



# Upgrade Guide

## BlackBerry Enterprise Server for Microsoft Exchange

Version: 4.1 | Service Pack: 6



# Contents

<b>1</b>	<b>Choosing a BlackBerry Enterprise Server upgrade option.....</b>	<b>5</b>
	Upgrading the BlackBerry Enterprise Server software by overwriting the existing version.....	5
	Upgrading the BlackBerry Enterprise Server by using a new computer.....	5
	Upgrading the BlackBerry Enterprise Server software in phases.....	6
	Verify the BlackBerry Enterprise Server version from which you are upgrading.....	7
<b>2</b>	<b>System requirements.....</b>	<b>9</b>
	System requirements: BlackBerry Enterprise Server.....	9
	System requirements: BlackBerry Attachment Service.....	11
	System requirements: BlackBerry Manager.....	12
	System requirements: BlackBerry MDS Connection Service.....	13
	System requirements: BlackBerry MDS Integration Service.....	14
	System requirements: BlackBerry Router.....	14
	System requirements for optional environments and features.....	15
	Unsupported environments.....	17
<b>3</b>	<b>Preparing to upgrade from BlackBerry Enterprise Server Version 4.0.....</b>	<b>19</b>
	Back up the BlackBerry Enterprise Server registry settings.....	19
	Back up the BlackBerry Enterprise Server log files.....	19
	Back up the BlackBerry Configuration Database.....	19
	BlackBerry Configuration Database Backup Tool parameters.....	20
<b>4</b>	<b>Preparing to upgrade from BlackBerry Enterprise Server Version 3.6.....</b>	<b>21</b>
	Update out-dated BlackBerry device assignments.....	21
	HandheldCleanup tool parameters.....	21
	Back up the BlackBerry Enterprise Server registry settings.....	22
	Back up the BlackBerry Enterprise Server log files.....	22
	Consolidating multiple BlackBerry Enterprise Server instances.....	22
	Identify the primary instance of the BlackBerry Enterprise Server.....	23
	Add the BlackBerry Enterprise Server instances to the BlackBerry Enterprise Server Management console.....	23
	Preparing to upgrade the BlackBerry Enterprise Server instances that have different SRP addresses.....	24
	Testing the transfer of user information during the upgrade process.....	25
	Create a preview BlackBerry Configuration Database.....	25
	Test the transfer of user information to the preview BlackBerry Configuration Database.....	26

Change applications to connect to default BlackBerry Mobile Data Service ports.....	28
Configure wireless data synchronization for BlackBerry devices.....	28
<b>5 Preparing to upgrade from BlackBerry Enterprise Server Version 3.5 SP2 and preceding versions.....</b>	<b>29</b>
Move BlackBerry Enterprise Server Version 2.1 SP5 configuration information to the BlackBerry Enterprise Server Management console.....	29
Update out-dated BlackBerry device assignments.....	29
HandheldCleanup tool parameters.....	30
Back up the BlackBerry Enterprise Server registry settings.....	30
Back up the BlackBerry Enterprise Server log files.....	30
Configure wireless data synchronization for BlackBerry devices.....	31
<b>6 Configuring a Microsoft Exchange 5.5, Microsoft Exchange 2000, or Microsoft Exchange 2003 messaging environment.....</b>	<b>33</b>
Identify and resolve any Microsoft Exchange known issues for wireless calendar synchronization.....	33
<b>7 Setting up the database connection.....</b>	<b>35</b>
Specifying permissions when connecting to the BlackBerry Configuration Database using Microsoft Windows authentication.....	35
Specifying MSDE 2000 permissions for the Microsoft Windows account.....	35
Assign Microsoft SQL Server permissions to the Microsoft Windows account.....	35
Configuring authentication to the BlackBerry MDS Integration Service database.....	36
<b>8 Upgrading the BlackBerry Enterprise Server software by overwriting the existing version.....</b>	<b>37</b>
Upgrade the BlackBerry Enterprise Server software.....	37
Improve the startup performance of the BlackBerry Enterprise Server.....	38
<b>9 Upgrading the BlackBerry Enterprise Server by using a new computer.....</b>	<b>39</b>
Prerequisites: Upgrading the BlackBerry Enterprise Server software.....	39
Install BlackBerry Enterprise Server Version 4.1 SP5 on the new computer.....	40
Move user accounts to the new BlackBerry Enterprise Server.....	41
BESMigration tool parameters.....	41
Prevent the old BlackBerry Enterprise Server from connecting to the BlackBerry Infrastructure.....	42
Improve the startup performance of the BlackBerry Enterprise Server.....	42
Start the new BlackBerry Enterprise Server.....	43
Move user accounts back to BlackBerry Enterprise Server Version 3.6.....	43

<b>10</b>	<b>Upgrading the BlackBerry Enterprise Server software in phases.....</b>	<b>45</b>
	Managing a mixed-version environment.....	45
	Upgrade the BlackBerry Enterprise Server Version 4.0 SP3 in phases.....	46
	Upgrading BlackBerry Enterprise Server Version 4.0 and earlier versions in phases.....	46
	Upgrade BlackBerry Enterprise Server Version 4.0 and earlier versions in phases and create a new BlackBerry Configuration Database.....	46
	Upgrade BlackBerry Enterprise Server Version 4.0 and earlier versions in phases and upgrade the existing BlackBerry Configuration Database.....	47
<b>11</b>	<b>Troubleshooting the BlackBerry Enterprise Server upgrade process.....</b>	<b>49</b>
	A third-party tool did not install successfully and the BlackBerry Enterprise Server setup application closed.....	49
	Previous version detected but no database available.....	49
	The BlackBerry Collaboration Service does not connect to Microsoft Office Live Communications Server 2005.....	49
	The setup application did not prompt you to change or confirm the MAPI profile.....	50
	You cannot resolve errors that occur when you move users.....	50
	You encounter errors when you try to upgrade the BlackBerry Configuration Database.....	50
	The setup application prompts you for access to the installation media for Microsoft .NET Framework Version 1.1.....	51
	Restore a BlackBerry Configuration Database.....	51
<b>12</b>	<b>Upgrading the BlackBerry Device Software.....</b>	<b>53</b>
	Permitting users to upgrade the BlackBerry Device Software at their computers.....	53
	Upgrading the BlackBerry Device Software at a central computer.....	53
	Pushing the BlackBerry Device Software and the BlackBerry Desktop Software to users' computers.....	54
<b>13</b>	<b>Permitting users to upgrade the BlackBerry Device Software at their computers.....</b>	<b>55</b>
	Configure a network drive.....	55
	Save the BlackBerry Device Software installation files to the network drive.....	55
	Verify the version of the application loader tool.....	56
	Sending the BlackBerry Desktop Software or BlackBerry Device Manager installation files to users' computers.....	56
	Send the BlackBerry Device Manager installation file to users' computers.....	56
	Send the BlackBerry Desktop Software installation file to users' computers.....	57
	Synchronizing wireless data automatically.....	57
	Create the BlackBerry Device Software upgrade instructions for BlackBerry device users.....	57
	Confirming that the BlackBerry Device Software upgrade process completed successfully.....	58
	Verify that the upgrade from BlackBerry Device Software Version 4.0 or later completed successfully.....	58

Verify that the upgrade from BlackBerry Device Software Version 3.6 completed successfully.....	58
<b>14 Upgrading the BlackBerry Device Software at a central computer.....</b>	<b>59</b>
Configure a network drive.....	59
Save the BlackBerry Device Software installation files to the network drive.....	59
Create a software configuration for the BlackBerry Device Software.....	60
Assign the software configuration to a user.....	60
Upgrade the BlackBerry Device Software at a central computer.....	60
Verify that the BlackBerry Device Software upgrade at a central computer completed successfully.....	61
<b>15 Pushing the BlackBerry Device Software and the BlackBerry Desktop Software to users' computers.....</b>	<b>63</b>
Configure a network drive.....	63
Install the BlackBerry Device Software on the network drive.....	63
Save the BlackBerry Desktop Software installation files to the network drive.....	64
Synchronizing wireless data automatically.....	64
Send the installation files for the BlackBerry Desktop Software and the BlackBerry Device Software to users using a third-party application.....	64
Confirming that the BlackBerry Device Software upgrade process completed successfully.....	65
Verify that the upgrade from BlackBerry Device Software Version 4.0 or later completed successfully.....	65
Verify that the upgrade from BlackBerry Device Software Version 3.6 completed successfully.....	65
<b>16 Troubleshooting the BlackBerry Device Software upgrade process.....</b>	<b>67</b>
When users click the link to the application loader tool in the upgrade instructions, the upgrade process does not start.....	67
<b>17 Glossary.....</b>	<b>69</b>
<b>18 Legal notice.....</b>	<b>73</b>

# Choosing a BlackBerry Enterprise Server upgrade option 1

## Upgrading the BlackBerry Enterprise Server software by overwriting the existing version

The in-place upgrade process upgrades the BlackBerry® Enterprise Server software by replacing the existing version of the software.

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>You do not require additional computers to perform this upgrade.</li> <li>When the upgrade process completes, user accounts are active, and no additional administrative action is required.</li> </ul>	<ul style="list-style-type: none"> <li>You cannot remove the BlackBerry Enterprise Server and return to the earlier version of the software automatically.</li> <li>You must turn off the BlackBerry Enterprise Server during the upgrade process, so the interruption to services for BlackBerry devices lasts as long as it takes the upgrade process to complete.</li> </ul>

If you are upgrading from BlackBerry Enterprise Server Version 3.5 SP2, Version 3.6 SP3 or later, or Version 4.0 or later, use this upgrade process.

When you use the in-place upgrade process, the following events occur:

- BlackBerry devices that are running BlackBerry® Device Software Version 4.0 or later receive new service books, and wireless data synchronization occurs
- all BlackBerry devices receive new IT policies

## Upgrading the BlackBerry Enterprise Server by using a new computer

The cutover upgrade process installs the BlackBerry® Enterprise Server on a new computer and moves user accounts and server information from the old BlackBerry Enterprise Server to the new one.

If you are upgrading from BlackBerry Enterprise Server Version 3.6, use this upgrade process.

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>You can move user accounts back to the old BlackBerry Enterprise Server if you encounter any problems with the new one.</li> </ul>	<ul style="list-style-type: none"> <li>You require one extra computer.</li> </ul>

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>You can use new server hardware and start with a clean environment.</li> <li>Users experience minimal service interruptions because user accounts remain active on the old BlackBerry Enterprise Server until you start the new one.</li> </ul>	<ul style="list-style-type: none"> <li>If you upgrade from a version earlier than BlackBerry Enterprise Server Version 4.0, the BlackBerry Enterprise Server takes longer to start than it did previously because it sends new service books to all of the BlackBerry devices that are capable of wireless data synchronization.</li> </ul>

This upgrade process uses the same SRP credentials on both the old and the new BlackBerry Enterprise Server instances.

When you use the cutover process, the following events occur:

- BlackBerry devices that are running BlackBerry Device Software Version 4.0 or later receive new service books, and wireless data synchronization occurs
- all BlackBerry devices receive new IT policies

## Upgrading the BlackBerry Enterprise Server software in phases

The phased upgrade process maintains earlier versions of the BlackBerry® Enterprise Server software so that you can gradually create new BlackBerry Enterprise Server instances and move user accounts to them.

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>You can move user accounts to the new BlackBerry Enterprise Server instances gradually, for example, to limit the number of service books and IT policies that the BlackBerry Policy Service sends at one time.</li> <li>You can monitor system performance as you add user accounts.</li> <li>You can reorganize your BlackBerry Enterprise Server environment during the upgrade process by changing user distribution patterns.</li> </ul>	<ul style="list-style-type: none"> <li>You require additional computers.</li> <li>You require additional SRP credentials.</li> <li>If you move user accounts from one BlackBerry Configuration Database to another, you lose the BlackBerry device options that you backed up in the BlackBerry Configuration Database.</li> <li>You cannot use some new features (for example, one-to-many relationships between a BlackBerry MDS Connection Service or a BlackBerry Collaboration Service and multiple BlackBerry Enterprise Server instances) in the BlackBerry Enterprise Server software until all BlackBerry Enterprise Server components are at the same version.</li> </ul>

When you upgrade the BlackBerry Enterprise Server software in phases, the following events occur:

- BlackBerry devices that are running BlackBerry® Device Software Version 4.0 or later receive new service books, and wireless data synchronization occurs
- all BlackBerry devices receive new IT policies

## Verify the BlackBerry Enterprise Server version from which you are upgrading

Perform this task to verify the version that you are upgrading from so that you can choose a supported upgrade process.

1. On the taskbar, click **Start > Settings > Control Panel**.
2. Double-click **Add/Remove Programs**.
3. Click **BlackBerry Enterprise Server**.
4. Click **Support Information**.



## System requirements

## 2

For information about calculating hardware requirements, visit [www.blackberry.com/go/serverdocs](http://www.blackberry.com/go/serverdocs) to see the *BlackBerry Enterprise Server Capacity Calculator* and *BlackBerry Enterprise Server Performance Benchmarking*.

