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Technology · Connections · Results

Enterprise Mobility for IMS Access

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Topics

- **Enterprise Mobility**

- **The IBM Mobile Foundation**
  - IBM Cast Iron
  - Worklight
- **IMS Impact**
  - Transactions
  - Databases

Enterprise Mobility

- **Evolving trends**
  - 2011 - 850K Android activations per day, over 372M iOS devices sold with 62M alone in Q4,
  - 2012 – shipment of smartphones and tablets is expected to exceed that of traditional personal computers including laptops
  - 2013
    - Employee smartphones will account for 62 % of business-use
    - 8 out of 10 businesses will support tablet use in the workplace
  - ...
  - 2016 - the estimate is that there will be 1 billion+ smart phones in market, 375 million+ tablets
- **Expanding marketplace and explosive growth due to:**
  - Increasing business requirements for enterprise mobile applications or "apps" for mobile device connectivity
  - Constant introduction of new capabilities that inspire new opportunities
    - e.g., global positioning system (GPS) functionalities and cameras
  - Businesses everywhere are now strategically employing enterprise mobile apps to support business objectives.
  - Industry recognition of the importance of strategically deploying new enterprise mobile apps to support business objectives.

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Enterprise Mobility…

- **Mobile Device provides new end points**

-
    - Business to Enterprise
        - productivity tools for employees
    - Business to Consumer
        - Customer engagement channels
    - Consumer to Consumer
        - Transfer data to/from mobile device

productivity tools for employees and as engagement channels facing customers.

The consumerization of IT continues to bring mobile technologies from the consumer market into the enterprise.
In just two years, smartphones brought to the workplace by employees will account for 62 percent of business-use smartphones.
Those individuals will also bring in their tablets; in fact, by 2013, 8 out of 10 businesses will support tablet use in the workplace

Enterprise Mobility

- **Application types**

  - Native Mobile only Application

  - Mobile Web access Application

  - Hybrid Application
    - Mobile only + Web access

productivity tools for employees and as engagement channels facing customers.

Enterprise Mobility …

- **The Mobile lifecycle**
  - Strong demand by lines of business
  - Higher expectations of user experience with mobile apps
  - Lack of best practices guidance on how to deliver mobile applications
  - More direct involvement from users/stakeholders in design
  - Native programming models are not portable across devices
  - Highly fragmented set of mobile devices and platforms
  - Very large number of configurations of devices, platforms, carriers, etc. to test
  - Evolution at a much faster pace
    - More frequent releases and updates for apps with more urgent time-to-market demands

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Enterprise Mobility Challenges

- **Changes to the business model**
  - New business opportunities based upon geolocation
  - Anytime, anywhere business transactions
  - Importance of social business interactions

- **Application Development complexity**
  - Multiple device platforms with fragmented Web, native, and hybrid model landscape
  - Connecting to enterprise back-end services in a secure and scalable manner
  - Unique mobile requirements (UI, connected/disconnected use, version upgrades,etc.)

- **Mobile security and management**
  - Protection of privacy and confidential information
  - Use of client-owned smartphones and tablets
  - Visibility, Security & Management of mobile platform requirements
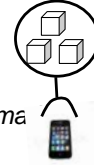
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Enterprise Mobility …

- **IBM solutions address these needs through architectures and product solutions that**
  - Build and Connect
    - ***Build*** *mobile applications that run on multiple devices*
    - ***Connect*** *to, and* ***run*** *enterprise back-end applications and informa* *systems*
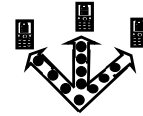 - Manage and Secure
    - ***Manage*** *mobile devices and applications*
    - ***Secure*** *the mobile business environment*
  - Extend and Transform
    - ***Extend*** *existing business capabilities to mobile devices*
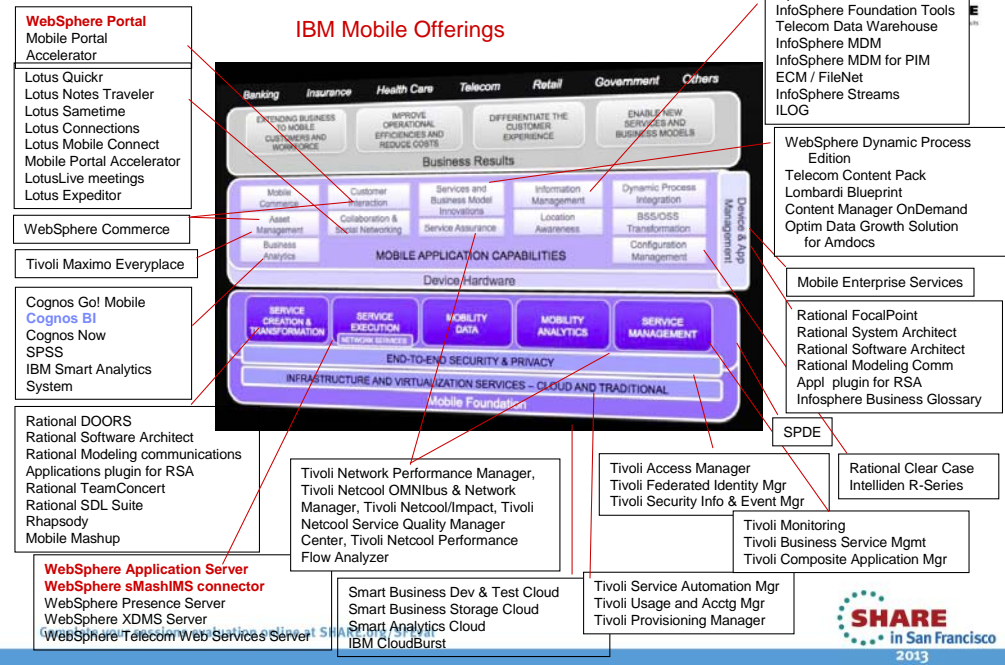   - ***Transform*** *the business by creating new opportunities*

Enterprise Mobility …

IBM Mobile Offerings

WebSphere Portal
Mobile Portal
Accelerator

Lotus Quickr
Lotus Notes Traveler
Lotus Sametime
Lotus Connections
Lotus Mobile Connect
Mobile Portal Accelerator
LotusLive meetings
Lotus Expeditor

