E160N: Introduction to the BlackBerry Browser

CONNECTING THE DOTS

WirelessEnterprise Symposium2005

Agenda

- Giving Thought to the Mobile Intranet
- BlackBerry® Web Application Architecture
- Introduction to BlackBerry Browser
  - Supported Mark-Up and Script
  - Security
  - Connectivity Options
- Web Content Optimization and Push
- What's new in BlackBerry Browser v4.0

The Mobile Intranet

- Designing web-based applications for wireless handhelds differs from designing for the desktop Internet environment
- The wireless intranet is not the intranet wireless!
- Wireless computing poses some challenges, but also offers advantages over desktop computing
  - Realize how to **manage** the limitations of wireless and how to **take advantage** of its unique features and opportunities

The Mobile Intranet

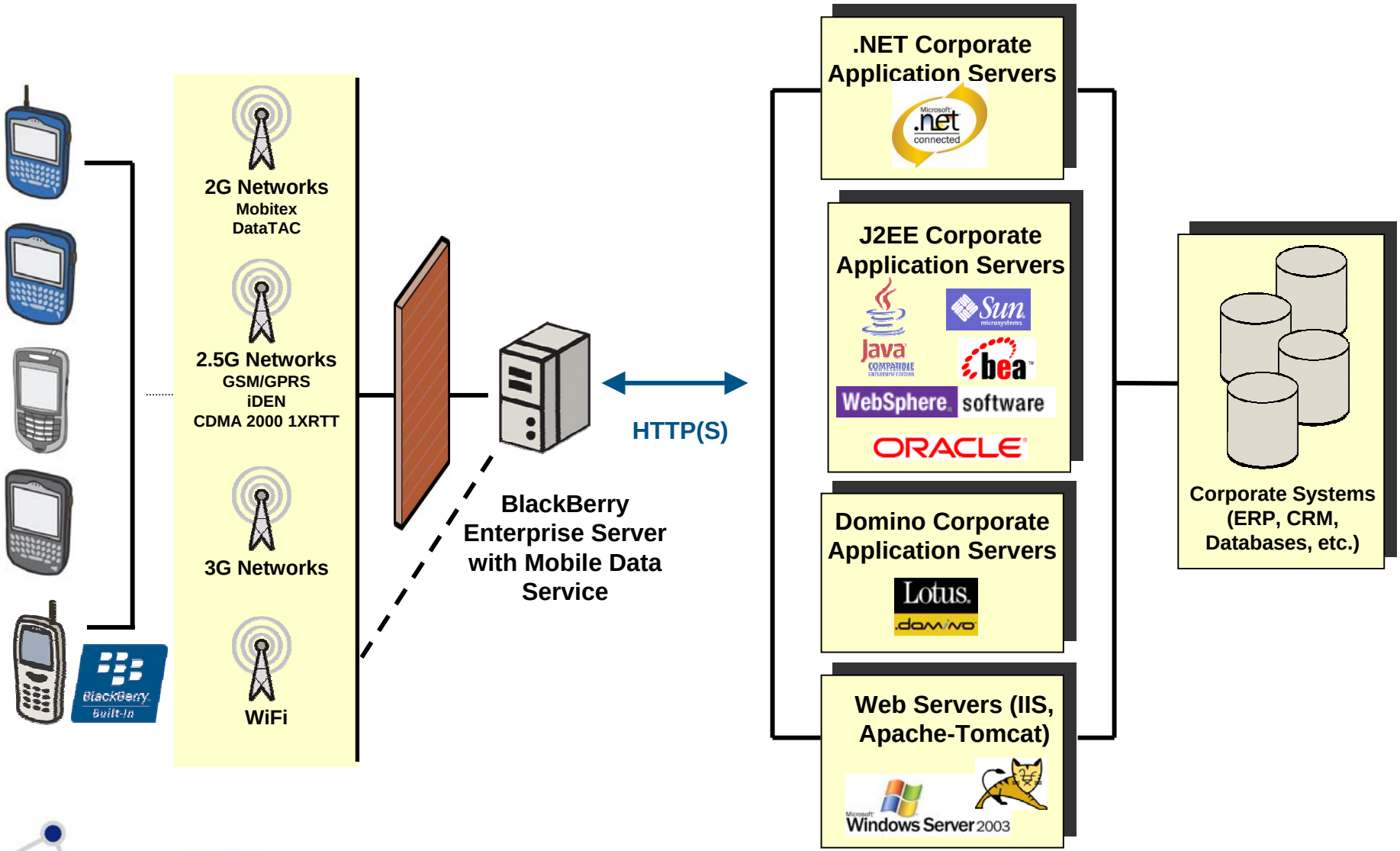
Needs of the Mobile Professional