### System requirements: BlackBerry Enterprise Server

Item	Requirement
operating system	<p>Any of the following operating systems:</p> <ul style="list-style-type: none"> <li>• Windows® 2000 SP4 Server or Advanced Server</li> <li>• Windows Server® 2003 or later</li> <li>• Windows Server 2003 or later (64-bit)</li> <li>• Windows Server 2003 R2 SP2</li> <li>• Windows Server 2003 R2 SP2 (64-bit)</li> <li>• Windows® Small Business Server 2003 Standard or Premium</li> </ul>
messaging server	<p>Any of the following messaging servers installed physically close to where you plan to install the BlackBerry® Enterprise Server:</p> <ul style="list-style-type: none"> <li>• Microsoft® Exchange version 5.5</li> <li>• Microsoft Exchange 2000</li> <li>• Microsoft Exchange 2003 or later</li> <li>• Microsoft Exchange 2007</li> <li>• Microsoft Exchange mixed environment (any combination of Microsoft Exchange version 5.5, Microsoft Exchange 2000, Microsoft Exchange 2003, and Microsoft Exchange 2007)</li> <li>• Microsoft® Solution for Hosted Messaging and Collaboration version 3.5</li> </ul>
system tools for the messaging server	<p>Any of the following system tools for the messaging server installed on the computer that hosts the BlackBerry Enterprise Server:</p> <ul style="list-style-type: none"> <li>• Microsoft Exchange version 5.5 Administrator</li> <li>• Microsoft Exchange 2000 System Manager</li> <li>• Microsoft Exchange 2003 System Manager</li> <li>• Microsoft Exchange Server MAPI client and CDO 1.2.1</li> </ul>

Item	Requirement
Microsoft Exchange Organization of the system tools for the messaging server	<ul style="list-style-type: none"> <li>to support Microsoft Exchange 2007, either Microsoft Exchange Server MAPI client and CDO 1.2.1, or Microsoft Exchange 2003 SP2 System Tools</li> </ul>
version of the CDO library	latest version that is supported by the latest version of Microsoft Exchange in your organization's environment
Unicode support for calendars	To support Microsoft Exchange 2003, the following Microsoft hotfixes installed: <ul style="list-style-type: none"> <li>913643 on your organization's messaging server</li> <li>923537 on the computer that hosts the BlackBerry Enterprise Server</li> </ul>
Internet Service Manager	to support Microsoft Exchange 2007, the Internet Service Manager component of Microsoft® IIS
database management system	Any of the following database management systems: <ul style="list-style-type: none"> <li>MSDE 2000</li> <li>Microsoft® SQL Server® 2000 SP4</li> <li>Microsoft SQL Server 2005 or later Professional, Enterprise, or Express</li> <li>Microsoft SQL Server 2005 or later (64-bit)</li> </ul>
collation setting	To support Microsoft SQL Server, the following conditions on the database server: <ul style="list-style-type: none"> <li>collation setting is default case-insensitive</li> <li>BlackBerry Configuration Database collation setting is default case-insensitive</li> </ul>
remote database conditions	named pipes and TCP/IP network protocols turned on
data access components	Any of the following data access components on the computers that host the BlackBerry Enterprise Server or the BlackBerry Configuration Database: <ul style="list-style-type: none"> <li>MDAC version 2.8 with Security Patch MS04-003 (version 2000.85.1025.00)</li> <li>MDAC version 2.8.2 (version 2000.86.1830.00), included with Windows Server 2003 SP1</li> </ul>
database conditions for the BlackBerry MDS Integration Service	A database server with the following conditions: <ul style="list-style-type: none"> <li>host for the BlackBerry Configuration Database</li> <li>support for mixed-mode authentication</li> </ul>

Item	Requirement
Microsoft® .NET Framework	to support languages other than English, localized version of Microsoft .NET Framework version 1.1 SP1
instant messaging server	Any of the following instant messaging servers: <ul style="list-style-type: none"> <li>• IBM® Lotus® Sametime® version 6.5.1 Community Server (version 6.5.1 or later required to support dormant mode)</li> <li>• IBM Lotus Sametime version 7.0 Community Server</li> <li>• IBM Lotus Sametime version 7.5 Community Server</li> <li>• IBM Lotus Sametime version 8.0 Community Server</li> <li>• Microsoft® Office Live Communications Server 2005 (SP1 required to support Microsoft® Office Communicator and dormant mode)</li> <li>• Microsoft® Office Communications Server 2007 Standard or Enterprise</li> <li>• Novell® GroupWise® Messenger version 2.0.1 or later</li> </ul>
browser	Microsoft® Internet Explorer® with the following settings: <ul style="list-style-type: none"> <li>• Java® or JavaScript® turned on</li> <li>• language preferences configured to display encoded web pages</li> </ul>
media player	to support audio attachments, Windows Media® Player version 9 or later
network proximity	high-speed, switched connection between the BlackBerry Enterprise Server and the messaging servers
firewall	A firewall or proxy firewall with the following conditions: <ul style="list-style-type: none"> <li>• support for the BlackBerry Enterprise Server to initiate an outgoing, two-way TCP/IP connection to an external server on port 3101</li> <li>• support for the resolution of Internet addresses using DNS</li> <li>• transparency of the proxy server for proxy firewalls</li> </ul>

## System requirements: BlackBerry Attachment Service

The following system requirements apply when installing the BlackBerry® Attachment Service on a computer separate from the BlackBerry® Enterprise Server.

Item	Requirement
operating system	Any of the following operating systems:

Item	Requirement
	<ul style="list-style-type: none"> <li>Microsoft® Windows® 2000 SP4 (Server edition or Advanced Server edition)</li> <li>Microsoft® Windows Server® 2003 SP1</li> <li>Microsoft® Windows® XP Professional SP2</li> </ul>
media player	To support audio attachments, Windows Media® Player Version 9 or later
web browser	Microsoft® Internet Explorer® with the following settings: <ul style="list-style-type: none"> <li>Java® or JavaScript® turned on</li> <li>language preferences configured to display encoded web pages</li> </ul>

## System requirements: BlackBerry Manager

The following system requirements apply when installing the BlackBerry® Manager on a computer separate from the BlackBerry® Enterprise Server.

Item	Requirement
operating system	Any of the following operating systems: <ul style="list-style-type: none"> <li>Windows® 2000 SP4 (Server, Advanced Server, or Professional)</li> <li>Windows Server® 2003 or later</li> <li>Windows Server 2003 or later (64-bit)</li> <li>Windows Server 2003 R2 SP2</li> <li>Windows Server 2003 R2 SP2 (64-bit)</li> <li>Windows® XP Professional SP2</li> <li>Windows® Small Business Server 2003 (Standard edition or Premium edition)</li> </ul>
messaging server system tools	Any of the following messaging server system tools: <ul style="list-style-type: none"> <li>Microsoft® Exchange version 5.5 Administrator</li> <li>Microsoft Exchange 2000 System Manager</li> <li>Microsoft Exchange 2003 System Manager</li> <li>Microsoft Exchange Server MAPI client and CDO 1.2.1</li> <li>for Microsoft Exchange 2007, either Microsoft Exchange Server MAPI client and CDO 1.2.1 or Microsoft Exchange 2003 SP2 System Tools</li> </ul>

Item	Requirement
Microsoft Exchange Organization of the messaging server system tools	the same Microsoft Exchange Organization as the messaging server
version of the messaging server system tools	the same version as the messaging server
version of the CDO library	the latest version that is supported by the latest version of Microsoft Exchange in your environment
Internet Service Manager	To support Microsoft Exchange 2007, the Internet Service Manager component of Microsoft® Internet Information Services installed
Microsoft® .NET Framework	To support languages other than English, localized version of Microsoft .NET Framework version 1.1 SP1
browser	Microsoft® Internet Explorer® with the following settings: <ul style="list-style-type: none"> <li>• Java® or JavaScript® turned on</li> <li>• language preferences set to display encoded web pages</li> </ul>
data access components	Any of the following data access components: <ul style="list-style-type: none"> <li>• MDAC version 2.8 with Security Patch MS04-003 (version 2000.85.1025.00)</li> <li>• MDAC version 2.8 SP2 (version 2000.86.1830.00)</li> </ul>
printer and file sharing	To support BlackBerry device implementation, printer and file sharing turned on
USB hub	To support BlackBerry device implementation that uses a hub, a USB driver that supports USB 1.1-compliant hubs

## System requirements: BlackBerry MDS Connection Service

The following system requirements apply when installing the BlackBerry® MDS Connection Service on a computer separate from the BlackBerry® Enterprise Server.

Item	Requirement
operating system	Any of the following operating systems: <ul style="list-style-type: none"> <li>• Microsoft® Windows® 2000 SP4 (Server edition, Advanced Server edition, or Professional edition)</li> <li>• Microsoft® Windows Server® 2003 SP1</li> <li>• Microsoft® Windows® XP Professional SP2</li> </ul>

Item	Requirement
	<ul style="list-style-type: none"> <li>Microsoft® Windows® Small Business Server 2003 (Standard edition or Premium edition)</li> </ul>
messaging server application	<p>To support BlackBerry Enterprise Server Version 3.5 and BlackBerry Enterprise Server Version 3.6, any of the following applications:</p> <ul style="list-style-type: none"> <li>Microsoft® Exchange Version 5.5 Administrator</li> <li>Microsoft Exchange 2000 System Manager</li> <li>Microsoft Exchange 2003 System Manager</li> <li>Microsoft Exchange Server MAPI client and CDO 1.2.1</li> <li>for Microsoft Exchange 2007, either Microsoft Exchange Server MAPI client and CDO 1.2.1 or Microsoft Exchange 2003 SP2 System Tools</li> </ul>
RSA® Authentication Agent	To support enhanced network authentication, RSA Authentication Agent Version 5.0 for Microsoft Windows

## System requirements: BlackBerry MDS Integration Service

The following system requirements apply when installing the BlackBerry® MDS Integration Service on a computer separate from the BlackBerry® Enterprise Server.

Item	Requirement
operating system	<p>Any of the following operating systems:</p> <ul style="list-style-type: none"> <li>Microsoft® Windows® 2000 SP4 (Server edition or Advanced Server edition)</li> <li>Microsoft® Windows Server® 2003 SP1</li> <li>Microsoft® Windows® XP Professional SP2</li> </ul>
database conditions	A database server that is the the host for the BlackBerry Configuration Database.

## System requirements: BlackBerry Router

The following system requirements apply when installing the BlackBerry® Router on a computer separate from the BlackBerry® Enterprise Server.

Item	Requirement
operating system	Any of the following operating systems: <ul style="list-style-type: none"> <li>Microsoft® Windows® 2000 SP4 (Server edition or Advanced Server edition)</li> <li>Microsoft® Windows Server® 2003 SP1</li> <li>Microsoft® Windows® XP Professional SP2</li> </ul>
firewall	A firewall or proxy firewall with the following conditions: <ul style="list-style-type: none"> <li>support for the BlackBerry Router to initiate an outgoing, two-way TCP/IP connection to an external server on port 3101</li> <li>support for the resolution of Internet addresses using DNS</li> <li>transparency of the proxy server for proxy firewalls</li> </ul>

## System requirements for optional environments and features

Item	Description
virtual environment	The BlackBerry® Enterprise Server and its components support the following virtual environments: <ul style="list-style-type: none"> <li>VMware® ESX Server version 2.5.2 or later</li> <li>VMware ESX Server version 3.0.1</li> <li>VMware ESX Server version 3.5</li> </ul>
Windows® Messenger	The BlackBerry Collaboration Service supports Windows Messenger if MSMQ version 3.0 is installed. If installed separately from Windows Server® 2003, the default Microsoft® Active Directory® Integration and Triggers subcomponents must be cleared, and only the Common subcomponent must be selected.
Windows Messenger with TLS	The BlackBerry Collaboration Service supports Windows Messenger with TLS if one of the following certificates is installed on the computer that hosts the BlackBerry Collaboration Service: <ul style="list-style-type: none"> <li>if your organization's instant messaging server is Microsoft® Office Live Communications Server 2005, an MTLs certificate</li> <li>if your organization's instant messaging server is Microsoft Office Live Communications Server 2005 SP1, a server authentication certificate for the computer account</li> </ul>

Item	Description
IBM® Lotus® Sametime®	The BlackBerry Collaboration Service supports IBM Lotus Sametime when you add the IP address of the computer that hosts the BlackBerry Collaboration Service to the CommunityConnectivity document on the IBM Lotus Sametime server.
Novell® GroupWise® Messenger	The BlackBerry Collaboration Service supports Novell GroupWise Messenger when SSL authentication is turned on for the Novell GroupWise Messenger agents on the Novell GroupWise Messenger server.
Microsoft® Office Communicator Web Access server with TLS	<p>The BlackBerry Collaboration Service supports the Microsoft Office Communicator Web Access server with TLS if one of the following certificates is installed on the computer that hosts the BlackBerry Collaboration Service:</p> <ul style="list-style-type: none"> <li>• if your organization's instant messaging server is Microsoft Office Live Communications Server 2005 or Microsoft Office Communications Server 2007, an MTLS certificate</li> <li>• if your organization's instant messaging server is Microsoft Office Live Communications Server 2005 SPI, a server authentication certificate for the computer account</li> </ul>
Microsoft Office Communicator Web Access 2007 and AJAX Service	<p>The BlackBerry Collaboration Service supports the Microsoft Office Communicator Web Access 2007 server and the AJAX Service if you have installed a virtual server on your organization's Microsoft Office Communicator Web Access server, with the following conditions:</p> <ul style="list-style-type: none"> <li>• all IP addresses must be unassigned</li> <li>• optionally, support for an HTTPS browser connection</li> <li>• internal access only</li> </ul>
Microsoft Office Communicator Web Access 2005 server and AJAX Service	<p>The BlackBerry Collaboration Service supports the Microsoft Office Communicator Web Access 2005 server and the AJAX Service, with the following conditions:</p> <ul style="list-style-type: none"> <li>• the following Microsoft hotfixes from <a href="http://support.microsoft.com">http://support.microsoft.com</a> installed: <ul style="list-style-type: none"> <li>• 911996 on your organization's Microsoft Office Live Communications Server</li> <li>• 915066 on your organization's Microsoft Office Communicator Web Access server</li> </ul> </li> </ul>