WebSphere Commerce

Tivoli Maximo Everyplace

Cognos Go! Mobile
Cognos BI
Cognos Now
SPSS
IBM Smart Analytics
System

Rational DOORS
Rational Software Architect
Rational Modeling communications
Applications plugin for RSA
Rational TeamConcert
Rational SDL Suite
Rhapsody
Mobile Mashup

WebSphere Application Server
WebSphere sMashIMS connector
WebSphere Presence Server
WebSphere XDMS Server
WebSphere Telecom Web Services Server

DB2, Informix, solidDB
Optim, Guardium
InfoSphere Foundation Tools
Telecom Data Warehouse
InfoSphere MDM
InfoSphere MDM for PIM
ECM / FileNet
InfoSphere Streams
ILOG

WebSphere Dynamic Process
  Edition
Telecom Content Pack
Lombardi Blueprint
Content Manager OnDemand
Optim Data Growth Solution
  for Amdocs

Mobile Enterprise Services

Rational FocalPoint
Rational System Architect
Rational Software Architect
Rational Modeling Comm
Appl plugin for RSA
Infosphere Business Glossary

SPDE

Rational Clear Case
Intelliden R-Series

Tivoli Network Performance Manager,
Tivoli Netcool OMNIbus & Network
Manager, Tivoli Netcool/Impact, Tivoli
Netcool Service Quality Manager
Center, Tivoli Netcool Performance
Flow Analyzer

Tivoli Access Manager
Tivoli Federated Identity Mgr
Tivoli Security Info & Event Mgr

Tivoli Monitoring
Tivoli Business Service Mgmt
Tivoli Composite Application Mgr

Smart Business Dev & Test Cloud
Smart Business Storage Cloud
Smart Analytics Cloud
IBM CloudBurst

Tivoli Service Automation Mgr
Tivoli Usage and Acctg Mgr
Tivoli Provisioning Manager

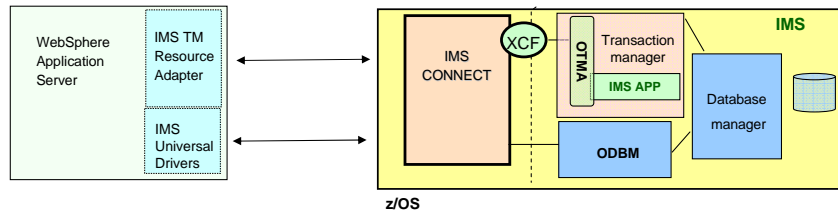# Enterprise Mobility …

- **IBM Mobile framework**

  - Connectivity to back-end IMS resources

    - WebSphere Application Server solutions
      - *IMS TM Resource Adapter for transactions*
        - *Full capability adapter (JCA connector)*
        - *IMS usage experience is mature*
        - *Supports connectivity to IMS Connect from any platform on which WAS can run*
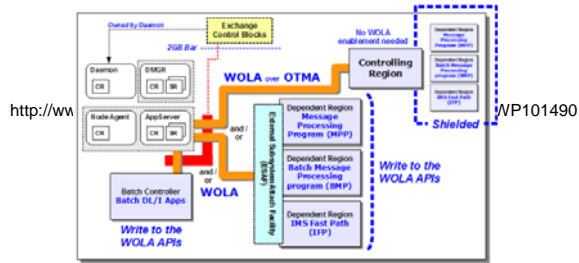   - *IMS Universal Drivers*
        - *Full access to IMS databases*

Enterprise Mobility …

- **WAS connectivity to back-end IMS transactions …**
  - WebSphere Optimized Local Adapter (WOLA)
    - Useful when WAS and IMS are in the same LPAR
      - *High speed Local Comm function accessible by address spaces outside the WAS z/OS cell*
    - WAS to IMS transactions uses the OTMA CI
    - IMS to WAS uses WOLA APIs and ESAF

- http://ww..VP101490

Enterprise Mobility …

- **WAS connectivity to back-end IMS transactions …**

  - IBM Operational Decision Management (IBM ODM)   *Previously WebSphere Operational Decision Management on z/OS (WODM)*

    - Business rules management system (BRMS) and Business events Processor (BEP)
      - *Detects events and event patterns in real-time to enable situational awareness and response of actionable situations*
      - *Automates the response of highly variable decisions based on the specific context of a process, transaction, or interaction.*
      - *Manages and governs rules-based decision logic separately from application code in order to provide better visibility, understanding, and maintainability compared to traditional application development*

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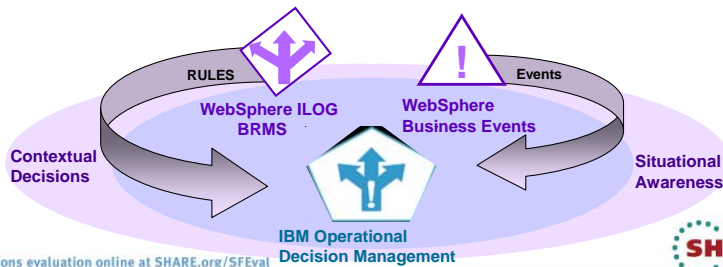
Enterprise Mobility …

- Business Event Processing
  - *Detects* when events of patterns of events occur to notify people or systems to take action
  - *Decides* business outcome through execution of business rules against available data
- IBM ODM and IMS

http://www.redbooks.ibm.com/redbooks/pdfs/sg248014.pdf
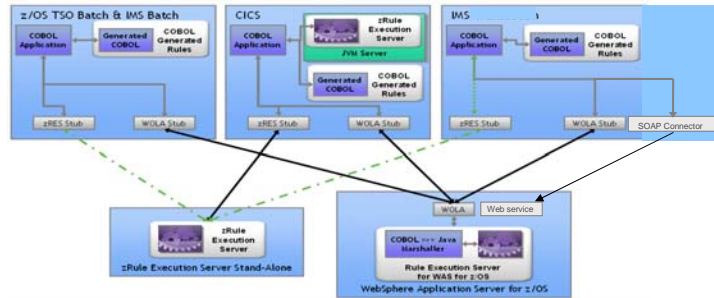
http://www.gse-nordic.org/2012/s310_ims%20ad_2012.pdf

