

Upgrade Guide

BlackBerry Enterprise Server Express for Microsoft Exchange

Version: 5.0
Service Pack: 4



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Overview: BlackBerry Enterprise Server Express

1

The BlackBerry Enterprise Server Express is designed to be a secure, centralized link between an organization's wireless network, communications software, applications, and BlackBerry smartphones. The BlackBerry Enterprise Server Express integrates with your organization's existing infrastructure to provide smartphone users with mobile access to your organization's resources.

The BlackBerry Enterprise Server Express supports smartphones that are provisioned for a BlackBerry Enterprise Server or for the BlackBerry Internet Service.

You can manage the BlackBerry Enterprise Server Express, smartphones, and user accounts using the BlackBerry Administration Service. You can access the BlackBerry Administration Service web application from any computer that can access the computer that hosts the BlackBerry Administration Service.

You can optionally install BlackBerry Management Studio in your organization's environment to provide a simplified administrative console for your organization's helpdesk administrators and an integrated view of the BlackBerry Enterprise Server Express and other MDM domains. For more information, visit <http://www.blackberry.com/go/serverdocs> to see the *BlackBerry Management Studio Feature and Technical Overview*.

Planning a BlackBerry Enterprise Server Express upgrade

2

If your organization's environment includes only one BlackBerry Enterprise Server Express, you can upgrade the BlackBerry Enterprise Server Express to the latest version by overwriting it or by installing it on a different computer and moving the user data to the upgraded BlackBerry Enterprise Server Express.

If your organization's environment includes more than one BlackBerry Enterprise Server Express, you can upgrade each BlackBerry Enterprise Server Express instance to the latest version in phases to reduce the risk to your organization's environment and minimize the number of users that the upgrade might affect at the same time.

Supported BlackBerry Enterprise Server Express versions that you can upgrade

You can upgrade BlackBerry Enterprise Server Express 5.0 SP2 or 5.0 SP3 to the latest BlackBerry Enterprise Server Express version.

Upgrade implications for the BlackBerry Configuration Database

When you upgrade the BlackBerry Enterprise Server Express to the latest version, you must also upgrade the BlackBerry Configuration Database to the latest version. You can use the setup application to install or upgrade BlackBerry Enterprise Server Express components such as the BlackBerry Configuration Database. The installation or upgrade process upgrades the BlackBerry Configuration Database automatically so that the database and components run the same version. If you do not want to use the setup application to upgrade the BlackBerry Configuration Database, you can run the database upgrade scripts on the database server.

You cannot manage the BlackBerry Enterprise Server Express until you install the BlackBerry Administration Service version that is the same as the BlackBerry Configuration Database version or upgrade the BlackBerry Administration Service so that it is the same version as the BlackBerry Configuration Database.

You must move an MSDE database such as a BlackBerry Configuration Database from MSDE to a version of Microsoft SQL Server that Microsoft fully supports. To upgrade a BlackBerry Configuration Database and move it from MSDE to Microsoft SQL Server, you must create a copy of the BlackBerry Configuration Database, move the copy to Microsoft SQL Server, and then upgrade the BlackBerry Configuration Database on the Microsoft SQL Server to the latest version.

Synchronizing data over the wireless network automatically

When you upgrade the BlackBerry Enterprise Server Express, the BlackBerry Synchronization Service sends updated service books to the BlackBerry devices that can synchronize data over the wireless network. BlackBerry Device Software versions 4.0 and later can synchronize data automatically if the BlackBerry Enterprise Server Express is running.

If the data does not synchronize automatically, you must use the BlackBerry Administration Service to resend the service books and synchronize the data.

Corrective calendar synchronization

Corrective calendar synchronization finds and corrects differences between the calendar entries on BlackBerry devices and the calendar entries on users' computers.

When you upgrade the BlackBerry Enterprise Server Express to the latest version, corrective calendar synchronization is turned on by default. Corrective calendar synchronization is configured to run daily at 12:00 AM for all users whose devices are turned on. It checks users' calendars to correct any differences that display for the next seven days between calendars on devices and calendars in email applications. For more information about corrective calendar synchronization and changing the default settings, see the *BlackBerry Enterprise Server Express Administration Guide*.

Hardware requirements: BlackBerry Enterprise Server Express

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The following are requirements for a BlackBerry Enterprise Server Express and the BlackBerry Enterprise Server Express components that you install on a single computer that uses Microsoft Exchange. The requirements are for an environment that includes users that receive 100 to 200 email messages each day.

You can improve the performance and reliability of the BlackBerry Enterprise Server Express by installing components on multiple computers. If you install all BlackBerry Enterprise Server Express components on the same computer as the messaging server, it is a best practice to support up to 75 BlackBerry device users only on the BlackBerry Enterprise Server Express. If you want to support more than 75 users on the BlackBerry Enterprise Server Express, it is a best practice to install the BlackBerry Enterprise Server Express components on computers that are separate from the computer that hosts the messaging server.

If your environment supports up to 1000 users, install the BlackBerry Configuration Database on a computer that is separate from the computer that hosts the BlackBerry Enterprise Server Express. If your BlackBerry Enterprise Server Express environment supports up to 2000 users, install the BlackBerry Configuration Database and the BlackBerry Administration Service on computers that are separate from the computer that hosts the BlackBerry Enterprise Server Express.

Item	Requirement
BlackBerry Enterprise Server Express that supports up to 75 users on the same server as Microsoft Exchange or Windows Small Business Server	<ul style="list-style-type: none"> • Visit www.microsoft.com to see the requirements for Microsoft Exchange or Windows Small Business Server • Add 1.5 GB memory to the memory requirements for Microsoft Exchange or Windows Small Business Server • 150 MB disk space for the BlackBerry Enterprise Server Express • 400 MB disk space for the BlackBerry Administration Service • Approximately 2 MB per user each day for log files (100 email messages per user)
BlackBerry Enterprise Server Express that supports up to 200 users	<ul style="list-style-type: none"> • Single processor, 2.0 GHz Intel Xeon (two processors recommended) • 2 GB of memory • 64-bit operating system: Two 64 GB drives (minimum), RAID 1