- Anytime, Anywhere Access
- Immediacy
- Specific Data Requirements

Nature of the Wireless Handheld

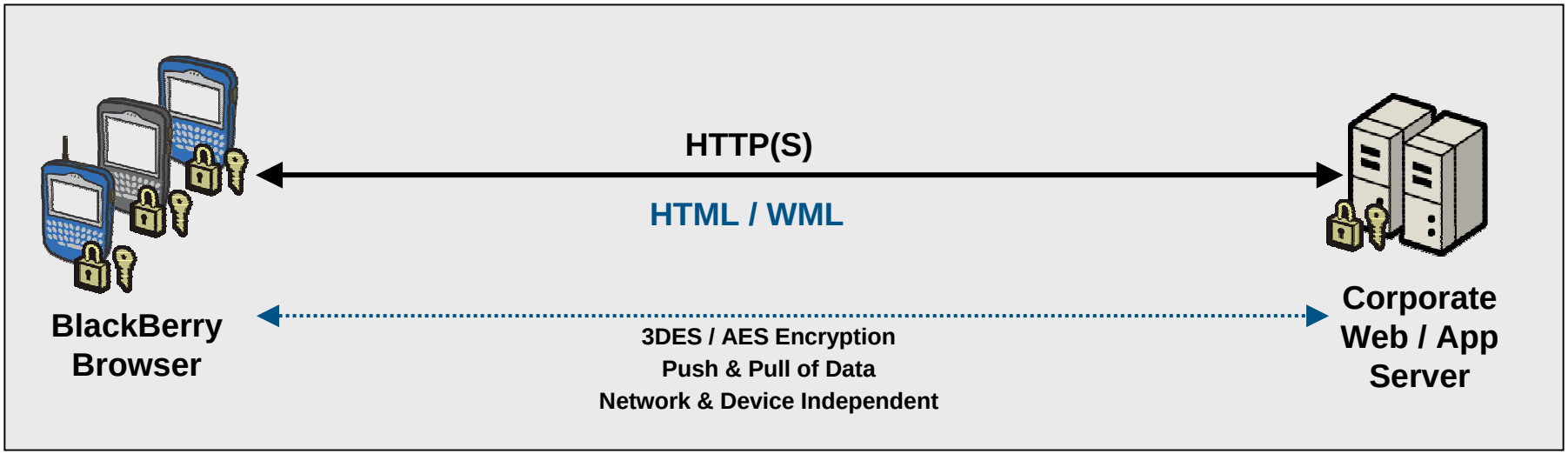
- Advantages
- Limitations

BlackBerry Application Architecture



BlackBerry Application Architecture

From the web developer's perspective…



The BlackBerry platform abstracts out the complexity involved in mobilizing web-based applications

BlackBerry Browser Overview

- Main BlackBerry Browser versions include:
  - BlackBerry Browser v3.6 and v3.7
    - All GPRS, iDEN™ and CDMA Java™-enabled BlackBerry devices
    - Support for color and monochrome screen devices
  - BlackBerry Browser v3.8 and v4.0
    - Upgrade from BlackBerry Browser v3.7 with new features (JavaScript, Offline Forms, etc.)
  - RIM Browser v2.5 and v2.6
    - RIM 850™, RIM 857™, RIM 950™ and RIM 957™ handhelds
    - DataTAC and Mobitex® wireless networks in North America

