Administering BlackBerry in a Lotus Domino Environment

BlackBerry™

Research In Motion

BlackBerry for Lotus Domino Resource Kit

- **Controlling Costs (TCO)**
  - Deployment
  - Administration

- **Keeping Up with User Demand and Interest**
  - I need to access _____
  - Why can't I do this _____
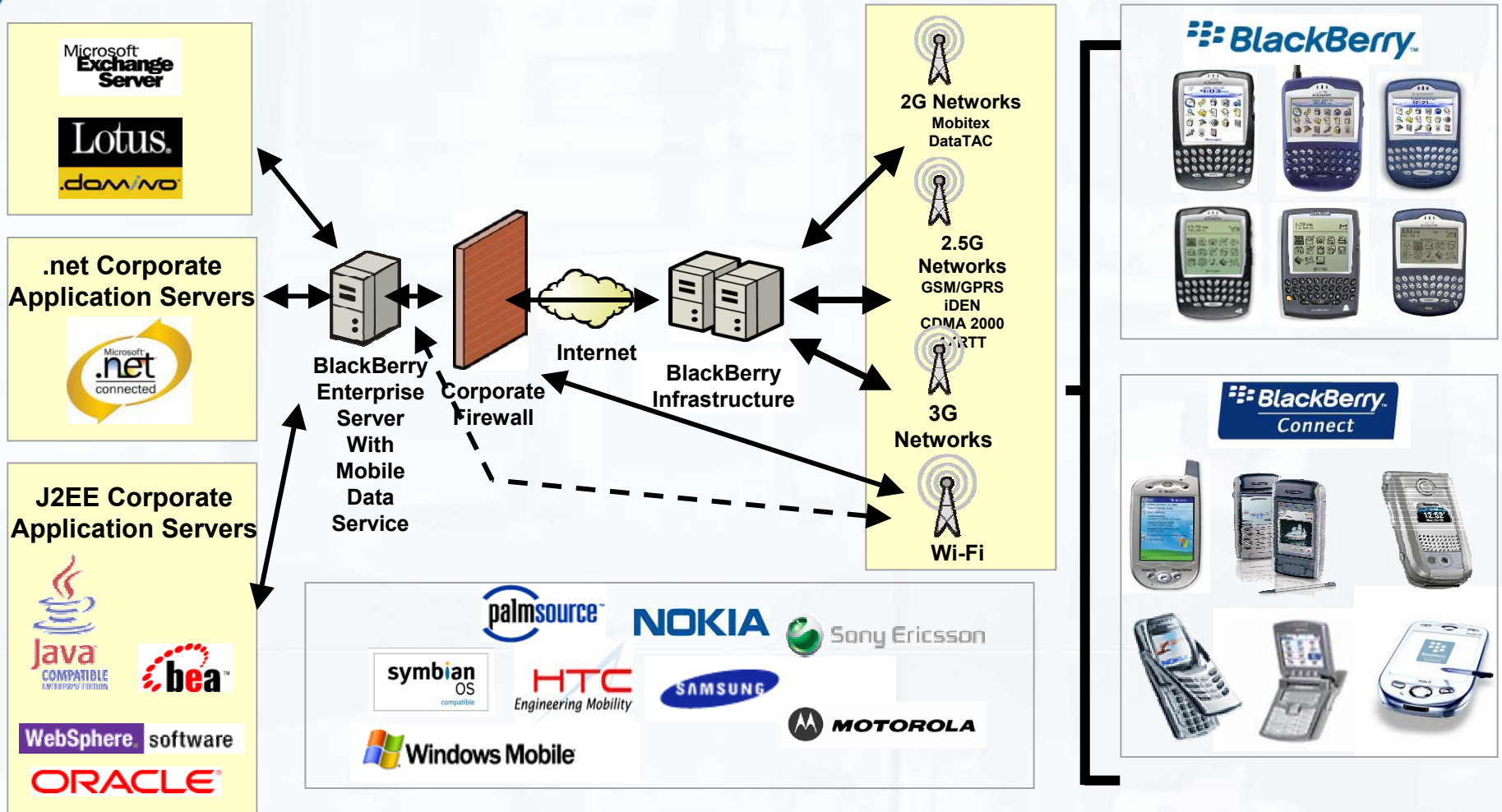
- **Maintaining "Mission Critical" Status**
  - Quote: "What! I can't get my email! Fix it now!"
    Anonymous F500 Executive

BlackBerry

BlackBerry Enterprise Software v4.0

- **Simplified Deployment**
    - Initial Deployment (no desktop software required!)
        - User Self-Provisioning
        - Central Provisioning
    - Ongoing Maintenance
        - Easier Options for Upgrading BlackBerry Handhelds
        - Provisioning 3rd Party Applications

- **End User Simplicity**
    - "Cradle Free" Operation Day-to-Day
    - Automatic Connectivity

- **Improved Manageability and Security**

- **Architecture Enhancements**

BlackBerry for Lotus Domino Resource Kit

:: BlackBerry

One BlackBerry Platform…

Microsoft Exchange Server

Lotus .domino

.net Corporate Application Servers

Microsoft .net connected

J2EE Corporate Application Servers

Java COMPATIBLE ENTERPRISE EDITION

bea

WebSphere software

ORACLE

BlackBerry Enterprise Server With Mobile Data Service

Corporate Firewall

Internet

BlackBerry Infrastructure

2G Networks
Mobitex
DataTAC

2.5G Networks
GSM/GPRS
iDEN
CDMA 2000
1xRTT

3G Networks

Wi-Fi

palmsource   NOKIA   Sony Ericsson

symbian OS compatible   HTC Engineering Mobility   SAMSUNG   MOTOROLA

Windows Mobile

BlackBerry

BlackBerry Connect

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Simplified Deployment
Wireless Provisioning

- Cradle-less Provisioning
  - User purchases BlackBerry® handheld and contacts their IT Department
  - IT adds user to the BlackBerry Enterprise Server™ and provides them with a password
  - User enters email address and password provided by IT
  - Security key exchange done securely over the air and Service Books are then provisioned wirelessly
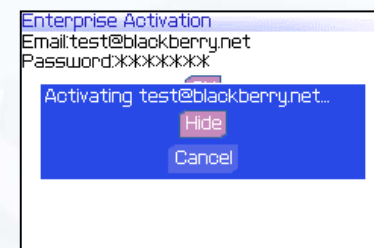
  - Users calendar, address book, tasks, memos, email pre-population, and existing handheld options (if present) are then populated automatically onto the users handheld for immediate use!

  - <u>BlackBerry Enterprise Software v4.0</u>

**BlackBerry for Lotus Domino Resource Kit**

Architecture
Handheld Configuration Tool

- Allows IT to

  - Provision devices for users

  - Fully control initial user experience

- Load multiple devices simultaneously

- Load appropriate handheld software from central location

- Full device provisioning including

  - security keys and service books

  - initial load of user data (calendar, address book, tasks, memos, email messages and default handheld options if desired)

BlackBerry for Lotus Domino Resource Kit
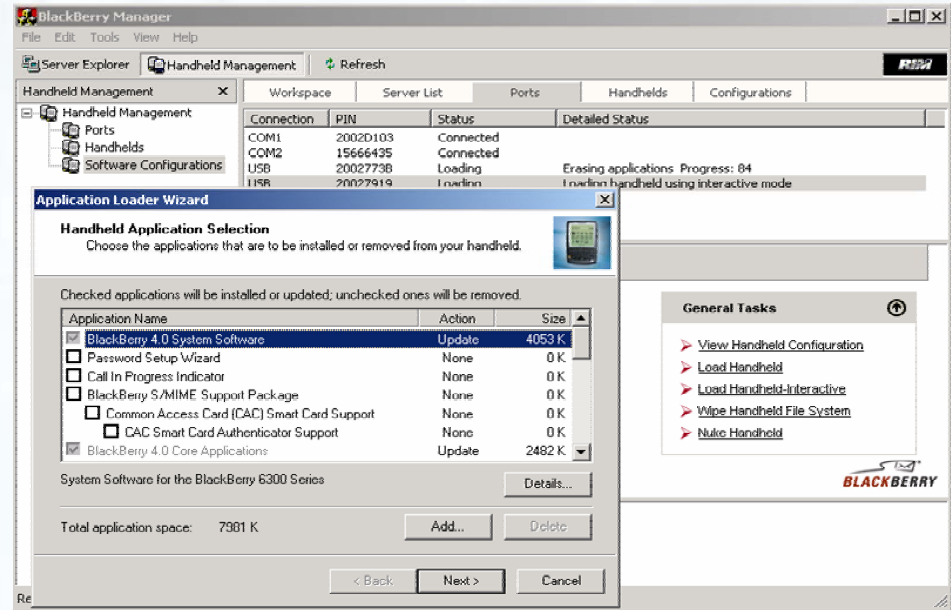
Simplified Deployment
## Application Loader "Lite"

- IT can provide users with a basic tool to upgrade core handheld software (operating system/radio)

- Simple wizard very similar to today's BlackBerry Application Loader that can be run from a central LAN location as specified by IT

  - Note: Application Loader "Lite" requires that the BlackBerry Handheld Manager (as a standalone install or part of BlackBerry desktop software v4.0) be installed on the workstations that would run this remote wizard

BlackBerry for Lotus Domino Resource Kit
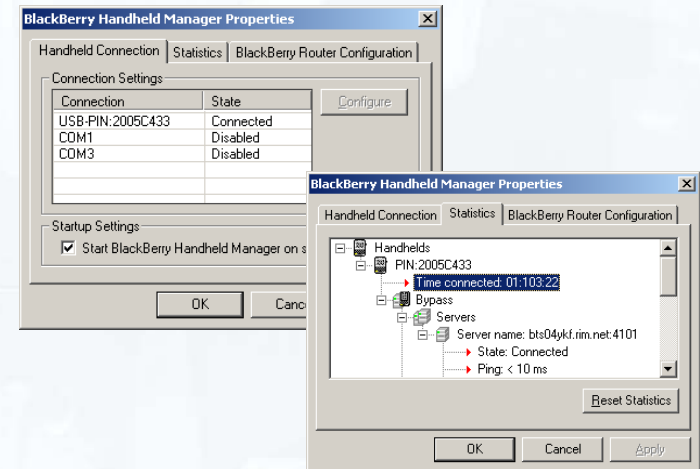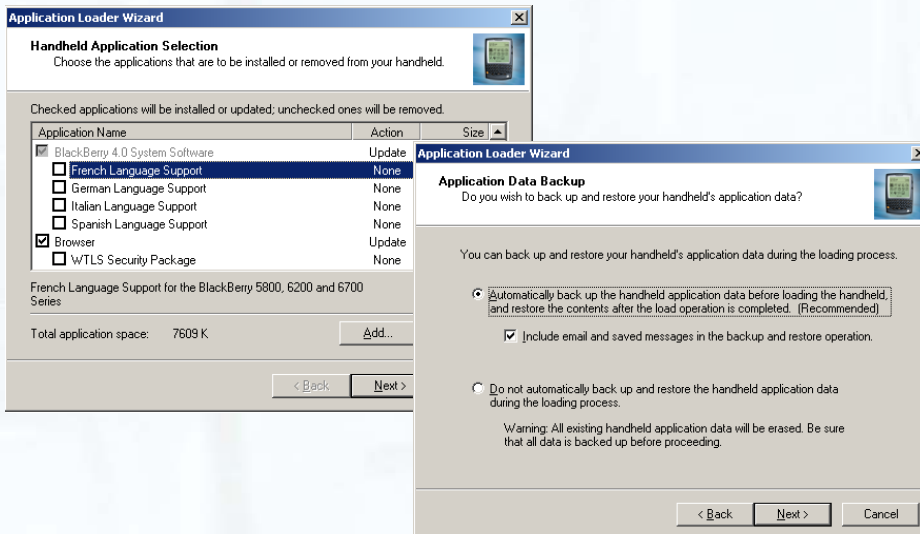
::: BlackBerry™

