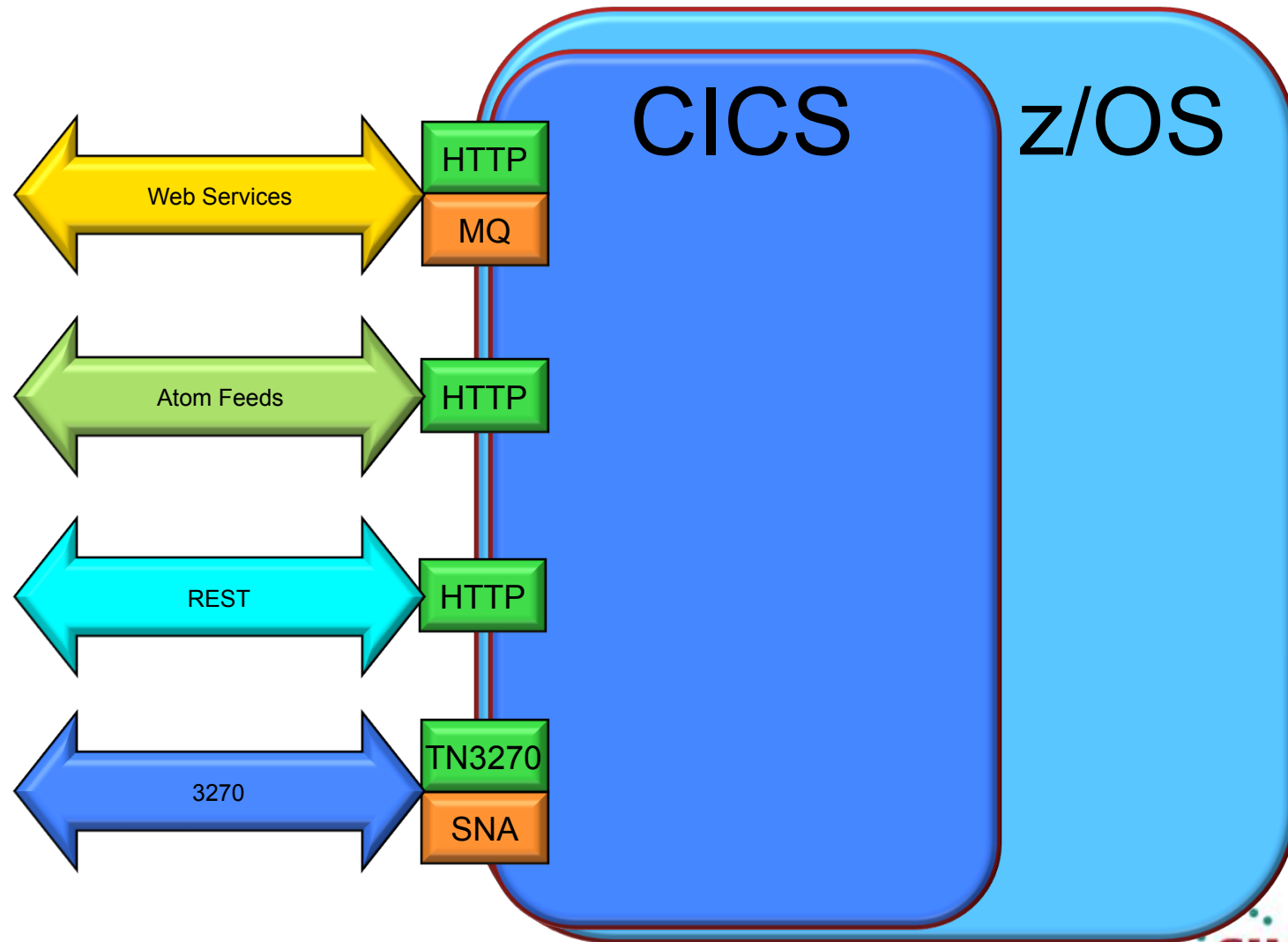
Large scale business critical workloads, some > 1bn transactions per day

Large installations with mixed workloads continue to support core business

CICS WebServices are the most widely adopted CICS feature in the last 10 years



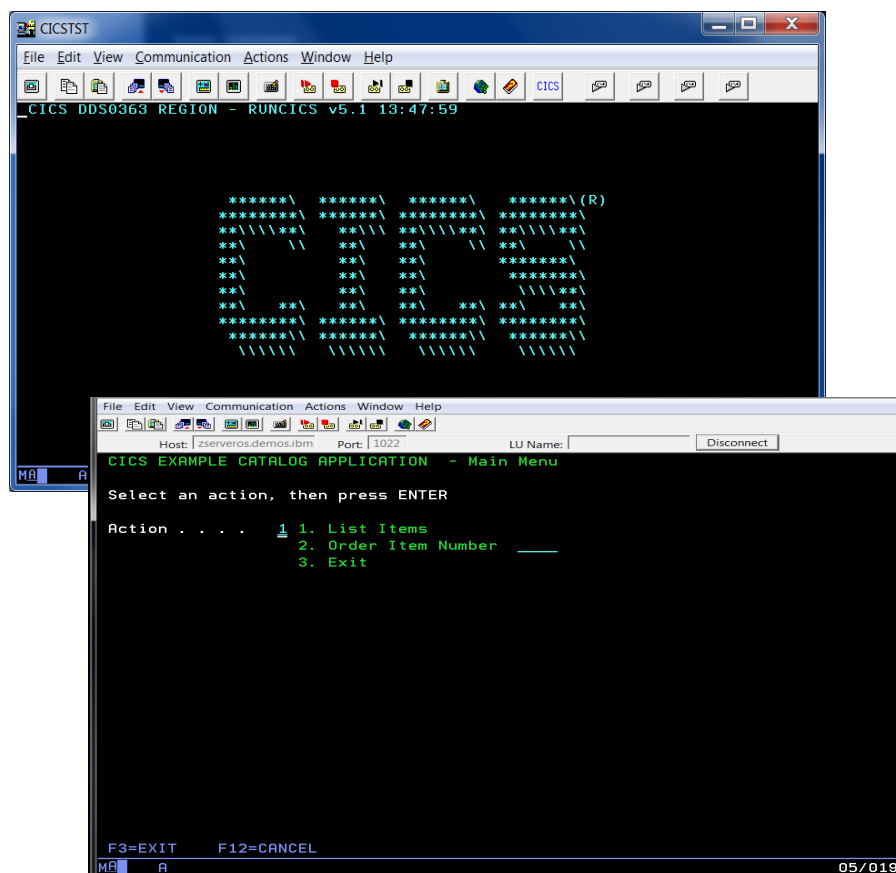
CLICS Connectivity Options



CICS Application Overview

- CICS Catalog Manager Application
 - COBOL based CICS application
 - VSAM File
 - Separate Presentation Logic and Business Logic
 - Callable Interface - Commarea

CICS Application Walkthrough



CICSST

File Edit View Communication Actions Window Help

CICS DDS0363 REGION - RUNCICS v5.1 13:47:59

```

*****\ *****\ *****\ *****\ (R)
*****\ *****\ *****\ *****\
**\ /\ **\ **\ /\ **\ /\
**\ /\ **\ **\ /\ **\ /\
**\ /\ **\ **\ /\ **\ /\
**\ /\ **\ **\ /\ **\ /\
*****\ *****\ *****\ *****\
*****\ *****\ *****\ *****\
\ /\ \ /\ \ /\ \ /\ \ /\ \ /\

```

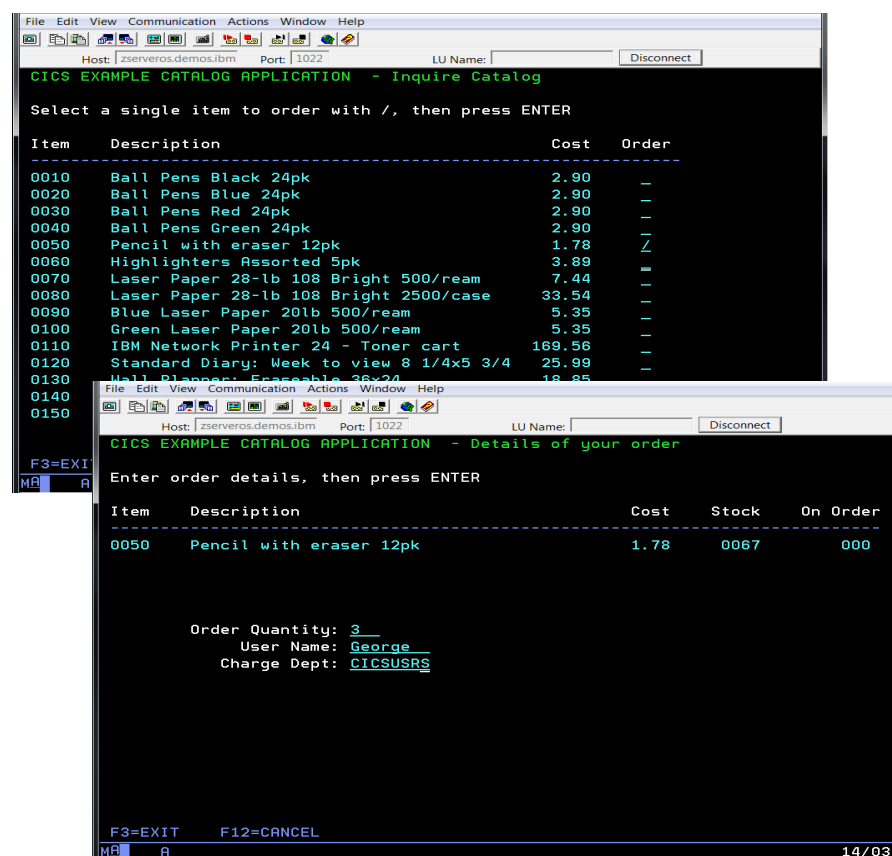
CICS EXAMPLE CATALOG APPLICATION - Main Menu

Select an action, then press ENTER

Action 1. List Items
2. Order Item Number
3. Exit

F3=EXIT F12=CANCEL

MA A 05/019



CICS EXAMPLE CATALOG APPLICATION - Inquire Catalog

Select a single item to order with /, then press ENTER

Item	Description	Cost	Order
0010	Ball Pens Black 24pk	2.90	-
0020	Ball Pens Blue 24pk	2.90	-
0030	Ball Pens Red 24pk	2.90	-
0040	Ball Pens Green 24pk	2.90	-
0050	Pencil with eraser 12pk	1.78	/
0060	Highlighters Assorted 5pk	3.89	-
0070	Laser Paper 28-lb 108 Bright 500/ream	7.44	-
0080	Laser Paper 28-lb 108 Bright 2500/case	33.54	-
0090	Blue Laser Paper 20lb 500/ream	5.35	-
0100	Green Laser Paper 20lb 500/ream	5.35	-
0110	IBM Network Printer 24 - Toner cart	169.56	-
0120	Standard Diary: Week to view 8 1/4x5 3/4	25.99	-
0130	Wall Planner: Erasable 36x24	18.85	-
0140			
0150			