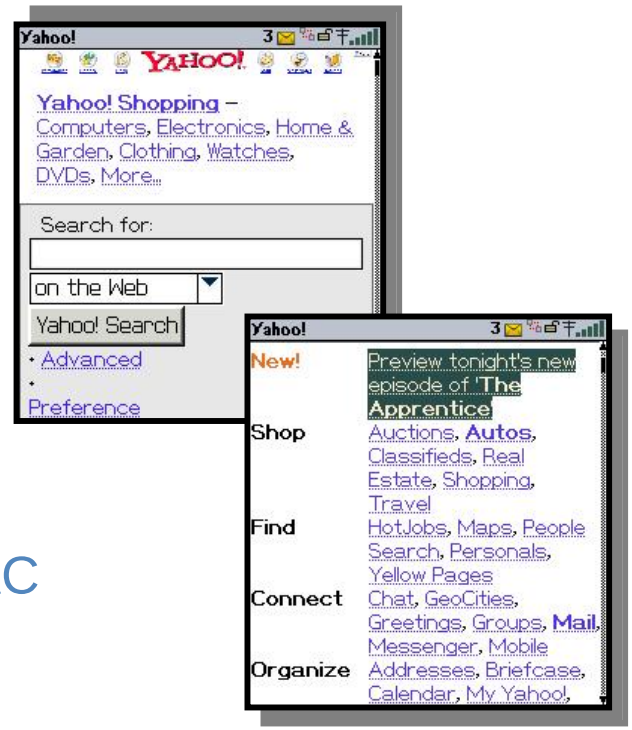
Wireless Browser-Based Solutions in the Enterprise

Key questions for consideration:

1. What **mark-up** languages are supported?
2. How will I **connect** to my corporate web servers?
3. Is **security** important? If so, how can I address this?
4. How can I ensure that the applications will be **adopted by users** and will make them more productive?
5. How can I make the content **dynamic** or **push** updated pages to my users?

BlackBerry Browser: Supported Mark-Up and Script

- BlackBerry Browser v3.6 and v3.7
  - HTML
  - XHTML Basic, cHTML
  - WML 1.3, WML Script 1.2
  - WBMP, PNG, GIF, JPEG images
- BlackBerry Browser v3.8 and v4.0 adds…
  - JavaScript support
  - HTML Tables
  - Animated GIFs, WAP 2.0 Style Sheets
- RIM Browser v2.5 and 2.6 for Mobitex/DataTAC
  - WML 1.3
  - WBMP images



Plazmic Media Content

Plazmic Content Developer's Kit™:

- Graphical authoring tool for SVG content
- Transcoder Macromedia® Flash™ (SWF) files into SVG
- Testing and debugging features for animated content
- Utility for transcoding SVG into a format optimized for delivery and use on wireless devices