Simplified Deployment
BlackBerry Desktop Manager v4.0

- ## BlackBerry Desktop Manager (Optional)
  - Equivalent functionality to current BlackBerry Desktop Manager v3.6
  - Basic MSI installation for easy deployment
  - Another mechanism to allow users to load new core handheld software (operating system/radio)
  - Allows users to
    - Reconcile email with local email archives
    - Sync with PIM software other than Notes
      - ACT!, GroupWise®, Lotus® Organizer, ASCII Text File Importer/Exporter, etc…
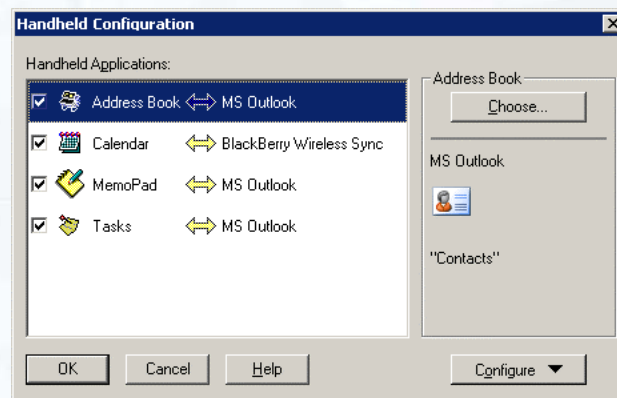
**BlackBerry for Lotus Domino Resource Kit**

BlackBerry Enterprise Software v4.0 Overview Agenda

- Simplified Deployment
- End User Simplicity
- Improved Manageability and Security
- Architecture

::: BlackBerry™

End User Simplicity
## Full Wireless Synchronization

- Two-way synchronization of all PIM information including Contacts, Tasks, Memos
- Initial full synchronization guarantees accuracy without data loss
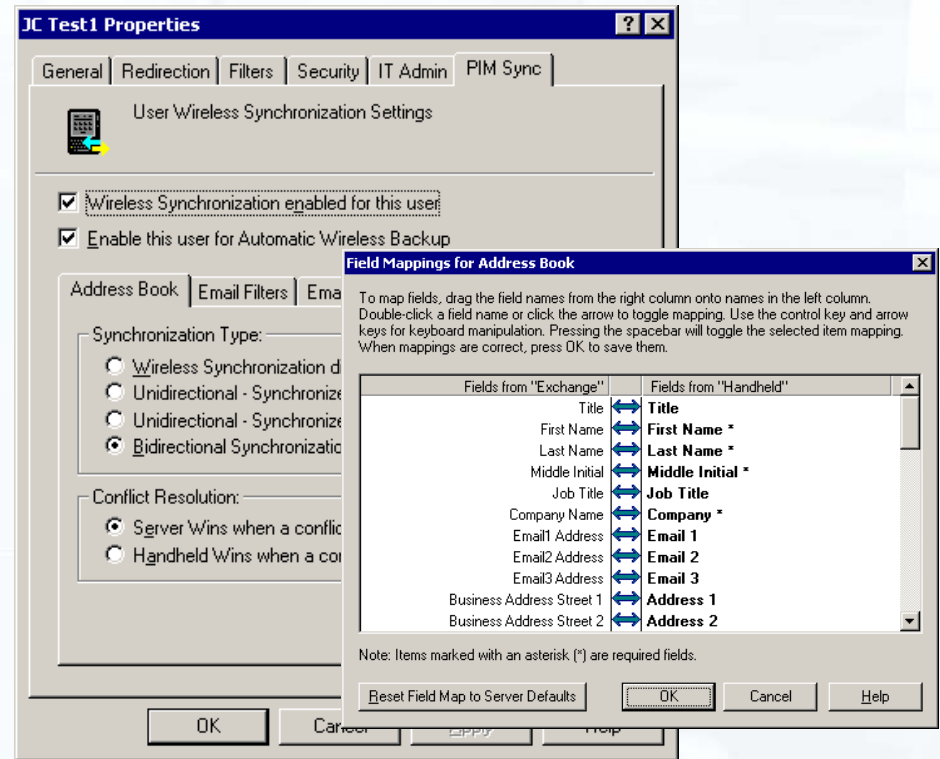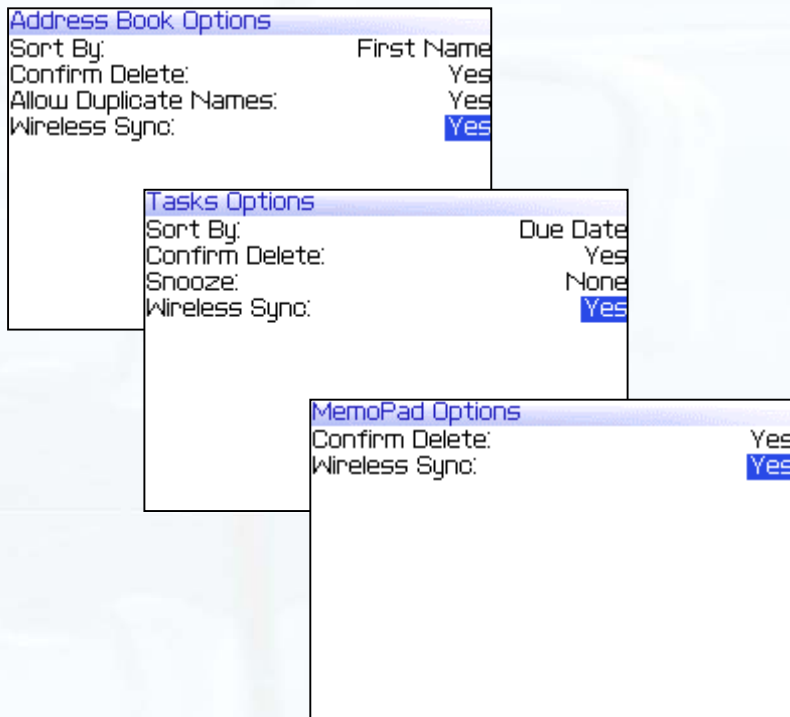
End User Simplicity
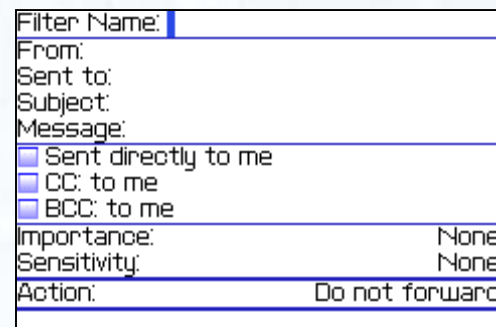## Automatic Wireless Backup

- Handheld settings not already stored on the server, will be automatically backed up wirelessly

- Enabled by the IT Administrator on a per user basis

- PIM data and email are NOT backed up wirelessly (already on server)

::: BlackBerry™
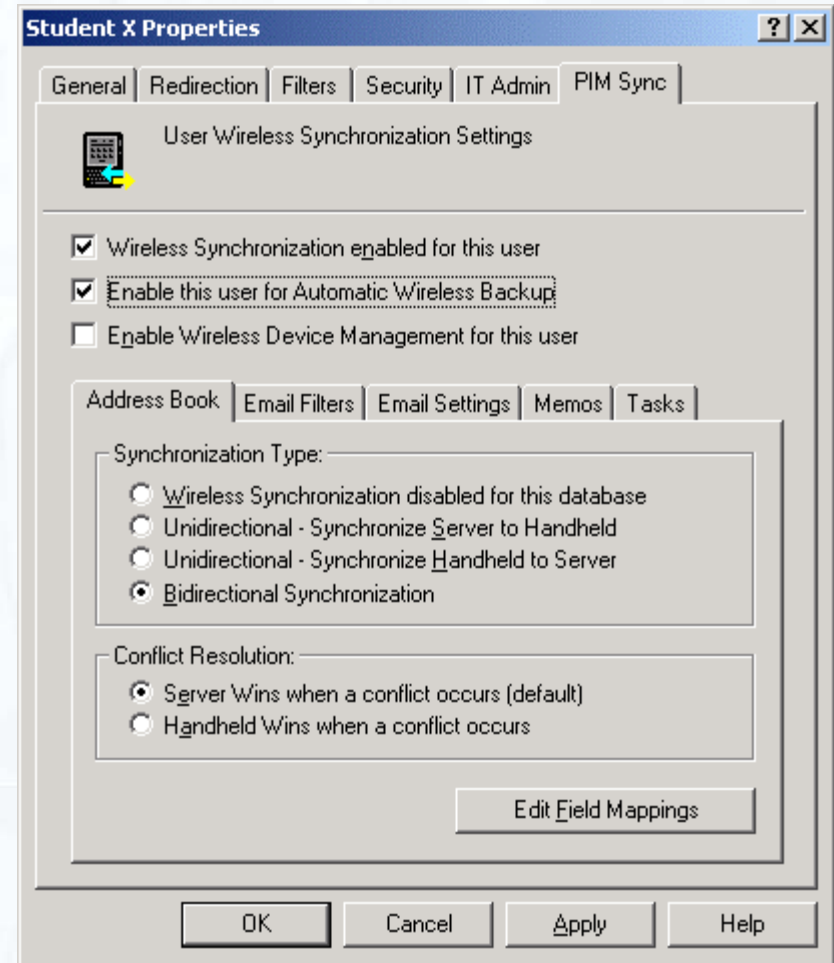
End User Simplicity
Wireless Email Settings

– Users can create, edit and delete email filters
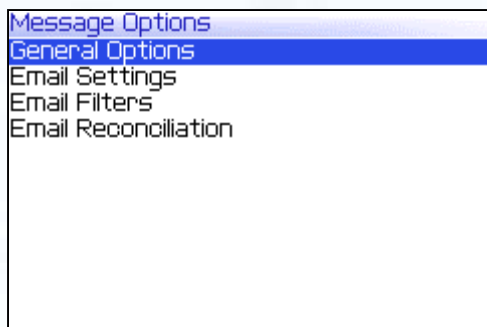
– Users can also edit their email redirection settings, auto-signature and Out of Office reply wirelessly from the handheld!