Item	Requirement
	<ul style="list-style-type: none"> • 32-bit operating system: Two 36 GB drives (minimum), RAID 1 • 150 MB disk space for the BlackBerry Enterprise Server Express • 400 MB disk space for the BlackBerry Administration Service • Approximately 2 MB per user each day for log files (100 email messages per user)
BlackBerry Enterprise Server Express that supports up to 500 users	<ul style="list-style-type: none"> • Two processors, 2.0 GHz Intel Xeon • 2 GB of memory • 64-bit operating system: Two 64 GB drives (minimum), RAID 1 • 32-bit operating system: Two 36 GB drives (minimum), RAID 1 • 150 MB disk space for the BlackBerry Enterprise Server Express • 400 MB disk space for the BlackBerry Administration Service • Approximately 2 MB per user each day for log files (100 email messages per user)
BlackBerry Enterprise Server Express that supports up to 1000 users	<ul style="list-style-type: none"> • Two processors, 2.0 GHz Intel Xeon • 3 GB of memory • 64-bit operating system: Two 64 GB drives (minimum), RAID 1 • 32-bit operating system: Two 36 GB drives (minimum), RAID 1 • 150 MB disk space for the BlackBerry Enterprise Server Express • 400 MB disk space for the BlackBerry Administration Service • Approximately 2 MB per user each day for log files (100 email messages per user)
BlackBerry Enterprise Server Express that supports up to 2000 users	<ul style="list-style-type: none"> • Two processors, 2.8 GHz Intel Xeon or two processors, 1.86 GHz Intel Xeon 5100 Series (Dual Core) • 6 GB of memory • 64-bit operating system: Two 64 GB drives (minimum), RAID 1 or four 64 GB drives (minimum), RAID 1+0 • 32-bit operating system: Two 36 GB drives (minimum), RAID 1 or four 36 GB drives (minimum), RAID 1+0 • 150 MB disk space for the BlackBerry Enterprise Server Express • 400 MB disk space for the BlackBerry Administration Service • Approximately 2 MB per user each day for log files (100 email messages per user)

System requirements

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System requirements: BlackBerry Enterprise Server Express

Item	Requirement
operating system	<p>Any of the following operating systems:</p> <ul style="list-style-type: none"> • Windows Server 2003 SP2 (32-bit or 64-bit) • Windows Server 2003 R2 SP2 (32-bit or 64-bit) • Windows Server 2008 SP2 (32-bit or 64-bit) • Windows Server 2008 R2 • Windows Server 2008 R2 SP1 • Windows Small Business Server 2003 • Windows Small Business Server 2008 • Windows Small Business Server 2011 Standard
Microsoft Exchange system tools	<p>Any of the following system tools:</p> <ul style="list-style-type: none"> • Microsoft Exchange 2003 SP2 System Manager • Microsoft Exchange Server MAPI Client and CDO 1.2.1 <p>To support Microsoft Exchange Server 2010, you must install version 6.5.8211.0 or later of the Microsoft Exchange Server MAPI Client and CDO 1.2.1.</p> <p>For more information about the the versions of the Microsoft Exchange Server MAPI client and CDO 1.2.1 that are supported by the BlackBerry Enterprise Server Express, visit www.blackberry.com/go/compatibility to see the BlackBerry Enterprise Server Express compatibility matrix.</p> <p>For more information about installing MAPI and CDO patches on your organization's BlackBerry Enterprise Server Express, visit support.microsoft.com to read article 917481 and visit www.blackberry.com/go/kbhelp to read article KB15779.</p>

Item	Requirement
Microsoft Exchange organization of the system tools for the messaging server	The same Microsoft Exchange organization that the messaging server uses
CDO library	To support the latest version of Microsoft Exchange Server in your organization's environment, the latest version of the CDO library that applies to the Microsoft Exchange Server version
Unicode support for calendars	To support Microsoft Exchange Server 2003, the following Microsoft hotfixes: <ul style="list-style-type: none"> • 913643 on the messaging server • 923537 on the computer that hosts the BlackBerry Enterprise Server Express
browser	Windows Internet Explorer 7.0 to 8.0 with language preferences configured to display encoded web pages
media player	One of the following: <ul style="list-style-type: none"> • if using Windows Server 2008, to support audio attachments, Windows Media Format SDK (for more information, visit msdn.microsoft.com and search Windows Media Format SDK) • if using Windows Server 2003, to support audio attachments, Windows Media Player 9 or later
network proximity	A high-speed, switched connection between the BlackBerry Enterprise Server Express and messaging servers
File and Printer Sharing	If using Windows Server 2003, to permit the BlackBerry Controller to monitor BlackBerry Enterprise Server Express components, install File and Printer Sharing For more information, see the documentation for Windows Server

System requirements: BlackBerry Administration Service and BlackBerry Web Desktop Manager

The following system requirements apply to the computer that you install the BlackBerry Administration Service and BlackBerry Web Desktop Manager on.

Item	Requirement
operating system	<p>Any of the following operating systems:</p> <ul style="list-style-type: none"> • Windows Server 2003 SP2 (32-bit or 64-bit) • Windows Server 2003 R2 SP2 (32-bit or 64-bit) • Windows Server 2008 SP2 (32-bit or 64-bit) • Windows Server 2008 R2 • Windows Server 2008 R2 SP1 • Windows Small Business Server 2003 • Windows Small Business Server 2008 • Windows Small Business Server 2011 Standard • Microsoft hotfix 955839 installed on the computer that hosts the BlackBerry Administration Service and BlackBerry Web Desktop Manager
memory	A minimum 1.2 GB of memory
outgoing data connection	For the BlackBerry Administration Service, an HTTPS connection using port number 3443

System requirements: BlackBerry Enterprise Server Express databases

Item	Requirement
database management system	<p>Any of the following database management systems:</p> <ul style="list-style-type: none"> • Microsoft SQL Server 2005 SP3 (32-bit or 64-bit) • Microsoft SQL Server 2005 SP4 (32-bit or 64-bit) • Microsoft SQL Server 2005 Express SP3 • Microsoft SQL Server 2008 SP2 (32-bit or 64-bit) • Microsoft SQL Server 2008 SP3 (32-bit or 64-bit) • Microsoft SQL Server 2008 R2 (32-bit or 64-bit)

Item	Requirement
	<ul style="list-style-type: none">• Microsoft SQL Server 2008 R2 SP1 (32-bit or 64-bit)• Microsoft SQL Server 2008 R2 SP2 (32-bit or 64-bit)• Microsoft SQL Server 2008 Express SP3 (32-bit or 64-bit)• Microsoft SQL Server 2008 R2 Express SP1 (32-bit or 64-bit)• Microsoft SQL Server 2008 R2 Express SP2 (32-bit or 64-bit)• Microsoft SQL Server 2012 (32-bit or 64-bit)
collation setting	<p>To configure collation settings, the following conditions:</p> <ul style="list-style-type: none">• database server collation configured to default case-insensitive• BlackBerry Configuration Database collation configured to default case-insensitive• collation must be the same for the Microsoft SQL Server instance and the database server that hosts the BlackBerry database notification system (BlackBerry Configuration Database)• default collations are suggested though non-default collations are supported (for more information, visit www.blackberry.com/go/kbhelp to read articles KB04785 and KB15534)
database connectivity	<ul style="list-style-type: none">• TCP/IP network protocols turned on• No count option turned off
nested triggers	<p>Nested trigger support turned on. For more information, visit msdn.microsoft.com to read article ms178101.</p>
database transactional replication	<p>To support database transactional replication for the BlackBerry Configuration Database, the following conditions:</p> <ul style="list-style-type: none">• the database server must be Microsoft SQL Server 2005 SP3 or later• the database server that hosts the replicated database must use the same version and build as the database server that hosts the primary database

System requirements: BlackBerry Attachment Service

The following system requirements apply to the computer that you install the BlackBerry Attachment Service on.

