

# Mobile Computing with System z

## Overview and Lab Intro



# Enterprise2013

IBM Research **The 2013 Global Technology Outlook**

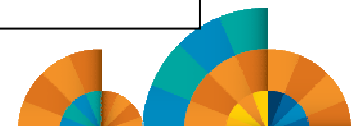


# Mobile First





- Mobile devices are emerging as **primary design point** for end-user access to IT
- Consumer access to enterprise data creates an increasing need for enterprise-level security and control
- Mobile First is about: Behavior like **consumer** applications
  - constantly connected clients
  - quickly accomplishing single tasks and then move on
- Is accelerating the integration of cloud, social, and analytics

[http://www.b2match.eu/system/softwaredays2013/files/Global-Technology-Outlook-2013\\_IBM.pdf?1366628169](http://www.b2match.eu/system/softwaredays2013/files/Global-Technology-Outlook-2013_IBM.pdf?1366628169)



## Mobile First - Mobile Applications are Not Miniature PC applications...

<p><b>1</b> <b>m</b></p> <p><b>Usage Context</b></p>	 <p><b>Mobile Applications</b></p> <ul style="list-style-type: none"> <li>▪ User may be in the middle of some other activity (e.g. shopping in a supermarket)</li> <li>▪ Interactions are short and may be interrupted</li> <li>▪ Users are very impatient</li> </ul>	 <p><b>PC Applications</b></p> <ul style="list-style-type: none"> <li>▪ Using the application is the primary activity</li> <li>▪ Interactions are longer and more focused</li> <li>▪ Users are impatient</li> </ul>
<p><b>Mode of Interaction</b></p>	<ul style="list-style-type: none"> <li>▪ Non-keyboard: touch prevalent, also speech</li> <li>▪ Typing should be minimized</li> <li>▪ Screen size/real-estate is small</li> </ul>	<ul style="list-style-type: none"> <li>▪ Keyboard and mouse</li> <li>▪ Typing is okay</li> <li>▪ Larger screen size for presenting information</li> </ul>
<p><b>Other considerations</b></p>	<ul style="list-style-type: none"> <li>▪ Integration with device capabilities (e.g. camera, GPS, accelerometer)</li> <li>▪ Offline behavior</li> </ul>	



# Mobile is changing the way information is used

Information restricted and developed in the data center



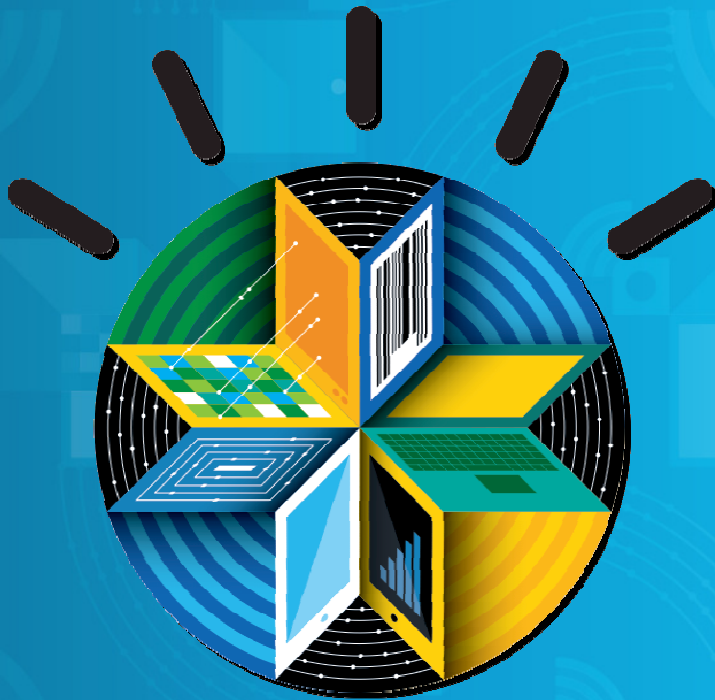
Information developed using multiple platforms and transformed into web services



Information developed and controlled by users for mobile devices



# IBM MobileFirst



## The Broadest Portfolio of Mobile Solutions

**IBM MobileFirst Platform**

**IBM MobileFirst Management**

**IBM MobileFirst Security**

**IBM MobileFirst Analytics**

## IBM Worklight - Consistent Mobile End-user Experience

Part of the IBM MobileFirst family - Mobile Application Platform for smartphones and tablets

- Simplifies the development of mobile applications ←
- across multiple mobile platforms - iOS, Android, BlackBerry, and Windows® Phone



 **Worklight**  
The Foundation  
for Mobile

### Typical Customer Pain Resolved with Worklight:

- First mobile app was created through expensive native development by 3 parties
- No consistent user experience across mobile platforms
- No code reuse between mobile and PC environments
- User was required to install multiple apps - impossible to update existing app without redeploying the entire native app



## Simplified Development – What is Difficult with Mobile Applications ?

Need to use familiar web technologies:

- HTML5, CSS, JavaScript

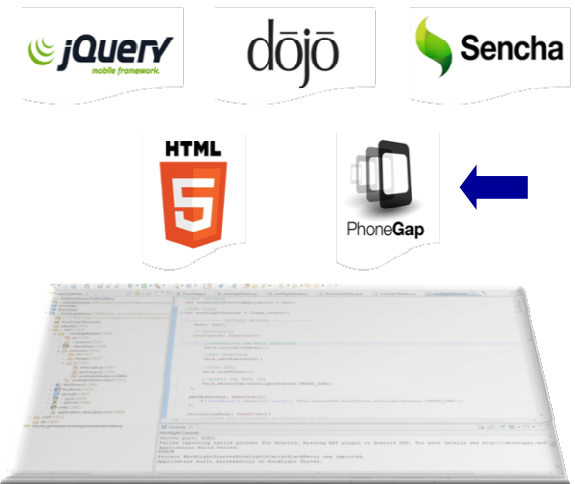
**Plus (Hybrid applications)**

Support all major mobile platforms with proprietary tools, languages and APIs:

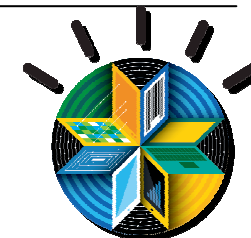
- Android phones and tablets
- Windows 7 and Vista (Deprecated)
- BlackBerry 6 and 7
- BlackBerry 10
- iPad
- iPhone
- Mac OS X Dashboard (Deprecated)
- Mobile Web Application
- Windows 8 desktop and tablets
- Windows Phone 7.5
- Windows Phone 8



Leverage common HTML5 and mobile libraries/frameworks:

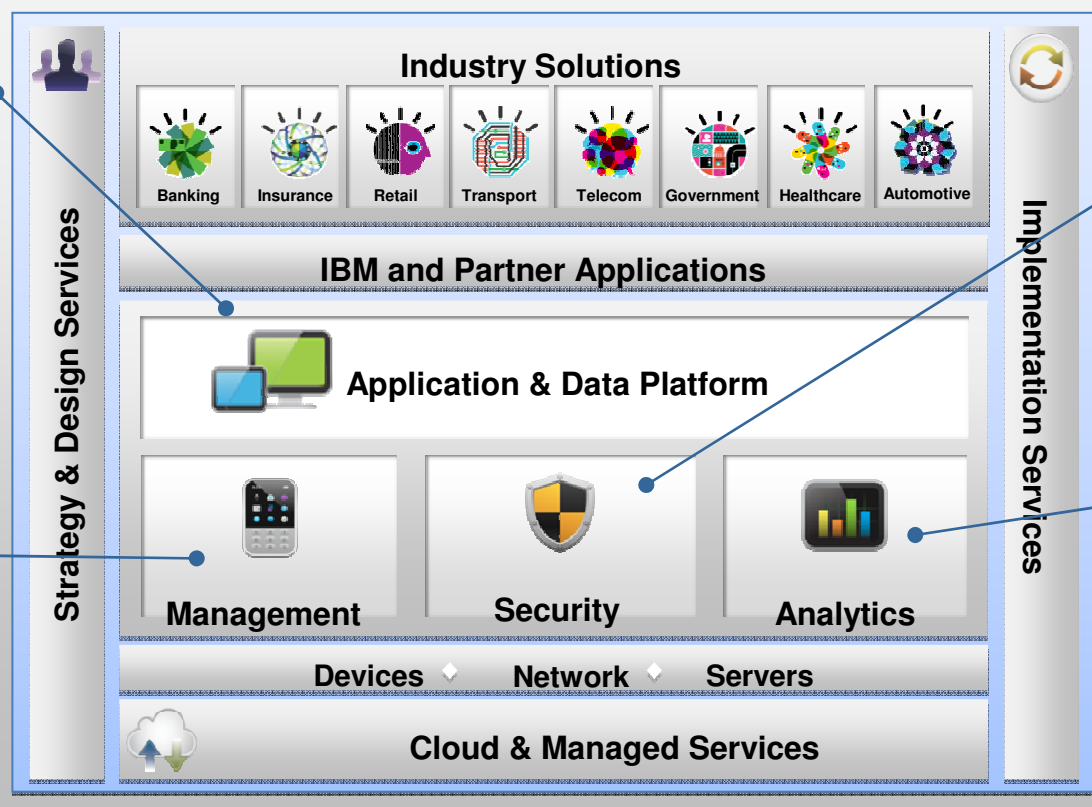






# IBM MobileFirst

## IBM MobileFirst



- IBM Worklight
- IBM Rational Test Workbench
- IBM Mobile Application Platform Management

- IBM Endpoint Manager for Mobile Devices
- IBM Enterprise Services Managed Mobility
- IBM Mobile and Wireless Network Management
- IBM Emptoris Rivermine Telecom Expense Management

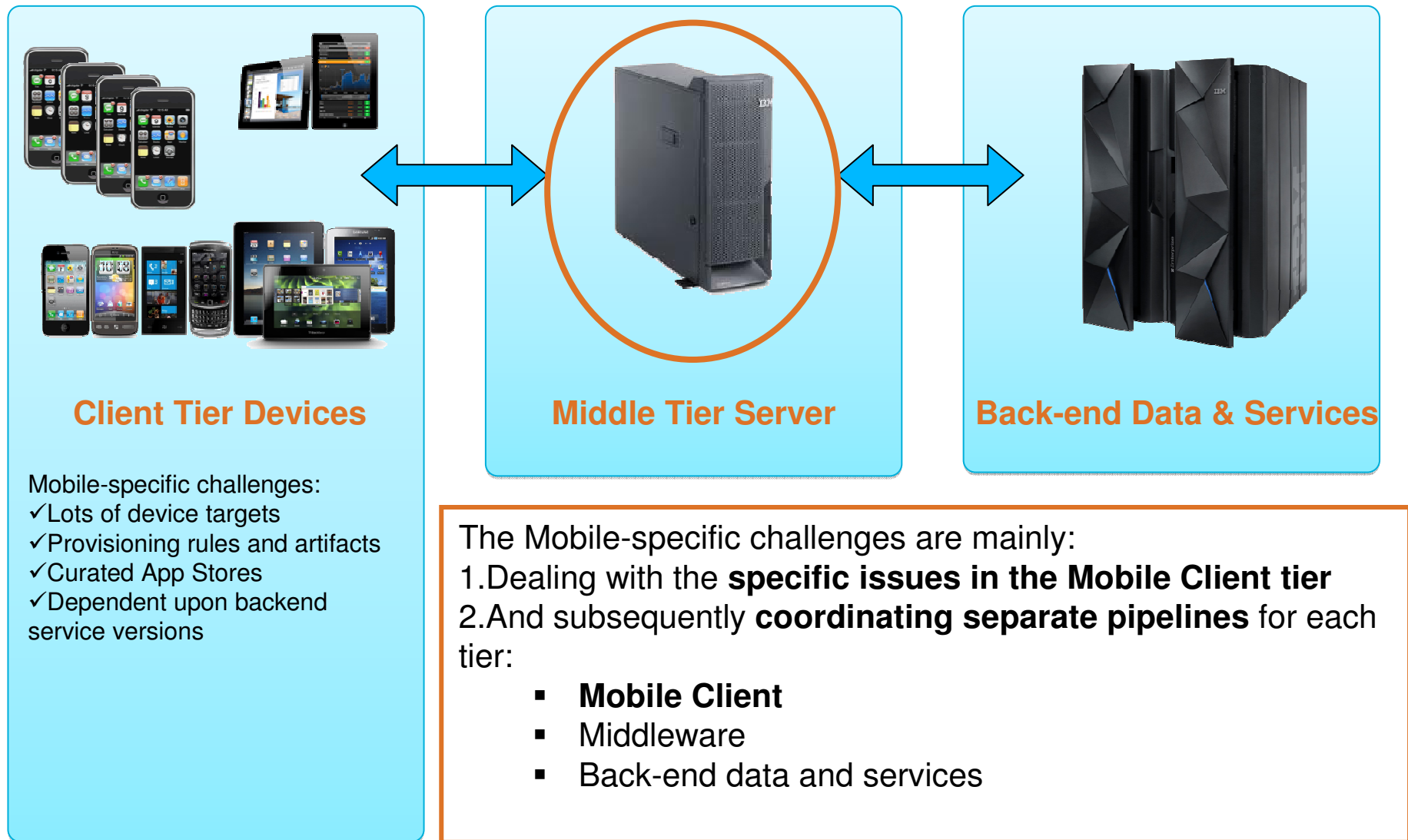
- IBM Security AppScan
- IBM Security Access Manager for Mobile and Cloud
- IBM Security QRadar SIEM
- IBM Mobile Connect