BlackBerry for Lotus Domino Resource Kit
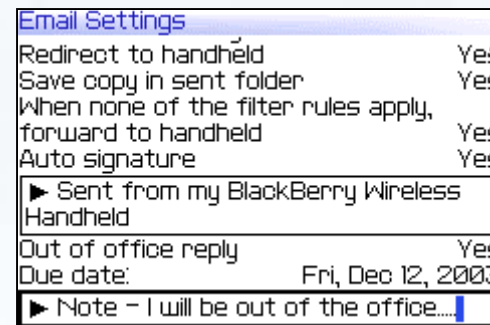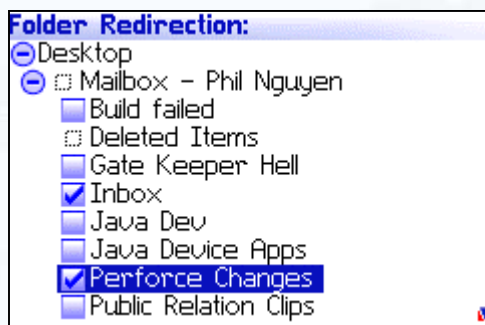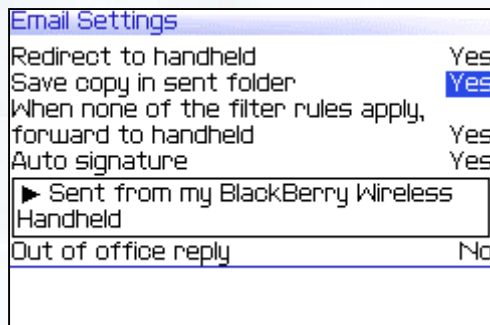
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End User Simplicity
Attachment Viewing Enhancements

– Support for JPG, BMP, GIF, PNG and TIFF image formats

– Support for Pan, Zoom and Rotate functionality with images

BlackBerry for Lotus Domino Resource Kit
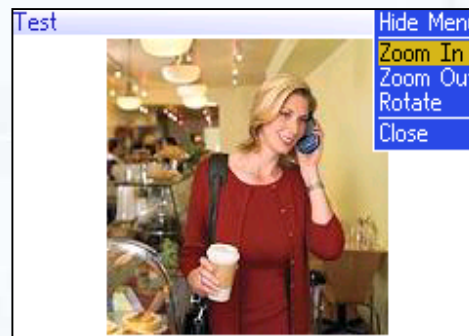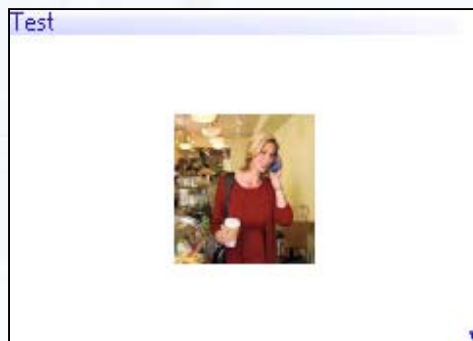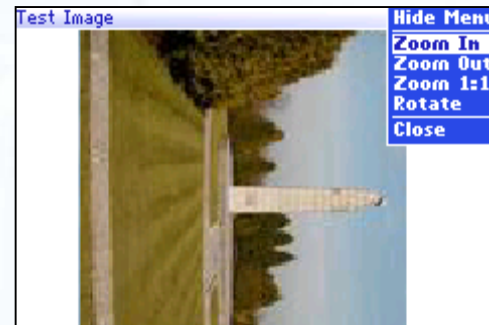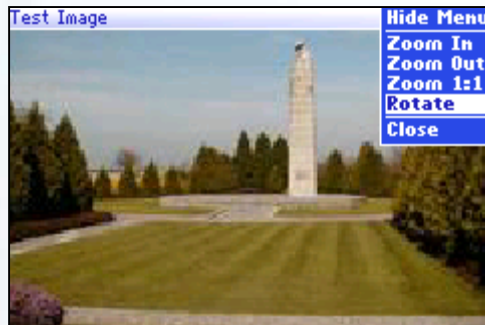
BlackBerry

End User Simplicity
BlackBerry Browser Enhancements

– JavaScript Support – for field-level validation
  - *Note:* There will be an IT Policy to disable this functionality
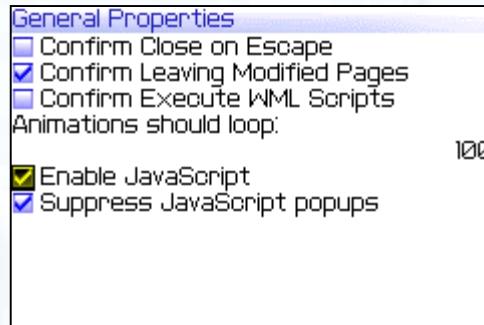
– Offline Form Submission

::: BlackBerry
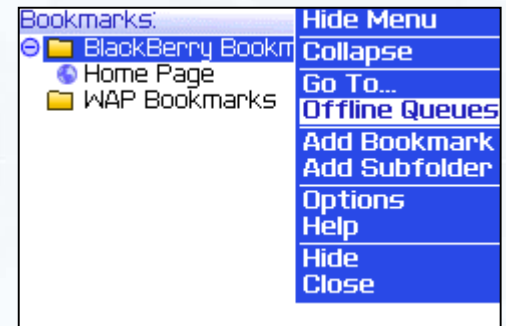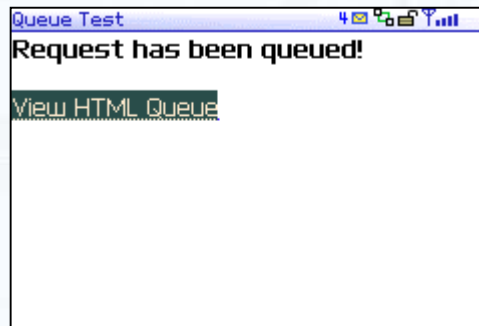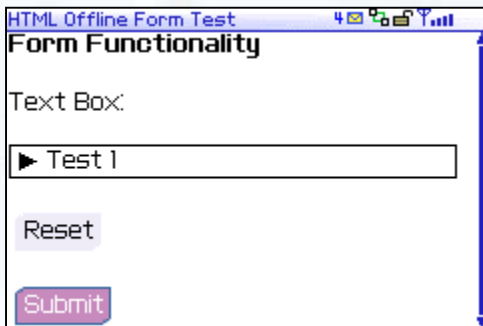
- Support for PIM Categories within Address Book, Tasks and MemoPad
    - Create, modify and delete categories
    - Filter by category
    - Assign user data to a category
    - Synchronize categories with PC

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End User Simplicity
On-Handheld Help

- – Users can view application-specific help right on the handheld
- – Helps provide context-sensitive help, as well as lowering support costs for BlackBerry!
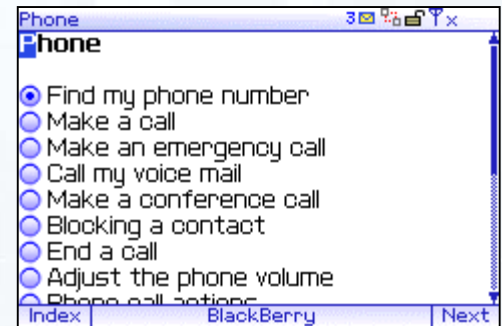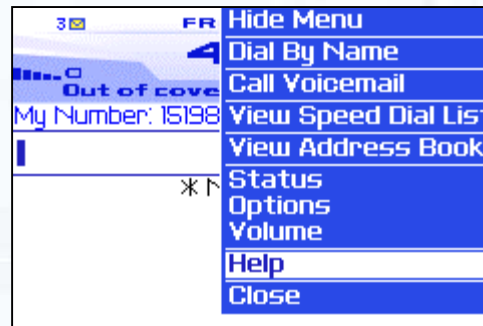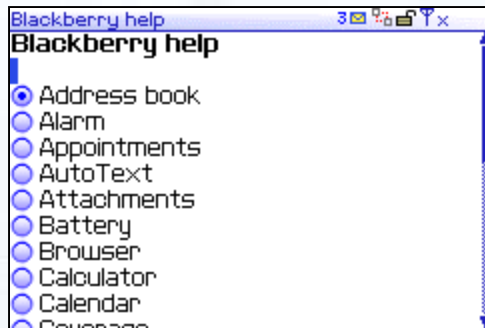
BlackBerry Enterprise Software v4.0 Overview Agenda

- Simplified Deployment
- End User Simplicity
- Improved Manageability and Security
- Architecture

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– New and improved interface for managing BlackBerry

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Architecture
BlackBerry IT Policy

- **Wireless IT Policy**
  - Graphical server-based configuration
  - Push policies wirelessly to the BlackBerry handhelds
    - Disable PIN-to-PIN, SMS, Phone, password enforcement, etc.
  - Extensible to 3rd party applications

- **Wireless IT Commands**
  - Critical importance to be able to protect corporate information
  - Push commands wirelessly and securely to handhelds
    - Wipe Handheld, erasing all application data
    - Lock Handheld and require a password to access
    - Change Password if user has forgotten password
    - Set Owner Information if user has lost handheld

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Improved Manageability/Security
Handheld Management Information

- PIN
- Model #
- Network type
- Serial #
- Home network
- Phone number
- Direct Connect ID (if available)
- Currently applied IT Policy status
- BlackBerry software versions
- 3rd party applications
- etc…

- Exportable from UI to .CSV

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Simplified Deployment
3rd Party Application Management

- Specify which specific applications are required, allowed, disallowed
  - Specifying a 3rd party application as required will push that application wirelessly to the appropriate handhelds if not already present
- Specify what resources (on and off the handheld) a given 3rd party application can access

Application	Version	Disposition	Delivery Mechanism	Policy Set
⊞ ☑ System Software	\<Use Latest\>	Required	Wireline Only	N/A
⊞ ☑ Browser	\<System Version\>	Required	Wireline Only	N/A
⊞ ☑ SSL/TLS Security Package	\<System Version\>	Required	Wireline Only	N/A
⊞ ☑ WTLS Security Package	\<System Version\>	Required	Wireline Only	N/A
⊞ ☑ Phone	\<System Version\>	Required	Wireline Only	N/A
⊟ ☑ MemoPad	\<System Version\>	Optional	Wireline Only	N/A
⊞ ☑ 950/957	\<System Version\>	Optional	Wireline Only	N/A
⊞ ☑ 6200 Series	\<System Version\>	Optional	Wireline Only	N/A
⊞ ☑ 6700 Series	\<System Version\>	Optional	Wireline Only	N/A
⊞ ☑ 7200 Series	\<System Version\>	Optional	Wireline Only	N/A
⊞ ☑ 7700 Series	\<System Version\>	Optional	Wireline Only	N/A
⊟ ☑ Tasks	\<System Version\>	Optional	Wireline Only	N/A
⊞ ☑ 6200 Series	\<System Version\>	Optional	Wireline Only	N/A
⊞ ☑ 6700 Series	\<System Version\>	Optional	Wireline Only	N/A
⊞ ☑ 7200 Series	\<System Version\>	Optional	Wireline Only	N/A
⊞ ☑ 7700 Series	\<System Version\>	Optional	Wireline Only	N/A
⊟ ☑ Calendar and Tasks	\<System Version\>	Optional	Wireline Only	N/A
⊞ ☑ 950/957	\<System Version\>	Optional	Wireline Only	N/A
⊞ ☑ Internal MDS App	1.0	Required	Wireless	Internal App Policies
⊞ ☑ RIMCell	\<Any\>	Optional	Wireless	External App Policies
⊞ ☑ RIMZee	\<Any\>	Optional	Wireless	External App Policies

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Improved Manageability/Security
Server Architectural Enhancements

- Seamless User Moves Between Servers
  - Users will no longer be required to cradle their handheld if they have been moved between BlackBerry Enterprise Servers