F3=EXIT

MA A

CICS EXAMPLE CATALOG APPLICATION - Details of your order

Enter order details, then press ENTER

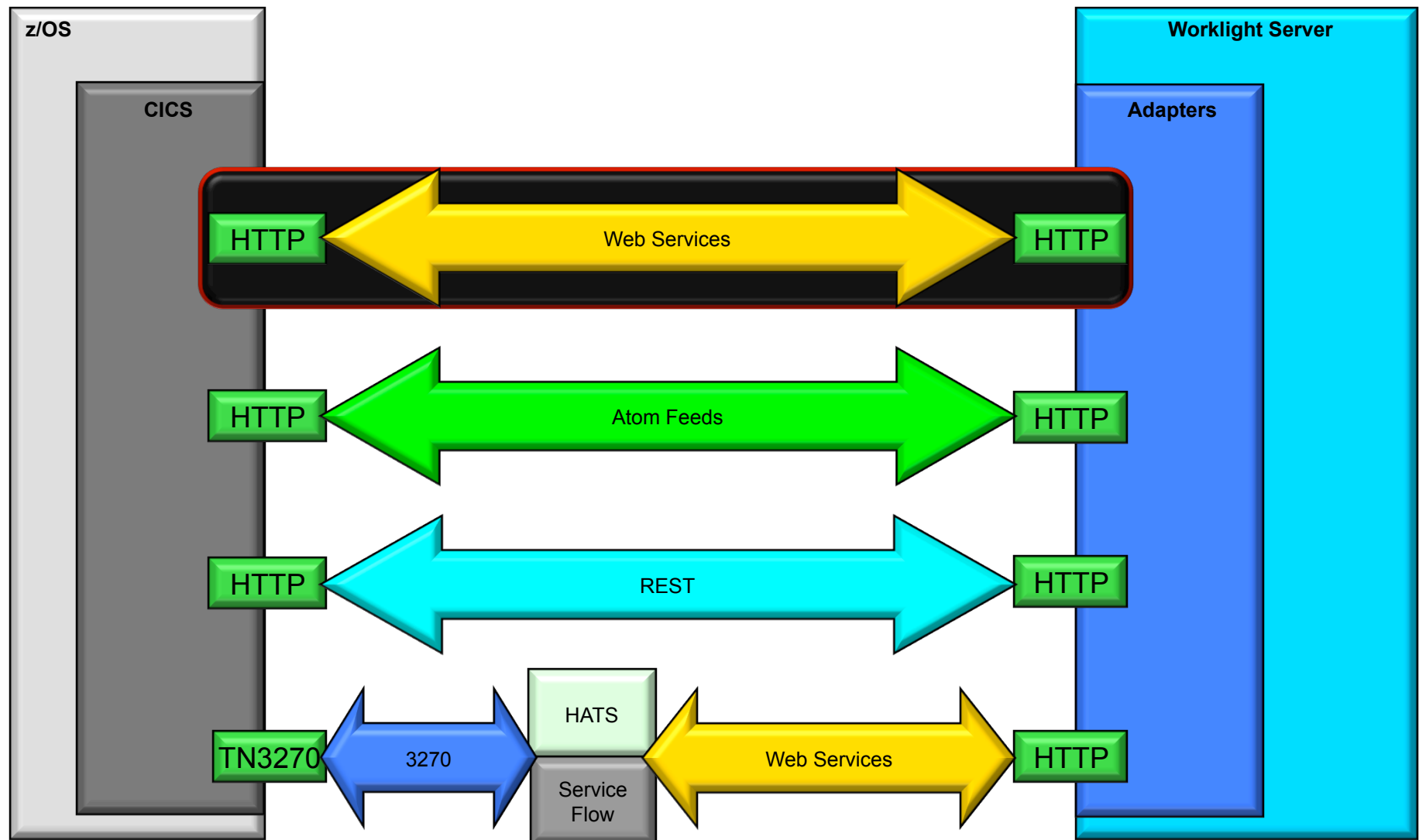
Item	Description	Cost	Stock	On Order
0050	Pencil with eraser 12pk	1.78	0067	000