- IBM Tealeaf CX Mobile
- IBM Mobile Commerce
- IBM Cognos Mobile

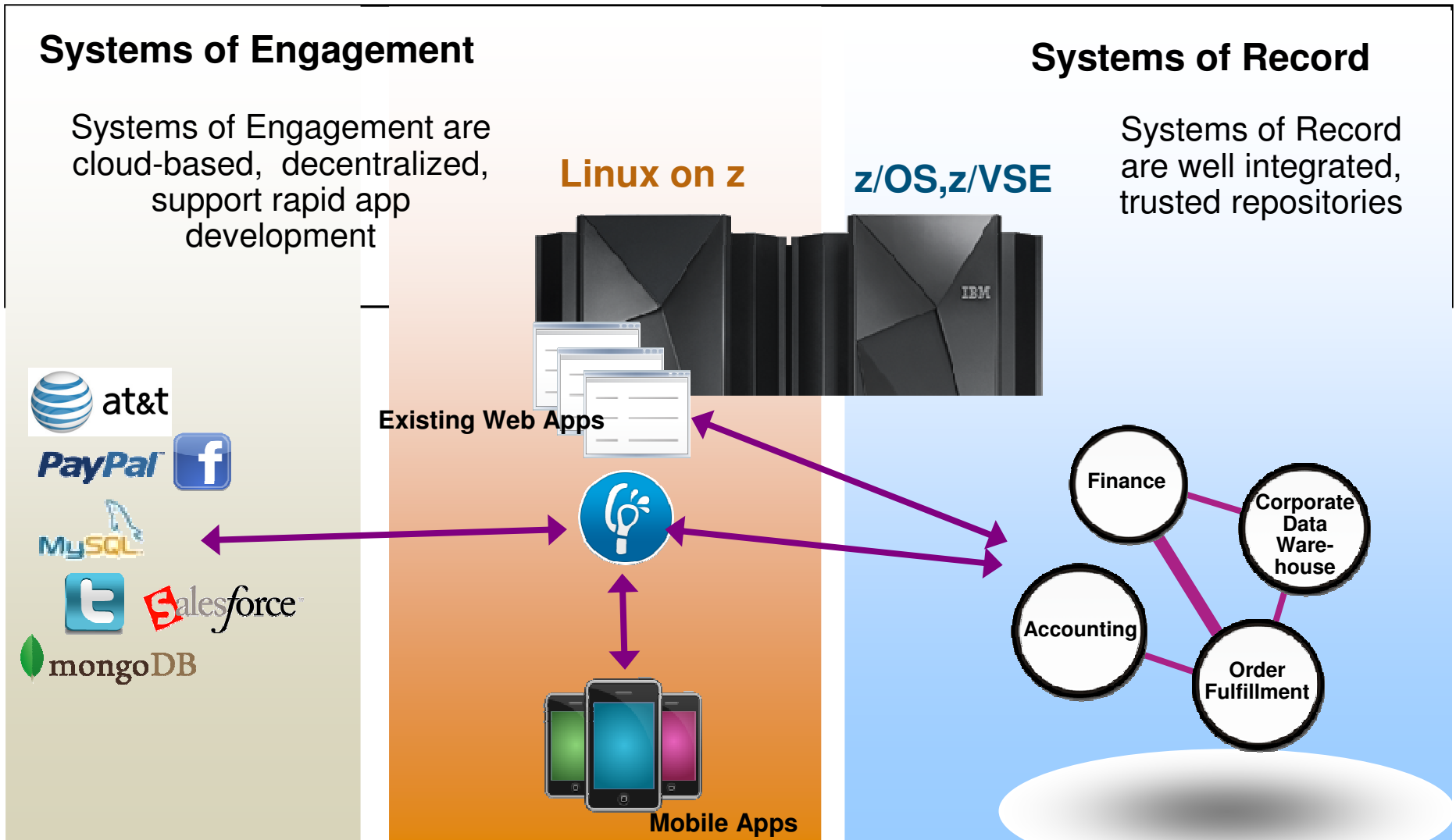




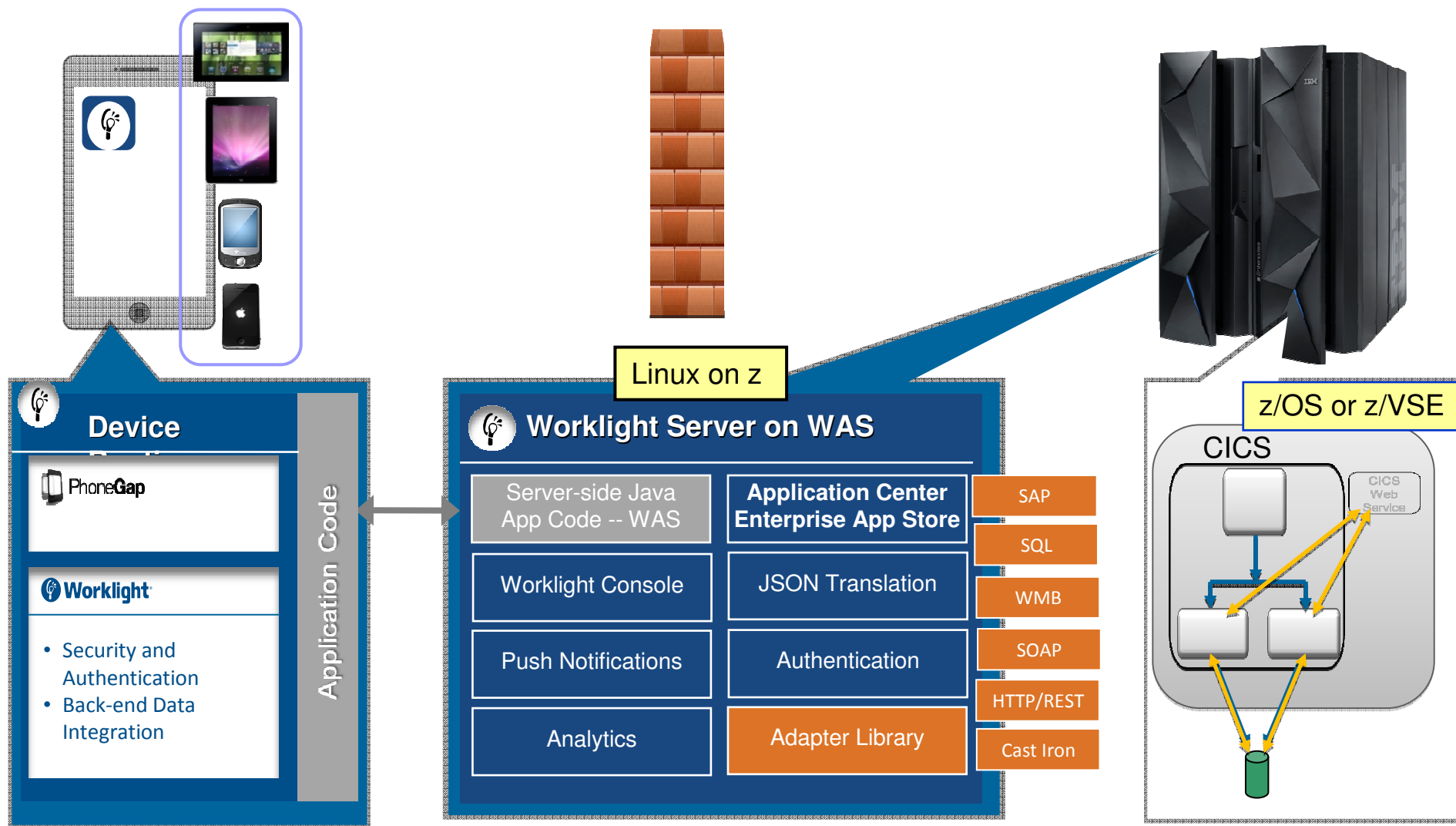
## Multi-tier Mobile Apps - Specific Challenges



# System z - Bridge Systems of Record and Engagement



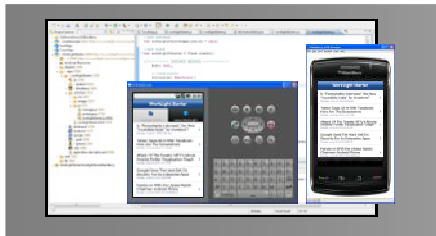
# IBM Worklight Server - Architecture on Linux on System z



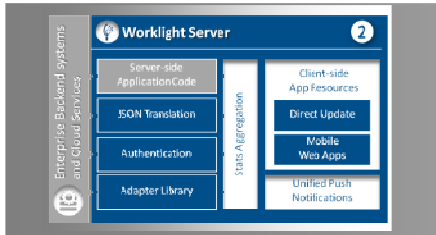
Worklight Video: [http://www.youtube.com/watch?feature=player\\_embedded&v=zHnFw70XXXo](http://www.youtube.com/watch?feature=player_embedded&v=zHnFw70XXXo)



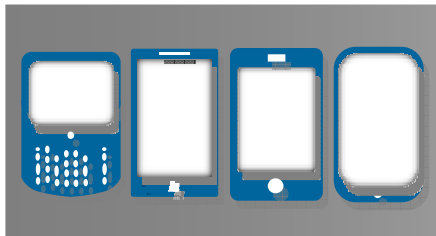
# Worklight overview



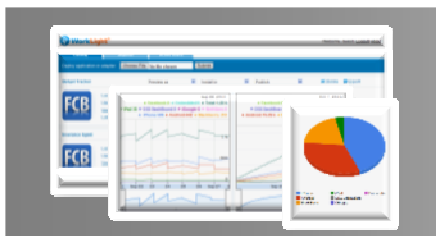
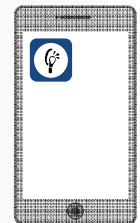
**Worklight Studio**  
The most complete, extensible environment with maximum code reuse and per-device optimization