Item	Description
	<ul style="list-style-type: none"> <li>a virtual server installed on your organization's Microsoft Office Communicator Web Access server, with the following conditions: <ul style="list-style-type: none"> <li>all IP addresses must be unassigned</li> <li>forms-based authentication only</li> <li>optionally, support for an HTTPS browser connection</li> <li>an ISAPI filter for the cwaauth.dll file and the ajax.dll file</li> <li>internal access only</li> </ul> </li> </ul>
enhanced network authentication	The BlackBerry Enterprise Server and its components support RSA® Authentication Agent version 5.0 for Windows®.
SNMP monitoring	The BlackBerry Enterprise Server and its components support the SNMP service.
remote access	The BlackBerry Enterprise Server and its components support remote access using any of the following applications: <ul style="list-style-type: none"> <li>Terminal Services for use with Windows Server 2000, installed using Remote Administration mode</li> <li>Microsoft® Remote Desktop Connection for use with Windows Server 2003</li> </ul>
HTML email	The BlackBerry Enterprise Server and its components support HTML email in a Japanese environment with the following options selected in the regional and language settings of the computer: <ul style="list-style-type: none"> <li>Install files for complex script and right-to-left languages</li> <li>Install files for East Asian languages</li> </ul>

## Unsupported environments

Item	Description
DMZ	The BlackBerry® Enterprise Server and its components, with the exception of the BlackBerry Router, do not support installation in a DMZ.
messaging server	The BlackBerry Enterprise Server and its components do not support the installation of the messaging server on the same computer.
email application	The BlackBerry Enterprise Server and its components do not support the installation of email applications on the same computer.

Item	Description
Microsoft® SQL Server® 2005 Express database	The BlackBerry MDS Integration Service databases do not support the Microsoft SQL Server 2005 Express database.

# Preparing to upgrade from BlackBerry Enterprise Server Version 4.0

## 3

### Back up the BlackBerry Enterprise Server registry settings

Perform this task to maintain a record of the registry entries.

1. On the computer that hosts the BlackBerry® Enterprise Server software, open the Registry Editor.
2. In the left pane, navigate to HKEY\_LOCAL\_MACHINE\SOFTWARE\Research In Motion.
3. Right-click **Research In Motion**. Click **Export**.
4. Save the file.

### Back up the BlackBerry Enterprise Server log files

Perform this task to maintain a record of existing logs, and so that you can troubleshoot the upgrade process if it does not complete successfully.

1. On the computer on which you plan to upgrade the BlackBerry® Enterprise Server, navigate to C:\Program Files\Research In Motion\BlackBerry Enterprise Server\Logs.
2. Copy the log files to a backup location.

**After you finish:** If you are upgrading from BlackBerry Enterprise Server Version 3.6 or a preceding version, delete the log files from the BlackBerry Enterprise Server computer.

### Back up the BlackBerry Configuration Database

Back up the BlackBerry® Configuration Database so that you can restore it if the upgrade process does not complete successfully.

If your database environment is Microsoft® SQL Server®, use the backup and restore tools that Microsoft Corporation provides.

If your database environment is MSDE 2000, you can use the BlackBerry Configuration Database Backup Tool that is included with the BlackBerry® Enterprise Server installation media. By default, the backup file is named *<database name><YYYYMMDDHHMMSS>.bak*.

1. On the computer that hosts the BlackBerry Configuration Database, at the command prompt, change to the **Tools** folder on the BlackBerry Enterprise Server installation media.
2. Run **BlackBerryDbBackup.exe**.

#### Example

To back up a BlackBerry Configuration Database named "BESMgmt" to a folder named "DB\_backup\_folder" when you use the database credentials "sqlusername" and "sqlpassword", type

```
BlackBerryDBBackup.exe -d BESMgmt -f C:\DB_backup_folder -U sqlusername -P sqlpassword
```

## BlackBerry Configuration Database Backup Tool parameters

The parameters listed in brackets are optional.

Parameter	Description
-d <dbname>	This parameter specifies the name of the BlackBerry® Configuration Database. For example, BESMgmt.
[-f] <foldername>	This parameter specifies the folder that you want to save the backup file in.  If you specify a different location, the folder must already exist.  The default folder is the current location.
[-S] <database server>	This parameter specifies the name of the server that hosts the database.
[-E]	This parameter specifies whether you want to use Microsoft® Windows® authentication to connect to the database instead of database authentication.  Your login account must have database owner permission.  The default is false.
[-U] <username>	This parameter specifies the user name for database authentication.  If you want to use a different login account, the account must have database owner permission.  The default is sa.
[-P] <password>	This parameter specifies the password for database authentication.
[-p] <percentage>	This parameter specifies the interval, in percentages, that you want the BlackBerry Configuration Database Backup Tool to report progress at.  The default is 10.
[-?]	This parameter specifies information about the tool. No other parameters are required when you use this parameter.

# Preparing to upgrade from BlackBerry Enterprise Server Version 3.6 4

Before you upgrade from BlackBerry® Enterprise Server Version 3.6 SP3 or later, you must complete the following tasks:

- consolidate the BlackBerry Enterprise Server and user configuration information from earlier database versions
- transfer configuration information for BlackBerry Enterprise Server instances and user accounts from the messaging server to the BlackBerry Configuration Database
- replace earlier implementations of multiple BlackBerry Enterprise Server instances that connect to the messaging server with multiple BlackBerry Messaging Agent instances on a single BlackBerry Enterprise Server

## Update out-dated BlackBerry device assignments

Use the HandheldCleanup tool to locate out-of-date assignments between BlackBerry® devices and user mailboxes. This tool checks for any BlackBerry devices that are assigned to user mailboxes that do not have a current server domain name. When the tool locates user mailboxes with server domain names that are different, it changes the server domain name to the GAL server domain name and adds the BlackBerry device to the report list.

1. At the command prompt, switch to C:\Program Files\Research In Motion\BlackBerry Enterprise Server\Utility.
2. Type **HandheldCleanup.exe** with one of the following parameter strings:
  - **-d [<filename>] [-p <MAPI profile name>]**: Use this parameter string to write the BlackBerry device information for a specified BlackBerry® Enterprise Server to a file. If you do not specify a file name, the tool writes the information to the command prompt window.
  - **-u [-p <MAPI profile name>]**: Use this parameter string to check whether the BlackBerry device mailbox has been moved, and update the information.
3. When prompted, type the name of the BlackBerry Enterprise Server.

### Example

To retrieve BlackBerry device information using a MAPI profile that is named "BESAdmin" and to write the results in a file that is named "results.txt", type

```
handheldcleanup.exe -d results.txt -p BESAdmin -u
```

## HandheldCleanup tool parameters

Parameter	Description
-d	This parameter writes BlackBerry® device information to the report list.

Parameter	Description
<filename>	This parameter specifies the name of the file that the tool creates. If you do not specify a file name, the information displays on the screen.
-p <MAPI profile name>	This parameter specifies the name of the MAPI profile that you use to connect to the messaging server.
-u	This parameter updates information about the BlackBerry device.

## Back up the BlackBerry Enterprise Server registry settings

Perform this task to maintain a record of the registry entries.

1. On the computer that hosts the BlackBerry® Enterprise Server software, open the Registry Editor.
2. In the left pane, navigate to HKEY\_LOCAL\_MACHINE\SOFTWARE\Research In Motion.
3. Right-click **Research In Motion**. Click **Export**.
4. Save the file.

## Back up the BlackBerry Enterprise Server log files

Perform this task to maintain a record of existing logs, and so that you can troubleshoot the upgrade process if it does not complete successfully.

1. On the computer on which you plan to upgrade the BlackBerry® Enterprise Server, navigate to C:\Program Files\Research In Motion\BlackBerry Enterprise Server\Logs.
2. Copy the log files to a backup location.

**After you finish:** If you are upgrading from BlackBerry Enterprise Server Version 3.6 or a preceding version, delete the log files from the BlackBerry Enterprise Server computer.

## Consolidating multiple BlackBerry Enterprise Server instances

When you upgrade multiple BlackBerry® Enterprise Server instances, the setup application defines the name of the primary instance as the new BlackBerry Enterprise Server name. After defining this new name, the setup application moves all user accounts to this BlackBerry Enterprise Server and then deletes all other service information, files, and registry settings from the obsolete instances.

During the upgrade process, the BlackBerry devices continue to work. The upgrade process maintains the association between the user accounts and the old SRP identifier until the BlackBerry devices receive new service books that contain the SRP identifier of the new BlackBerry Enterprise Server. If users have BlackBerry® Device Software Version 4.0 or later, they

receive the service books over the wireless network. If users have a version of the BlackBerry Device Software earlier than Version 4.0, they receive the service books the next time that they connect their BlackBerry devices to the BlackBerry® Desktop Manager.

## Identify the primary instance of the BlackBerry Enterprise Server

1. On the computer on which you plan to upgrade the BlackBerry® Enterprise Server, open the Registry Editor.
2. In the left pane, navigate to HKEY\_LOCAL\_MACHINE\SOFTWARE\Research In Motion\BlackBerry Enterprise Server\Servers.
3. Click the first BlackBerry Enterprise Server instance key (for example, <ComputerName>1).
4. Check the value of **ServerInstance** for the following information:
  - If the value is **1**, this is the primary instance.
  - If the value is not **1**, repeat steps 3 through 4 for the remaining BlackBerry Enterprise Server instance keys.
  - If you no longer have an instance with a value of **1**, the minimum value (for example, 2) is the primary instance.

## Add the BlackBerry Enterprise Server instances to the BlackBerry Enterprise Server Management console

If necessary, either add all instances of the BlackBerry® Enterprise Server to the BlackBerry Enterprise Server Management console, or delete the instances from your environment. Perform one of these tasks to make sure that the BlackBerry Configuration Database upgrades successfully.

### Before you begin:

- Verify that the SRP identifier and SRP authentication keys are unique for each BlackBerry Enterprise Server.
  - Verify that all BlackBerry Enterprise Server instances have been added to the BlackBerry Enterprise Server Management console.
1. Open the BlackBerry Enterprise Server Management console.
  2. Right-click **BlackBerry Server Management**. Click **New BlackBerry Server**.
  3. In the **Server Name** field, type the server name that you provided during the BlackBerry Enterprise Server installation process.
  4. In the **SRP Identifier** and **SRP Authentication Key** fields, type the information that appears on the label of the BlackBerry Enterprise Server installation media.
  5. If the label on the installation media also includes the host routing information, in the **Host Routing Information** field, type the necessary information to connect to the wireless network.
  6. Perform one of the following actions:
    - To locate the mailbox used during the BlackBerry Enterprise Server installation process, beside the **Administration Mailbox**, click **Select Mailbox**.
    - Type the mailbox name in the **Administration Mailbox** field.

7. Click **Check Name**.
8. Verify the mailbox information.
9. Click **OK**.

**After you finish:** To delete the BlackBerry Enterprise Server instances from the BlackBerry Enterprise Server Management console, right-click a server name. Click **Remove Server**. All users on that BlackBerry Enterprise Server become BlackBerry Desktop Redirector users.

## Preparing to upgrade the BlackBerry Enterprise Server instances that have different SRP addresses

If you are running multiple BlackBerry® Enterprise Server instances on one computer, you can consolidate them if they connect to the same SRP address. If you have multiple BlackBerry Enterprise Server instances that connect to different SRP addresses, you must perform one of the following actions:

- change the instances to use the same SRP address
- move the instances and the associated user accounts to separate computers

### Move the BlackBerry Enterprise Server instances that connect to different SRP addresses to new computers

1. Install BlackBerry® Enterprise Server Version 3.6 on a new computer using one of the SRP addresses (for example, SRP2.na.blackberry.net).
2. Add the BlackBerry Enterprise Server to the BlackBerry Enterprise Server Management console.
3. Move the user accounts from the BlackBerry Enterprise Server instance that uses the SRP address (for example, SRP2) to the new BlackBerry Enterprise Server that uses the same SRP address.
4. Instruct users to connect their BlackBerry devices to the BlackBerry® Desktop Manager to activate their BlackBerry devices on the new BlackBerry Enterprise Server.

**After you finish:** Delete the obsolete BlackBerry Enterprise Server instance that used the SRP address.

### Change the BlackBerry Enterprise Server instances to use the same SRP address

1. On the computer that hosts the BlackBerry® Enterprise Server, open the Registry Editor.
2. In the left pane, navigate to HKEY\_LOCAL\_MACHINE\SOFTWARE\Research In Motion\BlackBerry Enterprise Server\Servers\<BES\_Instance\_nameX>.
3. Change the **NetworkAccessNode** keys to the same SRP address.
4. Restart the BlackBerry Enterprise Server service.

## Testing the transfer of user information during the upgrade process

You can test the transfer of user information during the upgrade process by running the BESMigration tool in preview mode on a copy of the BlackBerry® Configuration Database.

### Create a preview BlackBerry Configuration Database

Perform this task to ensure that the upgrade of the BlackBerry® Configuration Database will complete successfully.