Order Quantity: 3
User Name: George
Charge Dept: CICSUSRS

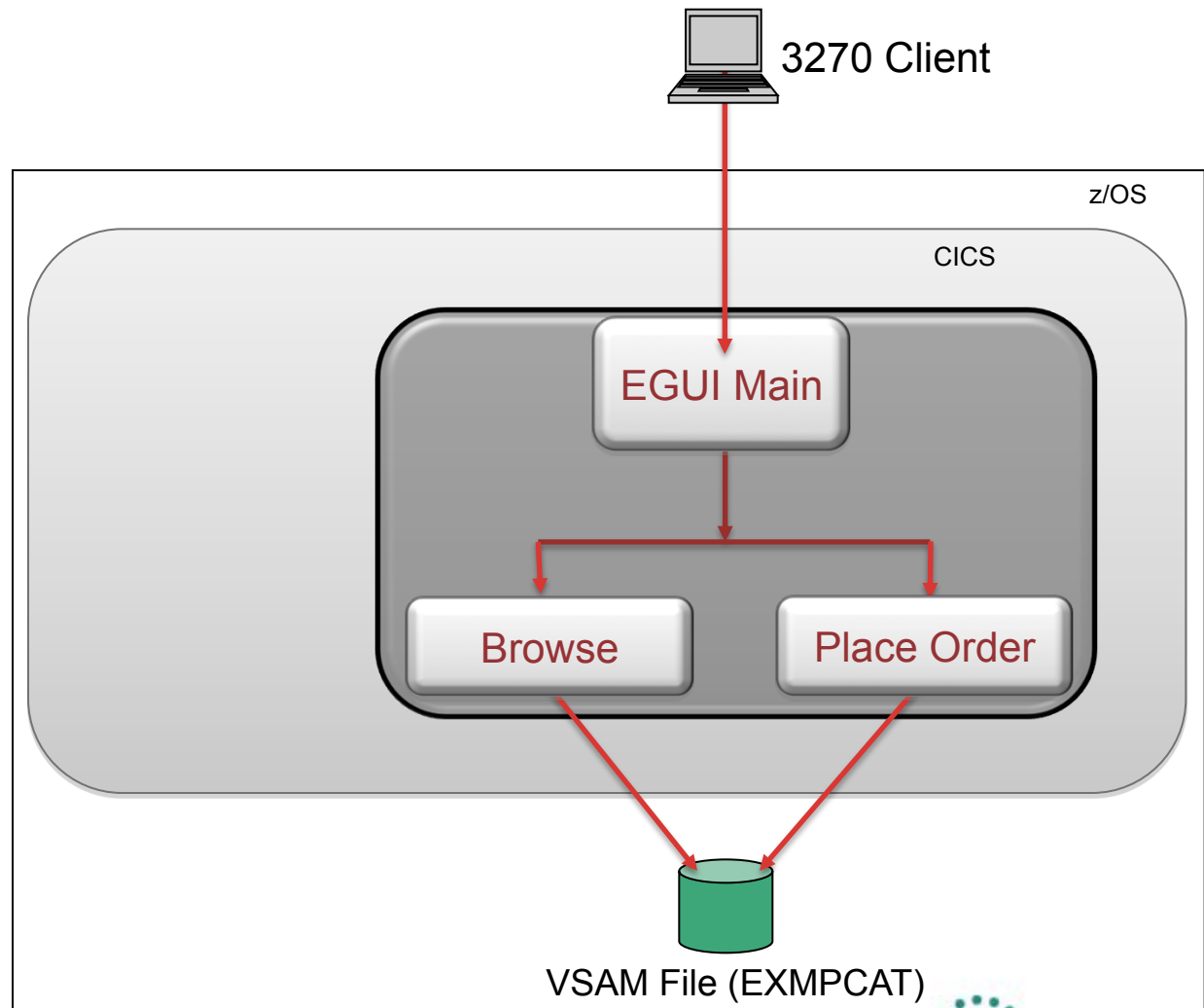
F3=EXIT F12=CANCEL

MA A 14/033

Worklight – CICS Connectivity Options

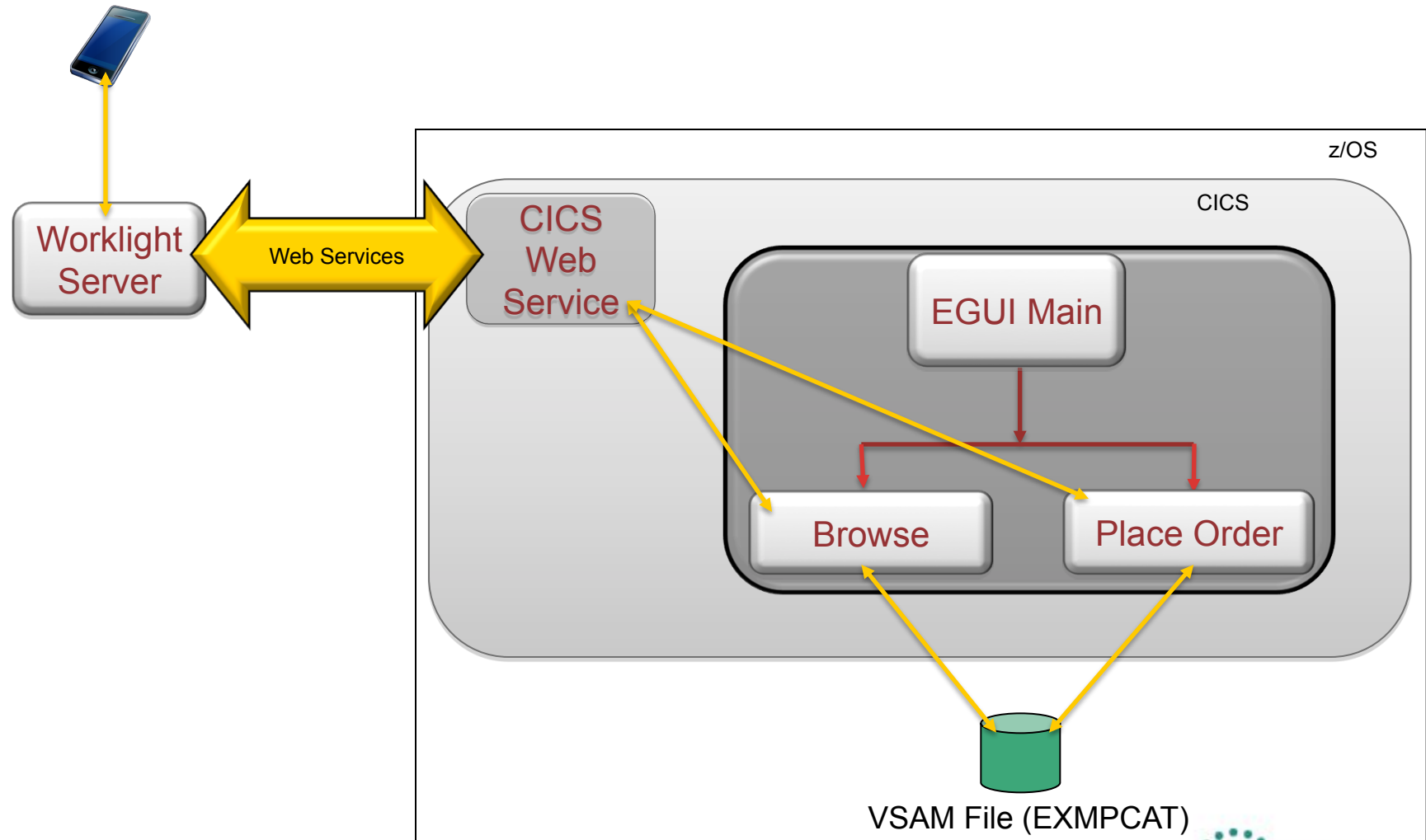


Existing CICS Web Service Enabled App

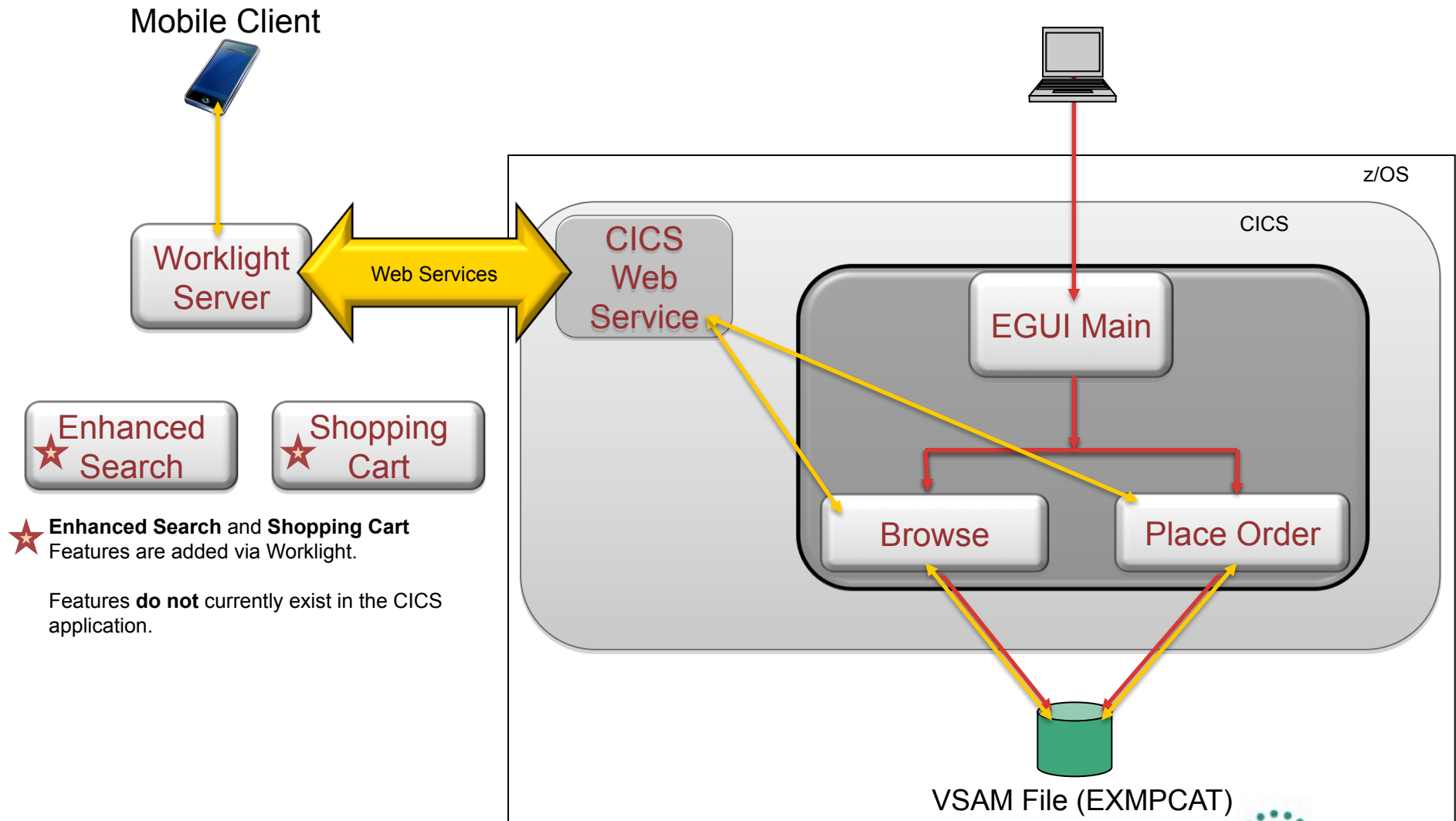


Worklight Modernizes the CICS Web Service Enabled App

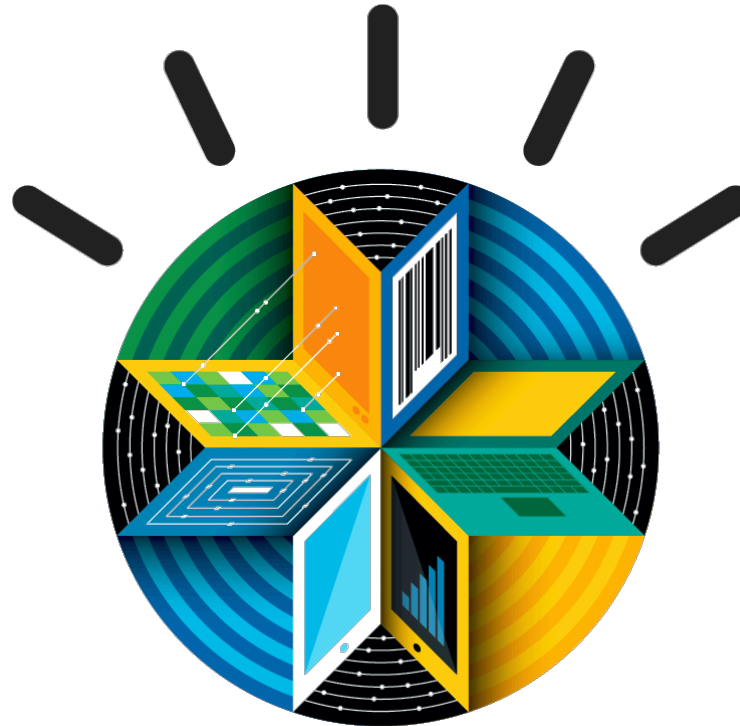
Mobile Client



Worklight Enhances the CICS Web Service Enabled App



IBM WORKLIGHT



IBM Worklight: A mobile enterprise application platform

Speeding the development, integration and management of mobile applications



IBM Worklight goes beyond mobile app UI creation to deliver full mobile middleware.



Client Challenge

Using standards-based technologies and tools and delivering an enterprise-grade services layer that meets the needs of mobile employees and customers

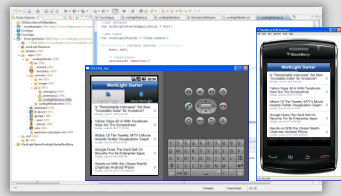
Key Capabilities

Mobile optimized middleware

- Open approach to 3rd-party integration
- Mix native and HTML
- Strong authentication framework
- Encrypted offline availability
- Enterprise back-end connectivity
- Unified push notifications
- Data collection for analytics
- Direct updates and remote disablement
- Packaged runtime skins

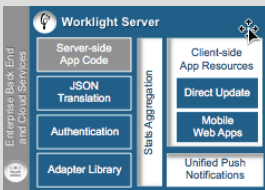
Complete your sessions evaluation online at SHARE.org/SFEval

Worklight Overview



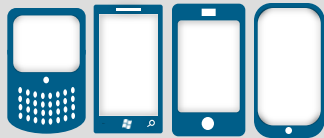
Worklight Studio

The most complete, extensible environment with maximum code reuse and per-device optimization



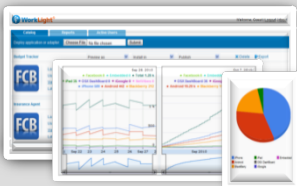
Worklight Server

Unified notifications, runtime skinning, version management, security, integration and delivery



Worklight Runtime Components

Extensive libraries and client APIs that expose and interface with native device functionality