Enterprise Mobility …

WebSphere Smash IMS Connector

- WebSphere sMash **is a development and execution platform for quickly building agile, web-based applications**
  - Supports dynamic scripting languages e,g, PHP (**P**HP: **H**ypertext **P**reprocessor) and Groovy– and provides an agile web application development environment
  - JVM-based runtime (Not JEE)
  - Supports reuse of enterprise content, including SOA services, as RESTful services
  - Contains browser-based tooling and an Eclipse plug-in

Windows

sMash http runtime

sMash Application

IMS Connect API

Connection and TmInteraction properties files

z/OS

IMS Connect

OTMA

IMS App
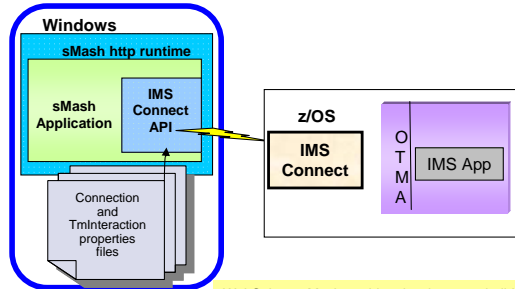
WebSphere sMash enables developers to build applications in the Web 2.0 style by easily composing and pulling together preexisting assets using dynamic scripting languages and simple REST principles

- IMS Connect API
  - Generates the IMS Connect input message header
  - Manages interaction according to the IMS Connect message protocols
  - Deals with socket connections made on behalf of the client applications
  - Supports IMS Connect user message exits HWSSMPL0/HWSSMPL1

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Enterprise Mobility

- **Cognos**
    - Facilitates business decisions through the implementation of business intelligence (BI) and financial performance management (FPM) software
    - Allows decision makers to aggregate data from transaction systems (SAP, Oracle,… and now IMS.) along with other sources across the organization to create a single, integrated business performance management framework
    - **With IMS**
        - *Allows IMS data to be integrated into this environment using the IMS Open Database solution and the IMS universal drivers*
            - *Using the Cognos generic JDBC driver interface*

Windows, Linux, Unix, and zLinux   **z/OS**

Cognos	IMS Connect	ODBM	IMS
IMS Universal Database Driver / TCPIP	TCPIP / SCI	SCI / ODBA	CTL / IMS DB

TCPIP

PC
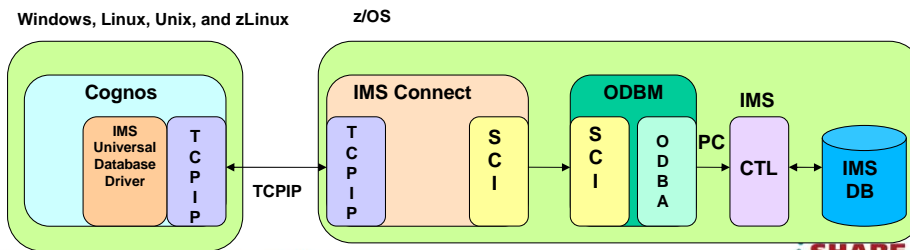
SO …

IBM has been investing in the mobile space for more than a decade

BUT

**In April of this year, IBM announced a new portfolio that expands
IBM's strategy to provide clients with a mobile platform that
spans application development, integration, security and
management.**
*www-01.**ibm**.com/support/docview.wss?uid=swg21590856*

IBM Mobile Foundation - 2012

New!

IBM Mobile Foundation

Includes

- IBM WebSphere Cast Iron
- IBM Endpoint Manager for Mobile Devices
- IBM Worklight

Plus New Services

- IBM Mobile Services

Complementary O

- IBM solutions for Social Business
- IBM Smarter Commerce
- IBM Exceptional Web Experience
- IBM Rational Collaborative Lifecycle Management

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IBM Mobile Foundation …

- **Packaging of several existing IBM tools and the new cross-platform mobile development and integration capabilities of Worklight**
  - A mobile product family that allows organizations to:
    - Develop HTML5, hybrid and native apps once and deploy to multiple mobile environments without manual porting
    - Manage and secure network-connected devices, including mobile endpoints
    - Integrate mobile applications to enterprise systems and cloud services

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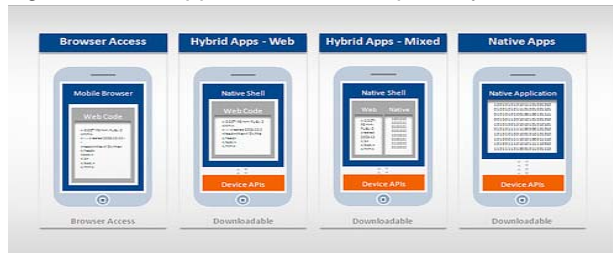
IBM Mobile Foundation …

- **Supports the development of mobile apps in four ways**
  - Web Apps - Quick and low-cost development effort
    - Written entirely in HTML5, CSS and JavaScript code
    - Executed by the mobile browser and therefore cross-platform by default, but less powerful than native apps.
  - Hybrid Apps (Web) - The app's source code consists of web code executed within a native container that is provided by Worklight and consists of native libraries.
  - Hybrid Apps (Mix) - The web code is augmented with native language to create unique features and access native APIs that are not yet available via JavaScript, such as AR, NFC and others.
  - Native Apps - Platform-specific requiring unique expertise and knowledge
    - Pricey and time consuming to develop but delivers the highest user experience of all approaches.

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Web Apps - Newer smart phones and tablets come with advanced web browsers pre-installed, and it is very feasible to implement a mobile business application that is a standard web application, plus special style sheets to accommodate the mobile form factor and approximate the mobile device "look and feel." Mobile applications implemented using this approach support the widest variety of mobile devices, since web browser support for JavaScript and HTML5 is fairly consistent.

Hybrid Apps - Hybrid mobile application implementation is a form of compromise between pure native implementation and pure web implementation. Hybrid apps are linked to additional native libraries that allow the app to have access to native device features from the single application code base. Because the bulk of a hybrid application is implemented using technology not unique to any single device, most of the code for the application is portable and reusable across many different mobile operating systems. However, small segments of native code also can be integrated with the hybrid app. So the developer can decide how much of the application implementation is a shared, common code base and how much is device-specific customization.

Native Apps – Native implementations of mobile apps are completely non-portable to any other mobile operating system. A native Apple iOS app must be totally rewritten if it is to run on an Android device. That makes this choice a very costly way of implement-ing a mobile business application.