1. Copy the installation media for the new version of BlackBerry® Enterprise Server software to the database server that will host the preview BlackBerry Configuration Database.
2. Extract the contents of the installation media to a folder on the computer.
3. Navigate to the **Database** folder.
4. In a text editor, open **BESMgmt.cfg**.
5. Specify the following settings:
  - **DATABASE\_NAME**
  - **USERID**
  - **PASSWORD**
  - **SCRIPT\_ROOT**
  - **LOG\_DIR**
  - **DBMS**
  - **DB\_FILE\_DIR**
  - **BACKUP\_DIR**
6. Save the file and close it.
7. In a command prompt, change to the **Database** folder.
8. Type **CreateDB.exe <path>BESMgmt.cfg**.

By default, the Database Creation Tool writes the details of the database creation process in the DBInstallV<YYMMDDHHMMSS>log file, where <YYMMDDHHMMSS> specifies the date and time that the Database Creation Tool created the database.

### BESMgmt.cfg properties

Property	Description
DATABASE_NAME	This property specifies the name of the BlackBerry® Configuration Database.

Property	Description
USERID	If you use database authentication, this property specifies the user name of a database account that has server administrator permission and database creator permission.
PASSWORD	If you use database authentication, this property specifies the password for the database account.
SCRIPT_ROOT	This property specifies the path to the DBInstallScripts folder. By default, this folder is located in the same root folder as createdb.exe.
LOG_DIR	This property specifies the path to the folder that you want to create log files in. By default, this folder is located in the same root folder as createdb.exe.
DBMS	This property specifies the database management system that you want to use.
DB_FILE_DIR	This property specifies an existing folder that you want to save the database files in. By default, this folder is located in the same root folder as the createdb.exe file.
BACKUP_DIR	This property specifies an existing folder that you want to save the database backup in. By default, this folder is located in the same root folder as the createdb.exe file.

## Test the transfer of user information to the preview BlackBerry Configuration Database

After you create the preview BlackBerry® Configuration Database, you can test the transfer of user information to estimate how long it might take to move user accounts to a new BlackBerry® Enterprise Server when you upgrade the BlackBerry Enterprise Server software.

1. On the computer that hosts the preview BlackBerry Configuration Database, at a command prompt, switch to the **Tools** folder on the BlackBerry Enterprise Server installation media.
2. Type **besmigration.exe** with the required parameters.

If the transfer of user information was unsuccessful, check the log file for error messages.

### Example

Configure the following situation:

- you are using a MAPI profile that is named "BESADMIN"
- you are testing the transfer of user information from a BlackBerry Enterprise Server that is named "BES02" to a BlackBerry Enterprise Server that is named "BES01"
- you have a database server that is named "sqlserver1" and a BlackBerry Configuration Database that is named "besgmt"
- you want to write the migrate.log file and the status.tmp file to the root directory

To preview this migration, type

```
besmigration.exe -s "BESADMIN" "BES02" "BES01" -d "sqlserver1" "besmgmt" -l migrate.log -t status.tmp -w -p
```

If you are previewing the transfer of user information from a BlackBerry Enterprise Server that includes multiple instances on one computer, you must use the primary instance definitions for the new BlackBerry Enterprise Server. You must specify the primary instance as the *<new server>* name and, if you are previewing the user migration from the primary instance, the *<old server>* and *<new server>* names must be the same.

## BESMigration tool parameters

Parameter	Description
-s <i>&lt;MAPI profile&gt;&lt;old server&gt;&lt;new server&gt;</i>	This parameter specifies the following MAPI information: <ul style="list-style-type: none"> <li><i>&lt;MAPI profile&gt;</i>: The MAPI profile that you want to use when you move BlackBerry® Enterprise Server and user account information.</li> <li><i>&lt;old server&gt;</i>: The name of the BlackBerry Enterprise Server or instance that you are moving user accounts from.</li> <li><i>&lt;new server&gt;</i>: The name of the BlackBerry Enterprise Server that you are moving user accounts to.</li> </ul>
-d <i>&lt;DB server name&gt; &lt;DB name&gt;</i>	This parameter specifies the computer name and the database name of the BlackBerry Configuration Database.
-l <i>&lt;log file&gt;</i>	This parameter specifies the name of the log file and the path to it.
-t <i>&lt;status file&gt;</i>	This parameter specifies the name of the status file and the path to it. The BESMigration tool uses the status file to track the progress of the transfer of user information. On subsequent transfer attempts, the tool reads this file to determine which user records are already located in the BlackBerry Configuration Database.
-w	This parameter writes status and progress information to the registry.
-u <i>&lt;username&gt; &lt;password&gt;</i>	If you are using database authentication, this parameter specifies the database user name and password.
-p	This parameter runs the tool in preview mode without making any changes to the BlackBerry Configuration Database.
-q	This parameter runs the tool silently.
-g	This parameter prints user properties that the tool retrieved from the user's mailbox to the migration log file, for troubleshooting purposes only.

## Change applications to connect to default BlackBerry Mobile Data Service ports

If you have applications in your BlackBerry® Enterprise Server environment that connect to the BlackBerry Mobile Data Service on custom ports, you must change those applications to connect on standard ports to ensure the applications can access the BlackBerry Enterprise Server after the upgrade process completes successfully.

- > Verify that applications connect to the BlackBerry Mobile Data Service on the following ports:
  - BlackBerry Mobile Data Service host port: 3200
  - listen port for the web server: 8080
  - SSL listen port for the web server SSL: 8443

## Configure wireless data synchronization for BlackBerry devices

When you upgrade the BlackBerry® Enterprise Server, the BlackBerry Synchronization Service must send service books to those BlackBerry devices that can synchronize data over the wireless network.

If you do not perform the following task for BlackBerry devices that can synchronize data over the wireless network, the BlackBerry Enterprise Server cannot update the service books automatically after the upgrade process completes, and the BlackBerry devices cannot send or receive email messages.

- > If you want wireless data synchronization to occur automatically after the BlackBerry Enterprise Server upgrade process completes, perform one of the following actions:
  - Before you upgrade the BlackBerry Enterprise Server, instruct users with BlackBerry® Device Software Version 4.0 or later to connect their BlackBerry devices to BlackBerry® Desktop Manager Version 3.6 SP3 or later.
  - If you do not support the BlackBerry Desktop Manager in your environment to turn on wireless data synchronization, you must activate the BlackBerry devices over the wireless network.

# Preparing to upgrade from BlackBerry Enterprise Server Version 3.5 SP2 and preceding versions 5

## Move BlackBerry Enterprise Server Version 2.1 SP5 configuration information to the BlackBerry Enterprise Server Management console

When you upgrade from BlackBerry® Enterprise Server Version 2.1 SP5, you move the configuration information for the BlackBerry Enterprise Server and user accounts from Microsoft® Exchange administration extensions to the BlackBerry Enterprise Server Management console.

1. Using the Microsoft Exchange Administration tool, export the **BlackBerry Servers** configuration list from the **Configuration** container.
2. Save the server configuration information to a text file.
3. If the BlackBerry Configuration Database does not already exist, run **setup.exe** in the **BESManMMC** folder on the BlackBerry Enterprise Server Version 2.1 SP5 installation media to create the BlackBerry Configuration Database.
4. Using the BlackBerry Enterprise Server Management console, import the text file that contains the BlackBerry Enterprise Server configuration information.
5. To delete the BlackBerry Enterprise Server administration extensions, on the taskbar, click **Start > Programs > BlackBerry Enterprise Server > Uninstall Administration Extension**.

**After you finish:** After you upgrade and import any system information, delete the Microsoft Exchange 5.5 administration extensions using the WinBBinstaller tool. To obtain the WinBBinstaller tool, contact technical support.

## Update out-dated BlackBerry device assignments

Use the HandheldCleanup tool to locate out-of-date assignments between BlackBerry® devices and user mailboxes. This tool checks for any BlackBerry devices that are assigned to user mailboxes that do not have a current server domain name. When the tool locates user mailboxes with server domain names that are different, it changes the server domain name to the GAL server domain name and adds the BlackBerry device to the report list.

1. At the command prompt, switch to C:\Program Files\Research In Motion\BlackBerry Enterprise Server\Utility.
2. Type **HandheldCleanup.exe** with one of the following parameter strings:
  - **-d [<filename>] [-p <MAPI profile name>]:** Use this parameter string to write the BlackBerry device information for a specified BlackBerry® Enterprise Server to a file. If you do not specify a file name, the tool writes the information to the command prompt window.
  - **-u [-p <MAPI profile name>]:** Use this parameter string to check whether the BlackBerry device mailbox has been moved, and update the information.
3. When prompted, type the name of the BlackBerry Enterprise Server.

**Example**

To retrieve BlackBerry device information using a MAPI profile that is named "BESAdmin" and to write the results in a file that is named "results.txt", type

```
handheldcleanup.exe -d results.txt -p BESAdmin -u
```

**HandheldCleanup tool parameters**

Parameter	Description
-d	This parameter writes BlackBerry® device information to the report list.
<filename>	This parameter specifies the name of the file that the tool creates. If you do not specify a file name, the information displays on the screen.
-p <MAPI profile name>	This parameter specifies the name of the MAPI profile that you use to connect to the messaging server.
-u	This parameter updates information about the BlackBerry device.

**Back up the BlackBerry Enterprise Server registry settings**

Perform this task to maintain a record of the registry entries.

1. On the computer that hosts the BlackBerry® Enterprise Server software, open the Registry Editor.
2. In the left pane, navigate to HKEY\_LOCAL\_MACHINE\SOFTWARE\Research In Motion.
3. Right-click **Research In Motion**. Click **Export**.
4. Save the file.

**Back up the BlackBerry Enterprise Server log files**

Perform this task to maintain a record of existing logs, and so that you can troubleshoot the upgrade process if it does not complete successfully.

1. On the computer on which you plan to upgrade the BlackBerry® Enterprise Server, navigate to C:\Program Files\Research In Motion\BlackBerry Enterprise Server\Logs.
2. Copy the log files to a backup location.

**After you finish:** If you are upgrading from BlackBerry Enterprise Server Version 3.6 or a preceding version, delete the log files from the BlackBerry Enterprise Server computer.

## Configure wireless data synchronization for BlackBerry devices

When you upgrade the BlackBerry® Enterprise Server, the BlackBerry Synchronization Service must send service books to those BlackBerry devices that can synchronize data over the wireless network.

If you do not perform the following task for BlackBerry devices that can synchronize data over the wireless network, the BlackBerry Enterprise Server cannot update the service books automatically after the upgrade process completes, and the BlackBerry devices cannot send or receive email messages.

- > If you want wireless data synchronization to occur automatically after the BlackBerry Enterprise Server upgrade process completes, perform one of the following actions:
  - Before you upgrade the BlackBerry Enterprise Server, instruct users with BlackBerry® Device Software Version 4.0 or later to connect their BlackBerry devices to BlackBerry® Desktop Manager Version 3.6 SP3 or later.
  - If you do not support the BlackBerry Desktop Manager in your environment to turn on wireless data synchronization, you must activate the BlackBerry devices over the wireless network.



# Configuring a Microsoft Exchange 5.5, Microsoft Exchange 2000, or Microsoft Exchange 2003 messaging environment

## 6

### Identify and resolve any Microsoft Exchange known issues for wireless calendar synchronization

You must read the Microsoft® Exchange known issues that might impact your messaging environment and install the hotfixes for them. If your messaging environment includes multiple messaging servers, resolve the known issues that apply to the latest version of the Microsoft Exchange software in your environment.

Without the proper fixes installed, the BlackBerry® Enterprise Server cannot function.

1. To determine which of the following Microsoft articles apply to your environment, visit [www.support.microsoft.com](http://www.support.microsoft.com):

Microsoft Exchange tool	Microsoft article
Microsoft Exchange Version 5.5 Administrator	<ul style="list-style-type: none"><li>• 312273</li><li>• 818709</li></ul>
Microsoft Exchange 2000 System Manager	<ul style="list-style-type: none"><li>• 314606</li><li>• 824960</li></ul>
Microsoft Exchange 2003 System Manager	<ul style="list-style-type: none"><li>• 823343</li><li>• 894470</li></ul>

2. Verify that your environment meets the requirements described in the applicable known issues.
3. Download and install the hotfixes for the known issues on the computers on which you plan to install the BlackBerry Enterprise Server and the BlackBerry Manager.



## Setting up the database connection

## 7

The BlackBerry® Enterprise Server can connect to the BlackBerry Configuration Database on the Microsoft® SQL Server® using Microsoft® Windows® authentication or database authentication. If you use Microsoft Windows authentication, the BlackBerry Manager logs in to the BlackBerry Configuration Database using the Microsoft Windows account that you used to complete the installation.

If you use database authentication with Microsoft SQL Server, the BlackBerry Manager authenticates to the database using the database credentials that the administrator provides.

### Specifying permissions when connecting to the BlackBerry Configuration Database using Microsoft Windows authentication

During the BlackBerry® Enterprise Server installation process, if you choose to connect to the BlackBerry Configuration Database using Microsoft® Windows® authentication, the Microsoft Windows account that you use must have permissions on the database server. The type of permissions depends on the BlackBerry Enterprise Server setup option that you choose, and on whether you create the BlackBerry Configuration Database on the same computer as the BlackBerry Enterprise Server or on another database server.