**Worklight Server**  
Unified notifications, runtime skins, 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

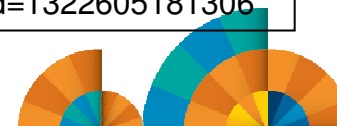


## Worklight Platform Support

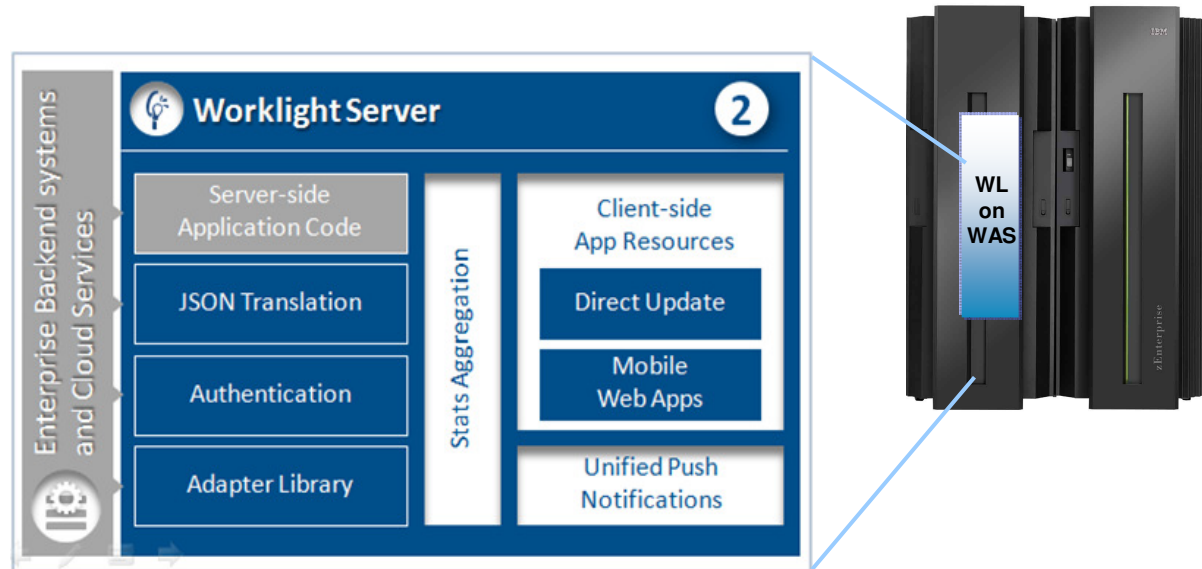
### Worklight Server

- Supported application server
  - WebSphere 7 & 8 (Distributed | zLinux)
  - WebSphere 8.5 Liberty Profile (included for Dev only), ND/Base (not included)
  - Apache Tomcat 7 (Linux | Windows | Mac OS X [development])
- Supported databases
  - DB2 Enterprise Server Edition V9.7 or later (DB2 LUW)
  - Apache Derby, SDK 10.8 (included), or later
  - Oracle 11g Database server, Standard or Enterprise Editions, release 1 or later
  - MySQL 5.1
- Supported OS
  - z/Linux SLES 10,11, RHEL 5,6.
  - See URL below for more.

<http://pic.dhe.ibm.com/infocenter/prodguid/v1r0/clarity-reports/report/html/prereqsForProduct?deliverableId=1322605181306>



## Worklight Server



Worklight Server is a **WebSphere Application Server (WAS)/Java application**, supported on **System z Linux** – WAS 7, 8, 8.5 on SLES 10, 11, and RHEL 5, 6

**Adapters** are used to communicate to back-end services like databases, transaction systems, MQ, etc.

**Performs protocol mediation** - [JSON](#) is used to communicate to mobile devices – translation is done to HTTP or Web Services that are used by server components.

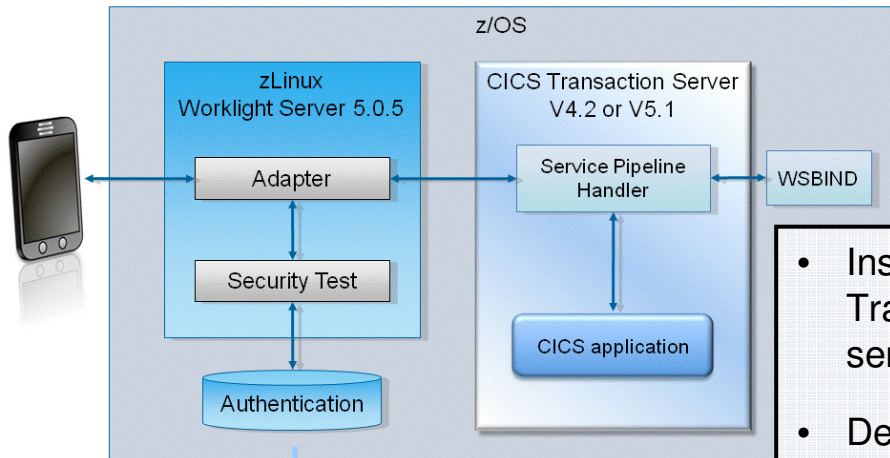
Worklight Video: [http://www.youtube.com/watch?feature=player\\_embedded&v=zHnFw70XXXo](http://www.youtube.com/watch?feature=player_embedded&v=zHnFw70XXXo)





# Implementing CICS JSON web services for mobile applications

- Includes architectural patterns and example scenarios
- Integration with IBM Worklight



- Instructions to connect mobile devices to IBM CICS Transaction Server - **exploiting** existing CICS enterprise services
- Develop new services supporting **new lines of business**
- Develop, configure, and deploy a mobile application that connects:
  - either directly to CICS Transaction Server
  - or to CICS via IBM Worklight® Server