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IBM Mobile Foundation …

- **WebSphere Cast Iron (for IT Departments)**
  - Hybrid cloud technology that links mobile applications to clouds as well as back-end infrastructure and enterprise resources

- **Worklight (for developers)**
  - A set of development and integration tools
    - Allows developers to write applications and other mobile software just once
      - *For deployment across Apple iOS, Google Android and Research In Motion's BlackBerry platform*

- **IBM Endpoint Manager (for administrators)**
  - Software that spans servers to mobile devices and can carry out critical tasks such as wiping the data and applications off a mobile device when those resources could be at risk
    - Supports managing all types of endpoints on a network and making them secure

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IBM WebSphere Cast Iron

- **Deployed using**
  - A physical appliance (WebSphere DataPower Cast Iron Appliance XH40)
  - A virtual appliance (WebSphere Cast Iron Hypervisor Edition)
    - Can be installed on existing servers using virtualization technology
  - A full cloud service (IBM Cast Iron Cloud)

- **Supports a variety of secure communication protocols:**
  - HTTPS (HTTP over SSL)
  - SOAP/HTTP over SSL
  - Secure FTP (FTP over SSH) and FTPS (FTP over SSL or Implicit FTPS)
  - Secure Databases (SSL): Supports secure mechanism for database access

IBM Worklight

- Apps Development
  - Build once. Run anywhere.
  - Android, iOS, Blackberry, Microsoft, iGoogle, Facebook app, Adobe AIR
  - Runtime Skins for different resolutions
  - Standards based language
  - Application Lifecycle Management
  - Centralized Build Process
- Security
  - Secured offline access
  - On device encryption of user data
  - Single sign-on mechanism
  - SSL encryption
  - Protection against reverse engineering vulnerabilities
  - Multi-factor authentication

- Enterprise Integration
  - Direct access to back-end systems
  - Leverage existing SOA services
  - Server-side caching
  - Adapters with support for SAP, SOAP, REST, SQL and more
- Application Management
  - App distribution
  - App Version management
  - Remote disabling apps
  - Direct Update
  - Push Notification service management
  - Analytics and Usage report
- Middleware
  - WebSphere Application Server ND
  - Reliable, Highly Available and Scalable

IBM Worklight

- **Includes Integration Adapters which**

  - Allow the Worklight platform to connect to back-end systems
    - Retrieve information and Perform actions

  - Are provided with the product
    - HTTP adapter (supports REST and SOAP)
    - Cast Iron Adapter
    - SQL adapter

  - Supports data retrieval as either raw or preprocessed

Information Systems   Databases   Applications

Query   Response

2   3   Update data

SQL   WS   HTTP

WORKLIGHT

4   Data/Result As JSON

1

Invoke Adapter procedue
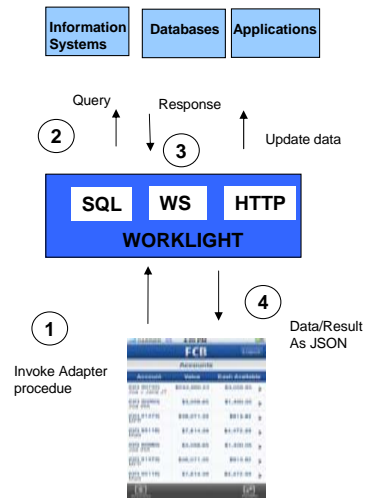
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Worklight Adapters …

- **Worklight HTTP Adapter**

  - Works with RESTful and SOAP-based services
    - Can read structured HTTP sources, for example RSS feeds
    - Allows sending a GET or POST HTTP request and retrieves data from the response headers and body
    - Easily customizable with simple server-side JavaScript
    - Optional server-side filtering
    - Retrieved data can be in XML, HTML, JSON, or plain text formats

Worklight Adapters …

- **Worklight Cast Iron Adapter**

  - Initiates orchestrations in Cast Iron to retrieve and return data to mobile clients
    - Takes advantage of Cast Iron implementations
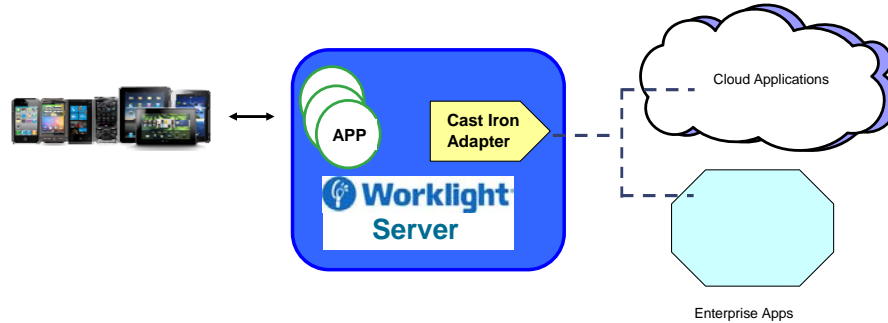
Cloud Applications

APP

Cast Iron Adapter

Worklight Server

Enterprise Apps

Worklight Adapters …

- **Worklight SQL Adapter**

  - A Worklight® SQL adapter is designed to communicate with any SQL data source
    - Both plain SQL queries or stored procedures can be used

  - Supports MySQL, Oracle 11g and DB2® databases

  - Supports a JDBC connector driver for specific database type must be downloaded separately by the developer and added to the lib\ folder of a Worklight project
    - *E.g., IMS universal driver*

Multi-channel is a way of delivering services that allows users / customers to interact with the system through a number of different channels: the peculiarity of multi-channel is that in any of these channels, you can **perform** a varying number of **tasks from start to finish without resorting to any other channel**.

Thus, for instance, you can perform a transfer using a home banking system via web, or a phone banking channel, through a mobile application, or walking to the closest branch. In each case you can complete the entire transaction inside one unique channel, without necessity to move toward another channel.