Item	Requirement
operating system	Any of the following operating systems: <ul style="list-style-type: none">• Windows Server 2003 SP2 (32-bit or 64-bit)• Windows Server 2003 R2 SP2 (32-bit or 64-bit)• Windows Server 2008 SP2 (32-bit or 64-bit)• Windows Server 2008 R2• Windows Server 2008 R2 SP1• Windows Small Business Server 2003• Windows Small Business Server 2008• Windows Small Business Server 2011 Standard
media player	One of the following: <ul style="list-style-type: none">• if using Windows Server 2008, to support audio attachments, Windows Media Format SDK (for more information, visit msdn.microsoft.com and search Windows Media Format SDK)• if using Windows Server 2003, to support audio attachments, Windows Media Player 9 or later
browser	Windows Internet Explorer 7.0 to 8.0 with language preferences configured to display encoded web pages

System requirements: BlackBerry MDS Connection Service

The following system requirements apply to the computer that you install the BlackBerry MDS Connection Service on.

Item	Requirement
operating system	Any of the following operating systems: <ul style="list-style-type: none">• Windows Server 2003 SP2 (32-bit or 64-bit)• Windows Server 2003 R2 SP2 (32-bit or 64-bit)• Windows Server 2008 SP2 (32-bit or 64-bit)• Windows Server 2008 R2• Windows Server 2008 R2 SP1• Windows Small Business Server 2003• Windows Small Business Server 2008• Windows Small Business Server 2011 Standard
RSA Authentication Agent	To support enhanced network authentication (optional), RSA Authentication Agent 6.1 for Windows Server 2003 or RSA Authentication Agent 7.0.1 for Windows Server 2008.
memory	One of the following: <ul style="list-style-type: none">• if you install a central push server and less than 1000 user accounts, a minimum of 1024 MB• if you install a central push server and more than 1000 user accounts, a minimum of 3 GB• if you do not install a central push server, a minimum of 512 MB

System requirements: BlackBerry Router

To install the BlackBerry Router on a computer that is separate from the computer that hosts the BlackBerry Enterprise Server Express, any of the following operating systems:

- Windows Server 2003 SP2 (32-bit or 64-bit)
- Windows Server 2003 R2 SP2 (32-bit or 64-bit)
- Windows Server 2008 SP2 (32-bit or 64-bit)
- Windows Server 2008 R2
- Windows Server 2008 R2 SP1
- Windows Small Business Server 2003
- Windows Small Business Server 2008
- Windows Small Business Server 2011 Standard

System requirements for your organization's environment

The following system requirements apply when you configure single sign-on authentication for the BlackBerry Administration Service and BlackBerry Web Desktop Manager or configure the BlackBerry MDS Connection Service to support Integrated Windows authentication.

Item	Requirement
network services	Microsoft Active Directory running at Windows Server 2003 domain functional level or higher
application server	For the BlackBerry MDS Connection Service to support Integrated Windows authentication, Microsoft IIS 6.0 or 7.0 using Integrated Windows authentication
file server	For the BlackBerry MDS Connection Service to support Integrated Windows authentication, Windows Server 2003 file services or Windows Server 2008 file services

System requirements: Computers for BlackBerry Web Desktop Manager and BlackBerry Administration Service users

Item	Requirement
browser	<ul style="list-style-type: none"> • Windows Internet Explorer 7.0 to 8.0 • Mozilla Firefox 3.6 • Safari 4 for Mac • Google Chrome 4 <p>Windows Internet Explorer 7 or later provides optimal support for BlackBerry Web Desktop Manager features and BlackBerry Administration Service features. Depending on the browser that you use, the BlackBerry Web Desktop Manager and BlackBerry Administration Service might not recognize BlackBerry devices and the browser might prevent you from activating devices that are connected to the computer, backing up and restoring device data, or adding or updating device applications.</p>
browser settings for Windows Internet Explorer	<p>To support browser access, you must configure the following settings:</p> <ul style="list-style-type: none"> • language preferences configured to display encoded web pages • Microsoft hotfix 955839 installed on the users' computers to make sure the correct time zones are displayed • the following settings turned on to support Microsoft ActiveX: <ul style="list-style-type: none"> • Automatic prompting for Microsoft ActiveX controls • Download signed Microsoft ActiveX controls • Run Microsoft ActiveX controls and plug-ins • Script Microsoft ActiveX controls marked safe for scripting • support for JavaScript • cookies turned on

Item	Requirement
	<ul style="list-style-type: none"> • support for TLS or SSL • the SSL certificate installed to permit trusted connections to the BlackBerry Administration Service • if using Windows Vista, the BlackBerry Administration Service web address added as a trusted web site and Enable protected mode cleared • if you configure single sign-on authentication for the BlackBerry Administration Service <ul style="list-style-type: none"> • the BlackBerry Web Desktop Manager and BlackBerry Administration Service web sites assigned to the local intranet zone • Enable Integrated Windows Authentication selected • if you do not configure single sign-on authentication for the BlackBerry Administration Service <ul style="list-style-type: none"> • the BlackBerry Web Desktop Manager and BlackBerry Administration Service web sites assigned to the local intranet or trusted sites security zone
browser settings for Firefox, Safari, and Google Chrome	<p>To support browser access, you must configure the following settings:</p> <ul style="list-style-type: none"> • support for JavaScript • cookies turned on • support for TLS or SSL • to permit trusted connections to the BlackBerry Administration Service, the SSL certificate installed <p>Single sign-on authentication for the BlackBerry Administration Service is not supported by Google Chrome.</p>

System requirements: Messaging server

Any of the following messaging servers that are located in close proximity to where you want to install the BlackBerry Enterprise Server Express:

- Microsoft Exchange Server 2010 SP1

- Microsoft Exchange Server 2010 and Microsoft Exchange Server 2010 Update Rollup 1 (Microsoft Exchange Server MAPI Client and CDO 1.2.1 must be version 6.5.8211.0 or later to support Microsoft Exchange Server 2010)
- Microsoft Exchange Server 2007 SP2 or SP3
- Microsoft Exchange Server 2003 SP2
- Any of the following Microsoft Exchange mixed environments:
 - Microsoft Exchange Server 2003 and 2007
 - Microsoft Exchange Server 2007 SP2 and 2010
 - Microsoft Exchange Server 2007 SP2 and 2010 SP1
 - Microsoft Exchange Server 2007 SP3 and 2010
 - Microsoft Exchange Server 2007 SP3 and 2010 SP1

To see the current compatibility matrix for the BlackBerry Enterprise Server Express, visit www.blackberry.com/go/compatibility.