### Specifying MSDE 2000 permissions for the Microsoft Windows account

If you install MSDE 2000 during the BlackBerry® Enterprise Server installation process, you do not need to specify additional permissions. When you select Microsoft® Windows® authentication during the BlackBerry Enterprise Server installation process, the setup application automatically assigns the required permissions to the Microsoft Windows account that you are using to complete the installation.

### Assign Microsoft SQL Server permissions to the Microsoft Windows account

- > Perform one of the following actions:
  - If you create the BlackBerry® Configuration Database on the same computer as the BlackBerry® Enterprise Server, or if you install the BlackBerry MDS Integration Service, assign the system administrator permission to the Microsoft® Windows® account that you are using to complete the installation.
  - If you create the BlackBerry Configuration Database on another computer, assign server administrator and database creator permissions to the Microsoft Windows account that you are using to complete the installation. If you are using Microsoft® SQL Server® 2005, assign the system administrator permission, or each of the following roles: SQLAgentUserRole, SQLAgentReaderRole, and SQLAgentOperatorRole.

## Configuring authentication to the BlackBerry MDS Integration Service database

If you install the BlackBerry® MDS Integration Service on a Microsoft® SQL Server®, the setup application uses the same authentication method and account that you specified for the BlackBerry Configuration Database. The account requires the same permissions for the BlackBerry MDS Integration Service database as it requires for the BlackBerry Configuration Database.

# Upgrading the BlackBerry Enterprise Server software by overwriting the existing version

## 8

The in-place upgrade process upgrades the BlackBerry® Enterprise Server software by replacing the existing version of the software.

Advantages	Disadvantages
<ul style="list-style-type: none"><li>You do not require additional computers to perform this upgrade.</li><li>When the upgrade process completes, user accounts are active, and no additional administrative action is required.</li></ul>	<ul style="list-style-type: none"><li>You cannot remove the BlackBerry Enterprise Server and return to the earlier version of the software automatically.</li><li>You must turn off the BlackBerry Enterprise Server during the upgrade process, so the interruption to services for BlackBerry devices lasts as long as it takes the upgrade process to complete.</li></ul>

If you are upgrading from BlackBerry Enterprise Server Version 3.5 SP2, Version 3.6 SP3 or later, or Version 4.0 or later, use this upgrade process.

When you use the in-place upgrade process, the following events occur:

- BlackBerry devices that are running BlackBerry® Device Software Version 4.0 or later receive new service books, and wireless data synchronization occurs
- all BlackBerry devices receive new IT policies

## Upgrade the BlackBerry Enterprise Server software

The upgrade process includes a restart of the computer.

- Log in to the computer using the BESAdmin account.
- Double-click **setup.exe**.
- Complete the instructions on the screen.
- When prompted to restart the computer, click **Yes**.
- Log in to the computer using the same account that you used in step 1 to start the setup application.
- Complete the instructions on the screen.
- In the Microsoft® Windows® Services, start the BlackBerry® Enterprise Server services.
- In the BlackBerry Manager, specify the proxy settings for the BlackBerry MDS Connection Service instances that you upgraded from Version 4.1 or Version 4.1 SP1.

## Improve the startup performance of the BlackBerry Enterprise Server

After an upgrade, the BlackBerry® Enterprise Server might send new service books to every BlackBerry device. If it sends all the new service books at the same time, the BlackBerry Enterprise Server startup time might be affected. You can improve the startup performance of the BlackBerry Enterprise Server by configuring how many service books the BlackBerry Enterprise Server sends each hour.

1. On the computer that hosts an upgraded BlackBerry Policy Service, open the Registry Editor.
2. In the left pane, navigate to HKEY\_LOCAL\_MACHINE\SOFTWARE\Research In Motion\BlackBerry Enterprise Server\BlackBerry IT Admin Server.
3. Create the following DWORD values:
  - **SBThrottlingEnabled**: Set to **1**.
  - **SBThrottleLimit**: Set, in decimal format, the maximum number of service books that you want the BlackBerry Enterprise Server to send each hour. The default number is .60, which means the BlackBerry Enterprise Server sends 60 new service books each hour.

# Upgrading the BlackBerry Enterprise Server by using a new computer

## 9

The cutover upgrade process installs the BlackBerry® Enterprise Server on a new computer and moves user accounts and server information from the old BlackBerry Enterprise Server to the new one.

If you are upgrading from BlackBerry Enterprise Server Version 3.6, use this upgrade process.

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>You can move user accounts back to the old BlackBerry Enterprise Server if you encounter any problems with the new one.</li> <li>You can use new server hardware and start with a clean environment.</li> <li>Users experience minimal service interruptions because user accounts remain active on the old BlackBerry Enterprise Server until you start the new one.</li> </ul>	<ul style="list-style-type: none"> <li>You require one extra computer.</li> <li>If you upgrade from a version earlier than BlackBerry Enterprise Server Version 4.0, the BlackBerry Enterprise Server takes longer to start than it did previously because it sends new service books to all of the BlackBerry devices that are capable of wireless data synchronization.</li> </ul>

This upgrade process uses the same SRP credentials on both the old and the new BlackBerry Enterprise Server instances.

When you use the cutover process, the following events occur:

- BlackBerry devices that are running BlackBerry Device Software Version 4.0 or later receive new service books, and wireless data synchronization occurs
- all BlackBerry devices receive new IT policies

## Prerequisites: Upgrading the BlackBerry Enterprise Server software

Item	Requirement
inactive user accounts	Delete inactive user accounts from the BlackBerry® Enterprise Server.
credentials from the BlackBerry Enterprise Server installation media	<ul style="list-style-type: none"> <li>CAL key</li> <li>SRP identifier</li> <li>SRP key</li> <li>SRP host</li> </ul>

Item	Requirement
installation credentials from your environment	<ul style="list-style-type: none"> <li>computer name and port number of the instant messaging server (use the virtual server name and port number where the AJAX Service is installed, if applicable)</li> <li>computer name and port number of the proxy server (optional)</li> </ul>
license model	<p>If you are upgrading from the BlackBerry Enterprise Server Small Business Edition to a BlackBerry Enterprise Server, obtain a new CAL key.</p> <p>For more information, visit <a href="http://www.blackberry.com/support">www.blackberry.com/support</a> to read article KB03535.</p>
proxy settings	Back up the proxy settings for BlackBerry MDS Services version 4.1 or version 4.1 SP1.
BlackBerry Manager instances	Close all BlackBerry Manager instances.
supported BlackBerry Enterprise Server versions	If you are upgrading from BlackBerry Enterprise Server version 4.0, 4.0 SP1, or 4.0 SP2, upgrade all BlackBerry Enterprise Server instances to version 4.0 SP3 or later.
database replication	Turn off database replication for the BlackBerry Configuration Database.

## Install BlackBerry Enterprise Server Version 4.1 SP5 on the new computer

**Note:** To ensure your upgrade process completes successfully, do not upgrade your existing BlackBerry® Configuration Database.

The installation process includes a restart of the computer.

If you use a .pac file to configure the connection to the proxy server, you can specify that file after you complete the installation process.

- Log in to the new computer using an administrative account with the appropriate database permissions. The setup application adds this account to the security administrator role in the BlackBerry Configuration Database automatically.
- Double-click **setup.exe**.
- Complete the instructions on the screen.
- When prompted for the BlackBerry® Enterprise Server and the SRP credentials, perform one of the following actions:
  - In a BlackBerry Enterprise Server Version 3.6 environment, use the name and credentials from the primary instance.
  - In all other environments, use the same name and the same SRP credentials as one of the BlackBerry Enterprise Server instances that you want to replace.
- When prompted to restart the computer, click **Yes**.

6. Log in using the same account that you used for the setup application in step 1.
7. Create or specify a new BlackBerry Configuration Database during the installation process.
8. Complete the instructions on the screen.
9. Before completing the installation process, clear the **Start Service(s)** option.

## Move user accounts to the new BlackBerry Enterprise Server

1. On the BlackBerry® Enterprise Server that the user accounts are located on, open a command prompt.
2. Switch to the **Tools** folder on the BlackBerry Enterprise Server installation media.
3. Type **besmigration.exe** with the required parameters.

If the transfer of user accounts was unsuccessful, check the log file for error messages.

### Example

Consider the following situation:

- you are transferring user information from a BlackBerry Enterprise Server that is named "BES02" to a BlackBerry Enterprise Server that is named "BES01"
- you have a MAPI profile that is named "BESAdmin"
- you have a database server that is named "sqlserver1"
- you have a new BlackBerry Configuration Database that is named "besmgmt41"
- you want to write the migrate.log file and the status.tmp file to the root directory

To preview this migration, type

```
besmigration.exe -s "BESADMIN" "BES02" "BES01" -d "sqlserver1" "besmgmt41" -l migrate.log -t status.tmp -w
```

## BESMigration tool parameters

Parameter	Description
-s <MAPI profile><old server><new server>	<p>This parameter specifies the following MAPI information:</p> <ul style="list-style-type: none"> <li>• &lt;MAPI profile&gt;: The MAPI profile that you want to use when you move BlackBerry® Enterprise Server and user account information.</li> <li>• &lt;old server&gt;: The name of the BlackBerry Enterprise Server or instance that you are moving user accounts from.</li> <li>• &lt;new server&gt;: The name of the BlackBerry Enterprise Server that you are moving user accounts to.</li> </ul>

Parameter	Description
-d <DB server name> <DB name>	This parameter specifies the computer name and the database name of the BlackBerry Configuration Database.
-l <log file>	This parameter specifies the name of the log file and the path to it.
-t <status file>	This parameter specifies the name of the status file and the path to it. The BESMigration tool uses the status file to track the progress of the transfer of user information. On subsequent transfer attempts, the tool reads this file to determine which user records are already located in the BlackBerry Configuration Database.
-w	This parameter writes status and progress information to the registry.
-u <username> <password>	If you are using database authentication, this parameter specifies the database user name and password.
-p	This parameter runs the tool in preview mode without making any changes to the BlackBerry Configuration Database.
-q	This parameter runs the tool silently.
-g	This parameter prints user properties that the tool retrieved from the user's mailbox to the migration log file, for troubleshooting purposes only.

## Prevent the old BlackBerry Enterprise Server from connecting to the BlackBerry Infrastructure

If you try to connect two BlackBerry® Enterprise Server instances to the BlackBerry® Infrastructure using the same SRP credentials, the BlackBerry Infrastructure deactivates the credentials and wireless traffic cannot occur.

1. In the Microsoft® Windows® Services, stop all BlackBerry Enterprise Server services.
2. Change the startup type for all BlackBerry Enterprise Server services to **Disabled**.

## Improve the startup performance of the BlackBerry Enterprise Server

After an upgrade, the BlackBerry® Enterprise Server might send new service books to every BlackBerry device. If it sends all the new service books at the same time, the BlackBerry Enterprise Server startup time might be affected. You can improve the startup performance of the BlackBerry Enterprise Server by configuring how many service books the BlackBerry Enterprise Server sends each hour.

1. On the computer that hosts an upgraded BlackBerry Policy Service, open the Registry Editor.
2. In the left pane, navigate to HKEY\_LOCAL\_MACHINE\SOFTWARE\Research In Motion\BlackBerry Enterprise Server \BlackBerry IT Admin Server.

3. Create the following DWORD values:
  - **SBThrottlingEnabled**: Set to 1.
  - **SBThrottleLimit**: Set, in decimal format, the maximum number of service books that you want the BlackBerry Enterprise Server to send each hour. The default number is .60, which means the BlackBerry Enterprise Server sends 60 new service books each hour.

## Start the new BlackBerry Enterprise Server

1. In the Microsoft® Windows® Services, start the BlackBerry® Enterprise Server services in the following order:
  - BlackBerry Controller
  - BlackBerry Router
  - BlackBerry Dispatcher
  - all remaining services
2. In the BlackBerry Manager, start the BlackBerry Enterprise Server and other BlackBerry Enterprise Server services.

**After you finish:** After you complete the upgrade process, users must reactivate their BlackBerry devices. Instruct users to connect their BlackBerry devices to the BlackBerry® Desktop Manager to receive their new SRP routing and service name information.

## Move user accounts back to BlackBerry Enterprise Server Version 3.6

If the BlackBerry® Enterprise Server upgrade process is unsuccessful, you can move user accounts back to the previous BlackBerry Enterprise Server version, but you have a limited amount of time in which to do so. After users connect their BlackBerry devices to the BlackBerry® Desktop Manager and receive their new SRP routing and service name information, you can no longer move their accounts back to BlackBerry Enterprise Server Version 3.6.

The BlackBerry Enterprise Server does not retain any updates that you perform on user accounts when you move the user accounts back to BlackBerry Enterprise Server Version 3.6.

1. Delete the user accounts from the new BlackBerry Enterprise Server.
2. Instruct the users to delete all data on their BlackBerry devices.
3. Add the user accounts to BlackBerry Enterprise Server Version 3.6.



# Upgrading the BlackBerry Enterprise Server software in phases 10

The phased upgrade process maintains earlier versions of the BlackBerry® Enterprise Server software so that you can gradually create new BlackBerry Enterprise Server instances and move user accounts to them.