Intro to Plazmic® WES Breakout Session

Session Code E190A

Browser Connectivity Options

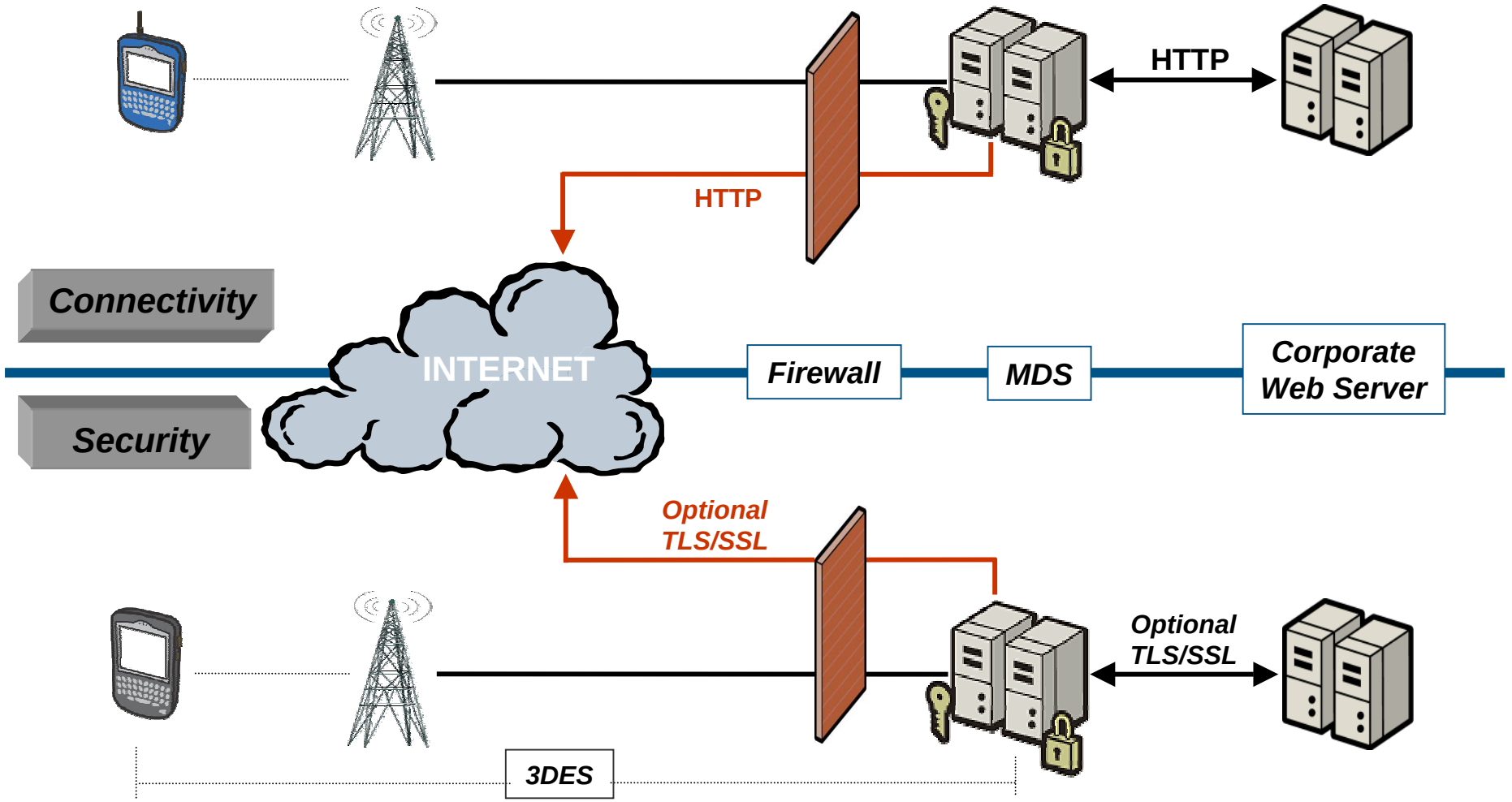
- BlackBerry wireless devices provide three browser configurations

- WAP Browser
  - Connects to the network using a WAP gateway
- Internet Browser
  - Connects to the network using the BlackBerry Internet Service™
- BlackBerry Browser
  - Connects to the network using the BlackBerry Mobile Data Service (MDS) feature of the BlackBerry Enterprise Server™