System requirements: Firewall

To install the BlackBerry Enterprise Server Express, configure a firewall or proxy firewall with the following conditions:

- Exclusive use of port 3101 to open and maintain an outbound, bidirectional TCP/IP connection to an external server
- Support for resolving Internet addresses that use DNS
- For proxy firewalls, transparency of the proxy server

Supported features and environments

Item	BlackBerry Enterprise Server Express
Messaging server	The BlackBerry Enterprise Server Express and BlackBerry Enterprise Server Express components support installation on the same computer as the messaging server.
Upgrades	You can upgrade any version of the BlackBerry Enterprise Server Express to a later version without having to uninstall the current version.

Item	BlackBerry Enterprise Server Express
BlackBerry Domain	<p>Your organization's BlackBerry Domain can contain more than one BlackBerry Enterprise Server Express instance. The different BlackBerry Enterprise Server Express instances in the BlackBerry Domain can be different versions, but the BlackBerry Configuration Database must be the same version as the latest BlackBerry Enterprise Server Express instance. The version of the BlackBerry Administration Service that you use to manage the BlackBerry Enterprise Server Express instances must be the same version as the BlackBerry Configuration Database.</p> <p>For example, if your organization's BlackBerry Domain contains a BlackBerry Enterprise Server Express 5.0 SP1 and a BlackBerry Enterprise Server Express 5.0 SP2, the BlackBerry Configuration Database must be version 5.0 SP2, and the BlackBerry Administration Service that you use to manage both BlackBerry Enterprise Server Express instances must be version 5.0 SP2.</p>
Virtual environment	For information, please visit www.blackberry.com to read KB 29661.
Enhanced network authentication	All BlackBerry Enterprise Server Express components support RSA Authentication Agent 6.1 for Windows Server 2003 and RSA Authentication Agent 7.0.1 for Windows Server 2008.
IP	BlackBerry Enterprise Server Express components support only IPv4 for TCP/IP connections.
SNMP monitoring	The BlackBerry Enterprise Server Express components support the SNMP service.
Remote access	The BlackBerry Enterprise Server Express components support remote access by administrators who use Remote Desktop Connection.

Unsupported environments

Item	Description
DMZ	The BlackBerry Enterprise Server Express and BlackBerry Enterprise Server Express components, with the exception of the BlackBerry Router, do not support installation in a DMZ.
messaging server	The BlackBerry Enterprise Server Express for Microsoft Exchange (and all BlackBerry Enterprise Server Express components) does not support installation on the computer that hosts the messaging server.
email application	The BlackBerry Enterprise Server Express and BlackBerry Enterprise Server Express components do not support installation on computers that host email applications such as Microsoft Outlook. Email applications use data files that

Item	Description
	<p>can cause conflicts with the BlackBerry Enterprise Server Express components. As a result, the BlackBerry Enterprise Server Express components might not function as expected.</p>
BlackBerry Attachment Service	<p>You must install the software update for KB22953 on Windows Server 2008 if you want the BlackBerry Attachment Service to support .mp3 audio files on BlackBerry devices and all audio formats on BlackBerry 7100 Series devices that support CDMA networks. To download the software update for KB22953, visit www.blackberry.com/support/downloads/.</p>
Remote Desktop Services or Terminal Services	<p>The BlackBerry Enterprise Server Express and BlackBerry Enterprise Server Express components do not support installation on a computer that you installed Remote Desktop Services or Terminal Services on.</p>
upgrades or migration	<p>You cannot upgrade any version of the BlackBerry Enterprise Server, BlackBerry Professional Software, or BlackBerry Enterprise Server Small Business Edition to the BlackBerry Enterprise Server Express. You cannot migrate user accounts from the BlackBerry Enterprise Server, BlackBerry Professional Software, or BlackBerry Enterprise Server Small Business Edition to the BlackBerry Enterprise Server Express.</p> <p>For more information about the migration paths that the BlackBerry Enterprise Transporter supports for the BlackBerry Enterprise Server Express, visit www.blackberry.com/go/serverdocs to see the <i>BlackBerry Enterprise Transporter Installation and Configuration Guide</i>.</p>
mixed environment	<p>You cannot connect both a BlackBerry Enterprise Server and a BlackBerry Enterprise Server Express to the same BlackBerry Configuration Database. To run both a BlackBerry Enterprise Server and a BlackBerry Enterprise Server Express in the same organization, you can configure one BlackBerry Configuration Database for the BlackBerry Enterprise Server instances, and another BlackBerry Configuration Database for the BlackBerry Enterprise Server Express instances.</p>

Preupgrade tasks

5

Configuring a Microsoft Exchange 2010 messaging environment

Create a Windows account that has a Microsoft Exchange 2010 mailbox

You must create a Windows account with a Microsoft Exchange 2010 mailbox so that the Windows account can authenticate with the Microsoft Exchange Server.

Before you begin: If you want free/busy lookups to work in Microsoft Outlook 2003 and earlier, you must configure Microsoft Exchange 2010 to support Microsoft Outlook 2003 and earlier by creating a public folder database. For more information about supporting Microsoft Outlook 2003 and earlier, visit <http://support.microsoft.com> to read article 555851 and visit <http://technet.microsoft.com> to read articles 123694, 124270, 397221, and 691120.

1. On the computer that hosts Microsoft Exchange, log in using an administrator account that has the permission to create accounts.
2. Open the Microsoft Exchange Management Console.
3. Create an account and mailbox that you name **BESAdmin**.
4. To permit the BlackBerry Enterprise Server Express to check if a BlackBerry device user has permission to access a public folder, assign the Owner permission for all public folders to the administrator account.

After you finish:

- To verify that you created the Windows account, log in to a computer using the Windows account.
- Verify that the Windows account is not a member of the Domain Administrators group in Microsoft Active Directory.
- Verify that BlackBerry device users have Read permissions and Visible permissions to public folders.
- To permit BlackBerry device users to check the availability of meeting participants using BlackBerry Device Software 4.5 or later, configure the Schedule+ Free/Busy information for the system public folder. For more information, visit <http://technet.microsoft.com> to read articles 629523 and 691129.

Related information

Manage the BlackBerry Enterprise Server Express performance in a Microsoft Exchange 2010 environment, 71

Configure Microsoft Exchange 2010 permissions for the Windows account

Before you begin:

Verify the domain name in Microsoft Active Directory. When you set the permissions, you must match the domain name in Microsoft Active Directory.

1. On a computer that hosts the Microsoft Exchange Management Shell, open the Microsoft Exchange Management Shell.
2. Type **Get-MailboxDatabase | Add-ADPermission -User "BESAdmin" -AccessRights ExtendedRight - ExtendedRights Receive-As, ms-Exch-Store-Admin, ms-Exch-Store-Visible**.
3. Type **Add-RoleGroupMember "View-Only Organization Management" -Member "BESAdmin"**.
4. Type **Add-ADPermission -InheritedObjectType User -InheritanceType Descendants -ExtendedRights Send-As - User "BESAdmin" -Identity "DC=<domain_1>,DC=<domain_2>,DC=<domain_3>"** where <domain_1>, <domain_2>, and <domain_3> form the name of the domain.
For example, if the domain name is example.organization.net, type **example** for <domain_1>, **organization** for <domain_2>, and **net** for <domain_3>.