Enterprise Mobility Workload

- **Business to systems programmer**
  - Scale using z/cloud and IMS Parallel Sysplex
  - Event processing for workload and error notification
  - IMS Monitoring tools
  - Current IMS security does not change
    - Just another endpoint

IMSPlex – Parallel Server Environment Cloud + Mobile workload support

- **IMS is a dynamic and configurable platform**

- **Provides standard interfaces to access resources**

- **Does not require application program recompiles even if the IMS release is changed**

- **Does not require application program changes even when the network or db structure changes**

z/OS COMMUNICATION Server

IMS Application Server

- IMS TM
  - Control Region
  - IMS Connect
- IMS MPP/IFP/JMP Region
  - Application Program
- IMS BMP/JBP Region
  - Application Program
- JDBC Drivers
- IMS z/OS Platform

MSC

Shared Queues and Data Sharing

IMS Catalog

IMS Application Server

- IMS TM
  - Control Region
  - IMS Connect
- IMS MPP/IFP/JMP Region
  - Application Program
- IMS BMP/JBP Region
  - Application Program
- JDBC Drivers
- JDBC Drivers
- DLI / DB2
- IMS z/OS Platform

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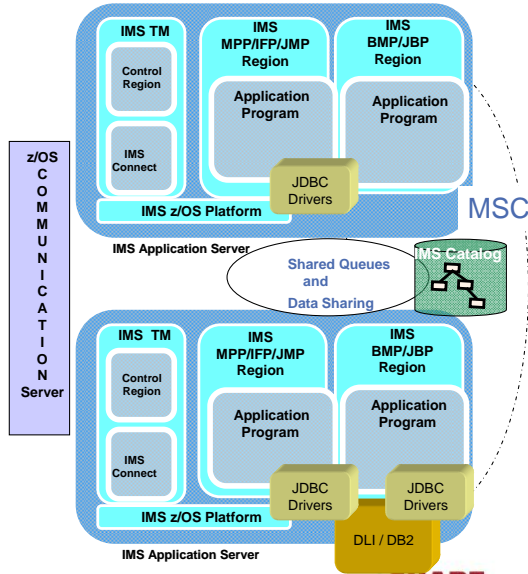
Accessing IMS Transaction Resources

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MQ Telemetry Transport - MQTT

- **Optimized messaging for smart sensors and telemetry devices**
  - Enables intelligent decision-making based on remote real-world events
  - Supports remote resource management of static or moving assets
  - MQTT is an open message protocol
    - Examples of usage includes: Facebook Messenger, iPhone, Android, and Windows apps

Telemetry can be used to extend the enterprise to mobile devices

- Direct device integration into back office
- Tiny messaging optimized for resource-constrained devices & gateways (RTUs)
- Terse protocol & compact header for fragile & pay-per-byte networks
- Advanced device level data buffering

- Event-driven publish-and-subscribe delivery of only significant information
- Open protocol encourages widespread device enablement
- Last Will & Testament for automated handling of device failures or outages

Sensors, Meters, Controllers, RFID Mobile devices

IBM Connectivity

MQ Telemetry   **MQ**

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MQ Telemetry Transport – MQTT …

- **With WebSphere MQ Telemetry, instrumented devices that are located anywhere in the world can connect to each other**
- **And with WebSphere MQ, they can connect to enterprise applications and web services**
  - MQ Telemetry uses the MQTT protocol to send and receive messages between devices or applications and the WebSphere MQ queue manager
  - From the WebSphere MQ queue manager, messages can be exchanged with other messaging applications

- **Other IBM products that have applications and devices that communicate using the MQTT protocol**
  - WebSphere Message Broker
  - WebSphere Application Server
  - IBM Operational Decision Management (IBM ODM)
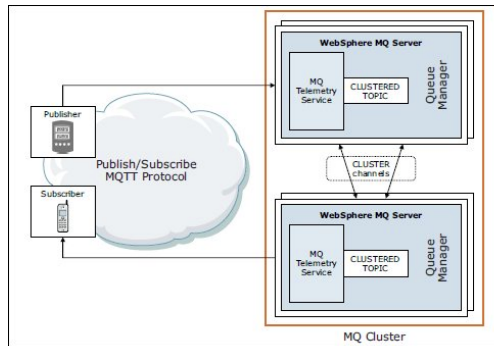
http://www.redbooks.ibm.com/technotes/tips0876.pdf

Accessing IMS Transactions – SOAP/HTTP …

- **WebSphere DataPower (XI50z, XB60)**
  - Supports
    - Access to IMS web services via the IMS SOAP Gateway
    - Access to IMS applications using an MQ server on system z and the MQ Bridge for IMS
    - Access to IMS applications using a DataPower embedded IMSClientConnect handler to IMS Connect

http://www.redbooks.ibm.com/redbooks/pdfs/sg247988.pdf
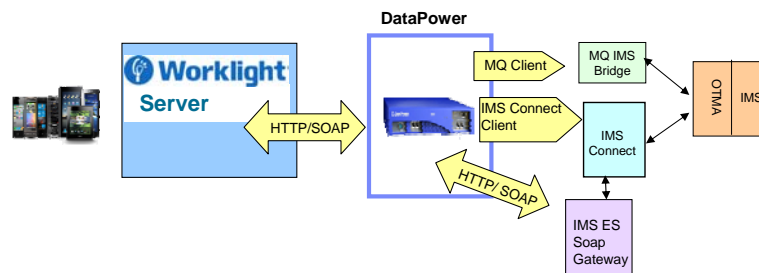
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XI50 XI52 XI50B XB62

XI50Z =blade – for calloutand IMS db --- also XI52 and XI50B and XB62
Xi50 is old for inbound to IMS

Future: Datapower "sidecar" architecture – a common framework :container
model" arch to allow all z subsystems, e.g., IM to embed external
components in sidecars
IMS sidecar will talk to IMS connect

Accessing IMS Transactions – SOAP/HTTP …

- **WebSphere Message Broker**

HTTP/SOAP

Worklight Server

SAP Apps

Dynamics

BAM

Database

Microsoft .NET

Web Services

MQ, JMS, MSMQ

z/OS, AS/400

http://tinyurl.com/9fyudba

Connect *FROM* anywhere*, TO* anywhere

Simple & Easy –to Install, Learn, Develop, Deploy and Manage

Visually Map and Transform between any two message or file formats
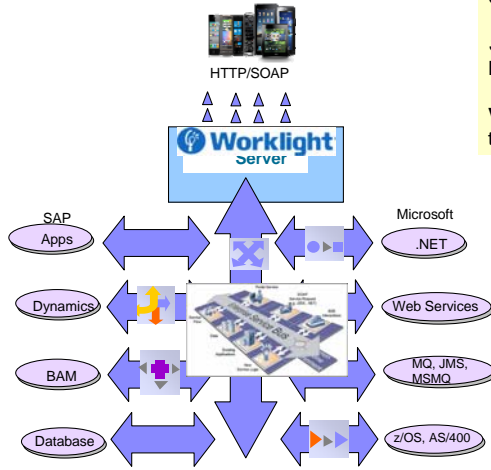
Connect everything to everything