- Support for Multiple Domino Domains
  - Allow a BlackBerry Enterprise Server to serve users on Domino mail servers in multiple domains
  - Includes support for all features: Email, Calendar, Remote Address Lookup, etc…

- Improved Fault Tolerance
  - Independent software processes monitor the BlackBerry Enterprise Server and its components
  - In the case of a failed operation, these processes will automatically detect and restart the appropriate functions
  - For BlackBerry Enterprise Server, MDS, Attachment Server

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Improved Manageability/Security

- Choice of 3DES or AES for End-to-End Security
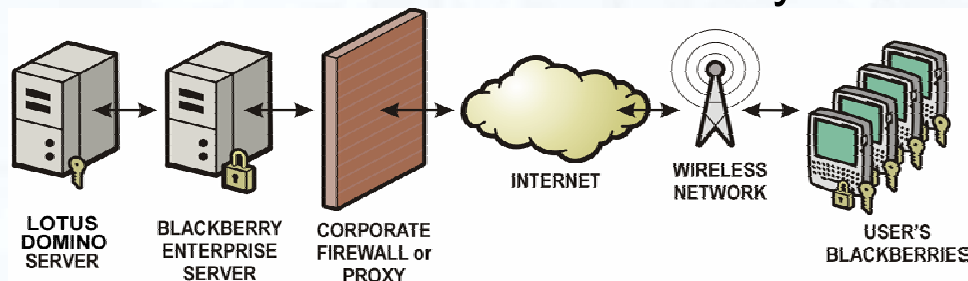
1. Triple DES (Data Encryption Standard)
   - Existing transport security for all wireless traffic between BlackBerry Enterprise Server and handheld
2. AES (Advanced Encryption Standard) – BlackBerry Enterprise Software v4.0
   - Available with both BlackBerry Enterprise Server v4.0 and BlackBerry handheld software v4.0 combined together.
   - The IT Administrator can specify whether AES can be used when both sides are capable, or whether only AES is to be allowed.

- Local encryption of all user data (messages, contacts, calendar, memos, tasks, etc…) on the handheld
   - Can be controlled via IT Policy, extensible to 3rd party applications
   - Slight performance impacts due to encrypting and un-encrypting data when enabled

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- Simplified Deployment
- End User Simplicity
- Improved Manageability and Security
- Architecture

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Architecture
BlackBerry Handheld Manager

- **Handles communication via the serial or USB port connection and the connected BlackBerry handheld**

- **Optional installation component that can easily be automatically deployed to user workstations (Basic MSI), and is architected to not require frequent updates**
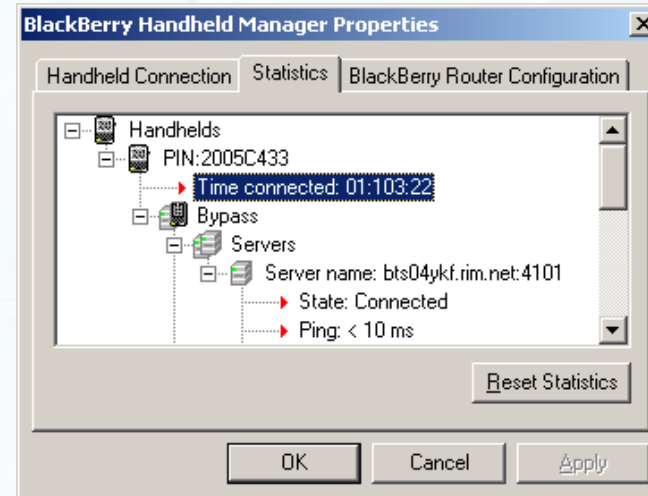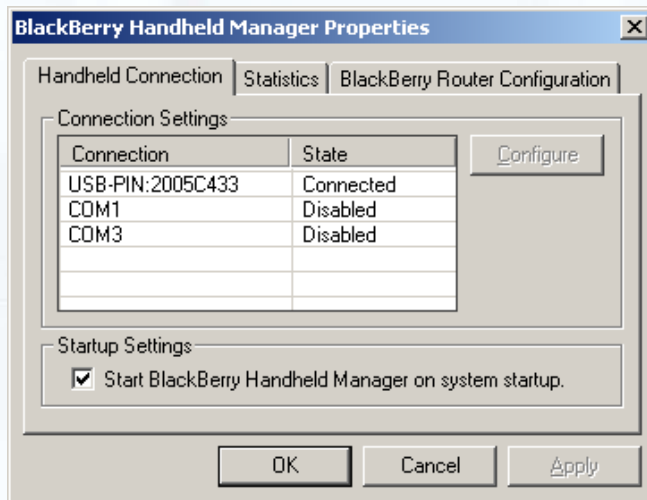
:: BlackBerry

Architecture
BlackBerry Bypass Router

- Acts as a router for all BlackBerry data traffic

- Runs as a Windows NT Service called BlackBerry Router

- Can be installed on a separate physical machine

- Allows BlackBerry users to connect their handhelds to their workstation using serial, USB (if BlackBerry Handheld Manager installed) and have all BlackBerry data traffic routed behind the firewall following Path #2 instead of over the wireless network following Path #1

- Least Cost Routing
  - BlackBerry users can connect their handhelds to their workstation using serial or USB (if BlackBerry Handheld Manager installed) and have all BlackBerry data traffic routed behind the firewall following Path #2 instead of over the wireless network following Path #1

BlackBerry for Lotus Domino Resource Kit
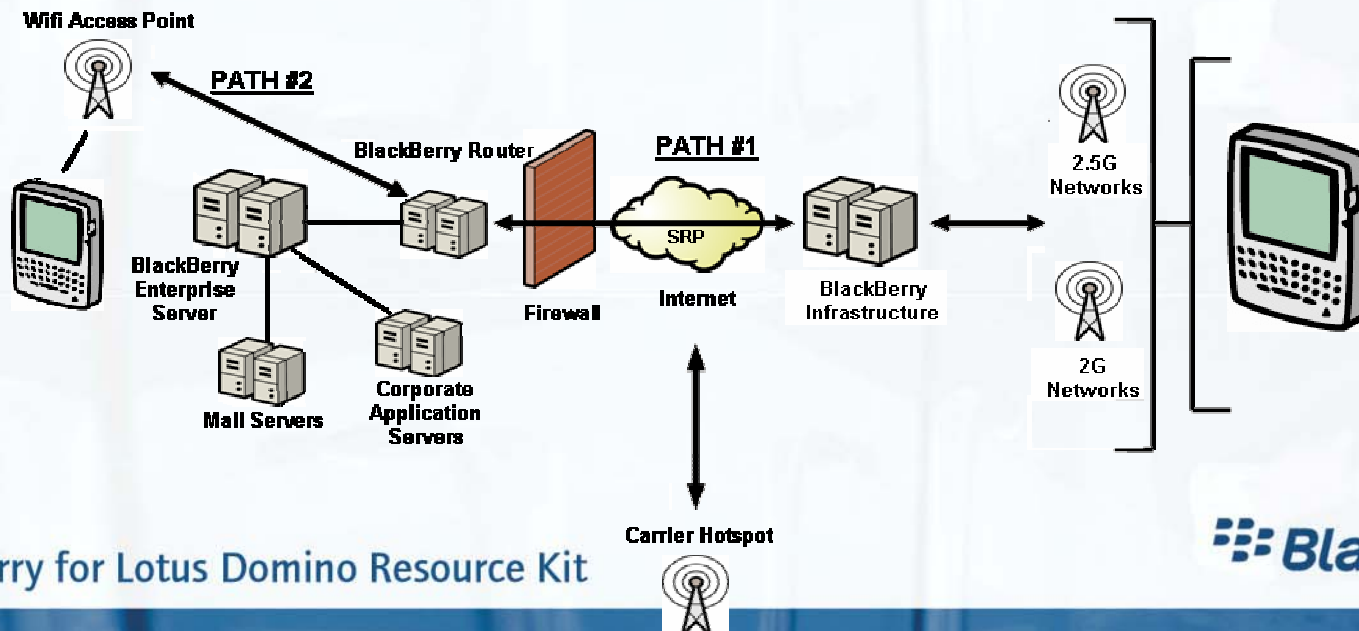
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Improved Manageability/Security
DMZ Deployments

- ## Deployment Flexibility
  - Option to place the BlackBerry Router in the DMZ
  - External connection in the DMZ
  - Mail server connection inside the firewall
  - However, cannot support "Least Cost Routing" unless workstations can reach BlackBerry Router in the DMZ

BlackBerry for Lotus Domino Resource Kit
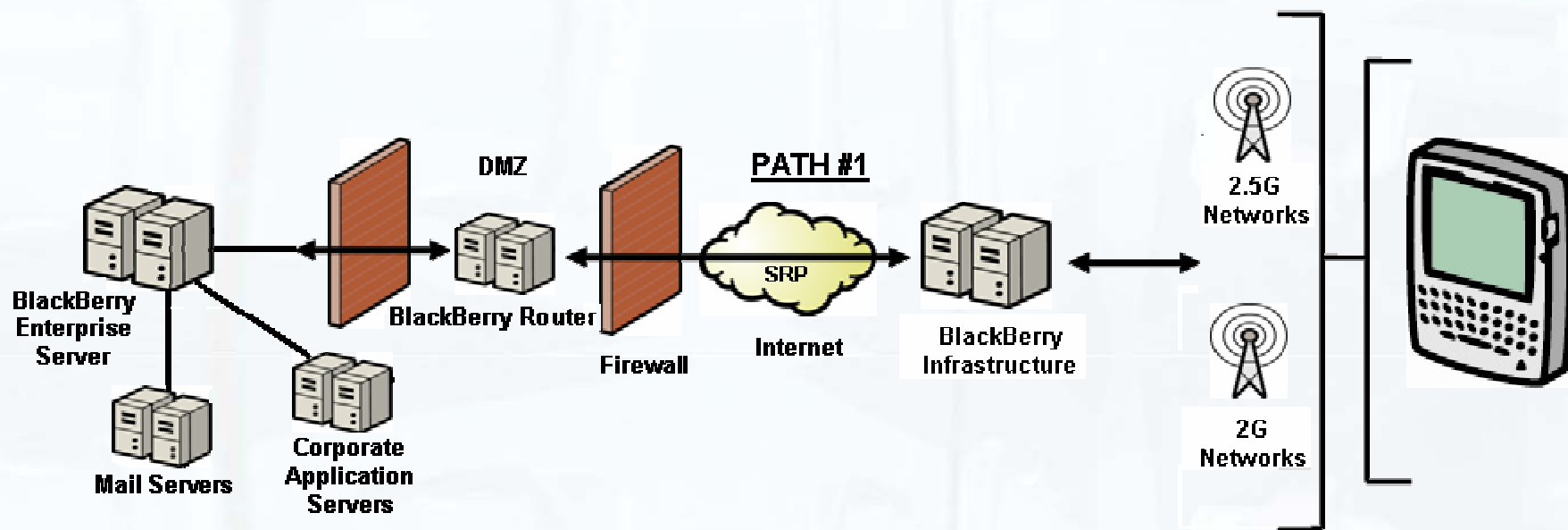
Agenda

- Planning your BlackBerry upgrade
- Pre-upgrade Logistics
- Upgrading Your BlackBerry Environment
- Post-upgrade

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Planning Your Upgrade
Server Considerations