Worklight Console

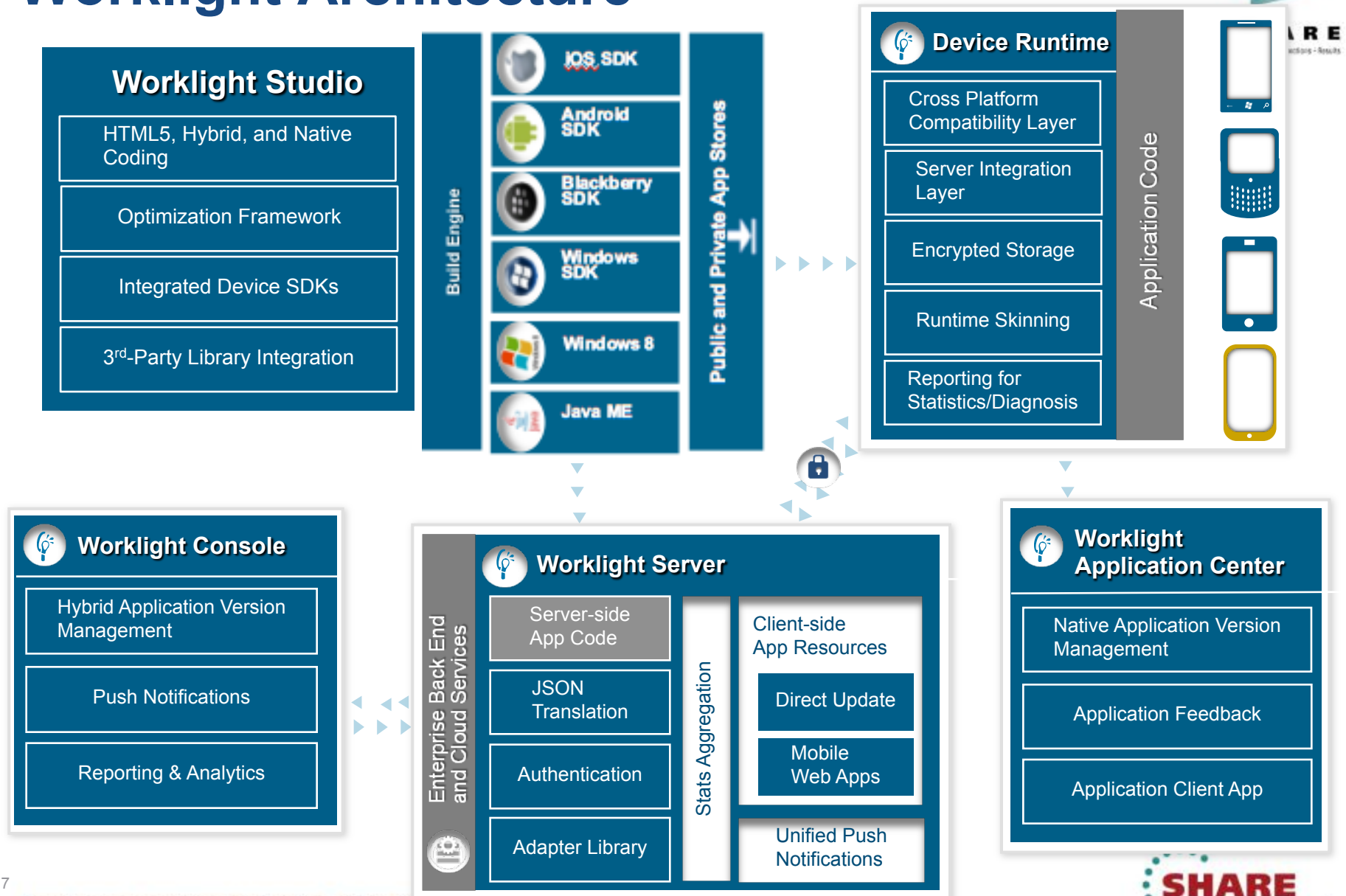
A web-based console for real-time analytics and control of your mobile apps and infrastructure



Worklight Application Center

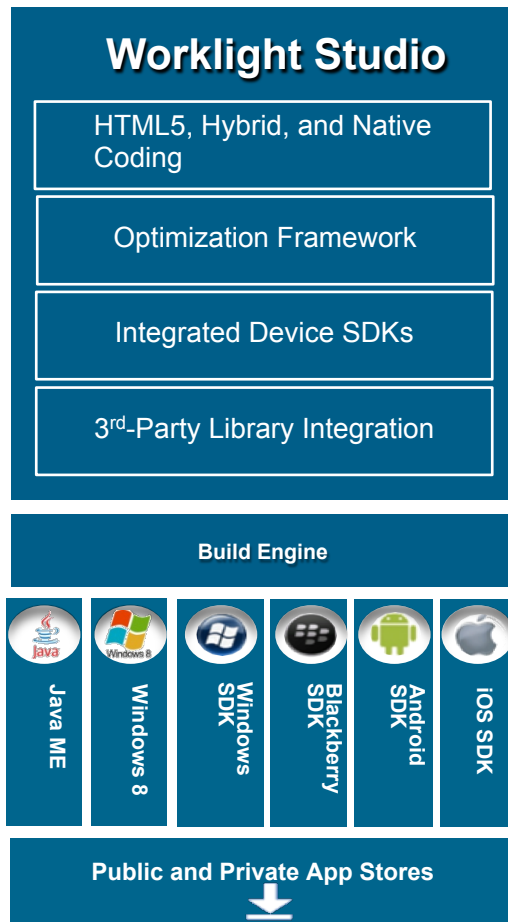
A cross-platform private mobile application store focused on the needs of a development organization or a team

Worklight Architecture



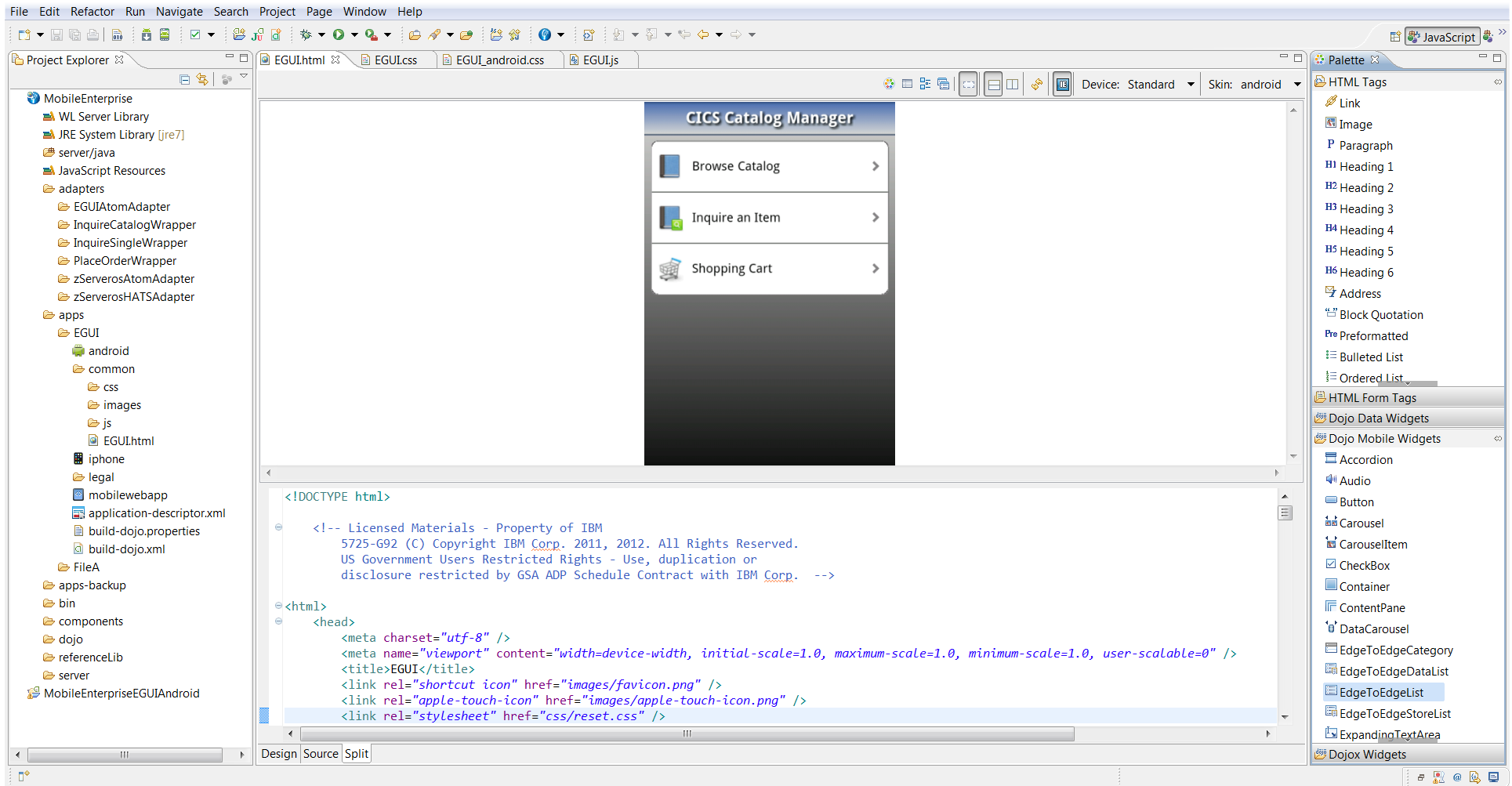


Worklight Studio

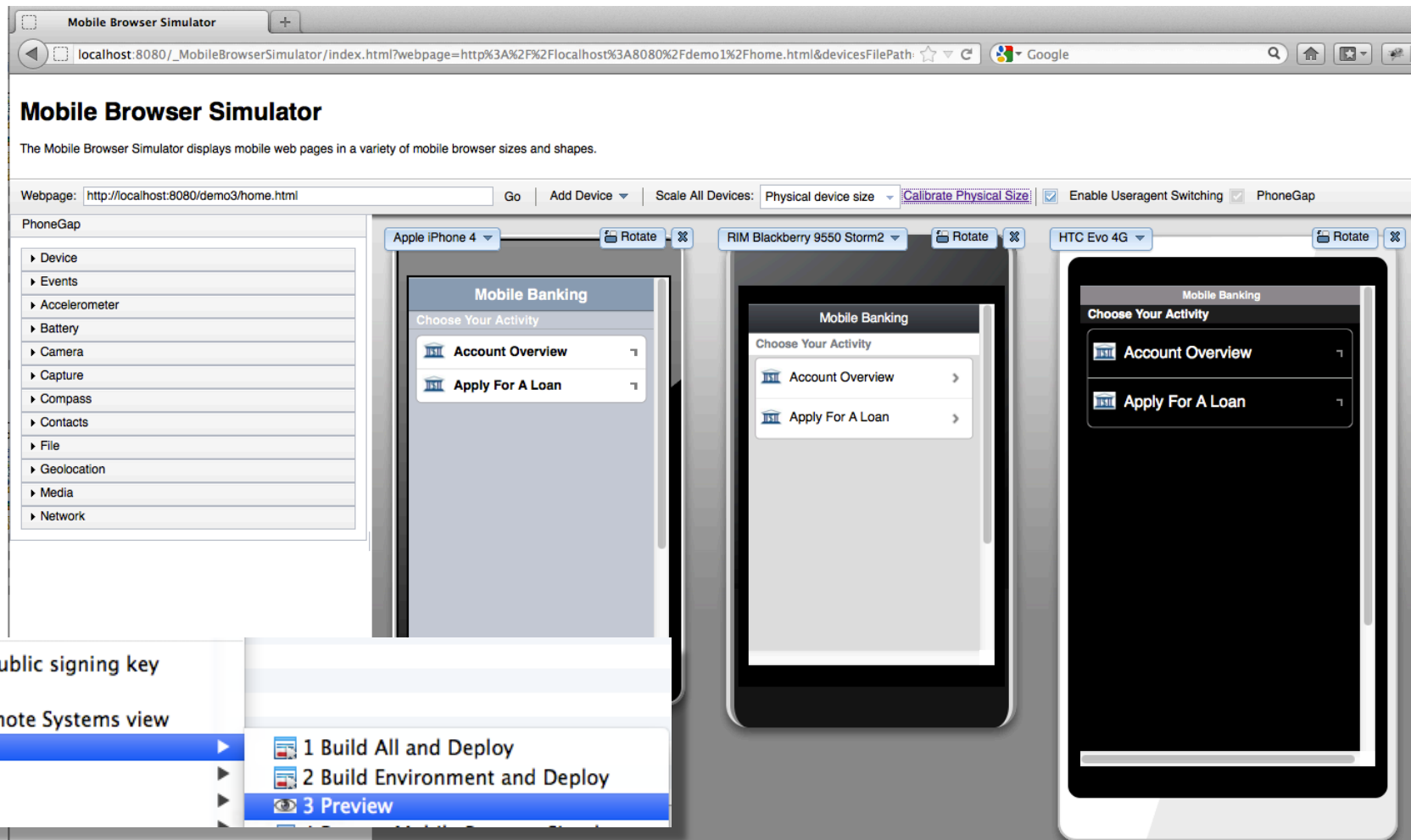


- Eclipse based, most complete, extensible Mobile IDE
- Build rich mobile application using open standard technologies and commonly available skills
- Single shared code base for multiple platforms - cross-platform compatibility
- Compatible with:
 - Dojo
 - JQuery
 - Others
- Native SDK integration
- Tooling for back-end connectivity utilities (Worklight Adapters)