Matches and routes Communications Between services

Transforms Between different Data formats

Converts Between different Transport protocols

Identifies and distributes Business events

Accessing IMS Transactions – SOAP/HTTP …

- **WebSphere Message Broker …**
  - A powerful broker solution driven by business rules
    - Messages are formed, routed, and transformed according to the rules that you define
    - Allows diverse applications to exchange information in dissimilar forms
      - *With brokers handling the processing required for the information to arrive in the right place in the correct format*
      - *The applications do not need to know anything except their own conventions and requirements.*
  - Implementation of an enterprise service bus architecture
    - Nodes
      - *Communication points to external resources*
      - *Points in the message flow which define a set of actions*

Accessing IMS Transactions – SOAP/HTTP …

- **WebSphere Message Broker …**
  - Provides two nodes to access IMS
    - MQ Node
      - *Takes advantage of the WMQ support - MQPUT / MQGET*
    - IMSRequest Node
      - *Takes advantage of the IMS TM Resource adapter*
        - *Accesses IMS through IMS Connect*
      - *Delivered/ built into WMB*
      - *Supports WMB Configurable Services which allow operational control of IMS connection configuration*
      - *Supports a broad range of IMS facilities*
        - *MPP, BMP and FP transaction regions*
        - *Commit mode 0, 1*
        - *SyncLevel NONE, CONFIRM*
        - *Single and multi segment IMS messages*

Get File Records   Call IMS Txn   Notify partner via MQ

Archive IMS response

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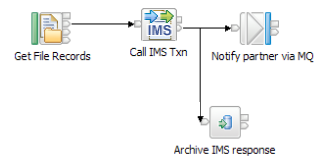
IMS Connect and IMS TM
(Supports Mobile Devices)
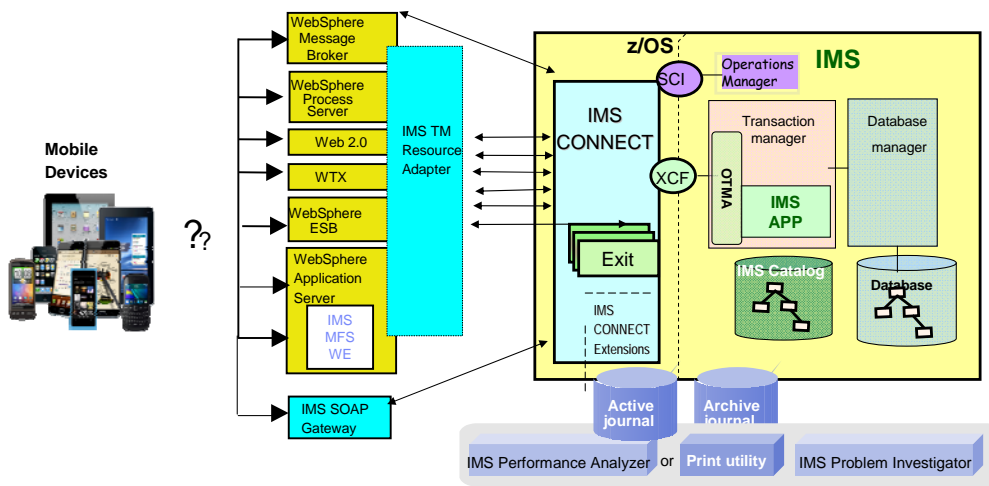
Accessing IMS Transactions – SOAP/HTTP

- **Enterprise Mobility means more transactions**
  - Using communication mechanisms and interfaces that are already there for IMS

  -
    - SOAP/HTTP adapters in Worklight or through Cast Iron
      - *Can send messages to IMS through*
        - *IMS ES Soap Gateway*
        - *WebSphere Application Server*
        - *WebSphere DataPower*
        - *WebSphere Message Broker*
        - *…*

Accessing IMS Transactions – SOAP/HTTP …

- **IMS Enterprise Suite Soap Gateway**
  - A web services solution that enables IMS applications to interoperate outside of the IMS environment
    - Compliant with the industry standards for web services, including SOAP/HTTP 1.1 and Web Services Description Language (WSDL) 1.1.
- **By using the Worklight Server's HTTP/SOAP adapter, Mobile applications can interoperate with the IMS environment**
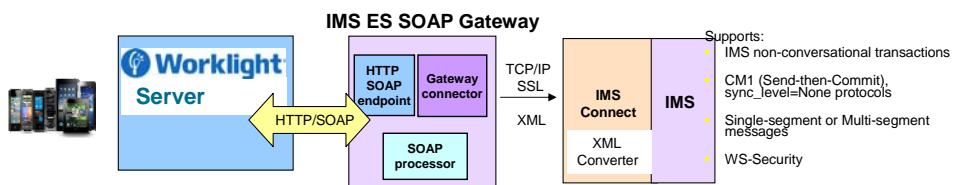
IMS ES SOAP Gateway

Worklight Server — HTTP/SOAP — HTTP SOAP endpoint | Gateway connector — SOAP processor — TCP/IP SSL / XML — IMS Connect / XML Converter — IMS

Supports:
- IMS non-conversational transactions
- CM1 (Send-then-Commit), sync_level=None protocols
- Single-segment or Multi-segment messages
- WS-Security

Accessing IMS Transactions – SOAP/HTTP …

- **WebSphere solutions**
  - Take advantage of the IMS TM Resource Adapter
    - Based on J2EE Connector Architecture (JCA) 1.5
    - Leverages existing IMS assets in an SOA environment
    - Supports development of applications that can submit transactions to IMS Transaction Manager through IMS Connect
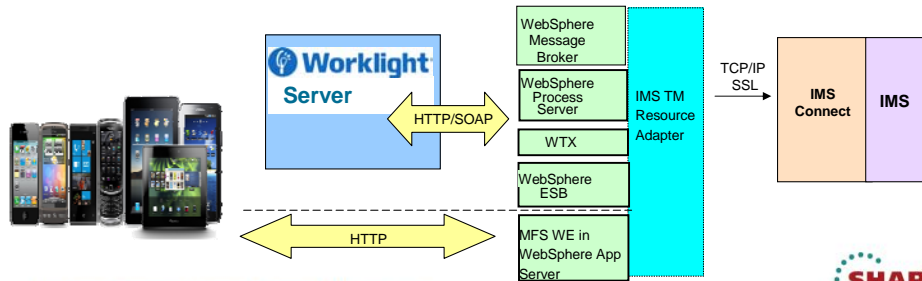
Modernize MFS based IMS transaction