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>You can move user accounts to the new BlackBerry Enterprise Server instances gradually, for example, to limit the number of service books and IT policies that the BlackBerry Policy Service sends at one time.</li> <li>You can monitor system performance as you add user accounts.</li> <li>You can reorganize your BlackBerry Enterprise Server environment during the upgrade process by changing user distribution patterns.</li> </ul>	<ul style="list-style-type: none"> <li>You require additional computers.</li> <li>You require additional SRP credentials.</li> <li>If you move user accounts from one BlackBerry Configuration Database to another, you lose the BlackBerry device options that you backed up in the BlackBerry Configuration Database.</li> <li>You cannot use some new features (for example, one-to-many relationships between a BlackBerry MDS Connection Service or a BlackBerry Collaboration Service and multiple BlackBerry Enterprise Server instances) in the BlackBerry Enterprise Server software until all BlackBerry Enterprise Server components are at the same version.</li> </ul>

When you upgrade the BlackBerry Enterprise Server software in phases, the following events occur:

- BlackBerry devices that are running BlackBerry® Device Software Version 4.0 or later receive new service books, and wireless data synchronization occurs
- all BlackBerry devices receive new IT policies

## Managing a mixed-version environment

After you upgrade the BlackBerry® Configuration Database to Version 4.1 or later, you must use BlackBerry Manager Version 4.1 to administer all BlackBerry® Enterprise Server instances that use the BlackBerry Configuration Database. You must also use BlackBerry Manager Version 4.1 for MMC to perform some administrative tasks on BlackBerry Enterprise Server instances earlier than Version 4.1. For more information, see *Managing Multiple Versions of the BlackBerry Enterprise Server for Microsoft Exchange in a BlackBerry Domain*.

The administrative tools that you use to manage a mixed-version environment depend on the versions of the BlackBerry Enterprise Server that you continue to use. In a mixed-version environment, the BlackBerry Manager version must not be later than the BlackBerry Configuration Database version.

## Upgrade the BlackBerry Enterprise Server Version 4.0 SP3 in phases

For more information about installing the BlackBerry® Enterprise Server software, see the *BlackBerry Enterprise Server Installation Guide*.

For more information about moving users, see the *BlackBerry Enterprise Server System Administration Guide*.

1. Install the new version of the BlackBerry Enterprise Server software on a new computer.  
When prompted to provide information for the BlackBerry Configuration Database, specify the existing BlackBerry Configuration Database so that you upgrade the BlackBerry Configuration Database.
2. Upgrade instances of the BlackBerry Manager to the new version.
3. Move user accounts to the upgraded BlackBerry Enterprise Server.
4. Upgrade instances of the central push server for the BlackBerry MDS Connection Service to the new version.
5. Upgrade the empty BlackBerry Enterprise Server to the new version using an in-place upgrade process.  
This BlackBerry Enterprise Server becomes the destination for user accounts moving from earlier versions of the BlackBerry Enterprise Server.
6. Continue to move user accounts to the upgraded BlackBerry Enterprise Server instances, and upgrade the BlackBerry Enterprise Server instances until all BlackBerry Enterprise Server instances are running the new version of the software.

## Upgrading BlackBerry Enterprise Server Version 4.0 and earlier versions in phases

### Upgrade BlackBerry Enterprise Server Version 4.0 and earlier versions in phases and create a new BlackBerry Configuration Database

Replacing the existing BlackBerry® Configuration Database results in more administrative tasks; however, you might choose to do this as part of a change to your overall BlackBerry® Enterprise Server environment (for example, a change in hardware).

For more information about installing the BlackBerry Enterprise Server, see the *BlackBerry Enterprise Server Installation Guide*. For more information about moving users, see the *BlackBerry Enterprise Server System Administration Guide*.

**Before you begin:** Users must have backed up their BlackBerry devices. Any BlackBerry device options that are stored in the BlackBerry Configuration Database are lost when you add user accounts to the new BlackBerry Configuration Database.

1. Install the new version of the BlackBerry Enterprise Server software on a new computer.  
The setup application prompts you to specify a BlackBerry Configuration Database. You must specify a new BlackBerry Configuration Database.

2. Delete user accounts from BlackBerry Enterprise Server Version 4.0 or earlier versions.
3. Add user accounts to the upgraded BlackBerry Enterprise Server.
4. Activate the BlackBerry devices over the wireless network.
5. Upgrade instances of the central push server for the BlackBerry MDS Connection Service to the new version.
6. Upgrade the empty BlackBerry Enterprise Server to the new version using an in-place upgrade process, specifying the new BlackBerry Configuration Database.
7. Repeat this task until all BlackBerry Enterprise Server instances are running the new version of the software.

## **Upgrade BlackBerry Enterprise Server Version 4.0 and earlier versions in phases and upgrade the existing BlackBerry Configuration Database**

For more information about installing the BlackBerry® Enterprise Server, see the *BlackBerry Enterprise Server Installation Guide*. For more information about moving users, see the *BlackBerry Enterprise Server System Administration Guide*.

1. Install the new version of the BlackBerry Enterprise Server software on a new computer.  
The setup application prompts you to specify a BlackBerry Configuration Database. You must specify the existing BlackBerry Configuration Database.
2. Upgrade instances of the BlackBerry Manager to the new version.
3. Move user accounts to the upgraded BlackBerry Enterprise Server.
4. Upgrade instances of the central push server for BlackBerry MDS Connection Service to the new version.
5. Upgrade the empty BlackBerry Enterprise Server to the new version using an in-place upgrade process.
6. Repeat this task until all BlackBerry Enterprise Server instances are running the new version of the software.



# Troubleshooting the BlackBerry Enterprise Server upgrade process

# 11

## A third-party tool did not install successfully and the BlackBerry Enterprise Server setup application closed

### Possible solution

1. In the BlackBerry® Enterprise Server installation media, open the **Tools** folder.
2. Double-click the setup application file for the tool that you want to install.
3. Complete the instructions on the screen.
4. Restart the BlackBerry Enterprise Server setup application.

## Previous version detected but no database available

This message appears when you start the setup application and the setup application stops responding.

### Possible solution

The registry keys that identify your BlackBerry® Configuration Database must exist in the Microsoft® Windows® Registry.

1. On the computer on which you plan to upgrade the BlackBerry® Enterprise Server, open the Registry Editor.
2. In the left pane, navigate to HKEY\_LOCAL\_MACHINE\Research In Motion\BlackBerry Enterprise Server\Database.
3. Create the following case-sensitive string values (if they do not exist):
  - **DatabaseName**: Type the name of the BlackBerry Configuration Database.
  - **DatabaseServerMachineName**: Type the computer name of the database server.
4. Restart the setup application.

## The BlackBerry Collaboration Service does not connect to Microsoft Office Live Communications Server 2005

### Possible solution

If your instant messaging environment supports Windows® Messenger with TLS, you must configure authentication.

1. Download the trial edition of Microsoft® Office Communicator 2005 from [www.microsoft.com/downloads](http://www.microsoft.com/downloads).
2. Install Microsoft Office Communicator 2005 on the computer that hosts the BlackBerry® Collaboration Service.
3. Connect to Microsoft® Office Live Communications Server 2005 using Microsoft Office Communicator 2005.
4. If a connection does not open, verify that you installed or imported the certificates required for authentication.

## The setup application did not prompt you to change or confirm the MAPI profile

### Possible solution

Create and change the MAPI profile manually.

1. In the BlackBerry® Enterprise Server installation media, open the **Tools** folder.
2. Double-click **Fixmapisvc.exe**.
3. Verify that **mapisvc.inf** is installed at C:\winnt\system32\ or C:\windows\system32\.
4. On the taskbar, click **Start > BlackBerry Enterprise Server > Edit MAPI Profile**.
5. Type the Microsoft® Exchange server name.
6. Click the Microsoft® Windows® account that is associated with the MAPI profile.
7. Click **OK**.

## You cannot resolve errors that occur when you move users

### Possible solution

1. Delete the user accounts from the BlackBerry® Enterprise Server before you start the upgrade process.
2. Add the user accounts to the BlackBerry Enterprise Server when the upgrade process completes.
3. Activate users' BlackBerry devices over the wireless network.

## You encounter errors when you try to upgrade the BlackBerry Configuration Database

### Possible solution

1. Navigate to C:\Program Files\Research In Motion\BlackBerry Enterprise Server\Log\Installer or to the location of the log files that you specified in the setup application.
2. Open **DB\_InstallV<YYMMDDHHMMSS>.log**, where <YYMMDDHHMMSS> specifies the date and time, in 24 hour clock format, that you upgraded the BlackBerry Configuration Database.
3. Check the log file for error messages.

## The setup application prompts you for access to the installation media for Microsoft .NET Framework Version 1.1

When the BlackBerry® Enterprise Server setup application installs Microsoft® .NET Framework Version 1.1 SP1 on a computer that hosts a previously installed version of Microsoft .NET Framework Version 1.1, it prompts you for access to the installation media for Microsoft .NET Framework Version 1.1.

### Possible solution

You can access the netfx.msi file that is included with the BlackBerry Enterprise Server installation media.

1. In the BlackBerry Enterprise Server installation media, open the **Tools** folder.
2. Double-click **netfx.msi**.
3. Complete the instructions on the screen.

## Restore a BlackBerry Configuration Database

If you created a copy of the BlackBerry® Configuration Database using the CreateDB tool, you can restore the copy.

1. In the Microsoft® Windows® Services, stop the BlackBerry® Enterprise Server services.
2. On the server that hosts the BlackBerry Configuration Database, open a command prompt window.
3. Change to *<extracted folder>\Tools*.
4. Type **BlackBerryDBRestore.exe**.
5. Type the same parameters that you used when you backed up the database.
6. Press ENTER.



## Upgrading the BlackBerry Device Software

# 12

If you want to make the new features of the BlackBerry® Enterprise Server available to your users, you can upgrade the BlackBerry® Device Software when you upgrade the BlackBerry Enterprise Server.

If you want to upgrade the BlackBerry Device Software, you can also choose to upgrade the BlackBerry® Desktop Software.

For more information about BlackBerry Device Software and BlackBerry Desktop Software, visit [www.blackberry.com/support](http://www.blackberry.com/support).

### Permitting users to upgrade the BlackBerry Device Software at their computers

If you want users to upgrade the BlackBerry® Device Software at their computers, you can install the BlackBerry Device Software and the application loader tool on a network drive.

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>You can automate the process for upgrading the BlackBerry Device Software so that users do not have to complete any upgrade tasks for BlackBerry devices that use a USB connection.</li> <li>You can upgrade BlackBerry devices remotely.</li> </ul>	<ul style="list-style-type: none"> <li>You cannot manage BlackBerry Device Software upgrades using software configurations.</li> <li>You cannot make users upgrade the BlackBerry Device Software.</li> <li>This upgrade process increases network traffic to the network drive.</li> </ul>

This upgrade process only applies if users have one of the following desktop software versions:

- BlackBerry® Desktop Software Version 3.6 or later
- BlackBerry® Handheld Manager Version 3.6 or later

After the upgrade process completes, the application loader tool connects to the messaging server to provision the BlackBerry devices.

### Upgrading the BlackBerry Device Software at a central computer

If you want to upgrade the BlackBerry® Device Software for users, or if you want users to upgrade their BlackBerry devices at a central computer, you can upgrade the BlackBerry Device Software at the central computer.

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• You can monitor the software upgrade process at the central computer.</li> <li>• You can use software configurations to help control the software upgrades.</li> <li>• You can upgrade multiple BlackBerry devices at the same time.</li> <li>• You can upgrade BlackBerry devices for users who do not have the BlackBerry® Desktop Manager installed on their computers.</li> <li>• You can share a single software location among multiple central computers.</li> </ul>	<ul style="list-style-type: none"> <li>• You cannot make users upgrade the BlackBerry Device Software.</li> </ul>

## Pushing the BlackBerry Device Software and the BlackBerry Desktop Software to users' computers

You can use third-party applications to create a single upgrade file that contains the BlackBerry® Desktop Software and the BlackBerry® Device Software, and send the upgrade file to the computers of your BlackBerry device users. The application loader tool on the computers upgrades the BlackBerry Device Software on the BlackBerry device.

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• You can install the BlackBerry Device Software and the BlackBerry Desktop Software on computers automatically.</li> <li>• You can set an IT policy to make users upgrade the BlackBerry Device Software.</li> </ul>	<ul style="list-style-type: none"> <li>• You must distribute large upgrade packages over your organization's LAN.</li> </ul>

The upgrade file installs the BlackBerry Desktop Software and the BlackBerry Device Software on the computers of your BlackBerry device users. To upgrade the BlackBerry Device Software on their BlackBerry devices, users can connect their BlackBerry devices to their computers and start the BlackBerry® Desktop Manager.

This upgrade process applies when you upgrade from BlackBerry Device Software Version 3.5 or earlier.

# Permitting users to upgrade the BlackBerry Device Software at their computers

## 13

If you want users to upgrade the BlackBerry® Device Software at their computers, you can install the BlackBerry Device Software and the application loader tool on a network drive.

Advantages	Disadvantages
<ul style="list-style-type: none"><li>You can automate the process for upgrading the BlackBerry Device Software so that users do not have to complete any upgrade tasks for BlackBerry devices that use a USB connection.</li><li>You can upgrade BlackBerry devices remotely.</li></ul>	<ul style="list-style-type: none"><li>You cannot manage BlackBerry Device Software upgrades using software configurations.</li><li>You cannot make users upgrade the BlackBerry Device Software.</li><li>This upgrade process increases network traffic to the network drive.</li></ul>

This upgrade process only applies if users have one of the following desktop software versions:

- BlackBerry® Desktop Software Version 3.6 or later
- BlackBerry® Handheld Manager Version 3.6 or later

After the upgrade process completes, the application loader tool connects to the messaging server to provision the BlackBerry devices.