Studio- WYSIWYG Development Environment



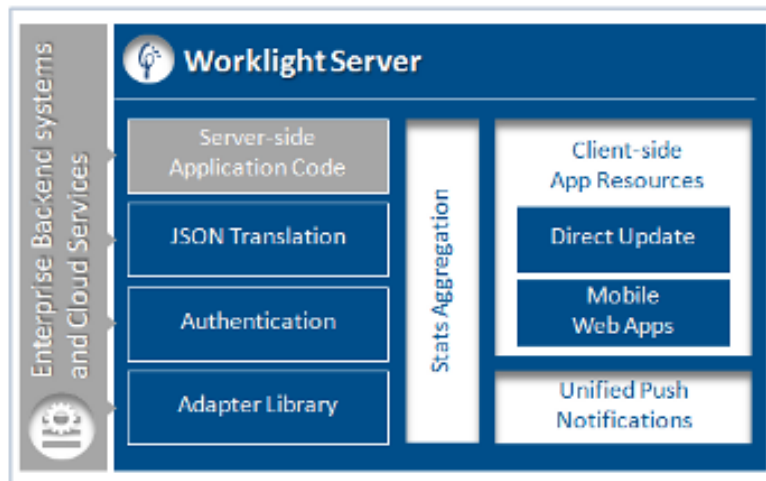
Mobile Browser Emulator - Preview in browser



Perform device specific tests in the Mobile Browser Simulator: supports PhoneGap and Worklight client API

Complete your sessions evaluation online at SHARE.org/SFEval

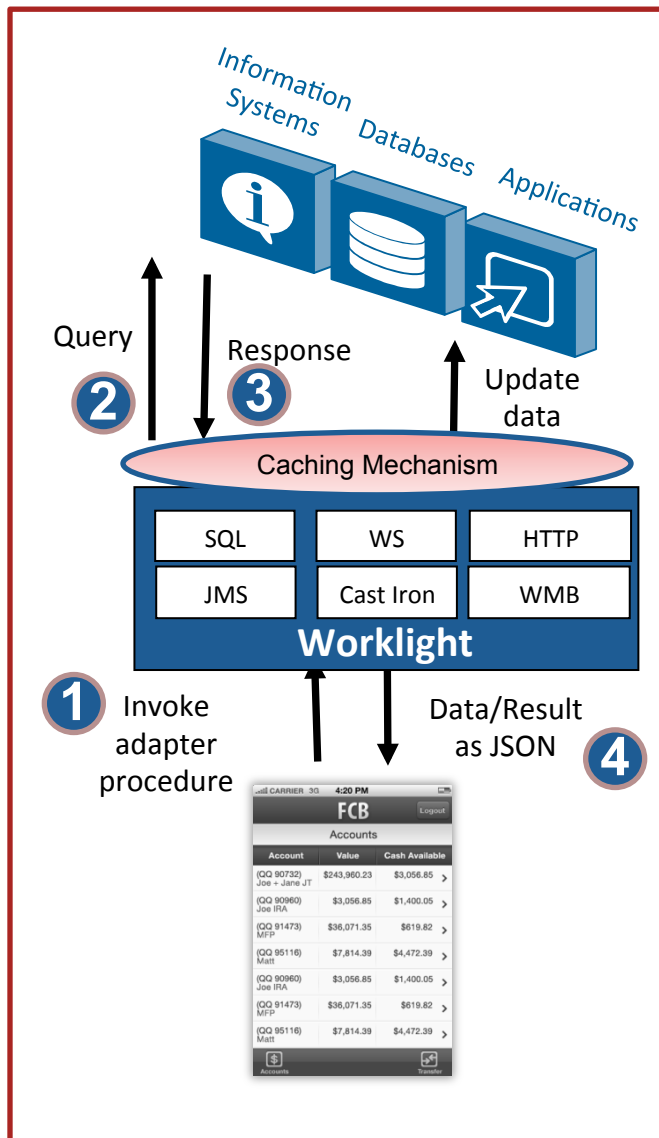
Worklight Server



A middleware component which delivers unified notifications, version management, security features, and integration services

- Distribution of mobile web apps
- Enterprise connectivity:
 - Secure client/server connectivity
 - Direct access to enterprise back-end data and transaction capabilities
 - Authentication enforcement
- Client control:
 - Application version management and remote disabling
 - Direct update of application code
- Unified Push Notifications
- Aggregation of usage statistics

Worklight Server- Adapters



Universality

Supports multiple integration technologies and back-end information systems

Read-only as well as Transactional Capabilities

Adapters support read-only and transactional access modes to back-end systems

Fast Development

Defined using simple XML syntax, and easily configure with JavaScript API

Security

Use of flexible authentication facilities to create connections with back-end systems
Adapters offer control over the identity of the connected user

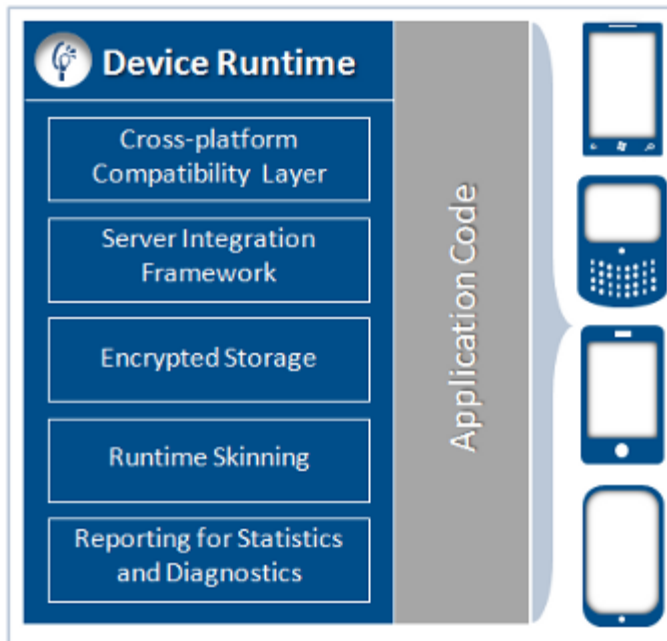
Caching

Caching utilized to store retrieved back-end data

Transparency

Data retrieved from back-end applications is exposed in a uniform manner regardless of the adapter type

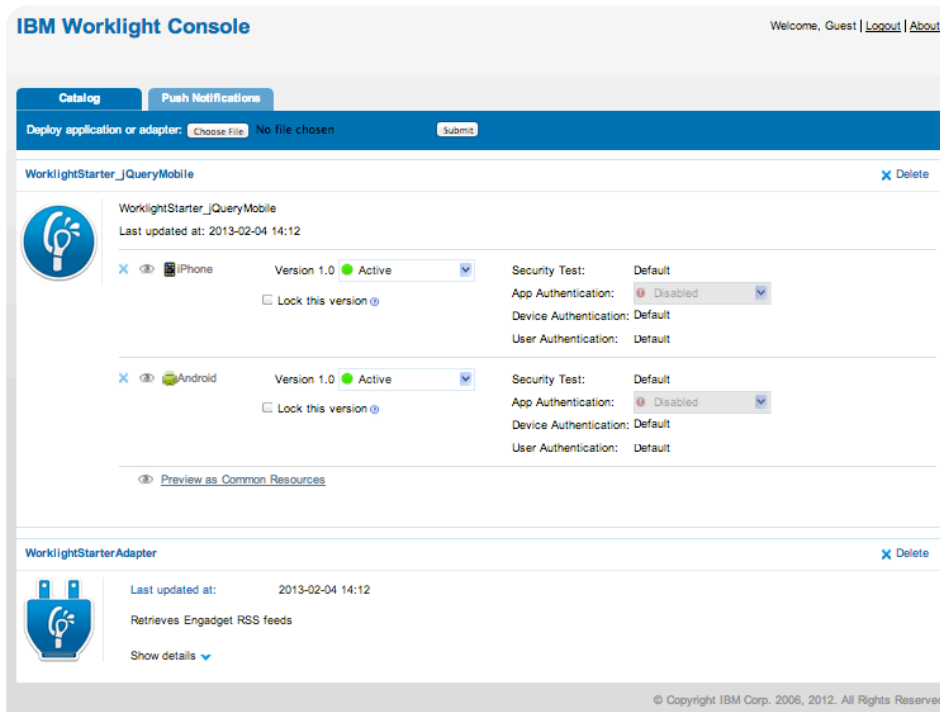
Worklight Device Runtime



Extensive libraries and client APIs that expose and interface with native device functionality and the Worklight server

- Cross-Platform Compatibility Layer
- Server Integration Framework
- Encrypted Storage
- Offline Authentication
- Runtime Skinning
- Statistics and Diagnostics Reporting