Connectivity and Security

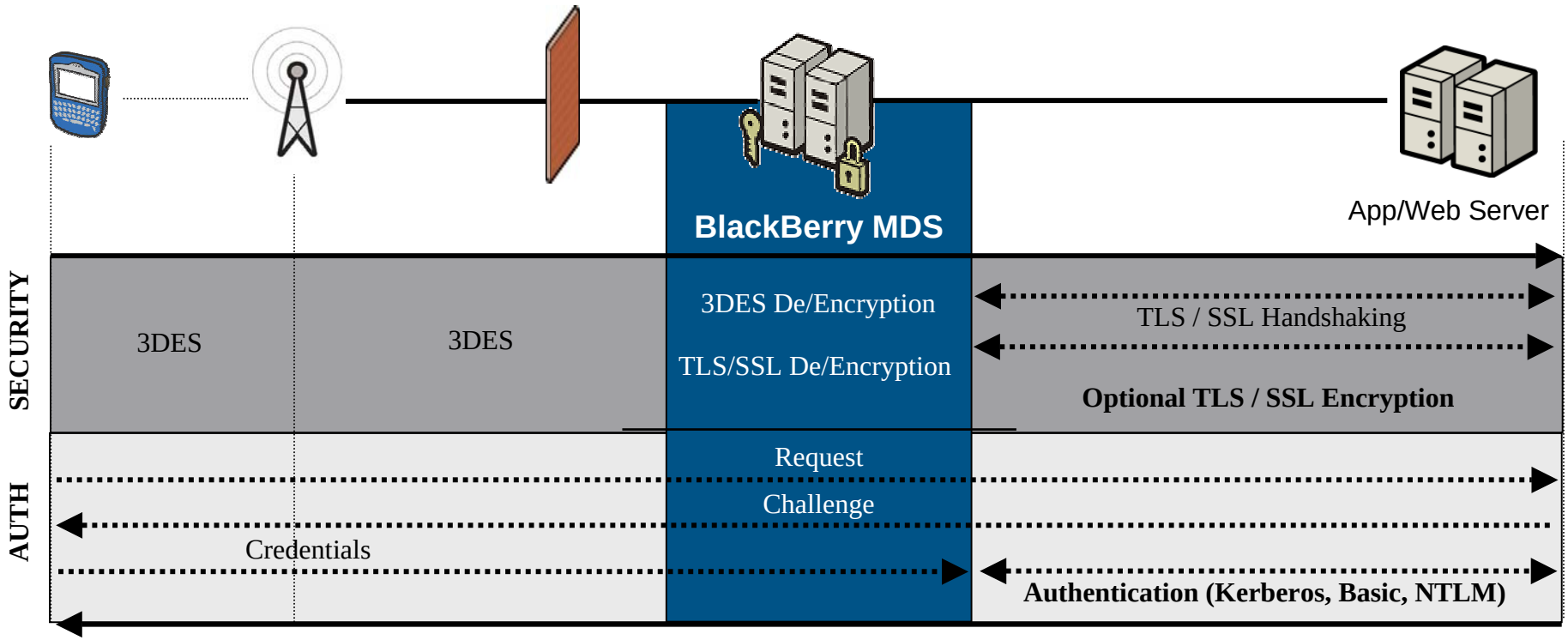
- Network Connectivity:
  - Intranet-based web servers can be connected to via the BlackBerry Mobile Data Service (MDS)
    - Simply enter the same internal URL that you would on a desktop browser on your intranet!
    - Browser connects through the intranet by default, even if requesting an Internet site
- Security:
  - All browser traffic through MDS is 3DES encrypted between the handheld and MDS
  - HTTPS (SSL/TLS) is also supported

Connectivity and Security



User Authentication

- MDS also supports a variety of corporate authentication schemes:
  - HTTP Basic
  - Kerberos
  - NT LAN Manager (NTLM)



Connectivity and Management Features

- MDS provide a number of other features for managing browser sessions:
  - Cache cookies and user credentials
  - Access control: manage which users are allowed to connect to the intranet via the browser
  - MDS transcodes and optimizes content for wireless delivery:
    - HTML – cHTML transcoder
    - All images are scaled and converted to PNG format
    - Unsupported tags are stripped, content is tokenized
  - MDS logs all browser requests

MDS Connectivity to Web Servers

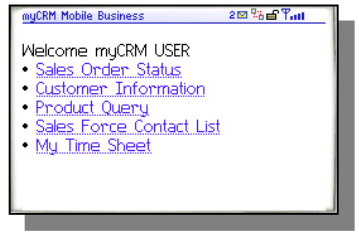
- What does the web server see when the BlackBerry Browser connects via MDS?
  - User-Agent = BlackBerry<Handheld>/<Version>
  - Accept Type = html, chtml, xhtml basic, wml
    - Note: WML only for RIM 850, RIM 857, RIM 950 and RIM 957 handhelds
  - Source IP Address = MDS machine IP Address
    - Note: MDS can optionally add the requesting device's PIN or email address as a header to each request