- Do I install components on separate hardware?
- Support for Domino 6.5
- Does my current architecture work in BlackBerry Enterprise Software v4.0?
- Planning for the Configuration database
- Multiple Domains
- New "BlackBerry Manager" Administration
- How will OTA PIM Sync be supported?
- Are my operations plans up-to-date?
- What do I need to think about for MDS?
- It's a good time to review security

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Planning Your Upgrade
Architecture – BlackBerry Enterprise Server Components

- **Distributable Components**
  - Attachment Service
  - BlackBerry Router
  - Configuration Database

- **Gains from Distribution**
  - Scalability
  - Flexibility

BlackBerry for Lotus Domino Resource Kit
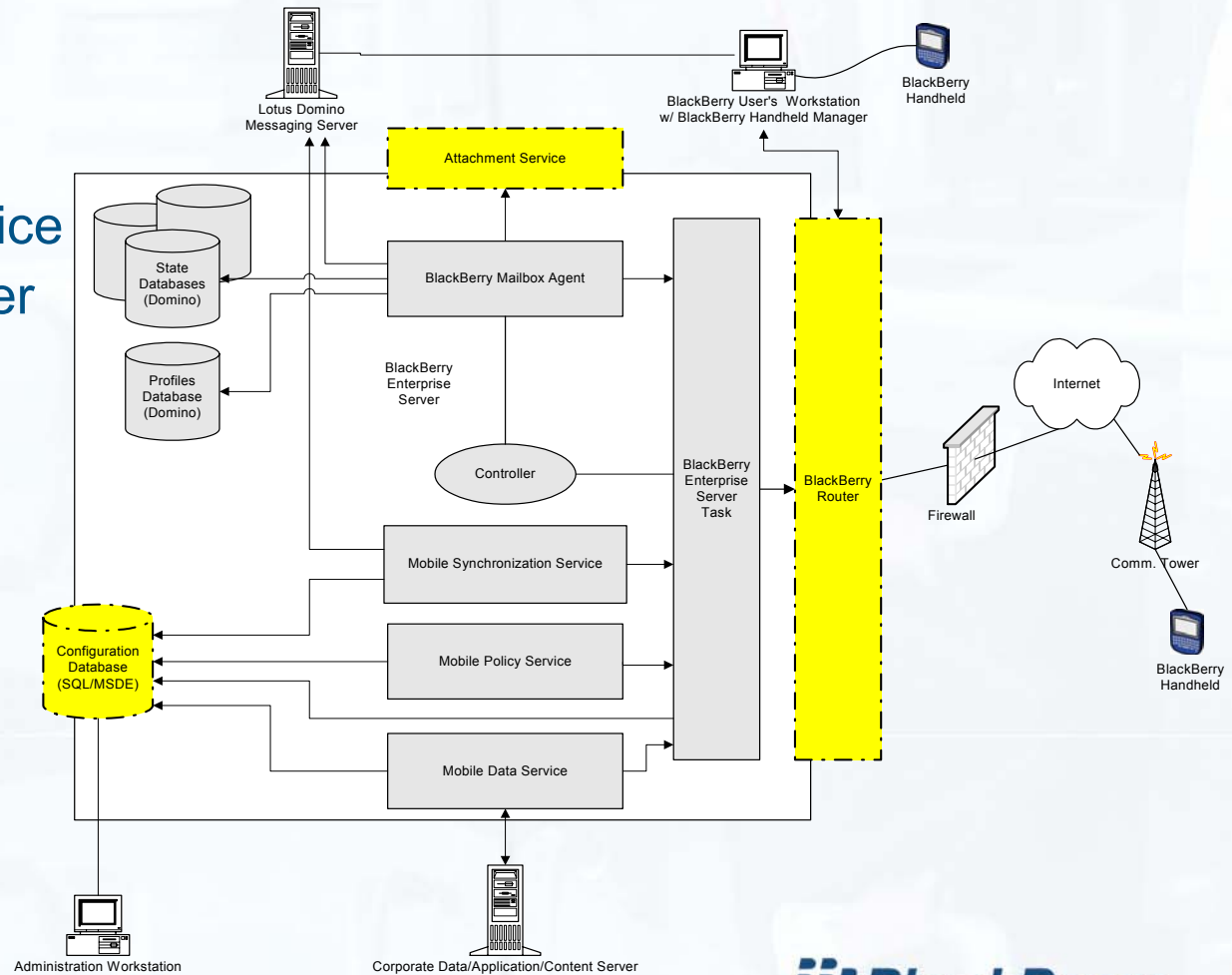
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Planning Your Upgrade

BlackBerry Enterprise Server Components - Configuration Database

- When planning for Configuration Database, consider:
  - SQL vs. MSDE
    - Do you have SQL in your organization?
    - Sizing and MSDE
  - How big will the Configuration Database be?
    - Base size of 100 MB
    - 1-2 MB per person, plus or minus, added in 25 MB increments
  - Required for Disaster Recovery
  - Configuration Database Contents
    - All data in BlackBerry Profiles database
    - Data for Wireless Restore
    - Copy of security key
    - BlackBerry Enterprise Server Configuration details
- Other DB Support

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- Does my architecture work with BlackBerry Enterprise Software v4.0?
  - Multiple Domain Support
    - Natively supported in BlackBerry Enterprise Software v4.0
  - How "healthy" are my cross-domain operations?
    - Mail routing
    - Replication
  - BlackBerry Enterprise Server in DMZ? Replace with BlackBerry Router in DMZ
- Do you have a custom, "unsupported" cross-domain BlackBerry Enterprise Server implementation solution in place?
  - Plan to roll it back in favor of BlackBerry Enterprise Software v4.0 native multiple-domain support

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Planning the Upgrade
Upgrading to the BlackBerry Manager

- Totally new BlackBerry Enterprise Server Administration tool
- Ideal – BlackBerry Enterprise Servers share a common configuration database
  - Upgrade BlackBerry Enterprise Server v4.0 administrators after installing first BlackBerry Enterprise Server v4.0
  - May not be used to administer pre BlackBerry Enterprise Server v4.0
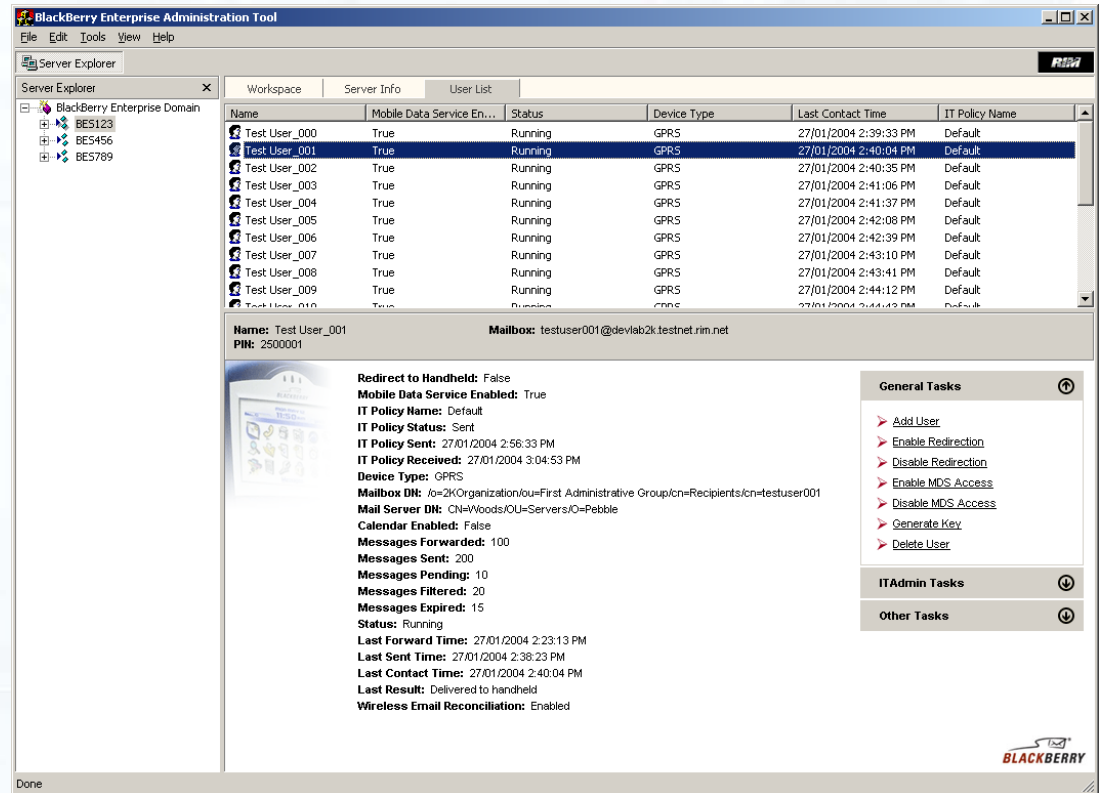
Planning Your Upgrade
Update Operations Plans

- Are my operations plans up-to-date?
  - Monitoring
    - Take baselines before and during upgrade to BlackBerry Enterprise Software v4.0
  - Disaster Recovery
    - How will I rollback from the upgrade if required?
    - Attend DR session for detailed info
  - Log Management
    - Choose a logging level
    - Choose a location (preferably NOT on system or application drive
    - Retain 7 days of logs for troubleshooting

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- What do I need to think about for MDS?
  - HTTP Logging
  - Proxy Configuration
    - Proxy Exclusion List
    - Proxy Auto Configuration (PAC) File
  - Document the configuration
    - Reference for Application Developers
    - Help Desk reference for browsing questions

BlackBerry.

- New OTA IT Policy
  - Password policies
  - Password Complexity
  - Timeout on device
  - Allowed, Required, Disallowed 3rd party applications
  - Local Data Encryption
  - 132 Policy items!
- Enhanced MDS Security
  - Access to the Push service
    - Who can push to devices?
  - Access from device (Pull – Browsing)
    - Where can devices access?
- AES or 3DES – you choose

Edit IT Policy

Policy Name: New Policy

Policy item	Value
🗀 Non-Grouped Device-Only Items	
☐ Password Required	
☐ Allow Peer-to-Peer Messages	
☐ Minimum Password Length	
☐ User Can Disable Password	
☐ Maximum Security Timeout	
☑ Maximum Password Age	5
☐ User Can Change Timeout	
☐ Password Pattern Checks	
☐ Enable Long Term Timeout	
☐ Allow SMS	
☐ Allow BCC Recipients	

OK   Cancel

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Planning Your Upgrade
Wireless PIM Sync Method(s)

Three options:

1. Replicate personal NABs to server
   – Disk space on server
   – Logistics of replication

2. Leverage iNotes
   – If iNotes already deployed, easy
   – "Sync" button on desktop – training issue

3. Leverage roaming user feature
   – If using already, go this way

BlackBerry for Lotus Domino Resource Kit
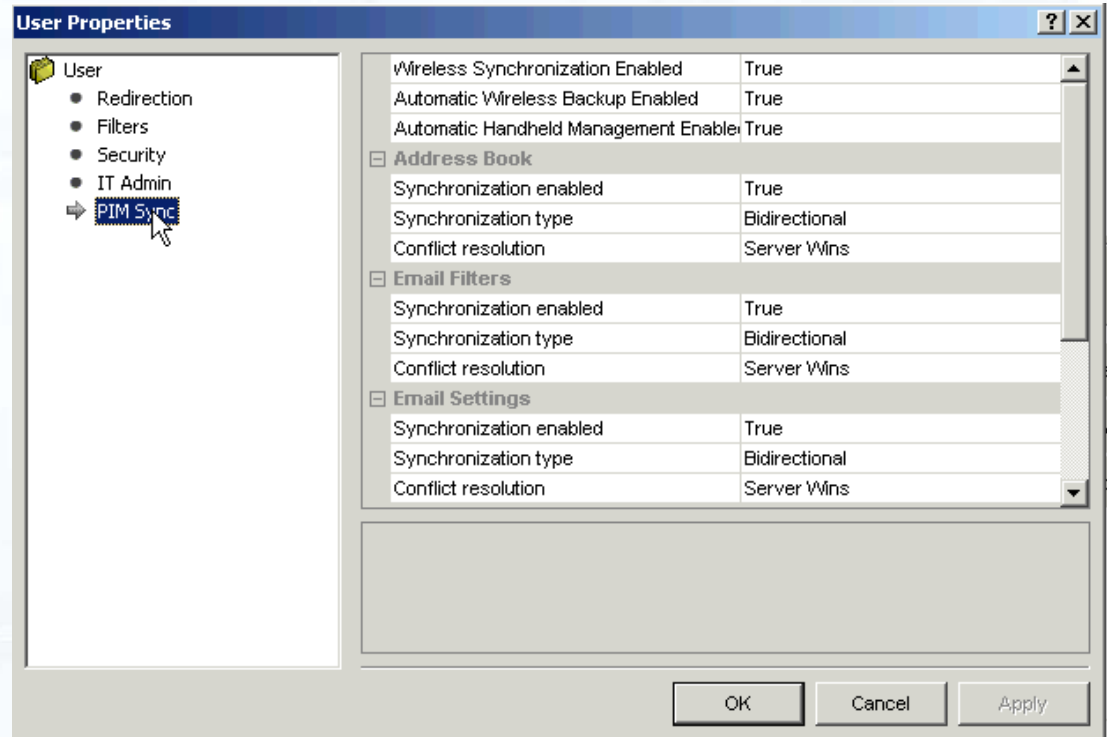
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Planning Your Upgrade
How Will You Upgrade Device Software?

- Going to BlackBerry Enterprise Software v4.0
  - Update via desktop manager
    - MSI package, Recorded Install
    - Test on corporate images
    - Push out via normal software distribution
  - Handheld configuration tool
  - App Loader "Lite"

- Post BlackBerry Enterprise Server v4.0
  - App Loader "Lite"
  - Desktop manager
  - Handheld configuration tool

BlackBerry for Lotus Domino Resource Kit
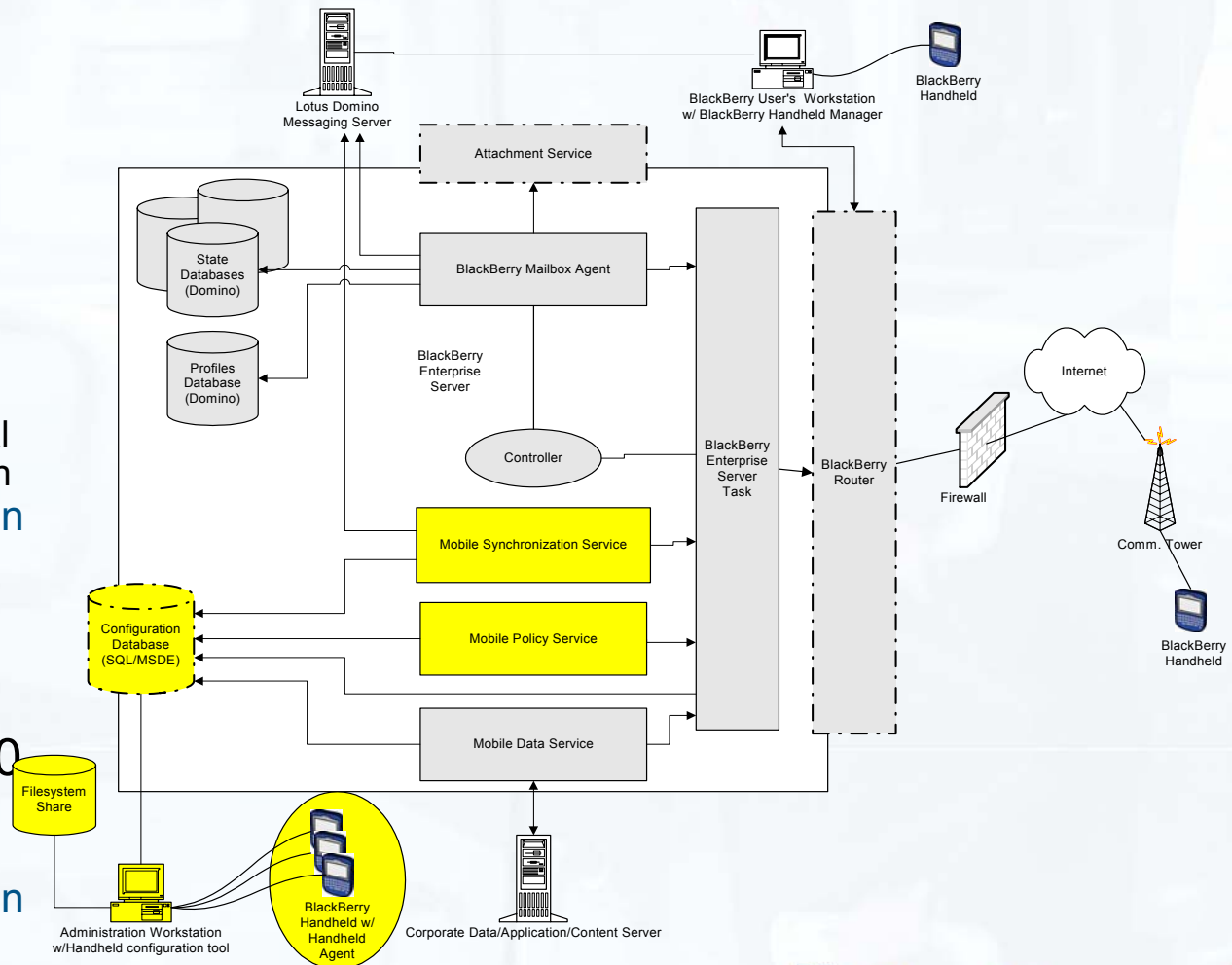
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Planning Your Upgrade
Upgrade Tasks

- Upgrade first BlackBerry Enterprise Server
  - Configuration database is created and initialized
  - Upgrade BlackBerry Enterprise Server v4.0 Administrators to BlackBerry Manager
  - Upgrade remaining BlackBerry Enterprise Servers
- Push out upgraded desktop manager and handheld software
- Upgrade Handhelds
  - Can follow BlackBerry Enterprise Server upgrade
    - Service books received with upgrade
  - Or can precede BlackBerry Enterprise Server upgrade
    - Service books via OTA Activation, after BlackBerry Enterprise Server upgrade
- Provide for post BlackBerry Enterprise Server v4.0 core software upgrades
- Uninstall desktop manager - may be scripted

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Pre-Upgrade Logistics
Topics

- Your Upgrade Team
- Pilot Users
- Schedule the Upgrade
- Document Your System, Licenses
- "Spring Cleaning"
- Monitoring
- Prepare the Server Environment
- Prepare the Desktop/Handheld Environment

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Pre-Upgrade Logistics
Identify & Assemble Your Upgrade Team

- Include in both Planning and Execution:
    - BlackBerry Project Manager
    - Infrastructure Architect
    - Messaging Administrator & Messaging Architect
    - BES Administrator
    - Security Group
    - DBA (Get to know this person!)
    - Desktop Support
    - Wireless Provisioning Coordinator
    - Help Desk
    - Training Group

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Pre-Upgrade Logistics
Scheduling and Pilot

- Scheduling - when should I upgrade?
    - Easy time for all users, or demand for specific features
    - Don't forget your Change Control Request!

- What about simultaneous upgrades or rollouts?
    - E.g., Notes/Domino 6.5, IT Policy, or mobile applications
    - Rolling out upgrades en masse vs. separately
        - Touch components once
        - vs. being able to troubleshoot one issue at a time

- Upgrade vs. Migrate - will impact task order and schedule
    - Order, configure, install hardware if needed

- Pilot
    - Identify pilot group - users who:
        - Can tolerate new BlackBerry environment
        - Are willing to provide useful, constructive feedback
    - Create user survey for feedback, validate and update process as needed

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Pre-Upgrade Logistics *Monitoring*

- Start preparing for BlackBerry Enterprise Software v4.0 now!
  - Great time to document your environment
    - Mail servers with BlackBerry users
    - BlackBerry Enterprise Server names and locations
    - Relevant network links
    - Firewall/Internet Connectivity
  - Licensing
- If you don't have monitoring in place, this is a good time to start
  - Monitoring should include Domino Mail Servers
    - Performance tuning session and whitepaper
    - Consider upgrading if near thresholds
  - Get baselines
    - Allow you to monitor deltas as upgrade progresses
  - Utilization on network links (35ms min.), between…
    - Domino mail servers and BlackBerry Enterprise Server
    - BlackBerry Enterprise Server and Configuration Database Server
    - Configuration Database Server and Administrators

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Pre-Upgrade Logistics
"Spring Cleaning"

- Clean up user accounts
    - Delete BlackBerry Enterprise Server users who no longer have mail accounts
    - Delete BlackBerry SDs for users long removed from the BlackBerry Enterprise Server (and/or the company)
    - Look at users with high pending message counts
- Delete logs if they have been backed up
- Ensure databases on BlackBerry Enterprise Servers are well maintained
    - No excessive white space or errors in Domino logs
    - Include Domino Directories on BlackBerry Enterprise Server
        - Used for resolving NAB lookups in BlackBerry Enterprise Server v2.2 and BlackBerry Enterprise Server v4.0
        - Also Multiple Domain Support in BlackBerry Enterprise Server v4.0

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Pre-upgrade Logistics
Handheld environment

- Figure out handheld strategy
  - "Clean up"
  - Check logs for unused devices, redistribute
- Will handhelds deployed support desired code version(s)?
  - Consider memory required by BlackBerry Enterprise Software v4.0 code releases
    - E.g., issues with 2MB RIM 950™, 8MB BlackBerry 5810™/BlackBerry 5820™, 8MB BlackBerry 6710™/BlackBerry 6720™
    - Pass down/trade in devices if needed
    - Can leave some handhelds at lower code version and functionality
    - Some carriers have "trade-in" programs

Create corporate handheld "image"
  - Test script and distribution mechanism on typical workstation images
  - Test use of Handheld Configuration Tool

Training to support handheld deployment

BlackBerry for Lotus Domino Resource Kit

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Upgrade
Server Upgrade Options

- Upgrade In Place:
  - Have rollback plan - full backup, full restore
  - Transparent to users, until device is upgraded

- Migrate to New Hardware:
  - Gradual migration to parallel, upgraded environment
  - Allows you to pilot new version, ensure environment is stable, upgrade users in batches
  - May be a good time to implement a new BlackBerry Enterprise Server
    - If needed to support growing user population

- Knife-edge cutover to new hardware, then upgrade in place
  - No knife-edge upgrades possible between versions
    - Introduction of Configuration Database, template changes, etc.
  - Would allow for immediate/near-time rollback