- **Business values offered by IMS MFS on demand**
  - Embedded command-line tooling
  - 3270 emulator and VTAM are no long required
  - Render displays for web browser and mobile devices, e.g. iPhone, iPad, etc.
  - Modernize MFS transaction without modifying existing applications.
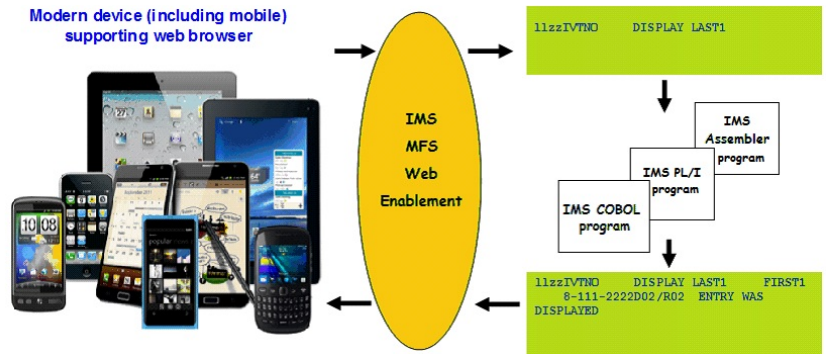
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Accessing IMS Transactions – IMS MFS WE

- **Style sheet is used to transform a MFS XML document into dynamic HTML pages that render data on mobile browser**

- **MFS XML Utility is tool that generates XMI files based on MFS source file. It also generates WAR file for deploying to WebSphere Application Server**

- **IMS MFS Adapter translates MFS XML document into a byte stream that IMS application can understand**

IMS Application Event notification
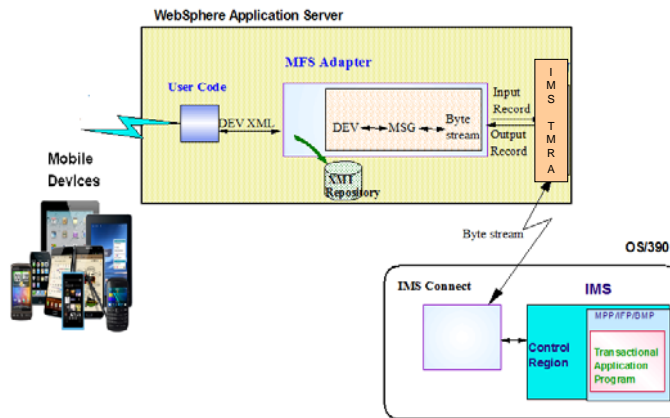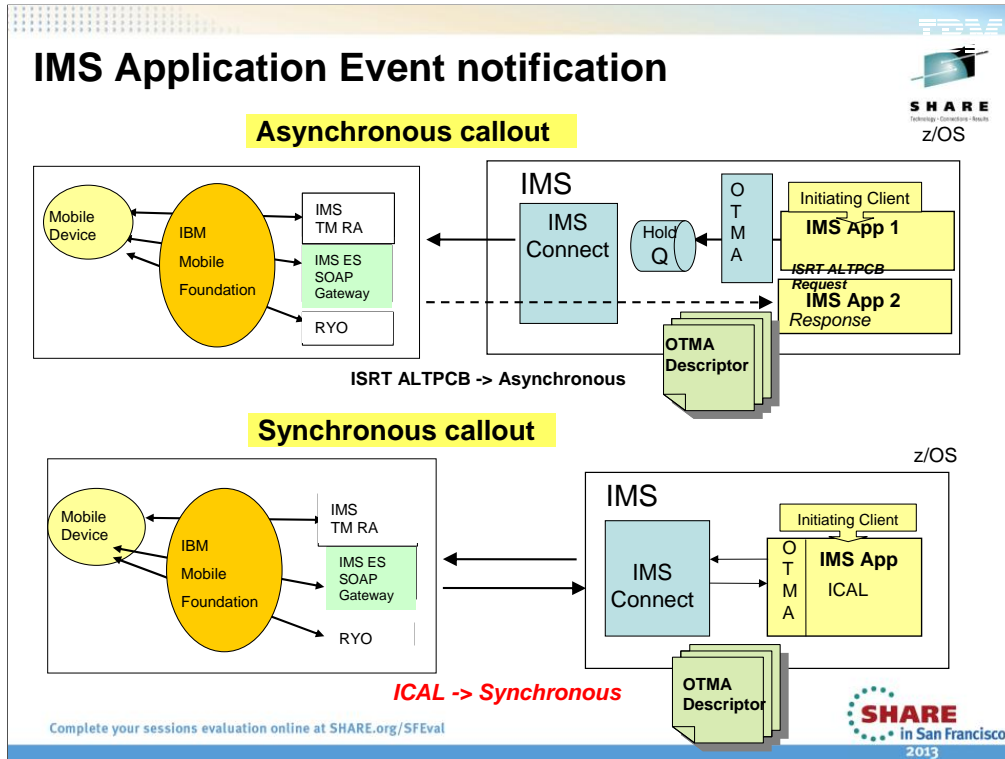
The structure of the library changed quite a lot with IMS Version 10. In Version 11 we will improve the content of information deliverables, but the overall library structure will remain largely the same, with the exception to the noted areas above.

How About Data?