Server-Side Content Management

- Use any standard web development tools to publish content on intranet web servers
  - Static Content:
    - HTML or WML pages
  - Dynamic Content:
    - Java Server Pages (JSPs) or Active Server Pages (ASPs)
    - Perl Script, PHP etc.
- Recommendations:
  - Optimize content to drive user experience
  - Leverage ‘push’ technology to deliver content proactively

Optimizing Content for BlackBerry

- Tips on Optimizing the User Experience
  - Use the “Accept” and “User-Agent” HTTP headers to detect the BlackBerry Browser
  - Loading a page from cache is much quicker than over the air
  - Do not discourage text entry
  - Email addresses and phone numbers automatically act as hot links to the BlackBerry Email and Phone applications
  - Use cookies and cache controls to manage sessions and expiry



Browser Content Optimization for BlackBerry

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Optimizing Content for BlackBerry

- Have a Web-Based Application for Desktops Already??
  - Test the existing pages on BlackBerry using the simulator and/or live BlackBerry device
  - Optimize content for BlackBerry
    - Remove / reduce large images and frames
    - Evaluate existing content and determine what makes sense on a wireless device
    - Consider laying content out differently if a lot of scrolling or navigation is required
  - Optimizing the content and layout for a BlackBerry device is extremely important to drive usage and acceptance with end-users
    - Make sure you understand WHY the user would use the application, and WHAT they would need to do from a wireless device

BlackBerry Browser Push

- BlackBerry enables you to pro-actively ‘push’ new web pages and links to your users’ devices
  - Alerts based on events that occur on the server
  - Silently update frequently accessed pages within the browser’s local cache
  - Push a permanent link to a frequently accessed site
    (such as an internal portal or entry point to an application)

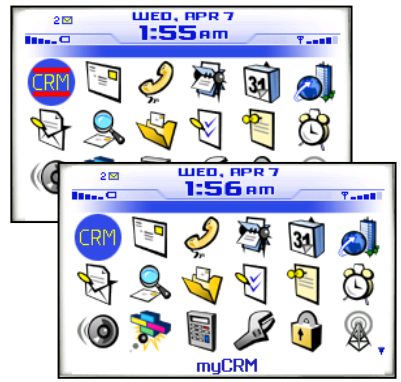
Leverage the value of ‘push’ for your own corporate data, without developing a custom client application or getting messages lost in the email inbox!

Developing Browser Push Applications

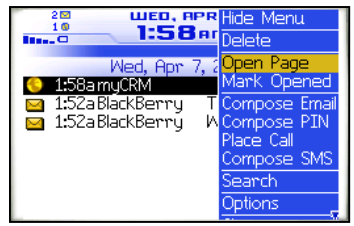
Session Code E360A

BlackBerry Browser Push Types

- There are 3 different options for alerting the user that new content has arrived:
  1. Channel Push
     - Push a custom icon along with the web page
     - Icon appears on the BlackBerry Home screen and acts as a permanent ‘channel’ to the referenced URL
     - When pushing an update to this page at a later time, the icon can change to an “unread” state
  2. Message Push
     - Push a message to the user’s inbox that automatically launches the browser to a specified page
  3. Cache Push
     - Push a page to the browser’s local cache, but do not notify the user