::: BlackBerry

Upgrade
Process and Changes to the BlackBerry Enterprise Server

- The upgrade process:
  - Replaces all system resources with updated versions
  - Cleans the Windows Installer registry of all previously released versions
  - Creates the Configuration Database (MSDE or SQL)

- Changes on the server during upgrade:
  - Link to SQL or MSDE database via mail agents
  - No more Outgoing Queue (function moved to BlackBerry SDs)
  - BlackBerry Router – new service
  - BlackBerry Profiles Database template update
  - Adds additional Logs for new services
  - BlackBerry Directory and BlackBerry Statistics database removed
    - Data moved to Configuration Database

::: BlackBerry

Upgrade
Installation Details

- JRE, XML parser and MSDE are bundled w/Install
- Choice during install of 4 possible configurations:
  - Full install (all on one box), AS-only, BlackBerry Router only, BlackBerry Manager-only
  - Only one on a box - AS, BlackBerry Router, BlackBerry Manager, if separate from the BlackBerry Enterprise Server
  - BlackBerry Router can service more than one BlackBerry Enterprise Server, as can BlackBerry Attachment Service
- Impact on Domino environment
  - Depends on OTA PIM Sync method(s) chosen
  - Scanning tasks, contacts, Journal on hosting server

BlackBerry

- Two install modes:
  - Wizard Mode
    - Runs during install
    - Only gathers data needed to get BlackBerry Enterprise Server up and running
  - Regular Mode - more options, more flexibility
    - Runs from control panel after BlackBerry Enterprise Server is installed
    - Post-install updates to configuration
    - Configure remote components, set ports, integrated BlackBerry Attachment Service server configuration
- Remote database fully supported for upgrade and install

::: BlackBerry

- More Log files – specify where they will go
    - BlackBerry Router
    - Dispatcher
    - Messaging Agent
    - Attachment viewer (logging is disabled by default)
    - MDS (New log created every 20 Meg)
    - Sync service (1 log for Sync Server and 1 for each of the connectors)
    - Controller
    - Policy Service
    - BlackBerry Manager

BlackBerry

Upgrade
BlackBerry Handhelds

• Handheld upgrade required for new features

- Communicate upgrade plan to users
  – Upgrade work groups together
- Use BlackBerry Configuration Tool
  – "Filling Station" to ease new device deployment
  – Like imaging PCs – software stored on share, particulars in DB
- Use desktop manager for upgrades
- "App Loader Lite"
- Watch monitoring
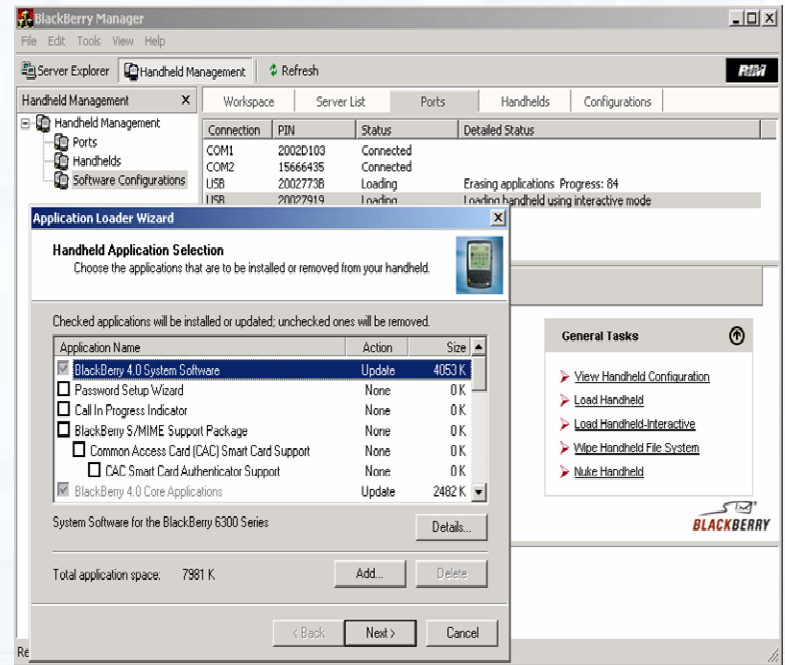
::: BlackBerry™

Post-Upgrade

- Consider removing desktop manager
  - Use BlackBerry Manager to ensure all users have upgraded their devices
  - Push out handheld manager
  - Deploy core software upgrade strategy
  - Uninstall DM
- Compare current monitoring to baseline
- Continue regular operational reviews of BlackBerry Infrastructure

- Enjoy the new features!

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- Daily Administration – New UI
- Where Data Is Stored
- No more Outgoing Queue
- OTA Enterprise Activation for users
- Controller function
- DR
- Effects on IT Policy
    - OTA supersedes Wired IT Policy
    - Policy Binding
- Maintaining the BlackBerry Enterprise Software v4.0 infrastructure – Configuration DB
- Maintenance of Domino databases for BlackBerry **stays the same**

:::: BlackBerry

Disaster Recovery Topics

- Disaster Recovery Points
- Disaster Recovery Options
  - Backup/Restore
  - Replication
  - Clustering
  - Move User (New to BlackBerry Enterprise Software v4.0)
- Other items to consider

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About Disaster Recovery

- Disaster Recovery is a broad term
  - Meaning varies between organizations
- Three main concepts for Disaster Recovery
  1. Hardware Failure
  2. "Smoking Hole in the Ground"
  3. High Availability
- When planning…
  - BlackBerry should be planned in accordance with your IBM Lotus Domino DR plan
  - When planning for off-site or high availability, use full SQL
    - Include your SQL DBA in DR for BlackBerry planning
  - Provide plans for testing your DR procedure
  - Test your DR plan!

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What happens when components fail?

- If Configuration Database (SQL/MSDE) connection is lost
  - E-mail and MDS functions of BlackBerry Enterprise Server continue
  - Administrator cannot administer BlackBerry Enterprise Server or make changes to its configuration
  - BlackBerry Enterprise Server will not restart
  - SQL and Domino must both be restored for fail-over
  - If you are planning disaster recovery, use full SQL
  - BlackBerryProfiles.nsf data also stored in BlackBerry Configuration SQL Database
    - If deleted, BlackBerryprofiles.nsf will re-create on server restart

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What happens when components fail?

- BlackBerry Router
  - BlackBerry Enterprise Server attempts to connect to SRP Host defined in registry
  - Internal Least Cost Routing will stop
- If BlackBerry Sync Service fails
  - Users PIM information stops syncing
- If IT Policy Service fails
  - New IT policies will not be pushed out
- Profiles Database corruption
  - All BlackBerry Enterprise Server traffic stops flowing
- User State Database Corruption
  - BlackBerry State Databases are key component to user
  - Data flow for that user stops if their State Database is corrupted

BlackBerry

Disaster Recovery Options

- BlackBerry Enterprise Server for Domino
  - Backup and restore
  - Replication
  - Domino clustering
  - Move user
- SQL Database
  - Backup and restore
  - One way replication to DR site
  - SQL clustering

BlackBerry

Backup/Restore

- Method of choice for smaller deployments
  - MSDE on same machine as BlackBerry Enterprise Server

- Key data to backup
  - BlackBerry Enterprise Server Management database on SQL server
    - SQL Backup job (if SQL Server)
    - Open file backup
  - BlackBerry Profiles Database
    - Location: \lotus\domino\data\bes
  - User BlackBerry State Databases
    - Location: \lotus\domino\data\bes\state
  - BlackBerry Enterprise Server Registry Settings
    - HKLM\SOFTWARE\Research In Motion
  - BlackBerry Logs
    - Default Location: c:\program files\Research In Motion\BlackBerry Enterprise Server\Logs

::: BlackBerry.

Backup/Restore

To restore to the new BlackBerry Enterprise Server:

- Install MSDE/SQL

- Install BlackBerry Enterprise Server

- Restore BlackBerry Enterprise Server Configuration database (SQL/MSDE)

- Restore Lotus/Domino/data/ BlackBerry Enterprise Server folder

- Run Domino maintenance utilities

    - Fixup

    - Updall

    - Compact

- Restart BlackBerry Enterprise Server

BlackBerry

Backup/Restore

After Reboot

- Verify all associated Windows® Server Services started
    - BlackBerry Attachment Service (if on BlackBerry Enterprise Server)
    - BlackBerry Controller (optional)
    - BlackBerry Enterprise Server
    - BlackBerry Mobile Data Service
    - BlackBerry Policy Service
    - BlackBerry Router
    - BlackBerry Synchronization Service
- Verify BlackBerry Enterprise Server add-in task has started
- User's data
    - Will continue to route
    - Is only as good as last restore
    - Transaction logging may help update
- Users may have some documents on device orphaned

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Replication/Clustering

- Replication or Domino Database Clustering can be used to maintain updated Domino Database information
  - On "Warm Spare" failover server
  - Key Data To Replicate
    - BlackBerryProfiles.nsf
    - User BlackBerry State DB
  - Configure replication interval
  - Install BlackBerry Enterprise Server using same SRP id and key as Primary
    - Use same version (Service Pack, Hotfix)
  - Remove BlackBerry Enterprise Server task from Notes.ini on backup BlackBerry Enterprise Server
  - Change the server document to deny user access
  - Copy primary server.id to failover BlackBerry Enterprise Server
- BlackBerry Enterprise Server management database in SQL may be…
  - Clustered (using SQL clustering)
  - Replicated to remote DR site in a one-way replication model

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Failover – Replication/Clustering

- If possible…
  - Remove BlackBerry Enterprise Server task from Primary Notes.ini
  - Stop all Windows services for BlackBerry
- Change the server.id on failover server to that of the primary server
  - Table in SQL references original server
- Run a "Repair" from Add and Remove Programs for the BlackBerry Enterprise Server
- Verify that the server is resolvable (from desktop manager)
- Start Domino and BlackBerry Enterprise Server task
- Data should continue to flow for all users
- MDS as a push service will not continue
  - The application servers which push would need to point to the new host name

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Off-Site DR Architecture Replication

Production Site

SQL Server

BlackBerry Enterprise Server Mgmt

BlackBerry Enterprise Server

BlackBerryprofiles.nsf

BlackBerry State Databases

DR Site

One-Way SQL replication of BlackBerry Enterprise Server Mgmt Database

BlackBerry Enterprise Server Mgmt

SQL Server

One-way replication of BlackBerry Profiles Database and User State Database

Users Denied Access

BlackBerry Enterprise Server

BlackBerryprofiles.nsf

BlackBerry State Databases

"Smoking Hole in the Ground" Scenario

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High Availability Architecture