<http://www.redbooks.ibm.com/redpieces/abstracts/sg248161.html?Open>

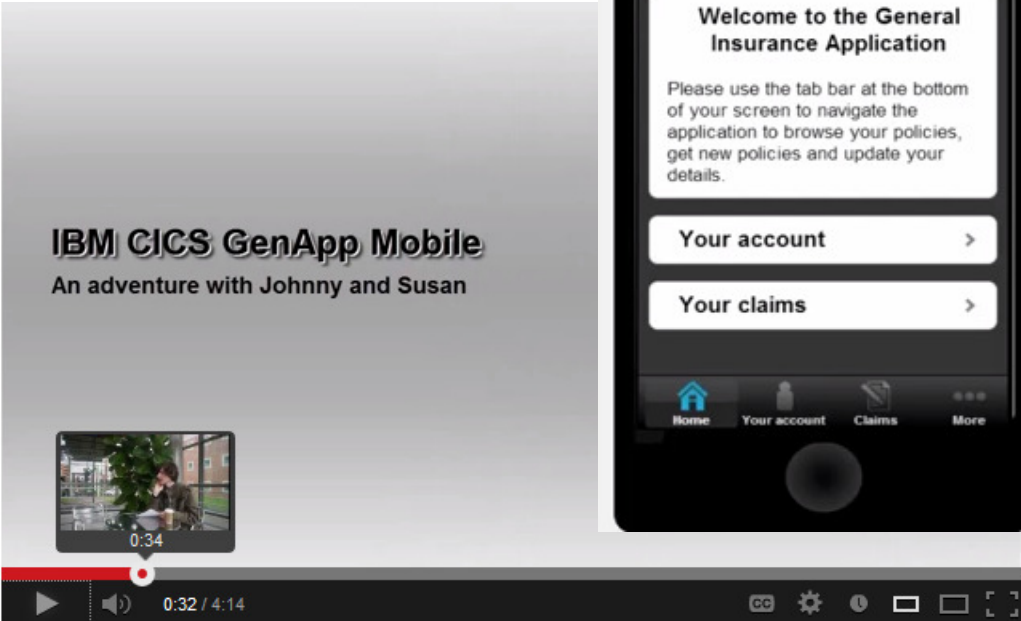
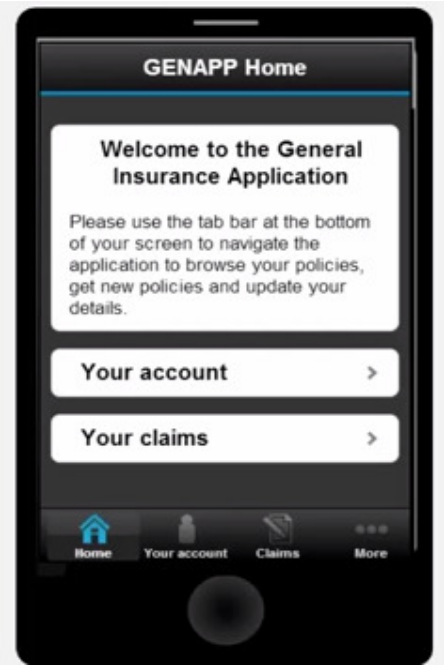




# CICS Mobile - Youtube Video

### Home screen

- Worklight allows you to construct standard interface components that work across all mobile platforms
- Build powerful interfaces that drive existing mainframe applications written in C/C++, COBOL, PL/I, and Java



### CICS Mobile

CICS Hursley · 67 Videos

Abonnieren 123

287 Aufrufe

Mag ich Info Teilen Hinzufügen

Veröffentlicht am 23.04.2013

Learn about the new CICS TS features for mobile devices in this video, made by CICS Mobile developers at the IBM Hursley Software Development Laboratory.

Mehr anzeigen

[http://www.youtube.com/watch?v=jc7d1o4\\_gj0](http://www.youtube.com/watch?v=jc7d1o4_gj0)

## Summary – System z meets the Mobile Challenge

- **Mobile First** – Mobile devices enable new business opportunities
  - System z sub-systems as well as system management SW are being prepared for mobile access
    - CICS TS Feature Pack for Mobile Extensions
    - Upcoming IMS JSON support
    - Rational Developer with Worklight Toolkit
    - Business Process Manager
- Mobile Support Server will become a **business critical** application
  - **System z** RAS (Reliability-Availability-Serviceability) capabilities make business sense
  - z/VM Scalability – management of huge spikes in concurrent mobile access invocations
- Adapter & Integration flexibility
- Security will become key challenge
  - Worklight Server on System z Linux runs where the business data & transactions reside
  - Leverage hipersocket, IEDN (Intra Ensemble Data Network) for back-end system communication
  - Crypto card for SSL off-load

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60%

of large companies are making their internal line-of-business applications accessible to workers on smart phones and tablets.

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There will be more mobile phones than humans by 2015.

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The 2013 Global Technology Outlook

Enterprise2013



# IBM MobileFirst in Action

<http://www.ibm.com/mobilefirst/us/en/see-it-in-action/>


The navigation bar features the IBM logo on the left, followed by menu items: Industries & solutions, Services, Products, Support & downloads, and My IBM. A search box is on the right. Below the navigation bar is a blue banner with the text "IBM MobileFirst" and a "Request a quote" / "Email IBM" button. A secondary navigation bar contains tabs for "Mobile enterprise", "Why IBM", "See it in action" (which is highlighted), "Offerings", "Developer resources", and "Conversations".

## See how your peers achieve measurable results

A graphic for the Air Canada case study. On the left, a grey chevron points left. In the center, the text reads "AIR CANADA enjoys an almost 80% cost reduction vs traditional check-in". To the right, a yellow arrow points right with the text "Watch the video".

A section for viewing case studies. It includes a "View case studies by:" label and two dropdown menus: "All business needs" and "All studies". Below this is a grid of four case study cards, each with a representative icon and a play button:

- TRAVEL**: Air Canada. New mobile travel services cut processing transactions 80 percent.
- INSURANCE**: American National Insurance. Saving time in the field with rapid.
- EDUCATION**: Birmingham Metropolitan College. Utilizing social learning to boost
- TECHNOLOGY**: CenterBeam. Delivering 98 percent policy compliance across all enterprise devices.