Channel Push



Message Push

New in BlackBerry Browser v4.0

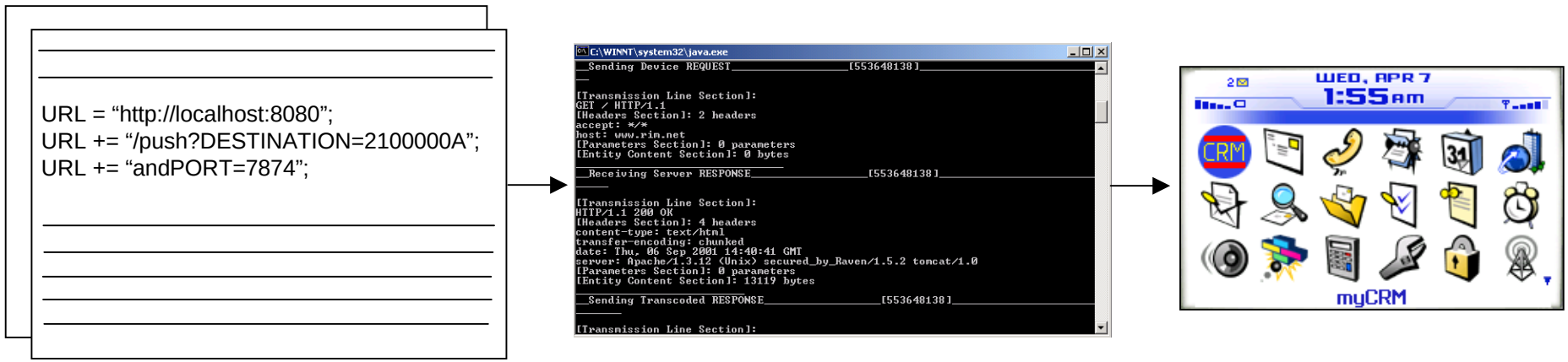
- JavaScript 1.3 Support
  - Support for JavaScript that is executed when the page first renders and JavaScript associated with actions on the page
  - Does not include support for Style Sheets or DHTML
- WAP CSS (Partial Support)
- HTML Table Support
  - Support for rendering small tables within HTML pages
- Support for animated GIF images
- Support for multi-part responses
- BlackBerry Browser Java API
  - Browser Field
  - HTTP Filter

New in BlackBerry Browser v4.0: Offline Forms

- Allows HTML and WML forms to be queued for submission if submitted while out of coverage
- How does it work?
  - Add “x-rim-queue-id=XXX” HTTP header to web page
  - If user submits the form while out of coverage, they will be prompted to queue the page for submission
  - Page will be submitted once handheld is in wireless coverage
  - User can view offline queues within the browser, including status and response
- Essential feature for corporate forms, such as Customer Call Reports, Expense Reports, Field Data Collection, etc.

Deployment and Testing Tools

- BlackBerry Browser Developer Guides:
  - www.blackberry.com/developers
- BlackBerry Java Development Environment (JDE):
  - BlackBerry device simulators with the BlackBerry Browser MDS simulator
  - Ability to test both pull- and push-based connectivity



Application Considerations

Browser vs. Client/Server

- Benefits of browser-based applications
  - Simpler to develop and deploy
  - Easier to maintain and manage
  - Support for multiple client devices
- Limitations of browser-based applications
  - User Interface and navigation can be cumbersome
  - Lack of local data storage and client-side logic
    - May not be useful when out of coverage
    - Performance concerns when navigating or requesting updates

BlackBerry Browser Recap

Key BlackBerry Browser Concepts:

1. Seamless connectivity to corporate intranet
2. Support for standard web content, including HTML
3. Proxied authentication and user management by MDS to optimize wireless link
4. Enterprise Value:
   - Access to internal web-enabled applications
   - Server-side applications to push web pages
   - User management and access control
5. Success factors for wireless browser-based applications:
   - Optimizing content for BlackBerry
   - Leveraging push technology to distribute content proactively

Additional WES Browser Development Sessions

WirelessEnterprise Symposium2005

Intro to Plazmic WES Breakout Session

Session Code E190A

Browser Content Optimization for BlackBerry

Session Code E260A

Developing Browser Push Applications

Session Code E360A

BlackBerry Browser Content Development Guide

BlackBerry Browser Technical Reference Guide

www.BlackBerry.com/developers

Introduction to the BlackBerry Browser

Demonstration & Questions

Thank you!

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