After you finish: If you create a mailbox database for Microsoft Exchange, repeat step 2.

Turn off client throttling in Microsoft Exchange 2010

By default, Microsoft Exchange 2010 uses client throttling policies to track the bandwidth that each Microsoft Exchange user consumes and enforce bandwidth limits as necessary. The policies affect the performance of the BlackBerry Enterprise Server Express, so you should turn off client throttling for the Windows account that has a Microsoft Exchange mailbox.

1. On a computer that hosts the Microsoft Exchange Management Shell, open the Microsoft Exchange Management Shell.
2. Type **New-ThrottlingPolicy BESPolicy**.
3. Type the following command:
Set-ThrottlingPolicy BESPolicy -RCAMaxConcurrency \$null -RCAPercentTimeInAD \$null -RCAPercentTimeInCAS \$null -RCAPercentTimeInMailboxRPC \$null -EWSMaxConcurrency \$null -EWSPercentTimeInAD \$null - EWSPercentTimeInCAS \$null -EWSPercentTimeInMailboxRPC \$null -EWSMaxSubscriptions \$null - EWSFastSearchTimeoutInSeconds \$null -EWSFindCountLimit \$null
4. Type **Set-Mailbox "BESAdmin" -ThrottlingPolicy BESPolicy**.

Increase the maximum number of connections to the Address Book service in Microsoft Exchange 2010

By default, Microsoft Exchange 2010 limits the maximum number of connections from the BlackBerry Enterprise Server Express to the Address Book service to 50. To permit the BlackBerry Enterprise Server Express to run, you must increase the number of permitted connections to a large value (for example, 100,000).

Before you begin: You must complete this task if the messaging server that the BlackBerry Enterprise Server Express uses is Microsoft Exchange 2010. If the messaging server is Microsoft Exchange 2010 SP1, you can change the `MaxSessionsPerUser` settings using client throttling policies.

1. On the computer that hosts the Microsoft Exchange CAS server, in `<drive>:\Program Files\Microsoft\Exchange Server\V14\Bin`, in a text editor, open the **microsoft.exchange.addressbook.service.exe.config** file.
2. Change the value of the `MaxSessionsPerUser` key to **100000**.
3. Save and close the file.
4. Restart the Address Book service.

Configure a management role for Microsoft Exchange Web Services

If you want the BlackBerry Enterprise Server Express to use Microsoft Exchange Web Services to manage calendars on BlackBerry devices, you must configure a management role for Microsoft Exchange Web Services in Microsoft Exchange 2010.

For more information about configuring the BlackBerry Enterprise Server Express to use Microsoft Exchange Web Services, see the *BlackBerry Enterprise Server Express Administration Guide*.

1. On a computer that hosts the Microsoft Exchange Management Shell, open the Microsoft Exchange Management Shell.
2. Type **New-ManagementRoleAssignment -Name "BES Admin EWS" -Role ApplicationImpersonation -User "BESAdmin"**.

Configure the BlackBerry Enterprise Server Express to run without public folders

If you did not install any public folders in Microsoft Exchange, you must configure the BlackBerry Enterprise Server Express to run without public folders by changing a registry key.

1. On each computer that hosts the BlackBerry Enterprise Server Express, click **Start > Run**.
2. In the **Open** field, type **regedit**.
3. Click **OK**.
4. Perform one of the following actions:
 - If you are running a 32-bit version of Windows, navigate to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows Messaging Subsystem\CDO.
 - If you are running a 64-bit version of Windows, navigate to HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Microsoft\Windows Messaging Subsystem.
5. If the **CDO** registry key does not exist, create a registry key that you name **CDO**.
6. In the **CDO** registry key, if the DWORD value does not exist, create a DWORD value that you name **Ignore No PF**.
7. Change the DWORD value to **1**.
8. Click **OK**.

Permit meeting requests from outside of your organization when using Microsoft Exchange Web Services for Microsoft Exchange 2010

By default, the BlackBerry Enterprise Server Express uses Microsoft Exchange Web Services to manage calendars on BlackBerry devices. Each time you add a new Microsoft Exchange mailbox, you must configure the calendar settings in Microsoft Exchange to permit BlackBerry device users to receive meeting requests from outside of your organization when using Microsoft Exchange Web Services.

1. On a computer that hosts the Microsoft Exchange Management Shell, open the Microsoft Exchange Management Shell.
2. For each Microsoft Exchange Server that hosts users, type the following command:
Get-Mailbox -server<messaging-server name> | Set-CalendarProcessing -ProcessExternalMeetingMessages \$true

Configuring a Microsoft Exchange 2007 messaging environment

Create a Windows account that has a Microsoft Exchange 2007 mailbox

You must create a Windows account that has a Microsoft Exchange 2007 mailbox so that the Windows account can authenticate with the Microsoft Exchange Server.

Before you begin: You must configure Microsoft Exchange 2007 to support versions of Microsoft Outlook that are earlier than 2007 by creating a public folder database. For more information about supporting versions of Microsoft Outlook that are earlier than 2007, visit <http://support.microsoft.com> to read article 555851 and visit <http://technet.microsoft.com> to read articles 123694, 124270, 397221, and 691120.

1. On the computer that hosts Microsoft Exchange, log in using an administrator account that has the correct permission to create accounts.
2. Open the Microsoft Exchange Management Console.
3. Create an account and mailbox that you name **BESAdmin**.
4. To permit the BlackBerry Enterprise Server Express to check if a user has permissions for a public folder, assign the Owner permission for all public folders to the administrator account.

After you finish:

- To verify that you created the Windows account, log in to a computer using the Windows account.
- Verify that the Windows account is not a member of the Domain Administrators group in Microsoft Active Directory.
- Verify that BlackBerry device users have Read and Visible permissions to public folders.
- To permit BlackBerry device users to check the availability of meeting participants in BlackBerry Device Software 4.5 or later, configure the Schedule+ Free/Busy information for the system public folder. For more information, visit <http://technet.microsoft.com> to read articles 629523 and 691129.

Configure Microsoft Exchange 2007 permissions for the Windows account

1. On a computer that hosts the Microsoft Exchange Management Shell, open the Microsoft Exchange Management Shell.
2. Perform one of the following actions:
 - If you log in to Microsoft Exchange Server 2007, type **add-exchangeadministrator "BESAdmin" -role ViewOnlyAdmin**.
 - If you log in to another computer, type **get-mailboxserver "< messaging_server_name >" | add-exchangeadministrator "BESAdmin" -role ViewOnlyAdmin**.
3. For each Microsoft Exchange Server 2007 instance that hosts BlackBerry device users, type the following command:
get-mailboxserver "< messaging_server_name >" | add-adpermission -user "BESAdmin" -accessrights ExtendedRight -extendedrights Receive-As, ms-Exch-Store-Admin

Permit users to send email messages in a Microsoft Exchange environment

To permit BlackBerry device users to send email messages, you must configure Send As permissions for the Microsoft Active Directory user object that contains users. This task describes how to configure the Send As permissions for the entire Windows domain, but you can also configure the permissions at the user object level or on a container of user objects.