IMS Connect and IMS DB
(Supports Mobile Devices)
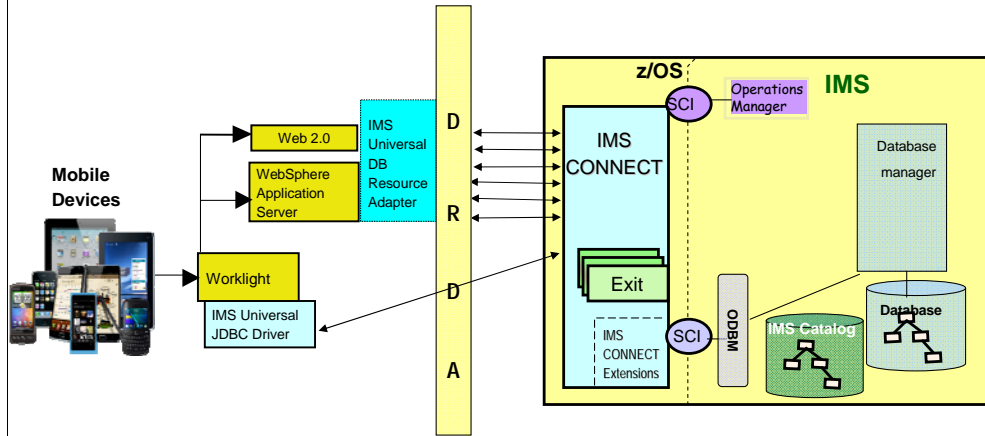
Complete your sessions evaluation online at SHARE.org/SFEval

IBM Worklight SQL Adapter

- **Development Studio**
  - A Worklight® SQL adapter is designed to communicate with any SQL data source
  - Both plain SQL queries or stored procedures can be used
  - IMS Universal JDBC connector driver can be to the lib\ folder
  - Access IMS DB via Type 4 Connectivity

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2013

IMS Open Database environment
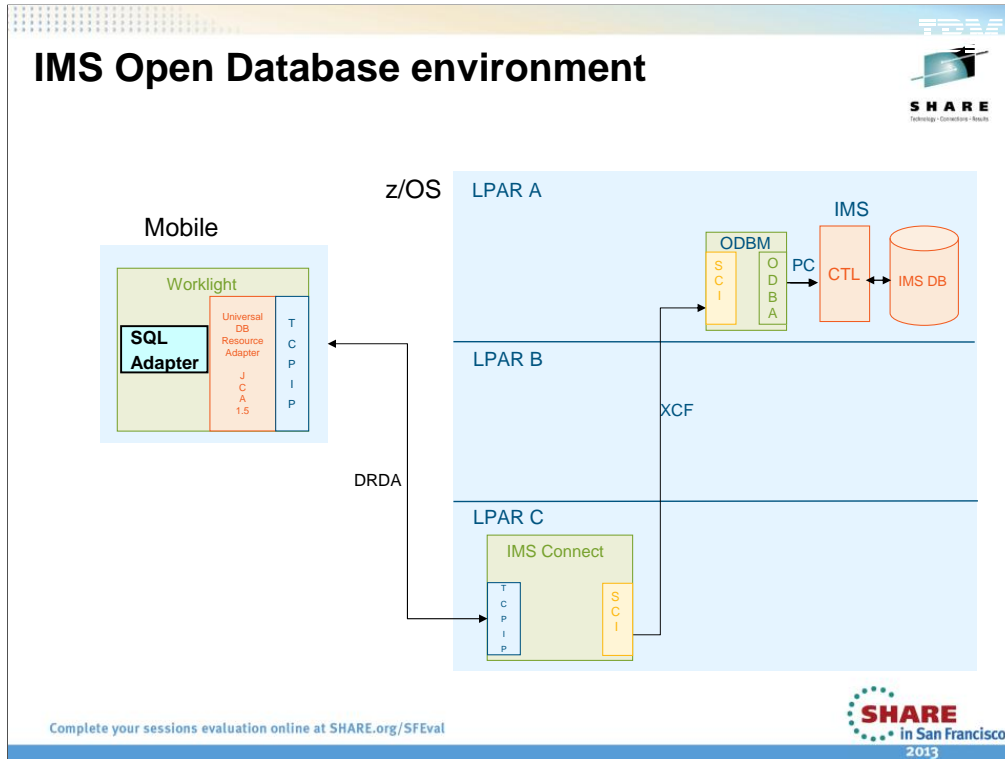
What we are doing is creating a new CSL address space to house the ODBA modules. This interface will use SCI as its communication mechanism. The ODBA modules are no longer tightly coupled with the applications themselves (and therefore the containers).

By leveraging SCI, the applications can be on any LPAR in an IMSplex. SCI uses either PC or XCF calls to communicate with other SCI components. XCF allows calls to go across LPARs in an IMSplex. This allows applications (and their containers) to be isolated on their own LPARs.
XCF: In IBM mainframes, a **Cross-system coupling facility**, or **XCF**, is a component of z/OS that manages communications between applications in a sysplex. Applications may be on the same system or different systems.

ODBA had a restriction that WAS had to run on the same LPAR as IMS DB. Type 2 connectivity
ODBM introduced a new address space (it contains ODBA)
IMS Connect was augmented to be a TCP IP gateway into IMS. IMS Connect replaces WAS z.
ODBM wraps ODBA
SCI Allows cross LPAR communication

IMS Connect has access to any Database in any LPAR

Worklight IMS DB

```
•        <connectivity>
•                        <dataSourceDefinition>
•
•        <driverClass>com.ibm.ims.jdbc.IMSDataSource.class</driverClass>
•
•        <url>jdbc:ims://zserveros.demos.ibm.com:7013/DFSSAM09:
•              dpsbOnCommit=true;fetchSize=0;datastoreName=IMSB</url>
•                                <user>DNET545</user>
•                        <password>********</password>
•                        </dataSourceDefinition>
•                </connectionPolicy>
•                <loadConstraints maxConcurrentConnectionsPerNode="5" />
•        </connectivity>
•
•        <!-- Replace this with appropriate procedures -->
•        <procedure name="getpart"/>
•           .
•      .
```

Worklight IMS DB

-      //Create SQL query

- var getpartStatement = WL.Server.createSQLStatement(
-      "SELECT * " +
-      "FROM PCB01.PARTROOT " +
-      "WHERE PART_NO_EDIT = '?';"
-);

- //Invoke prepared SQL query and return invocation result
- function getpart(partnum){
-      return WL.Server.invokeSQLStatement({
-           preparedStatement : getpartStatement,
-           parameters : ["partnum"]
-    });

Worklight Sample screen shots

Worklight Sample screen shots

Examples

- **Access to IMS data from a mobile device**

Examples – IMS MFS WE

- **A demo showing access to IMS MFS transaction from the web browser on a** *mobile device*