Welcome to a new perspective on mobility.

Mobilizing Applications: Lotus Domino Databases

With:
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- Responsible for developing and promoting best practices for mobilizing enterprise applications
- Extensive development and system architecture expertise in enterprise J2EE™ applications
Agenda

• BlackBerry Application Platform Overview
• Approaches to BlackBerry Development
  – Choose the right tool for the job!
  – BlackBerry Browser
  – BlackBerry MDS Studio Rapid Development
  – BlackBerry Java / Java ME
• Mobilizing Domino Applications
  – Why Domino is a great place to start!
  – Working examples & troubleshooting techniques
BlackBerry Platform: Enterprise Service Offering

- **BlackBerry® Enterprise Solution**
  - Enterprises deploying wireless solutions as a business tool to improve employee productivity & competitiveness
  - Includes BlackBerry® Enterprise Server
  - *Installed behind the firewall & integrated with corporate Email and Instant Messaging servers*
  - Secure connectivity to intranet for Browser & applications

![Diagram of BlackBerry service offering](image)

- **Email**
- **IM**
- **MDS Connection Service**
  (Browser)
  (Java Apps: HTTP)
  (MDS Studio Apps)
BlackBerry Wireless Development Platform

- BlackBerry Wireless Solution enables wireless applications to be developed and deployed without the need to:
  - Purchase or manage new wireless connections or new pricing plans
  - Create new application rules for your firewall
  - Worry about remote connectivity & support for multiple networks (including roaming!)
  - Worry about how to deploy to thousands of users in the enterprise

- New features found within BlackBerry® smartphones are enabling developers to create fantastic applications!
  - Inclusion of WiFi and 3G networks results in less wait time for the user and allows more data to be exchanged
  - Introduction of the camera, GPS functionality, along with the widespread adoption of Bluetooth® technology allows for the creation of more dynamic solutions
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Choosing the Right Tool for the Job!

- Reuse hardware, software, and existing processes whenever possible
- Remember: Application rollout, security, & support are critical to a successful application!
- K.I.S.S. (At least to start…)
- The user experience is paramount!
The BlackBerry Browser

- **BlackBerry Browser is fully functional:**
  - Standard Mark-up languages
    - HTML / JSP / ASP / WML
    - CSS / JavaScript / SSL
  - Dedicated “VPN” to the internal network
    - Expose content via “Intranet” vs. “Internet”
  - Logic can be added specifically for BlackBerry
    - “User-Agent” entry in HTTP Header
BlackBerry Solutions: BlackBerry Browser

- BlackBerry Browser applications excel at:
  - Ease of development
  - Leveraging existing development practices, infrastructure, and even business processes!
  - Users are already familiar with web based applications
  - Ease of deployment, securing, & troubleshooting
  - Ability to “Push” data

- BlackBerry Browser solutions are not suited to every task:
  - Restricted control of user experience
  - Online access only
  - Browser behavior is dependent on version of smartphone software
BlackBerry MDS Studio Specifications

- BlackBerry MDS Studio creates rich-client applications which talk to Web Services
  - Visual-design IDE based on Eclipse for building rich-client applications
    - Microsoft® Visual Studio® plug-in has just been released!
  - Applications are assembled from components using a “drag and drop” approach
    - UI Components
    - Data Components
    - Message Components
  - Minimal smartphone-side coding required (JavaScript)
BlackBerry MDS Studio Applications – How does it work?

- BlackBerry MDS Studio enables you to analyze WSDL files on the intranet or Internet
  - Determines the available methods, input/output parameters and related data components
- Generates data components for your BlackBerry application and message components to call the various “Get” and “Set” methods
- Build screens and workflow, link to data and message components
  - Add optional JavaScript for client-side processing
BlackBerry Solutions: MDS-Studio

- **MDS Studio applications excel at:**
  - Web Services can be leveraged by other applications
  - Provides a “rich-like” user experience
  - Easy to secure and troubleshoot
  - Reuse of existing infrastructure

- **Limitations of MDS-Studio include:**
  - Requires MDS-Runtime on the target device
  - Requires server-side WebServices
  - Limited control of user experience
  - Limited storage of persistent data
BlackBerry Java ME Specifications

• Use the BlackBerry® Java Development Environment (JDE) to build custom Java applications for the BlackBerry
  – BlackBerry JDE includes a robust set of debugging, profiling and optimization tools
  – Supports integration with existing Eclipse or NetBeans environments as well

• Robust Java API set
  – Support for industry standard Java ME (MIDP/CLDC) APIs
  – Additional BlackBerry-specific Java APIs
Custom Java Applications for BlackBerry

- Java APIs for BlackBerry enable you to develop rich custom client applications that provide
  - Customizable user interface
  - Local data storage on the device
  - Event listening and system interfaces
  - Secure wireless transport via HTTP

- Advanced Java API capabilities include
  - Integration with BlackBerry Email, PIM and Phone applications
  - Always-on background threads to listen for incoming push data
  - Communication with Bluetooth-enabled peripherals
  - Location-based services and audio playback
  - Integration with the Media Player and Camera found on select BlackBerry smartphones
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Developing for Domino!

- Domino is a great starting point for mobilizing workflows
  - Several built in “asynchronous” workflows that lend themselves well to mobilization
    - Discussion Database, Approval Workflow, etc.

- All of the development practices which have been discussed can be applied to mobilize Domino applications
  - Let’s demonstrate what is possible…
Domino Applications & The BlackBerry Browser

• Made available out of the box
  – With the HTTP agent, almost any Domino application can be accessed via the BlackBerry Browser

• The BlackBerry security architecture applies right out of the box
  – All communication between the BlackBerry smartphone and Domino server is encrypted along the same channels as e-mail

• Logic can be added specifically for BlackBerry smart phones
  – Use of the @BrowserInfo parameter
Domino Applications & WebServices

- Lotus Notes/IBM® Lotus Domino 7 has built-in Web Service design element
  - Located under Shared Code within Designer
  - Coded in LotusScript or Java
- Supports WSDL and SOAP 1.1
- HTTP Server Task
- Domino Designer does a fantastic job of exposing WebServices
• Domino does **not** have support for native sockets
  – But you don’t want to use them anyway as they are quite inefficient
• Two different approaches:
  – HTTP Posting of info
  – WebServices interaction (SOAP Request/Responses)
• The Java ME can act as the “front-end” while Domino acts as the “back-end”
Enough Talk! Let’s See This In Action!
BlackBerry Development Resources

Visit our sites:
www.blackberry.com/developers
www.blackberry.com/go/lotusphere

- BlackBerry Simulators and BlackBerry® MDS Studio
- Developer Documentation & Sample Code
- BlackBerry smartphone and BlackBerry MDS simulators
- Knowledge Base & Discussion Forum
- Presentations from Lotusphere
Questions?

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**BlackBerry VIP Customer Reception – Tuesday night, 6pm, Grand Harbor South (Yacht & Beach Hotel)**

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