## Configure a network drive

- Share `<drive>\Program Files\Common Files\Research In Motion` with read-only permissions.
- Verify that the computers of BlackBerry® device users in your organization can access the network drive.
- To decrease bandwidth over your organization's LAN, verify that the network drive is in close proximity to users.

## Save the BlackBerry Device Software installation files to the network drive

**Before you begin:** Your service provider can provide you with the BlackBerry® Device Software installation media.

- On the network drive, in the installation directory, create a folder that is named **Device**.
- Save the required BlackBerry Device Software files to the folder.

## Verify the version of the application loader tool

Perform this task to ensure that the application loader tool supports the new version of BlackBerry® Device Software.

1. On the network drive, navigate to `<drive>:\Program Files\Common Files\Research In Motion\AppLoader`.
2. Right-click **loader.exe**.
3. Click **Properties**.
4. On the **Version** tab, verify that **loader.exe** is Version 4.1 or later.  
If the version number for **loader.exe** is earlier than Version 4.1, visit [www.blackberry.com/support/downloads](http://www.blackberry.com/support/downloads) to download BlackBerry® Desktop Software Version 4.1 or later.

## Sending the BlackBerry Desktop Software or BlackBerry Device Manager installation files to users' computers

If BlackBerry® device users do not have the BlackBerry® Desktop Software installed on their computers, you can send the installation files for the BlackBerry Desktop Software or the BlackBerry® Device Manager to their computers.

You can distribute the installation files in one of the following ways:

- send the .msi file for the BlackBerry Device Manager to users' computers
- configure and send the BlackBerry Desktop Software installation file to users' computers, which installs the software and settings on users' computers automatically

If users require the S/MIME Support Package for BlackBerry® devices to synchronize certificates and private keys, send them the BlackBerry Desktop Software.

## Send the BlackBerry Device Manager installation file to users' computers

You can send the BlackBerry® Device Manager to users so that they can perform actions such as charging their BlackBerry devices, synchronizing organizer items through the BlackBerry Router, and upgrading the BlackBerry® Device Software at their computers.

**Note:** If you send the BlackBerry Device Manager installation file to computers on which the BlackBerry® Desktop Manager is installed, the BlackBerry Device Manager installation process removes the BlackBerry Desktop Manager automatically.

1. Download the installation file for the BlackBerry Device Manager from [www.blackberry.com/support/downloads](http://www.blackberry.com/support/downloads).
2. Copy the installation file that you downloaded to the shared network drive.
3. Send users an email message that includes the following information:
  - location of the installation file on the network drive
  - instructions to double-click blackberry device manager v4.1.msi

## Send the BlackBerry Desktop Software installation file to users' computers

You can send users the BlackBerry® Desktop Software so that they can synchronize organizer data items and manage message forwarding at their computers.

- > Send users an email message that includes the location of the installation file on the network drive and specifies one of the following installation types:
  - For the BlackBerry® Desktop Manager: `\\<shared network drive>\setup.exe /s`
  - For the BlackBerry Desktop Manager and the BlackBerry Certificate Synchronization Manager: `\\<shared network drive>\setup.exe /s /v "INSTALLLEVEL=125"`

The software installs automatically.

## Synchronizing wireless data automatically

When you upgrade the BlackBerry® Enterprise Server, the BlackBerry Synchronization Service sends service books to the BlackBerry devices that can synchronize data over the wireless network. For more information about which BlackBerry® Device Software versions cause wireless data synchronization to occur automatically, visit [www.blackberry.com/support](http://www.blackberry.com/support) to read article KB04295.

## Create the BlackBerry Device Software upgrade instructions for BlackBerry device users

Perform this task so that your users can upgrade the BlackBerry® Device Software.

1. Create an email message that includes the location of the application loader tool and specifies the following loading commands based on the type of connection that the BlackBerry device uses:
  - USB: `\\<shared computer name>\Research In Motion\Apploder\loader.exe /defaultUSB /forceload`
  - Serial: `\\<shared computer name>\Research In Motion\Apploder\loader.exe`
2. Consider providing the following instructions in the email message:
  - Connect your BlackBerry device to your computer.
  - Do not disconnect your BlackBerry device from your computer until the upgrade process completes.
  - If prompted, type your BlackBerry device password. Click **Next**.
  - If your BlackBerry device uses a serial connection, complete the instructions on the screen.
  - If prompted, select the **Provision the device during the loading process** option, and select the messaging server on which your user account is located.

## Confirming that the BlackBerry Device Software upgrade process completed successfully

### Verify that the upgrade from BlackBerry Device Software Version 4.0 or later completed successfully

1. In the BlackBerry® Manager, in the left pane, click a BlackBerry® Enterprise Server.
2. In the **Users** list, click a user.
3. In the lower pane, verify the BlackBerry® Device Software version.

When you upgrade the BlackBerry Device Software, the version of the BlackBerry Device Software on the BlackBerry device does not update immediately in the BlackBerry Manager. You might have to wait for a short period of time while the BlackBerry Configuration Database synchronizes the version of the BlackBerry Device Software that displays in the BlackBerry Manager with the version of the BlackBerry Device Software that is installed on the BlackBerry device.

### Verify that the upgrade from BlackBerry Device Software Version 3.6 completed successfully

- > Instruct users to perform the following actions:
  - On the BlackBerry® device, in the device options, click **About**.
  - Confirm the version.

# Upgrading the BlackBerry Device Software at a central computer

# 14

If you want to upgrade the BlackBerry® Device Software for users, or if you want users to upgrade their BlackBerry devices at a central computer, you can upgrade the BlackBerry Device Software at the central computer.

Advantages	Disadvantages
<ul style="list-style-type: none"><li>• You can monitor the software upgrade process at the central computer.</li><li>• You can use software configurations to help control the software upgrades.</li><li>• You can upgrade multiple BlackBerry devices at the same time.</li><li>• You can upgrade BlackBerry devices for users who do not have the BlackBerry® Desktop Manager installed on their computers.</li><li>• You can share a single software location among multiple central computers.</li></ul>	<ul style="list-style-type: none"><li>• You cannot make users upgrade the BlackBerry Device Software.</li></ul>

## Configure a network drive

1. Share <drive>:\Program Files\Common Files\Research In Motion with read-only permissions.
2. Verify that the computers of BlackBerry® device users in your organization can access the network drive.
3. To decrease bandwidth over your organization's LAN, verify that the network drive is in close proximity to users.

## Save the BlackBerry Device Software installation files to the network drive

**Before you begin:** Your service provider can provide you with the BlackBerry® Device Software installation media.

1. On the network drive, in the installation directory, create a folder that is named **Device**.
2. Save the required BlackBerry Device Software files to the folder.

## Create a software configuration for the BlackBerry Device Software

Perform this task to help control the software upgrade process for each BlackBerry® device at a central computer.

1. In the BlackBerry Manager, in the left pane, click **BlackBerry Domain**.
2. On the **Software Configurations** tab, click **Add New Configuration**.
3. In the **Configuration Name** field, type a name for the software configuration.
4. In the **Device Software Location** field, click the **Change** button.
5. Navigate to the network location where you installed the BlackBerry® Device Software.
6. In the **Application Name** list, select the check box for the BlackBerry device series that you want to upgrade the BlackBerry Device Software for.
7. Expand the application tree.
8. Select the check boxes for additional components or applications that you want to install.
9. Click **OK**.

## Assign the software configuration to a user

To monitor whether a user upgrades to BlackBerry® Device Software Version 4.0 or later, assign the user to the software configuration for the BlackBerry Device Software.

1. In the BlackBerry Manager, in the left pane, click a BlackBerry® Enterprise Server.
2. In the **Users** list, click the user account that you want to assign the software configuration to.
3. In the lower pane, click **Device Management**.
4. Click **Assign Software Configuration**.
5. Click a software configuration.
6. Click **OK**.

## Upgrade the BlackBerry Device Software at a central computer

### Before you begin:

- Verify that the central computer can access the network drive.
  - To decrease bandwidth over your organization's LAN, verify that the network drive is in close proximity to the central computer.
  - Verify that BlackBerry® Manager is installed on the central computer.
1. Connect the BlackBerry device to the central computer that hosts the BlackBerry Manager.
  2. In the BlackBerry Manager, in the left pane, click **Ports**.
  3. On the **Ports** tab, click the BlackBerry device that you want to upgrade the BlackBerry® Device Software for.

4. Perform one of the following actions:
  - To upgrade the BlackBerry Device Software automatically, click **Load Handheld**.
  - To upgrade the BlackBerry Device Software using the application loader tool, click **Load Handheld (Interactive)**.
5. Click a software configuration.
6. Click **OK**.
7. If you are using the application loader tool, complete the instructions on the screen.

## Verify that the BlackBerry Device Software upgrade at a central computer completed successfully

1. In the BlackBerry® Manager, in the left pane, click a BlackBerry® Enterprise Server.
2. In the **Users** list, click a user.
3. In the lower pane, check for one of the following status messages:
  - **Upgrade Required:** the BlackBerry device has not yet been upgraded to the BlackBerry® Device Software specified in the assigned software configuration
  - **Up to date:** the BlackBerry device has been upgraded to the BlackBerry Device Software specified in the software configuration

When you upgrade the BlackBerry Device Software, the version of the BlackBerry Device Software on the BlackBerry device does not update immediately in the BlackBerry Manager. You might have to wait for a short period of time while the BlackBerry Configuration Database synchronizes the version of the BlackBerry Device Software that displays in the BlackBerry Manager with the version of the BlackBerry Device Software that is installed on the BlackBerry device.



# Pushing the BlackBerry Device Software and the BlackBerry Desktop Software to users' computers

15

You can use third-party applications to create a single upgrade file that contains the BlackBerry® Desktop Software and the BlackBerry® Device Software, and send the upgrade file to the computers of your BlackBerry device users. The application loader tool on the computers upgrades the BlackBerry Device Software on the BlackBerry device.

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>You can install the BlackBerry Device Software and the BlackBerry Desktop Software on computers automatically.</li> <li>You can set an IT policy to make users upgrade the BlackBerry Device Software.</li> </ul>	<ul style="list-style-type: none"> <li>You must distribute large upgrade packages over your organization's LAN.</li> </ul>

The upgrade file installs the BlackBerry Desktop Software and the BlackBerry Device Software on the computers of your BlackBerry device users. To upgrade the BlackBerry Device Software on their BlackBerry devices, users can connect their BlackBerry devices to their computers and start the BlackBerry® Desktop Manager.

This upgrade process applies when you upgrade from BlackBerry Device Software Version 3.5 or earlier.

## Configure a network drive

1. Share `<drive>\Program Files\Common Files\Research In Motion` with read-only permissions.
2. Verify that the computers of BlackBerry® device users in your organization can access the network drive.
3. To decrease bandwidth over your organization's LAN, verify that the network drive is in close proximity to users.

## Install the BlackBerry Device Software on the network drive

If you want to automate the BlackBerry® Device Software upgrade process and the provisioning process, you can install the application loader tool. The application loader tool installs as a component of both BlackBerry Device Software Version 4.1 and BlackBerry® Desktop Software Version 4.1.

**Before you begin:** Your service provider can provide you with the BlackBerry Device Software installation media.

1. Save the BlackBerry Device Software installation file to the network drive.
2. On the network drive, double-click the **.exe** file.
3. Complete the installation process.
4. Verify that the files are located at `<drive>\Program Files\Common Files\Research In Motion\Shared\Loader Files`.

5. Save the BlackBerry Device Software installation file to other regional network drives and install it, if applicable, in your environment.

**After you finish:** To download BlackBerry Desktop Software Version 4.1, visit [www.blackberry.com/support/downloads](http://www.blackberry.com/support/downloads).

## Save the BlackBerry Desktop Software installation files to the network drive

1. Download the BlackBerry® Desktop Software installation file from [www.blackberry.com/support/downloads](http://www.blackberry.com/support/downloads).
2. Save the installation file that you downloaded to the shared network drive.
3. If necessary, extract the installation files from the **.exe** file to the network drive.
4. On the network drive, open **setup.ini**.
5. At the bottom of **setup.ini**, type **[INSTALL\_OPTIONS]**.
6. To add the installation settings, use **install.txt**, which is included with the BlackBerry Desktop Software installation files.
7. Save **setup.ini**.

## Synchronizing wireless data automatically

When you upgrade the BlackBerry® Enterprise Server, the BlackBerry Synchronization Service sends service books to the BlackBerry devices that can synchronize data over the wireless network. For more information about which BlackBerry® Device Software versions cause wireless data synchronization to occur automatically, visit [www.blackberry.com/support](http://www.blackberry.com/support) to read article KB04295.

## Send the installation files for the BlackBerry Desktop Software and the BlackBerry Device Software to users using a third-party application

Perform this task so that you can upgrade the BlackBerry® Desktop Software and BlackBerry® Desktop Manager by pushing the software to user computers using a third-party application.

1. To record the customized settings in the BlackBerry Desktop Software installation files so that you can create a custom software package, at a command prompt, type one of the following commands:
  - For BlackBerry Desktop Manager users, type `\\<shared computer name>\setup.exe /s`
  - For BlackBerry Desktop Manager users and BlackBerry Certificate Synchronization Manager users, type `\\<shared computer name>\setup.exe /s /v "INSTALLLEVEL=125"`
2. Package the customized BlackBerry Desktop Software and the BlackBerry® Device Software installation files using a third-party application for software packaging.
3. Send the installation files using a third-party application for software distribution.