For more information about Send As permissions and the BlackBerry Enterprise Server Express, visit www.blackberry.com/btsc to read article KB04707. For more information about assigning Send As permissions to multiple user accounts, visit support.microsoft.com to read article 912918.

1. Log in to a computer in the Windows domain as an administrator that has permissions to change user objects in Microsoft Active Directory.
2. On the taskbar, click **Start > Administrative Tools > Active Directory Users and Computers**.
3. On the **View** menu, click **Advanced Features**.
4. Right-click the domain root. Click **Properties**.
5. On the **Security** tab, click **Advanced**.
6. Click **Add**.
7. Type the name of the Windows account that you created (for example, BESAdmin).
8. Click **Check Names**.

9. Click **OK**.
10. Perform one of the following actions:
 - If you are running Windows Server 2003, in the **Apply** drop-down list, click **User Objects**.
 - If you are running Windows Server 2008, in the **Apply** drop-down list, click **Descendant User Objects**.
11. In the **Allow** column, select the **Send As** check box.
12. Click **Apply**.
13. Click **OK**.

Permit meeting requests from outside of your organization when using Microsoft Exchange Web Services for Microsoft Exchange 2007

By default, the BlackBerry Enterprise Server Express uses Microsoft Exchange Web Services to manage calendars on BlackBerry devices. Each time you add a new Microsoft Exchange mailbox, you must configure the calendar settings in Microsoft Exchange to permit BlackBerry device users to receive meeting requests from outside of your organization when using Microsoft Exchange Web Services.

1. On a computer that hosts the Microsoft Exchange Management Shell, open the Microsoft Exchange Management Shell.
2. For each Microsoft Exchange Server that hosts users, type the following command:
Get-Mailbox -server<messaging-server name> | Set-MailboxCalendarSettings -ProcessExternalMeetingMessages \$true

Configuring a Microsoft Exchange 2003 messaging environment

Create a Windows account that has a Microsoft Exchange 2003 mailbox

You must create a Windows account that has a Microsoft Exchange 2003 mailbox so that the Windows account can authenticate with the Microsoft Exchange messaging server.

1. On any computer in the Windows domain, on the taskbar, click **Start > Programs > Microsoft Exchange > Active Directory Users and Computers**.
2. Create an account that has the following attributes:
 - **Name:** BESAdmin
 - **Group membership:** Domain User
3. Create a Microsoft Exchange mailbox for the account.
4. To activate the new mailbox, send a test email message.

After you finish:

If you cannot see the Windows account in the Microsoft Active Directory to verify that you created it, log in to a computer using the Windows account.

For more information about the Send As permission and the BlackBerry Enterprise Server Express, visit www.blackberry.com to read KB04707.

For more information about assigning the Send As permission to multiple user accounts, visit www.support.microsoft.com to read article 912918.

Configure Microsoft Exchange 2003 permissions for the Windows account

On each Microsoft Exchange 2003 server that hosts BlackBerry device users, you must configure Microsoft Exchange permissions for the Windows account (for example, BESAdmin) that you want to use to install the BlackBerry Enterprise Server Express components.

This task describes how to configure the Microsoft Exchange permissions at the administrative group level for every Microsoft Exchange 2003 server that hosts BlackBerry device users but you can also configure the permissions at other levels, such as at the root of the organization or another administrative group.

1. On the computer that hosts the Microsoft Exchange 2003 System Manager, open the Microsoft Exchange 2003 System Manager.
2. Configure the Exchange View Only Administrator permission for the Windows account in the administrative group that contains the Microsoft Exchange 2003 servers that host BlackBerry device users.
3. On each Microsoft Exchange 2003 server that hosts BlackBerry device users, assign the following permissions to the Windows account:
 - Send As
 - Receive As
 - Administer Information Store
4. To permit the BlackBerry Enterprise Server Express to check if users have permissions to access a public folder, assign the Owner permission for all public folders to the Windows account.

After you finish: Verify that the users have Read and Visible permissions to public folders.

Permit users to send email messages in a Microsoft Exchange environment

To permit BlackBerry device users to send email messages, you must configure Send As permissions for the Microsoft Active Directory user object that contains users. This task describes how to configure the Send As permissions for the entire Windows domain, but you can also configure the permissions at the user object level or on a container of user objects.

For more information about Send As permissions and the BlackBerry Enterprise Server Express, visit www.blackberry.com/btsc to read article KB04707. For more information about assigning Send As permissions to multiple user accounts, visit support.microsoft.com to read article 912918.

1. Log in to a computer in the Windows domain as an administrator that has permissions to change user objects in Microsoft Active Directory.
2. On the taskbar, click **Start > Administrative Tools > Active Directory Users and Computers**.
3. On the **View** menu, click **Advanced Features**.
4. Right-click the domain root. Click **Properties**.
5. On the **Security** tab, click **Advanced**.
6. Click **Add**.
7. Type the name of the Windows account that you created (for example, BESAdmin).
8. Click **Check Names**.
9. Click **OK**.
10. Perform one of the following actions:
 - If you are running Windows Server 2003, in the **Apply** drop-down list, click **User Objects**.
 - If you are running Windows Server 2008, in the **Apply** drop-down list, click **Descendant User Objects**.
11. In the **Allow** column, select the **Send As** check box.
12. Click **Apply**.
13. Click **OK**.

Configure permissions for the Windows account

On each computer that you want to install the BlackBerry Enterprise Server Express components on, you must configure permissions for the Windows account that you want to use to install the BlackBerry Enterprise Server Express components and run the services for the BlackBerry Enterprise Server Express.

Without the correct permissions, the BlackBerry Enterprise Server Express cannot run.

1. Right-click **My Computer**. Click **Manage**.
2. In the left pane, expand **Local Users and Groups**.
3. Navigate to the **Groups** folder.
4. In the right pane, double-click **Administrators**.
5. Click **Add**.
6. In the **Enter the object names to select** field, type the Windows account name that you want the services for the BlackBerry Enterprise Server Express to use (for example, BESAdmin).
7. Click **OK**.
8. Click **Apply**.
9. Click **OK**.
10. On the taskbar, click **Start > Programs > Administrative Tools > Local Security Policy**.
11. Configure the following permissions for the Windows account:
 - log on locally with local permissions (if not assigned by default)
 - log on as a service
12. On the taskbar, click **Start > Programs > Administrative Tools > Computer Management**.
13. Add the Windows account to the local administrators group.