## Cloud and Mobile Computing

- Consolidated distributed server landscape to **Linux virtual servers running on IBM zEnterprise**
- Created multi-platform private cloud optimized for all workloads

<http://youtu.be/ZygaG7noaDE>

- If you're a Nationwide® customer, **Nationwide Mobile** can help you pay your bill, contact your agent, get an auto policy quote or start the **claims process**

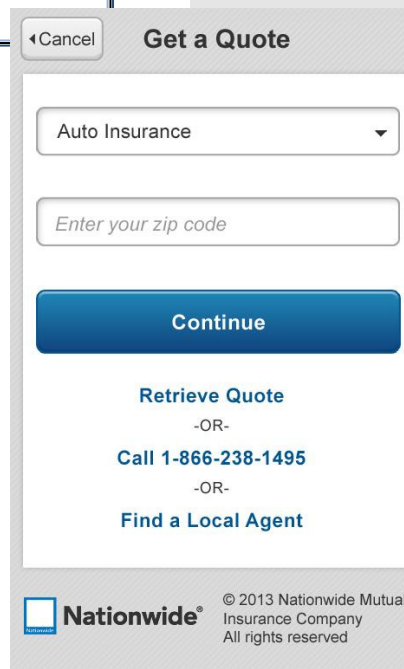
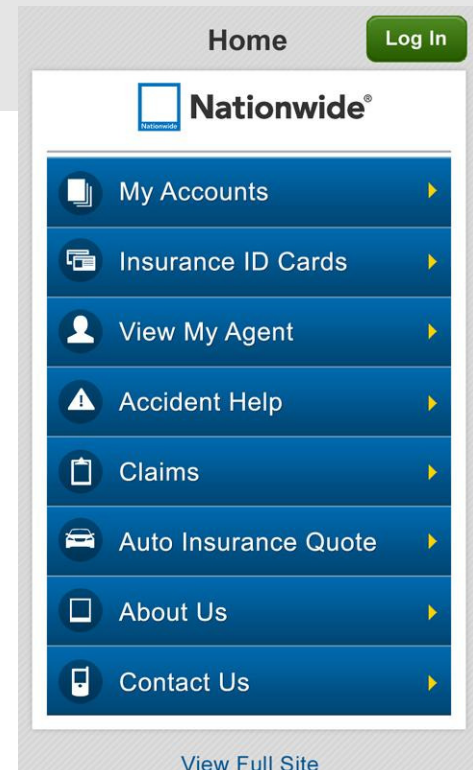
<https://play.google.com/store/apps/details?id=com.nationwide.mobile.android.nwmobile&hl=en>



Nationwide Mobile

Nationwide Insurance - September 6, 2013  
Finance

[Install](#) [Add to Wishlist](#)



# Free DeveloperWorks Download

## Welcome, mobile app developers

### DOWNLOAD WORKLIGHT

Worklight helps you build, test, and deploy native, HTML5, and hybrid mobile apps for Android, iOS, BlackBerry, and Windows Phone devices. The free **Worklight Developer Edition** gives you tools and an app server—in an easy-to-install Eclipse plugin.

**Download**  
Worklight Developer Edition  
and  
Mobile Test Workbench

**New in V6.0:** The Mobile Test Workbench for Worklight automates the functional testing of apps built with Worklight.

### GET STARTED

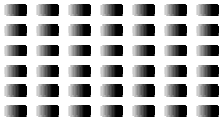
Get step-by-step guidance on how to set up and start using Worklight in our series of self-paced modules, exercises, and code samples.