**After you finish:** If you want to make sure that users upgrade the BlackBerry Device Software, set the Force Load Count IT policy rule and the Force Load Message IT policy rule. For more information, see the *BlackBerry Enterprise Server Policy Reference Guide*.

## Confirming that the BlackBerry Device Software upgrade process completed successfully

### Verify that the upgrade from BlackBerry Device Software Version 4.0 or later completed successfully

1. In the BlackBerry® Manager, in the left pane, click a BlackBerry® Enterprise Server.
2. In the **Users** list, click a user.
3. In the lower pane, verify the BlackBerry® Device Software version.

When you upgrade the BlackBerry Device Software, the version of the BlackBerry Device Software on the BlackBerry device does not update immediately in the BlackBerry Manager. You might have to wait for a short period of time while the BlackBerry Configuration Database synchronizes the version of the BlackBerry Device Software that displays in the BlackBerry Manager with the version of the BlackBerry Device Software that is installed on the BlackBerry device.

### Verify that the upgrade from BlackBerry Device Software Version 3.6 completed successfully

- > Instruct users to perform the following actions:
  - On the BlackBerry® device, in the device options, click **About**.
  - Confirm the version.



# Troubleshooting the BlackBerry Device Software upgrade process 16

## When users click the link to the application loader tool in the upgrade instructions, the upgrade process does not start

### Possible cause

The application loader might not be shared.

### Possible solution

1. Connect a BlackBerry® device to a computer on which the BlackBerry Manager is installed.
2. At the command prompt, type `\\<shared network drive>\Research In Motion\Apploder\loader.exe`
3. If the application loader tool starts, the tool is shared successfully.



# Glossary

# 17

**AJAX**

Asynchronous JavaScript® and XML

**BlackBerry Domain**

A BlackBerry Domain consists of the BlackBerry Configuration Database with its users and any BlackBerry® Enterprise Server instances that connect to it.

**BlackBerry MDS**

BlackBerry® Mobile Data System

**CAL**

A client access license (CAL) limits how many users you can add to the BlackBerry® Enterprise Server.

**CDO**

Collaboration Data Object

**DMZ**

A demilitarized zone (DMZ) is a neutral subnetwork outside of an organization's firewall. It exists between the trusted LAN of the organization and the untrusted external wireless network and public Internet.

**DNS**

Domain Name System

**GAL**

Global Address List

**HTTPS**

Hypertext Transfer Protocol over Secure Sockets Layer

**ISAPI**

Internet Server Application Programming Interface

**J2SE**

Java® 2 Platform, Standard Edition

**JRE**

Java® Runtime Environment

**LAN**

local area network

**LDAP**

Lightweight Directory Access Protocol

**MAPI**

Messaging Application Programming Interface

**MDAC**

Microsoft® Data Access Components

**messaging server**

A messaging server sends and processes messages and provides collaboration services, such as updating and communicating calendar and address book information.

**MMC**

Microsoft® Management Console

**BlackBerry Mobile Data Service**

After you upgrade to BlackBerry® Enterprise Server Version 4.1 or later, the BlackBerry® Mobile Data Service name changes to the BlackBerry MDS Connection Service.

**MSDE**

Microsoft® SQL Server® Desktop Engine

**MSMQ**

Microsoft® Message Queuing

**MTLS**

Mutual Transport Layer Security

**ODBC**

Open Database Connectivity

**S/MIME**

Secure Multipurpose Internet Mail Extensions

**SNMP**

Simple Network Management Protocol

**SQL**

Structured Query Language

**SRP**

Server Routing Protocol

**SSL**

Secure Sockets Layer

**TLS**

Transport Layer Security

**XML**

Extensible Markup Language



## Legal notice

# 18

©2008 Research In Motion Limited. All rights reserved. BlackBerry®, RIM®, Research In Motion®, SureType® and related trademarks, names, and logos are the property of Research In Motion Limited and are registered and/or used as trademarks in the U.S., Canada, and countries around the world.

IBM, Lotus, and Sametime are trademarks of International Business Machines Corporation. Microsoft, Active Directory, Internet Explorer, SQL Server, Windows, Windows Media, and Windows Server are trademarks of Microsoft Corporation. Novell and GroupWise are trademarks of Novell, Inc. RSA is a trademark of RSA Security. Java, JavaScript, JRE, and J2SE are trademarks of Sun Microsystems, Inc. VMware is a trademark of VMware, Inc. All other brands, product names, company names, trademarks, and service marks are the properties of their respective owners.

The BlackBerry smartphone and other devices and/or associated software are protected by copyright, international treaties, and various patents, including one or more of the following U.S. patents: 6,278,442; 6,271,605; 6,219,694; 6,075,470; 6,073,318; D445,428; D433,460; D416,256. Other patents are registered or pending in the U.S. and in various countries around the world. Visit [www.rim.com/patents](http://www.rim.com/patents) for a list of RIM (as hereinafter defined) patents.

This documentation including all documentation incorporated by reference herein such as documentation provided or made available at [www.blackberry.com/go/docs](http://www.blackberry.com/go/docs) is provided or made accessible "AS IS" and "AS AVAILABLE" and without condition, endorsement, guarantee, representation, or warranty of any kind by Research In Motion Limited and its affiliated companies ("RIM") and RIM assumes no responsibility for any typographical, technical, or other inaccuracies, errors, or omissions in this documentation. In order to protect RIM proprietary and confidential information and/or trade secrets, this documentation may describe some aspects of RIM technology in generalized terms. RIM reserves the right to periodically change information that is contained in this documentation; however, RIM makes no commitment to provide any such changes, updates, enhancements, or other additions to this documentation to you in a timely manner or at all.

This documentation might contain references to third-party sources of information, hardware or software, products or services including components and content such as content protected by copyright and/or third-party web sites (collectively the "Third Party Products and Services"). RIM does not control, and is not responsible for, any Third Party Products and Services including, without limitation the content, accuracy, copyright compliance, compatibility, performance, trustworthiness, legality, decency, links, or any other aspect of Third Party Products and Services. The inclusion of a reference to Third Party Products and Services in this documentation does not imply endorsement by RIM of the Third Party Products and Services or the third party in any way.

EXCEPT TO THE EXTENT SPECIFICALLY PROHIBITED BY APPLICABLE LAW IN YOUR JURISDICTION, ALL CONDITIONS, ENDORSEMENTS, GUARANTEES, REPRESENTATIONS, OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY CONDITIONS, ENDORSEMENTS, GUARANTEES, REPRESENTATIONS OR WARRANTIES OF DURABILITY, FITNESS FOR A PARTICULAR PURPOSE OR USE, MERCHANTABILITY, MERCHANTABILITY QUALITY, NON-INFRINGEMENT, SATISFACTORY QUALITY, OR TITLE, OR ARISING FROM A STATUTE OR CUSTOM OR A COURSE OF DEALING OR USAGE OF TRADE, OR RELATED TO THE DOCUMENTATION OR ITS USE, OR PERFORMANCE OR NON-PERFORMANCE OF ANY SOFTWARE, HARDWARE, SERVICE, OR ANY THIRD PARTY PRODUCTS AND SERVICES REFERENCED HEREIN, ARE HEREBY EXCLUDED. YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY BY STATE OR PROVINCE. SOME JURISDICTIONS MAY NOT ALLOW THE EXCLUSION OR LIMITATION OF IMPLIED WARRANTIES AND CONDITIONS. TO THE EXTENT PERMITTED BY LAW, ANY IMPLIED WARRANTIES OR CONDITIONS RELATING TO THE

DOCUMENTATION TO THE EXTENT THEY CANNOT BE EXCLUDED AS SET OUT ABOVE, BUT CAN BE LIMITED, ARE HEREBY LIMITED TO NINETY (90) DAYS FROM THE DATE YOU FIRST ACQUIRED THE DOCUMENTATION OR THE ITEM THAT IS THE SUBJECT OF THE CLAIM.

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW IN YOUR JURISDICTION, IN NO EVENT SHALL RIM BE LIABLE FOR ANY TYPE OF DAMAGES RELATED TO THIS DOCUMENTATION OR ITS USE, OR PERFORMANCE OR NON-PERFORMANCE OF ANY SOFTWARE, HARDWARE, SERVICE, OR ANY THIRD PARTY PRODUCTS AND SERVICES REFERENCED HEREIN INCLUDING WITHOUT LIMITATION ANY OF THE FOLLOWING DAMAGES: DIRECT, CONSEQUENTIAL, EXEMPLARY, INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, OR AGGRAVATED DAMAGES, DAMAGES FOR LOSS OF PROFITS OR REVENUES, FAILURE TO REALIZE ANY EXPECTED SAVINGS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, LOSS OF BUSINESS OPPORTUNITY, OR CORRUPTION OR LOSS OF DATA, FAILURES TO TRANSMIT OR RECEIVE ANY DATA, PROBLEMS ASSOCIATED WITH ANY APPLICATIONS USED IN CONJUNCTION WITH RIM PRODUCTS OR SERVICES, DOWNTIME COSTS, LOSS OF THE USE OF RIM PRODUCTS OR SERVICES OR ANY PORTION THEREOF OR OF ANY AIRTIME SERVICES, COST OF SUBSTITUTE GOODS, COSTS OF COVER, FACILITIES OR SERVICES, COST OF CAPITAL, OR OTHER SIMILAR PECUNIARY LOSSES, WHETHER OR NOT SUCH DAMAGES WERE FORESEEN OR UNFORESEEN, AND EVEN IF RIM HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW IN YOUR JURISDICTION, RIM SHALL HAVE NO OTHER OBLIGATION, DUTY, OR LIABILITY WHATSOEVER IN CONTRACT, TORT, OR OTHERWISE TO YOU INCLUDING ANY LIABILITY FOR NEGLIGENCE OR STRICT LIABILITY.

THE LIMITATIONS, EXCLUSIONS, AND DISCLAIMERS HEREIN SHALL APPLY: (A) IRRESPECTIVE OF THE NATURE OF THE CAUSE OF ACTION, DEMAND, OR ACTION BY YOU INCLUDING BUT NOT LIMITED TO BREACH OF CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR ANY OTHER LEGAL THEORY AND SHALL SURVIVE A FUNDAMENTAL BREACH OR BREACHES OR THE FAILURE OF THE ESSENTIAL PURPOSE OF THIS AGREEMENT OR OF ANY REMEDY CONTAINED HEREIN; AND (B) TO RIM AND ITS AFFILIATED COMPANIES, THEIR SUCCESSORS, ASSIGNS, AGENTS, SUPPLIERS (INCLUDING AIRTIME SERVICE PROVIDERS), AUTHORIZED RIM DISTRIBUTORS (ALSO INCLUDING AIRTIME SERVICE PROVIDERS) AND THEIR RESPECTIVE DIRECTORS, EMPLOYEES, AND INDEPENDENT CONTRACTORS.

IN ADDITION TO THE LIMITATIONS AND EXCLUSIONS SET OUT ABOVE, IN NO EVENT SHALL ANY DIRECTOR, EMPLOYEE, AGENT, DISTRIBUTOR, SUPPLIER, INDEPENDENT CONTRACTOR OF RIM OR ANY AFFILIATES OF RIM HAVE ANY LIABILITY ARISING FROM OR RELATED TO THE DOCUMENTATION.

Prior to subscribing for, installing, or using any Third Party Products and Services, it is your responsibility to ensure that your airtime service provider has agreed to support all of their features. Installation or use of Third Party Products and Services with RIM's products and services may require one or more patent, trademark, copyright, or other licenses in order to avoid infringement or violation of third party rights. You are solely responsible for determining whether to use Third Party Products and Services and if any third party licenses are required to do so. If required you are responsible for acquiring them. You should not install or use Third Party Products and Services until all necessary licenses have been acquired. Any Third Party Products and Services that are provided with RIM's products and services are provided as a convenience to you and are provided "AS IS" with no express or implied conditions, endorsements, guarantees, representations, or warranties of any kind by RIM and RIM assumes no liability whatsoever, in relation thereto. Your use of Third Party Products and Services shall be governed by and subject to you agreeing to the terms of separate licenses and other agreements applicable thereto with third parties, except to the extent expressly covered by a license or other agreement with RIM.

The terms of use of any RIM product or service are set out in a separate license or other agreement with RIM applicable thereto. NOTHING IN THIS DOCUMENTATION IS INTENDED TO SUPERSEDE ANY EXPRESS WRITTEN AGREEMENTS OR WARRANTIES PROVIDED BY RIM FOR PORTIONS OF ANY RIM PRODUCT OR SERVICE OTHER THAN THIS DOCUMENTATION.

Certain features outlined in this documentation require a minimum version of BlackBerry® Enterprise Server Software, BlackBerry® Desktop Software, and/or BlackBerry® Device Software and may require additional development or Third Party Products and Services for access to corporate applications.

This product includes software developed by the Apache Software Foundation ([www.apache.org/](http://www.apache.org/)) and/or licensed pursuant to Apache License, Version 2.0 ([www.apache.org/licenses/](http://www.apache.org/licenses/)). For more information, see the NOTICE.txt file included with the software. Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Research In Motion Limited  
295 Phillip Street  
Waterloo, ON N2L 3W8  
Canada

Research In Motion UK Limited  
200 Bath Road  
Slough, Berkshire SL1 3XE  
United Kingdom

Published in Canada