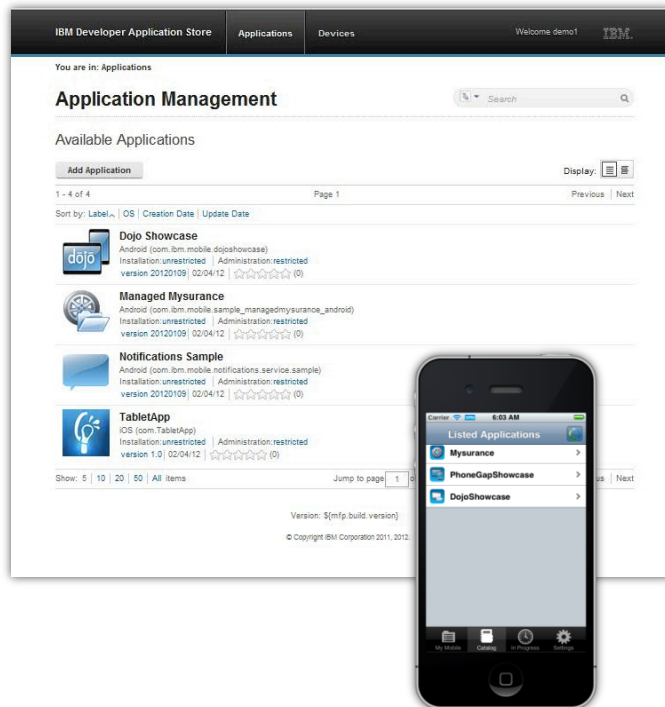
Worklight Console



A web-based console management of mobile apps and notifications

- Application Version Management
- Remote disable
- Push management
- Administrative dashboards for:
 - Deployed applications
 - Installed adapters
 - Push notifications

Application Center – Application Management

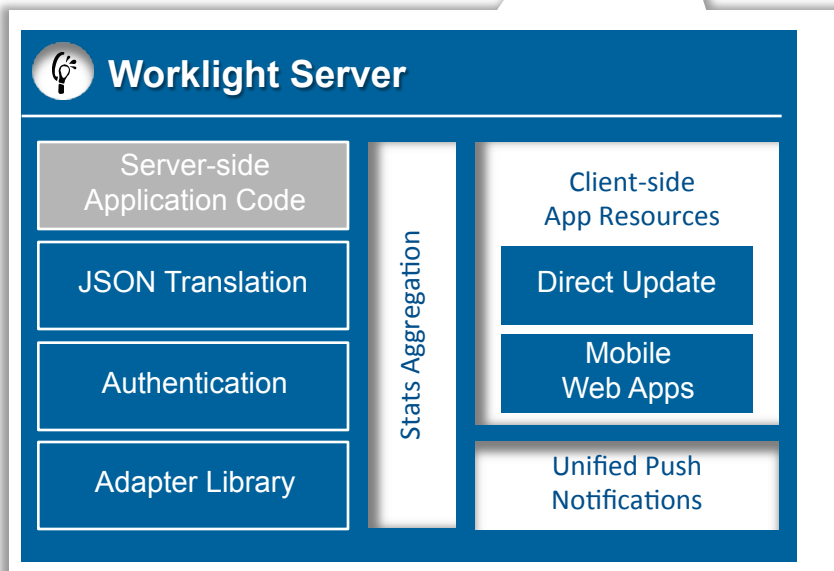
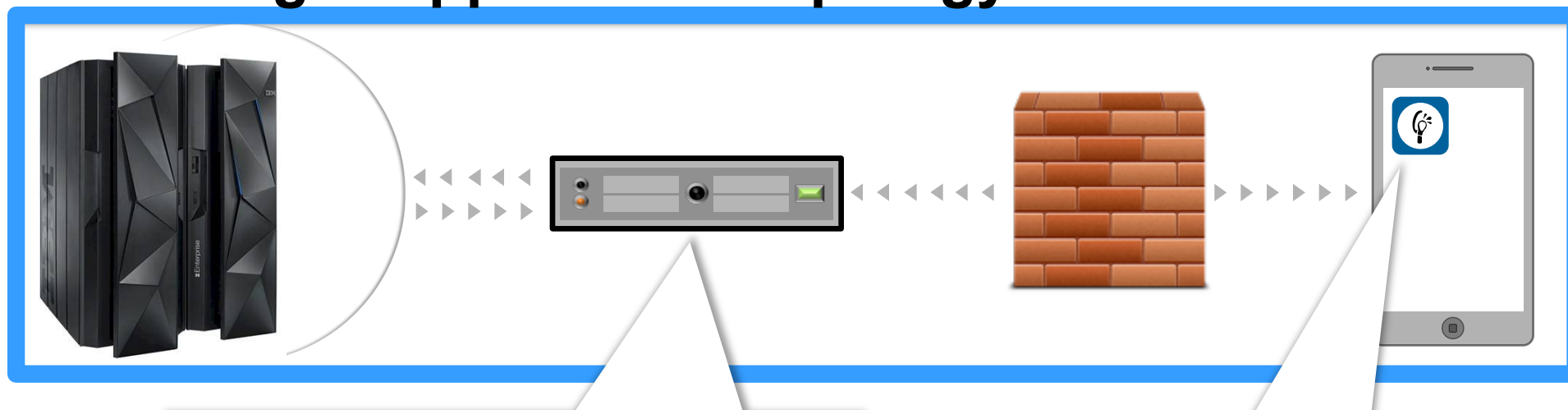


A cross platform private mobile application store similar to public app stores but focused on the needs of an organization or a team

Key capabilities:

- Delivers distribution and management of mobile applications within a company / teams
- Easy distribution of iOS and Android apps within a team
- Provides versioning and updates
- Centralizes rating and feedback information
- Controls who can modify or install an application with LDAP-based integration to define users and groups
- Easy to install and simple to run
- Integrates with IBM Endpoint Manager for app role-out to production

Worklight Application Topology



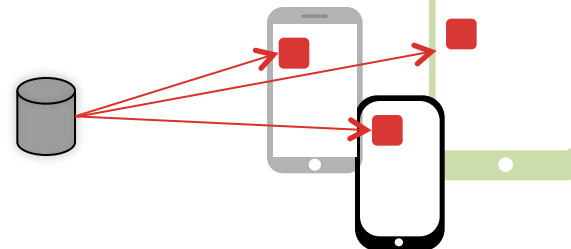
MOBILE APP DEMO

Flexible Push-Notification Framework

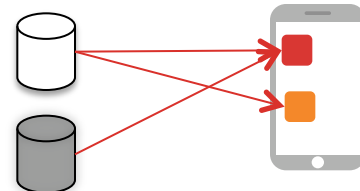
Common APIs for both iOS and Android



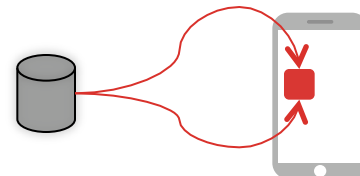
One application multiple devices
Custom subscription management



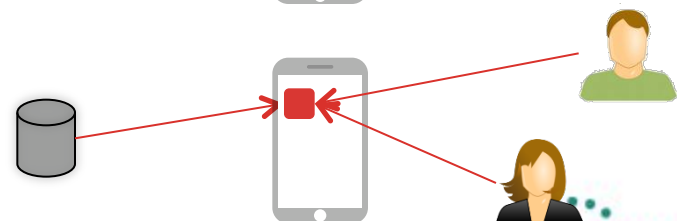
Many-to-many relationship between event sources and apps



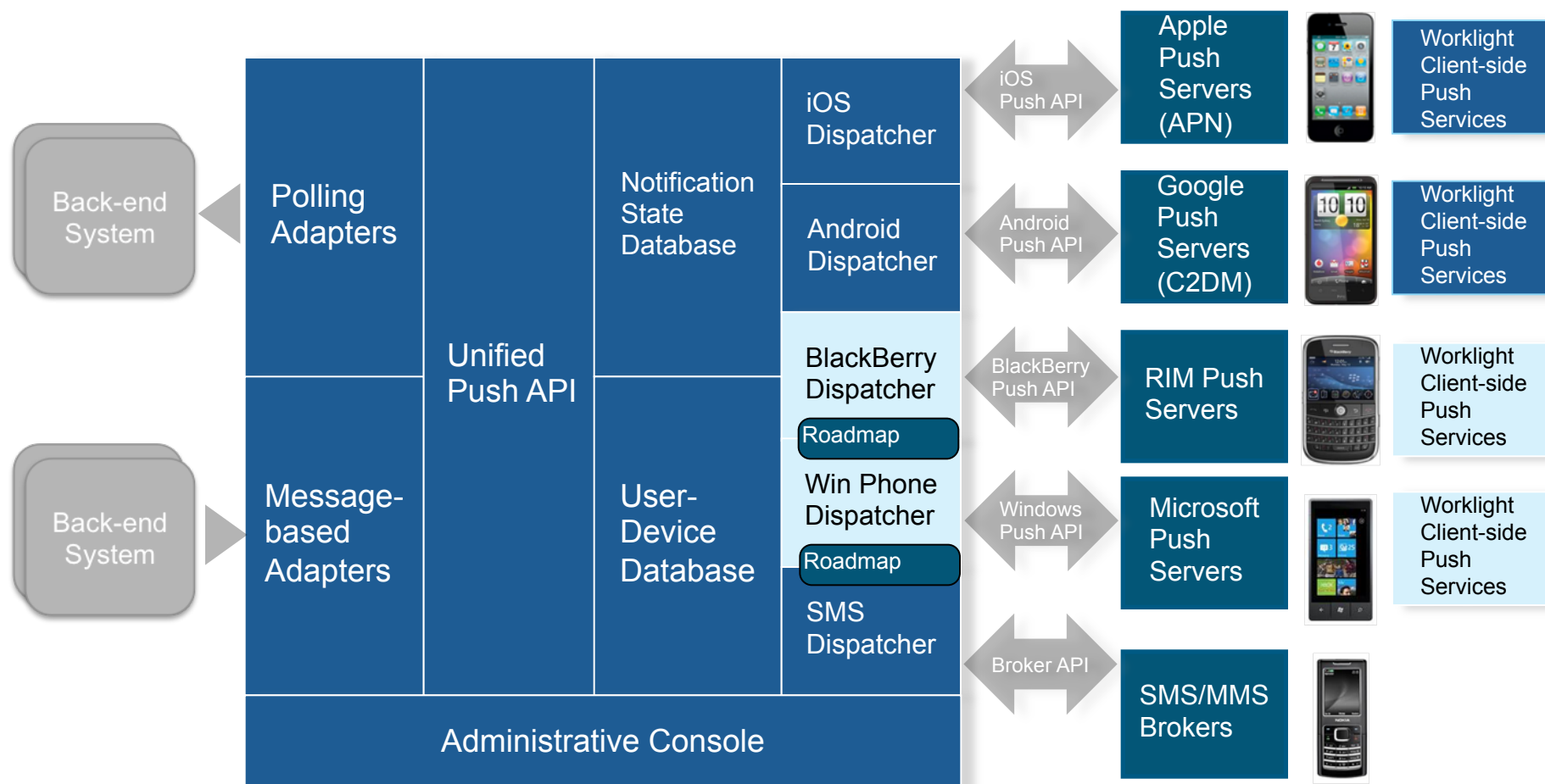
Multiple event sources from same back-end