**Get started**  
Tutorials, exercises, sample code

<http://www.ibm.com/developerworks/mobile/worklight/>



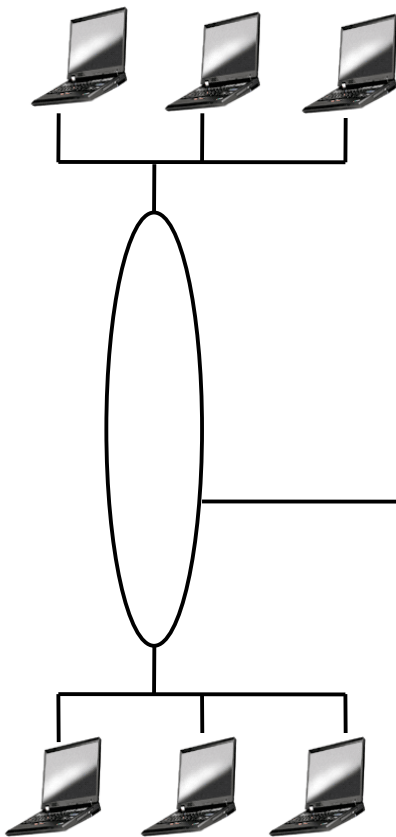
# The Mobile Lab



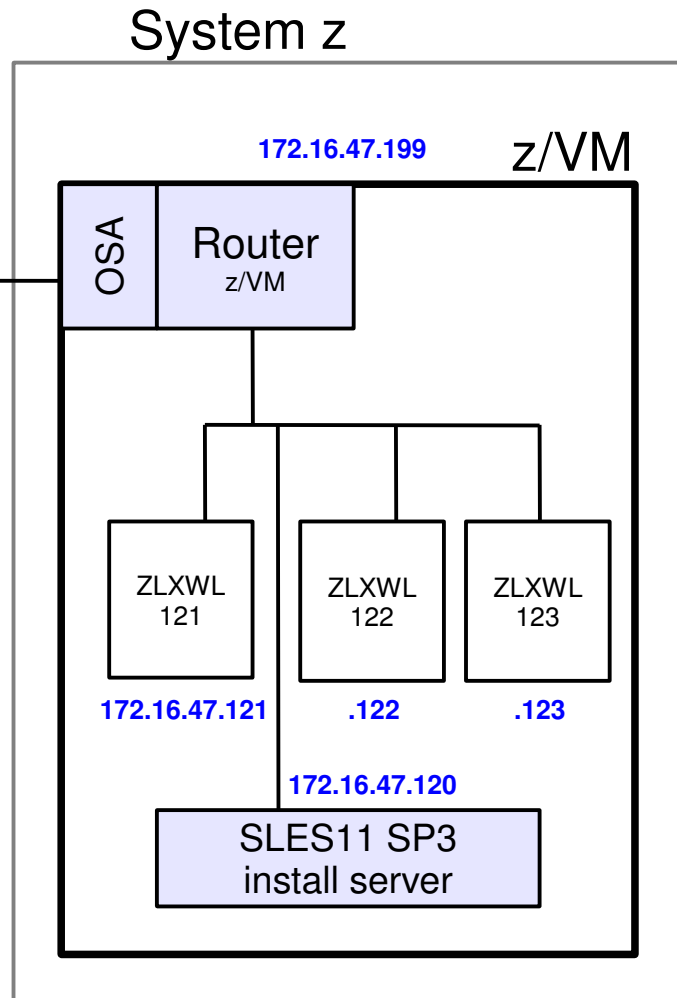


# Mobile Lab Installation Environment – Network topology

## Orlando

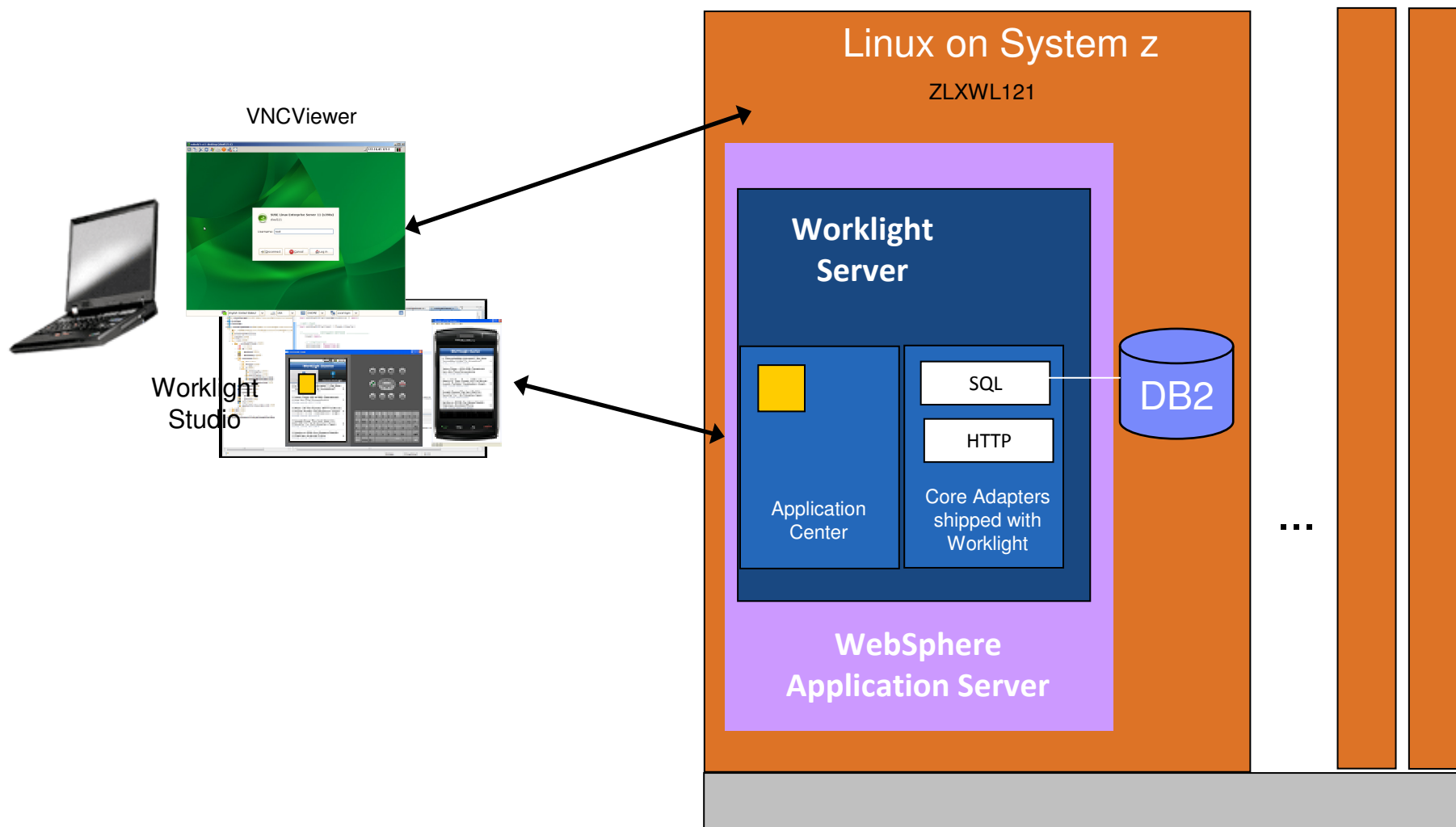


## Boeblingen





# Mobile Lab - environment with Linux on System z and Worklight



## Used / Installed Product Versions

### **System z:**

- SUSE Linux Enterprise Server (SLES) Version 11 SP3 Kernel 3.0.76
- IBM Installation Manager Fix Pack 1 (1.6.3.1)
- WebSphere Application Server V8.5.5 Liberty Profile
- DB2 Version 10.1
- IBM Worklight Server Version 6.0.0

### **Workstation:**

- Eclipse 4.2.2 (Juno)
- Workstation: Worklight Studio 6.0



# Questions?



**Susanne Wintenberger**  
IBM IT Specialist

IBM Deutschland Research  
& Development GmbH  
Schönaicher Strasse 220  
71032 Böblingen, Germany

Office: +49 (0)7031-16-3514  
swinten@de.ibm.com



**Wilhelm Mild**  
IBM IT Architect

IBM Deutschland Research  
& Development GmbH  
Schönaicher Strasse 220  
71032 Böblingen, Germany

Office: +49 (0)7031-16-3796  
mildw@de.ibm.com



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Any information contained in this document regarding Specialty Engines ("SEs") and SE eligible workloads provides only general descriptions of the types and portions of workloads that are eligible for execution on Specialty Engines (e.g., zIIPs, zAAPs, and IFLs).

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