Prevent the Microsoft Exchange known issues for wireless calendar synchronization

Some known issues for Microsoft Exchange impact how the BlackBerry Enterprise Server Express synchronizes calendars over the wireless network. To prevent the known issues from occurring, you can read about the known issues for Microsoft Exchange that might impact your organization's messaging environment and install the hotfixes for them. If your organization's messaging environment includes multiple messaging servers, you can resolve the known issues that apply to the latest Microsoft Exchange software version in your organization's environment.

If you do not install the correct hotfixes, the BlackBerry Enterprise Server Express cannot run.

1. Visit <http://support.microsoft.com> to read articles 823343 and 894470.
2. Verify that your organization's environment meets the requirements that are described in the applicable known issues.
3. Download the hotfixes for the known issues on the computers that you want to install the BlackBerry Enterprise Server Express or BlackBerry Administration Service on.
4. Install the hotfixes.

Verify if the Windows account can access a user account in Microsoft Exchange

The BlackBerry Enterprise Server Express requires permission to access each BlackBerry device user's mailbox to process email messages. The IEMSText.exe tool runs a test to verify whether the Windows account has the Send As permission in Microsoft Exchange so that the BlackBerry Enterprise Server Express can access user accounts. The IEMSText.exe tool does not verify whether the BlackBerry Enterprise Server Express can send email messages on behalf of a BlackBerry device user.

1. Copy the BlackBerry Enterprise Server Express installation files to the computer that you want to install the BlackBerry Enterprise Server Express on.
2. Extract the contents to a folder on the computer.
3. Navigate to `<extracted_folder>\Tools`.
4. Double-click **IEMSTest.exe**.

5. In the **Profile Name** drop-down list, select the profile names for the user accounts.
6. Click **OK**.
7. In the left pane, select the user accounts that you want to check.
8. Click **Select**.
9. Click **OK**.

Configuring connections for the BlackBerry Enterprise Server Express database

The database for the BlackBerry Enterprise Server Express is the BlackBerry Configuration Database. You create the BlackBerry Configuration Database when you install a BlackBerry Enterprise Server Express or BlackBerry Administration Service or when you run the CreateDB executable.

The BlackBerry Enterprise Server Express can connect to its database on the Microsoft SQL Server using Windows authentication or database authentication. By default, the BlackBerry Enterprise Server Express logs in to its database using the Windows account that you use to complete the installation process or the database credentials you provided during the installation process.

Specifying permissions when you connect to the BlackBerry Configuration Database using Windows authentication or Microsoft SQL Server authentication

If you connect the BlackBerry Enterprise Server Express to the BlackBerry Configuration Database using Windows authentication or Microsoft SQL Server authentication during the installation process, the Windows account or Microsoft SQL Server account that you specify must have database permissions on the database server. The type of permissions that you specify is determined by the setup option that you select and whether you create the BlackBerry Configuration Database on the computer that hosts the BlackBerry Enterprise Server Express components or on another database server.

Specifying permissions for the Windows account or Microsoft SQL Server account

If you install Microsoft SQL Server 2008 R2 Express Edition during the BlackBerry Enterprise Server Express installation process, you might need to specify permissions for the Windows account or Microsoft SQL Server account, depending on the type of authentication you select.

When you select Windows authentication during the BlackBerry Enterprise Server Express installation process, the setup application automatically assigns the required permissions to the Windows account that you use to complete the installation process.

When you select Microsoft SQL Server authentication during the BlackBerry Enterprise Server Express installation process, you must assign the required database permissions to the Microsoft SQL Server account that you use to complete the installation process.

Assign permissions to the Windows account or Microsoft SQL Server account

Perform one of the following actions:

- If you create the BlackBerry Configuration Database on the computer that hosts the BlackBerry Enterprise Server Express and you require the setup application to install Microsoft SQL Server Express during the installation process and you choose Windows authentication, you are not required to assign Microsoft SQL Server permissions to the Windows account. If you want the setup application to install the BlackBerry database notification system, you must assign the Microsoft SQL Server permission for the database system administrator (also called the sysadmin server role in Microsoft SQL Server Management Studio) to the Windows account.
- If you create the BlackBerry Configuration Database on the computer that hosts the BlackBerry Enterprise Server Express and you require the setup application to install Microsoft SQL Server Express during the installation process and you choose Microsoft SQL Server authentication, you must assign the database creator (dbcreator server role) Microsoft SQL Server permission to the Microsoft SQL Server account. If you want the setup application to install the BlackBerry database notification system, you must assign the Microsoft SQL Server permission for the database system administrator (also called the sysadmin server role in Microsoft SQL Server Management Studio) to the Microsoft SQL Server account.
- If you create the BlackBerry Configuration Database on the computer that hosts the BlackBerry Enterprise Server Express and the computer already hosts a Microsoft SQL Server, you must assign the database creator (dbcreator server role) Microsoft SQL Server permission to the Windows account or Microsoft SQL Server account that you use to complete the BlackBerry Enterprise Server Express installation process. If you want the setup application to install the BlackBerry database notification system, you must assign the Microsoft SQL Server permission for the database system administrator (also called the sysadmin server role in Microsoft SQL Server Management Studio) to the Windows account or Microsoft SQL Server account.
- If you create the BlackBerry Configuration Database on a computer that does not host the BlackBerry Enterprise Server Express, you must assign the database creator (dbcreator server role) Microsoft SQL Server permission to the Windows or Microsoft SQL Server account that you use to complete the BlackBerry Enterprise Server Express installation process. If you want the setup application to install the BlackBerry database notification system, you must assign the Microsoft SQL Server permission for the database system administrator (also called the sysadmin server role in Microsoft SQL Server Management Studio) to the Windows account or Microsoft SQL Server account.

Backing up the BlackBerry Enterprise Server Express databases

You must back up the BlackBerry Enterprise Server Express databases so that you can restore them if the BlackBerry Enterprise Server Express upgrade process does not complete.

If your organization's environment includes Microsoft SQL Server, use the backup and restore tools that Microsoft provides to back up the BlackBerry Enterprise Server Express databases.

If your organization's environment includes Microsoft SQL Server Express, you can use the BlackBerry Configuration Database Backup Tool that is included with the BlackBerry Enterprise Server Express installation media to back up the BlackBerry Enterprise Server Express databases to a file. By default, the backup file is named `<database_name><YYYYMMDDHHMMSS>.bak`.

Back up the BlackBerry Enterprise Server Express databases

1. Copy the BlackBerry Enterprise Server Express installation files to the computer that hosts the BlackBerry Enterprise Server Express database that you want to back up.
2. Extract the installation files to a folder on the computer.
3. At the command prompt, navigate to the **Tools** folder in the BlackBerry Enterprise Server Express installation files.
4. Run **BlackBerryDbBackup.exe**.