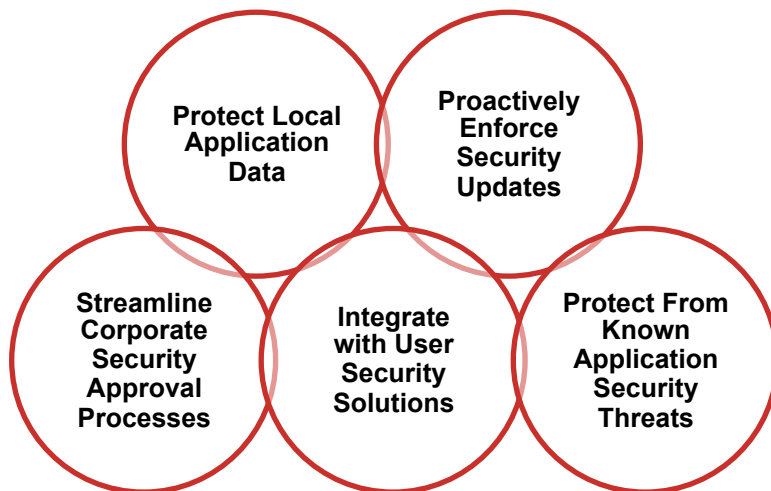
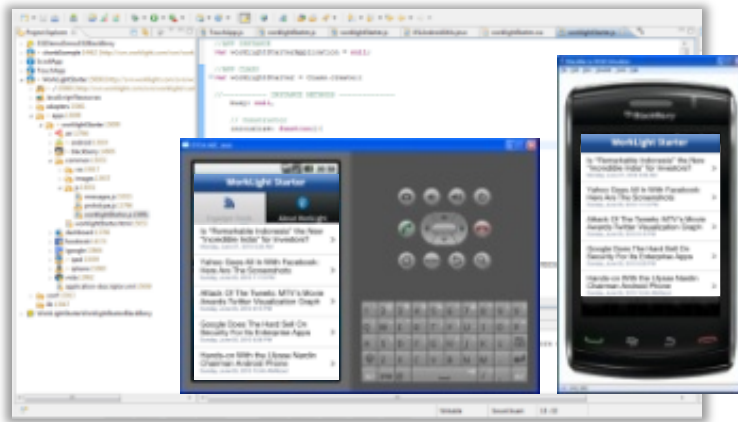
Multiple users logging into the same app



Unified Push Notifications Framework



Worklight Security



Application Security Objectives

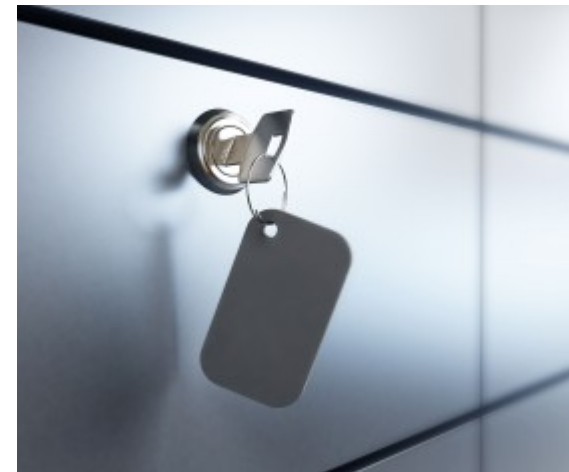
Application Security Design:

- Develop secure mobile apps using corporate best practices
- Encrypted local storage for data
- Offline user access
- Challenge response on startup
- App authenticity validation
- Enforcement of organizational security policies

Encrypted Cache

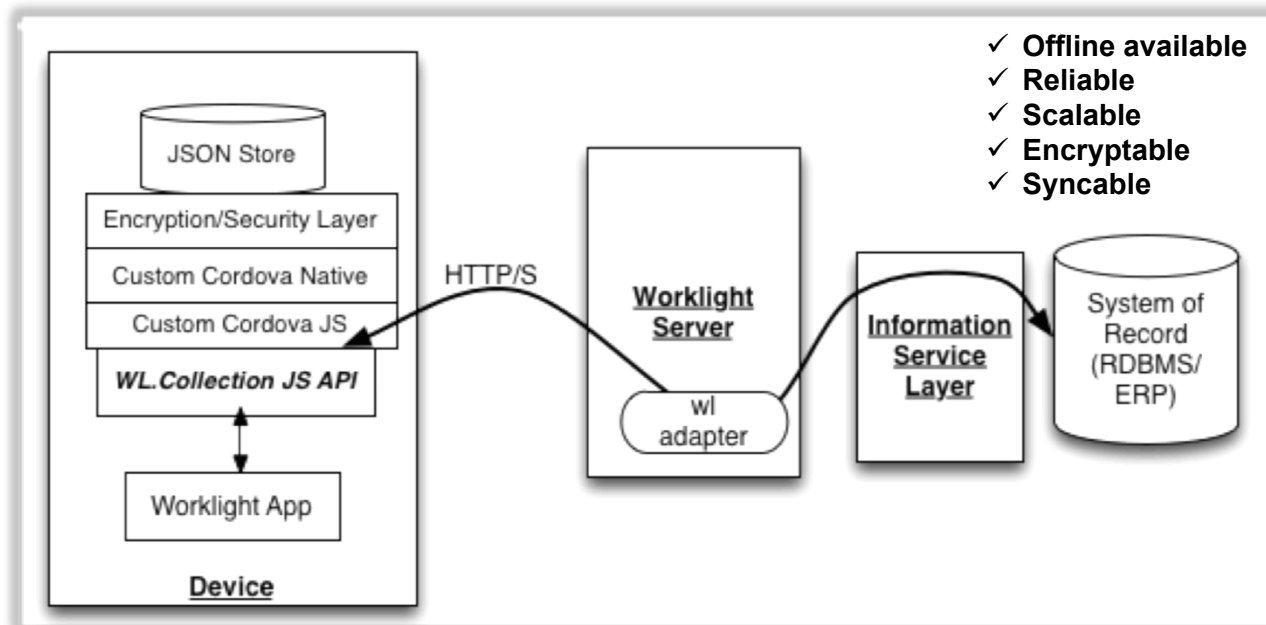


- A mechanism for storing sensitive data on the client side
- Implemented using HTML5 local storage technology
- Encrypts data with a combination of user-provided key and server-retrieved randomly generated token for security
- Stores data using key-value pairs
- Like a security deposit box – it will remain open until you close it, so don't forget to close the cache once you are done working with it

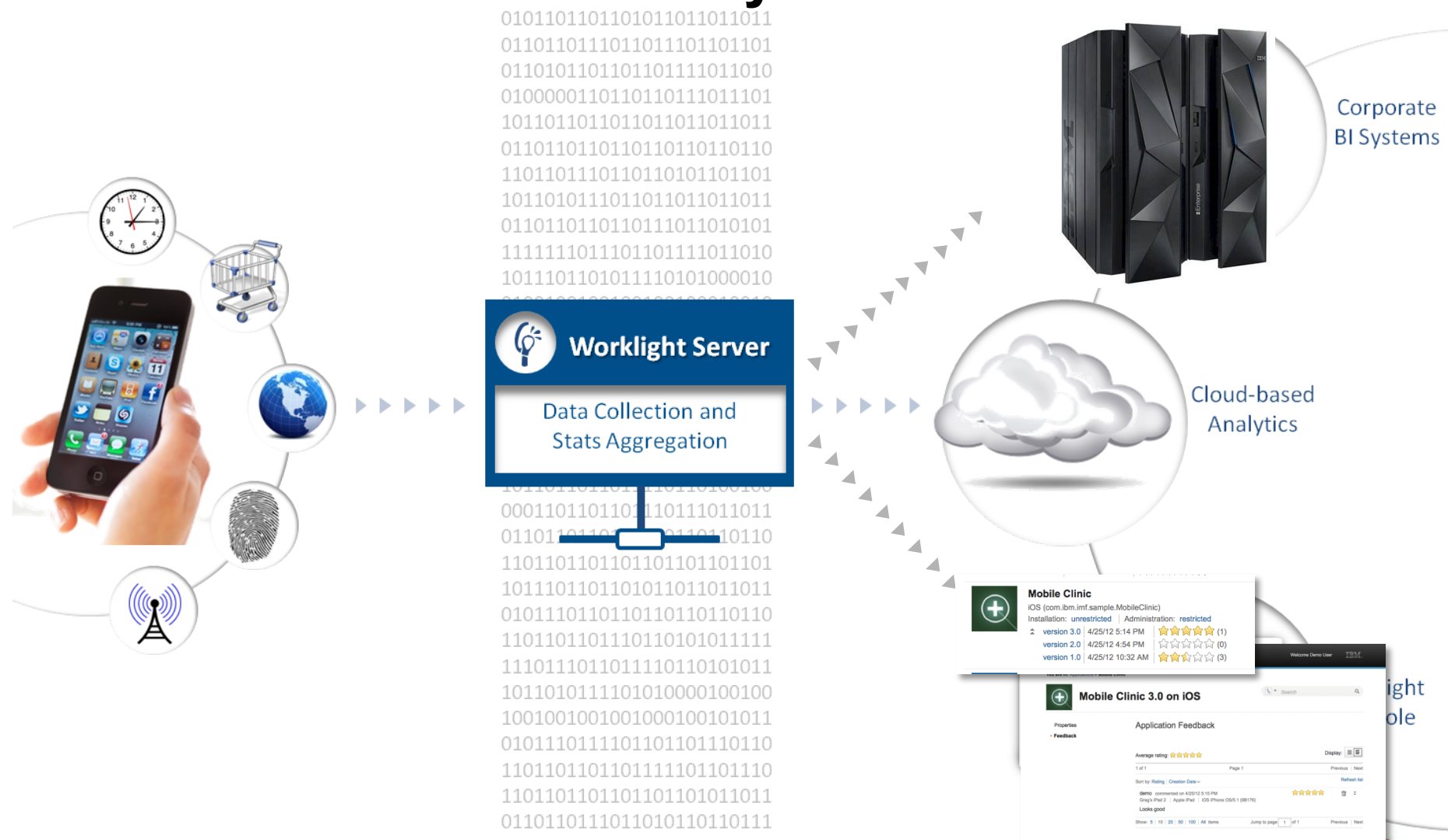


Mobile Data support

- **On-device, mobile database support**
 - **Embedded** JSON mobile database
 - **JavaScript APIs** to store, query and update the data in offline mode
 - **Encrypt** sensitive data, using a key provided by developer or obtained as user's password
 - **Server-to-client Sync**: Retrieve, store and keep data store up-to-date using adapters
 - **Client-to-server Sync**: Simplify write actions on data while the app is offline and send these actions to the server