Domino Clustered BlackBerry Enterprise Servers during normal operation

D o m i n o

M a i l

S e r v e r s
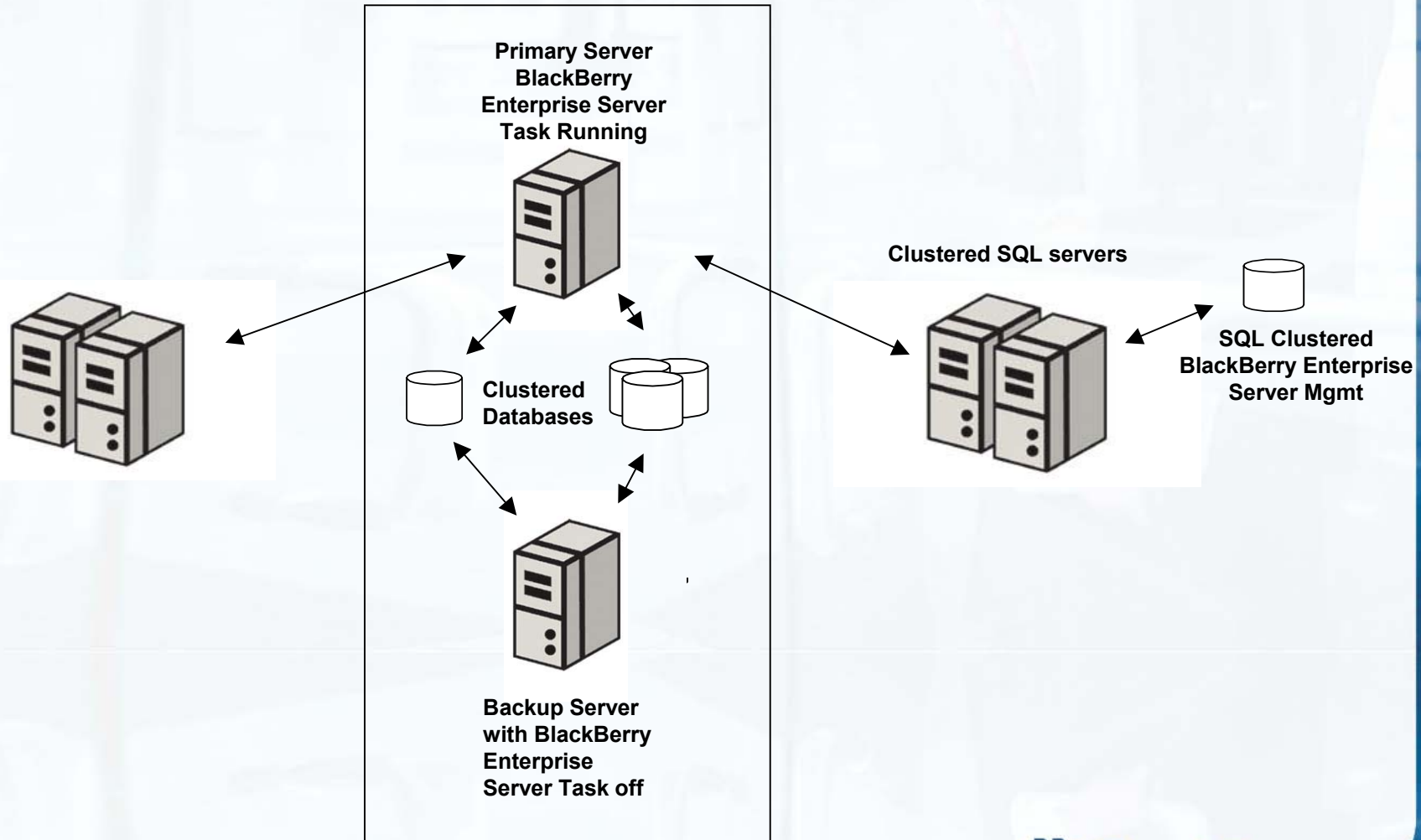
Primary Server BlackBerry Enterprise Server Task Running

Clustered SQL servers

Clustered Databases

SQL Clustered BlackBerry Enterprise Server Mgmt

Backup Server with BlackBerry Enterprise Server Task off

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High Availability Architecture

Domino Clustered BlackBerry Enterprise Servers during failover

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Primary Server BlackBerry Enterprise Server Task disabled

Clustered Databases

Domino Mail Servers

Backup Server BlackBerry Enterprise Server Task Running

Clustered SQL servers

SQL Clustered BlackBerry Enterprise Server Mgmt
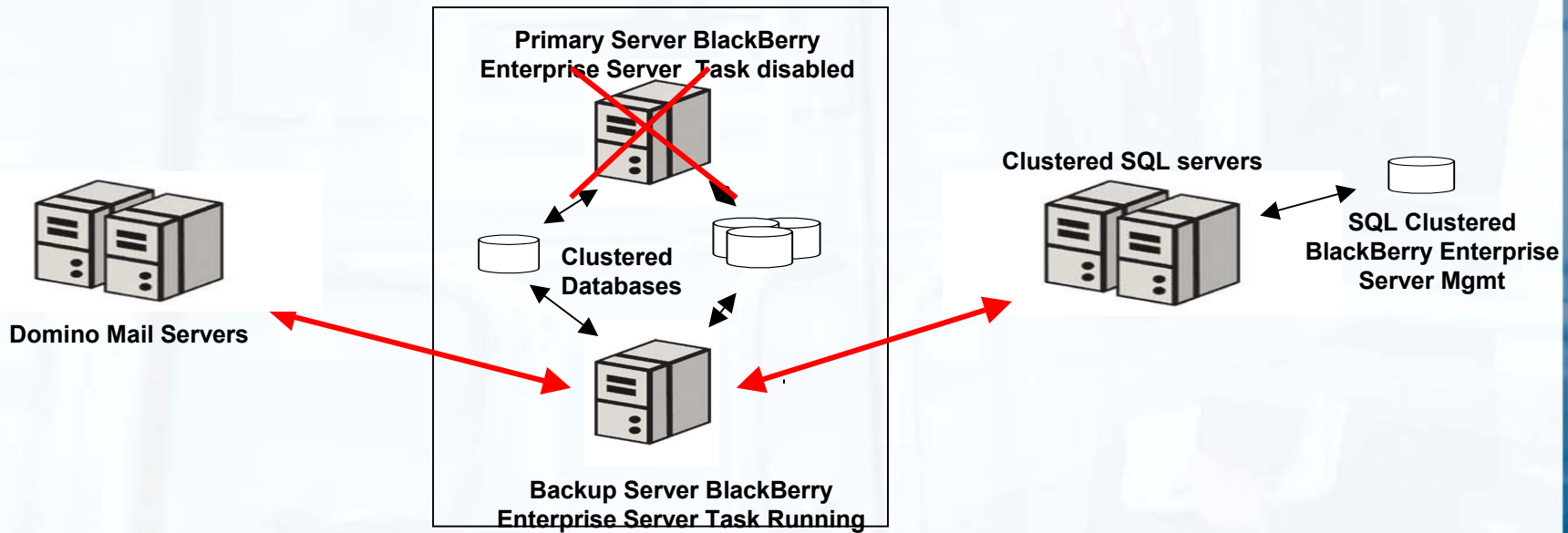
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Move User

New in BlackBerry Enterprise Software v4.0

- Can move a user from one BlackBerry Enterprise Server to another
  - Use "Move User" in BlackBerry Manager
  - No user interaction required
- User configuration data is stored in SQL database
  - Must be common to both BlackBerry Enterprise Servers
- Replica of the user's BlackBerry State Database will automatically be created on the destination BlackBerry Enterprise Server
  - If secondary BlackBerry Enterprise Server is available
  - If not, may use file-level copy or Domino DB replication (proactively)
- Profiles Database is updated with new user information on the new BlackBerry Enterprise Server
  - And removed from the old
- Updated service books are sent to the handheld with the new SRP information
- User move complete, user able to send and receive data

BlackBerry

Move User DR Architecture

During normal operation

User 1 active on BlackBerry Enterprise Server A with record in profiles database

BlackBerry Enterprise Server A (Active BlackBerry Server)

Lotus Domino Mail Servers

Admin PC

BlackBerry Enterprise Server A profiles database

User state databases

BlackBerry Enterprise Server B (Active BlackBerry Enterprise Server)

BlackBerry Enterprise Server Mgmt database contains master copy of user information for all BlackBerry Enterprise Servers

One way replication of user BlackBerry State Databases

BlackBerry Enterprise Server B profiles database

Replica copy of user state databases

BlackBerry for Lotus Domino Resource Kit

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Move User DR Architecture

During failure of BlackBerry Enterprise Server A

**BlackBerry Enterprise Server A
(Active BlackBerry Enterprise Server)**

1. Admin uses Move User to change BlackBerry Enterprise Server for User 1

Admin PC

BlackBerry Enterprise server A profiles database

User state databases

Lotus Domino Mail Servers

**BlackBerry Enterprise Server B
Active BlackBerry Enterprise Server))**

2. User 1 now changed to be running on BlackBerry Enterprise Server B in the BlackBerry Enterprise Server Mgmt database

3. Update is sent to BlackBerry Enterprise Server B

4. User 1's state database is detected

5. An entry for User 1 is created in BlackBerry Enterprise Server B's BlackBerry profiles Domino database. The user is now active again

BlackBerry Enterprise Server B profiles database

Replica copy of user state databases

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BlackBerry Router

- BlackBerry Router
  - If the BlackBerry Router is installed on another machine
    - A backup machine can be installed with BlackBerry Router
    - It can be running simultaneously with the Primary
  - If the primary BlackBerry Router fails
    - Manually point BlackBerry Enterprise Server to an alternate BlackBerry Router
      - Run BlackBerry Enterprise Server configuration and change the router host
      - Registry Change HKLM\Software\Research In Motion\BlackBerry Enterprise Server\Dispatcher\NetworkAccessNode

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Restoring the Domino Directory and Mail DBs

Domino Directory

- BlackBerry Enterprise Server uses Domino Universal Note ID (UNID) in the Person Document to uniquely identify each user.
  - The UserUNID field is stored in the profiles database
  - Links the BlackBerry user to the Lotus Notes user.
- Restore a Replica of the Domino Directory OR copy the Domino Directory at the file system level, or else…
  - Link between BlackBerry user and Lotus Notes user will be lost
  - Users will be unable to send or receive messages on their handhelds

BlackBerry Users' Mail Databases

- Restore a **replica** of the user's mail database
  - This maintains the UNID link between mail documents in the user's mail database, and the documents (status flags) in their BlackBerry State Database
- Or else, users will be unable to
  - Reply-with-text
  - Forward
  - Request more content on the handheld for messages that are in the restored mail database
  - Calendar items on the handheld will no longer be linked to the calendar items in Lotus Notes

::: BlackBerry

Summary

Best options for Disaster Recovery

- Hardware Failure
  - Backup/Restore
  - Replication
  - Clustering
  - Move User

- High Availability
  - Clustering
  - Replication
  - Move User

- Smoking Hole in the Ground
  - Replication

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Mobilize Your Enterprise With BlackBerry Resources

BlackBerry Browser and Application Development Resources

- BlackBerry Java Development Environment and Simulators
  - www.blackberry.com/developers
  - Used for application development or testing BlackBerry Browser

- Domino Application Samples for BlackBerry
  - www.blackberry.com/go/developers/lotusphere
  - Discussion Forum Sample
  - Emergency Contact List Sample
    - Both samples illustrate using the BlackBerry Browser and custom applications

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Mobilize Your Enterprise With BlackBerry Resources

BlackBerry for Lotus Domino and 3rd Party Solutions

- General Resources – BlackBerry for Lotus Domino
    - www.blackberry.com
    - www.blackberry.com/products/software/server/domino

- 3rd Party Solutions for BlackBerry
    - www.blackberry.com/ThirdParty
        - Enterprise Solutions Guide
    - Visit Lotusphere Solutions Showcase

BlackBerry

Administering BlackBerry in a Lotus Domino Environment

Thank You for Attending!

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Research In Motion