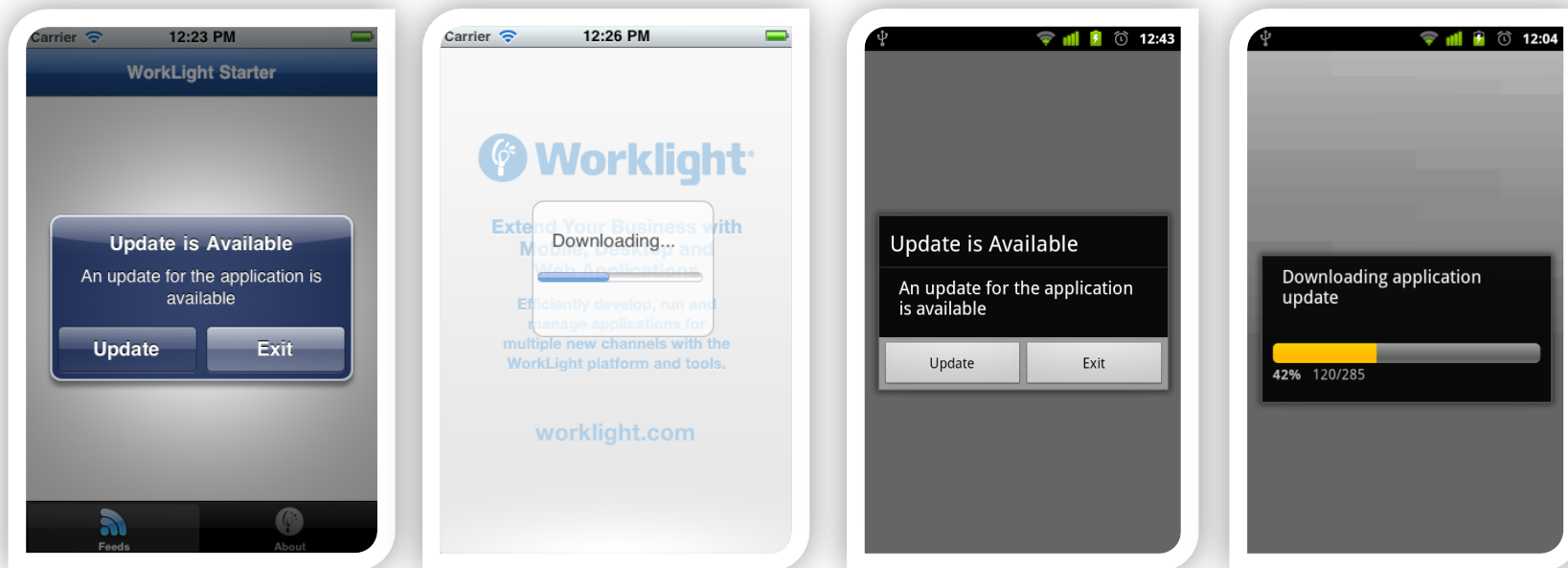


Data Collection and Analytics



Direct Update – client user experience

1. Detection upon startup and foreground
2. Dialog for easy user selection
3. App download progress bar
4. Application restarts automatically




Application Management

Worklight Welcome, Guest | [Logout](#) | [About](#) | [License](#)

Catalog | **Push Notifications** | **Reports** | **Active Users**

Deploy application or adapter: [Choose File](#) No file chosen [Submit](#)

WorkLight Starter [X Delete](#)

 Retrieves RSS feed from engadget.com
Preview as: [v](#) Last updated at: 2012-01-30 10:13

Device	Version	Status	Authenticity Testing
iPhone	Version 1.1	Disabled	Authenticity Testing: Disabled
<p>Notification text (will appear on the device): <input type="text" value="Please upgrade to the latest version"/></p> <p>URL to app store or market: <input type="text" value="http://itunes.com/myapp"/></p> <p>Save Cancel</p> <p><input type="checkbox"/> Lock this version</p>			
Android	Version 1.0	Active	Authenticity Testing: Enabled, blocking
<input type="checkbox"/> Lock this version			
BlackBerry	Version 1.0	Active	
Windows Phone	Version 1.0	Active	
iPad	Version 1.0	Active	Authenticity Testing: Disabled
<input type="checkbox"/> Lock this version			
Facebook	Version 1.0	Get App URL	

Worklight Starter [Reload](#)

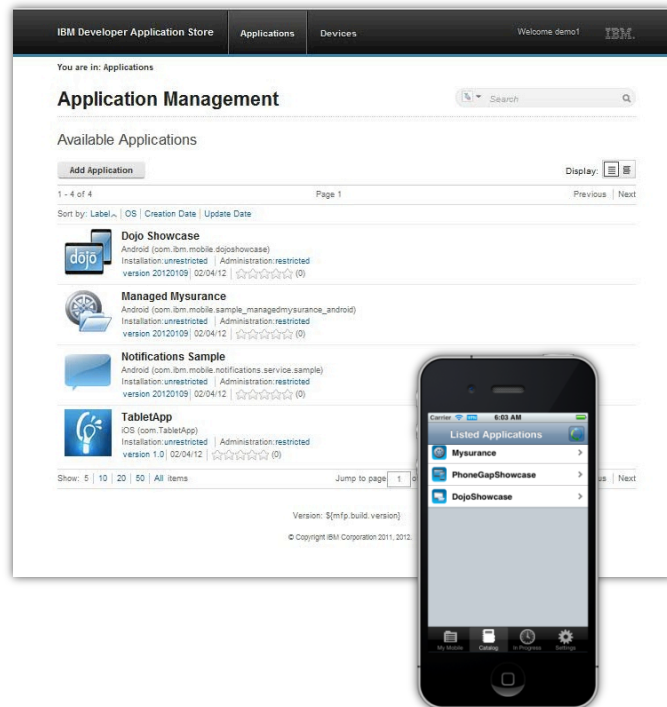
Application Disabled

the version 1.0 is disabled, please update to version 2.0.

[Exit application](#) [Get new version](#)

[Feeds](#) [About](#)

Application Center – App Distribution



A cross platform private mobile application store similar to public app stores but focused on the needs of an organization or a team

Key capabilities:

- delivers distribution and management of mobile applications within a company / teams
- easy distribution of iOS and Android apps within a team
- provides versioning and updates
- centralizes rating and feedback information
- controls who can modify or install an application
- easy to install and simple to run

IBM Worklight addresses top mobile development pain points

Developing for multiple mobile platforms

- Highly fragmented set of platforms, devices, languages, and tools **increases cost and complexity of development and test**
- Choosing not to support one or more platforms **reduces the reach of an application**



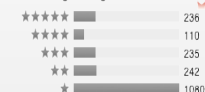
Delivering high quality apps that engage users and meet business objectives

- Poor quality can **negatively impact brand image**
- Bad ratings and comments can **cause other users to avoid trying an app**

Customer Ratings

Average rating for the current version: ★★★★★ 18 Ratings

Average rating for all versions: ★★★★★ 1903 Ratings



Integrating with enterprise systems

- Recreating instead of leveraging existing business logic **increases maintenance costs and risk of inconsistent behavior**
- Lack of ready back-end services **slows front-end development and increases potential for last minute integration issues**



Meeting accelerated time to market requirements

- Hand-off errors and delays between teams **slows progress and responsiveness to features and fixes**
- Misalignment of stakeholders **results in late rework and increased cycle times**



Summary

- Multiple Connectivity Options for CICS Applications
- Multiple Worklight Adapter Options
- Worklight Development Environment

References

- Learn about IBM Worklight
 - <https://www.ibm.com/developerworks/mobile/worklight.html>
- Education modules and associated sample code
 - <https://www.ibm.com/developerworks/mobile/worklight/getting-started>
- Free Download of Developer Edition
 - https://www14.software.ibm.com/webapp/iwm/web/signup.do?source=sw-app&S_PKG=worklight&S_CMP=web_dw_rt_swd
- IBM Worklight Version 5.0.5 Information Center
 - <http://pic.dhe.ibm.com/infocenter/wrklight/v5r0m5/index.jsp>
- IBM Worklight Forums
 - <http://www.ibm.com/developerworks/forums/category.jspa?categoryID=512>

System z Social Media Channels



- Top Facebook pages related to System z:

- [IBM System z](#)
- [IBM Academic Initiative System z](#)
- [IBM Master the Mainframe Contest](#)
- [IBM Destination z](#)
- [Millennial Mainframer](#)
- [IBM Smarter Computing](#)

- Top LinkedIn groups related to System z:

- [System z Advocates](#)
- [SAP on System z](#)
- [IBM Mainframe- Unofficial Group](#)
- [IBM System z Events](#)
- [Mainframe Experts Network](#)
- [System z Linux](#)
- [Enterprise Systems](#)
- [Mainframe Security Gurus](#)

- Twitter profiles related to System z:

- [IBM System z](#)
- [IBM System z Events](#)
- [IBM DB2 on System z](#)
- [Millennial Mainframer](#)
- [Destination z](#)
- [IBM Smarter Computing](#)

- Top System z blogs to check out:

- [Mainframe Insights](#)
- [Smarter Computing](#)
- [Millennial Mainframer](#)
- [Mainframe & Hybrid Computing](#)
- [The Mainframe Blog](#)
- [Mainframe Watch Belgium](#)
- [Mainframe Update](#)
- [Enterprise Systems Media Blog](#)
- [Dancing Dinosaur](#)
- [DB2 for z/OS](#)
- [IBM Destination z](#)
- [DB2utor](#)



Trademarks and Disclaimers

Copyright IBM Corporation 2012. All rights reserved.

- IBM, the IBM logo, ibm.com, WebSphere, DB2, Cast Iron, and Rational are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with the appropriate symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the web at “[Copyright and trademark information](http://www.ibm.com/legal/copytrade.shtml)” at www.ibm.com/legal/copytrade.shtml.
- Adobe is either a registered trademark or trademark of Adobe Systems Incorporated in the United States, and/or other countries.
- Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.
- Microsoft and Windows are trademarks of Microsoft Corporation in the United States, other countries, or both.
- Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.
- Other company, product, and service names may be trademarks or service marks of others.
- Information contained within is for informational purposes only, and is provided 'as-is' without any warranties, either expressed or implied. References in this publication to IBM products or services do not imply that IBM intends to make them available in all countries in which IBM operates.

Back up slides