Example

To back up a BlackBerry Configuration Database that is named BESMgmt to a folder that is 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 <database_name>	This parameter specifies the name of the BlackBerry Enterprise Server Express database (for example, BESMgmt).
[-f] <folder>	This parameter specifies the folder that you want to save the backup file in. If you specify a folder, it must already exist. The default folder is the current folder location.
[-S] <database_server>	This parameter specifies the name of the computer that hosts the BlackBerry Enterprise Server Express database.
[-E]	This parameter specifies that you want to use Windows authentication instead of database authentication to connect to the database server. Your login account must have the database owner permission. The default value is false (Windows authentication).
[-U] <user_name>	This parameter specifies the user name that you use for database authentication. To use a login account that is different from the default login account, the account must have database owner permission. The default user name is sa.
[-P] <password>	This parameter specifies the password that you use for database authentication.
[-p] <percentage>	This parameter specifies the interval, as a percentage, that you want the BlackBerry Configuration Database Backup Tool to report progress at. The default percentage is 10.
[-?]	This parameter specifies information about the BlackBerry Configuration Database Backup Tool. You do not require any other parameters when you use this parameter.

Applications that are installed with the BlackBerry Enterprise Server Express components

You can use the BlackBerry Enterprise Server Express installation process to install third-party applications.

Application	BlackBerry Enterprise Server Express components that the application is installed with
JDK with JRE 1.6.31	<ul style="list-style-type: none"> BlackBerry Administration Service
JDK 1.6.31	<ul style="list-style-type: none"> BlackBerry Administration Service BlackBerry MDS Connection Service
Microsoft XML Core Services 6.0 SP2	<ul style="list-style-type: none"> All components except the BlackBerry Router
Microsoft SQL Server 2008 R2 Express Edition (if selected)	<ul style="list-style-type: none"> BlackBerry Administration Service Any other components
Microsoft .NET Framework 2.0 (if you are installing Microsoft SQL Server Express)	<ul style="list-style-type: none"> All components

Prerequisites: Upgrading the BlackBerry Enterprise Server Express software

- The BlackBerry Configuration Database and all BlackBerry Administration Service instances in the BlackBerry Enterprise Server Express domain must run the same version of the BlackBerry Enterprise Server Express software. Before you upgrade the BlackBerry Configuration Database, you must stop the BlackBerry Administration Service services that run on all other computers in the BlackBerry Enterprise Server Express domain until you upgrade the computers.
- Install or upgrade the BlackBerry Administration Service on the computer that you perform the upgrade process on in the BlackBerry Enterprise Server Express domain first.
- In a Windows Server 2003 environment, to install Microsoft SQL Server 2008 R2 Express Edition during the installation of BlackBerry Enterprise Server Express, you must install Windows PowerShell 1.0, Microsoft .NET Framework 3.5 SP1, and Microsoft Windows Installer 4.5 before you run the BlackBerry Enterprise Server Express setup application.
- Upgrade all BlackBerry Enterprise Server Express instances to version 5.0 SP2 or later.
- Delete inactive user accounts from the BlackBerry Enterprise Server Express.
- Back up the BlackBerry Enterprise Server Express databases. The setup application also gives you the option to do this during the installation process.

- If you configured database replication for the BlackBerry Configuration Database, turn database replication off during the upgrade process to avoid possible errors.
- If you installed the BlackBerry database notification system on a remote Microsoft SQL Server, upgrade the BlackBerry database notification system manually.
- Verify that the Windows account that you use to upgrade the BlackBerry Enterprise Server Express software is the same account that you used to install the BlackBerry Enterprise Server Express software.
- If you install the BlackBerry Administration Service, verify that a WAN bridge does not separate the computers that host the BlackBerry Administration Service and BlackBerry Configuration Database.
- If you perform the upgrade on a computer that has more than one NIC, verify that the production NIC is first in the bind order in Windows network settings.
- If you want to install Microsoft SQL Server 2008 R2 Express Edition on a computer that does not host any BlackBerry Enterprise Server Express components, you can navigate to the Tools folder in the BlackBerry Enterprise Server Express installation files and run Sqlexpr.exe.

Performing a test upgrade of the BlackBerry Configuration Database

If you want to make sure that you can upgrade the BlackBerry Configuration Database in your organization's environment without any issues or if you want to find out how long it takes to upgrade the BlackBerry Configuration Database, you can perform a test upgrade of the BlackBerry Configuration Database.

When you perform a test upgrade of the BlackBerry Configuration Database, you back up the BlackBerry Configuration Database, restore the backup version of the BlackBerry Configuration Database to a database server that does not host the BlackBerry Configuration Database, and then run the CreateDB executable.

Perform a test upgrade of the BlackBerry Configuration Database

Before you begin: Verify that you configured the appropriate permissions on the database server that you want to perform a test upgrade of the BlackBerry Configuration Database on.

1. Log in to the computer that hosts the BlackBerry Configuration Database using a local administrator account or a Windows account that has SQL administrator permissions.
2. Back up the BlackBerry Configuration Database.

3. Log in to a computer that hosts a database server that you want to perform a test upgrade of the BlackBerry Configuration Database on using a local administrator account or a Windows account that has SQL administrator permissions.
4. Restore the backup version of the BlackBerry Configuration Database.
5. Copy the BlackBerry Enterprise Server Express installation files to the database server.
6. Extract the contents to a folder on the computer.
7. Navigate to `<extracted_folder>\Database` .
8. Open the **BesMgmt.cfg** file in a text editor.
9. Change the file to include information that is specific to your organization's environment.
10. Save and close the file.
11. Open a command prompt window.
12. Change to `<extracted_folder>\Database` .
13. Type **CreateDB.exe BESMgmt.cfg**.

BESMgmt.cfg properties

Property	Description
CMD	This property specifies the type of action that the CreateDB executable must complete (for example, whether to install or upgrade the BlackBerry Configuration Database).
DATABASE_NAME	This property specifies the name of the BlackBerry Configuration Database.
SERVER	This property specifies the name of the database server that hosts the BlackBerry Configuration Database. If a database instance hosts the BlackBerry Configuration Database, follow the format <i>database_server_name\database_instance_name</i> .
USERID	If you use database authentication, this property specifies the user name of the 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 in the same root folder that the CreateDB.exe file is located in.
LOG_DIR	This property specifies the path to the folder that you want to create log files in. By default, this folder is in the same root folder that the CreateDB.exe file is located in.
DBMS	This property specifies the database management system that your organization uses.

Property	Description
DB_FILE_DIR	This property specifies an existing folder that you want to save the database files in. By default, this folder is in the same root folder that the CreateDB.exe file is located in.
BACKUP_DIR	This property specifies an existing folder where you want to save the database backup in. By default, this folder is located in the same root folder that the CreateDB.exe file is located in.
BES_TYPE	This property specifies the messaging server that your organization uses.

Upgrading the BlackBerry Enterprise Server Express software by using the in-place upgrade process

Using the in-place upgrade process, you can upgrade the BlackBerry Enterprise Server Express software by replacing the existing version and upgrading the BlackBerry Configuration Database.

You can use the in-place upgrade process if your organization's environment includes a standalone BlackBerry Enterprise Server Express instance.

When you use the in-place upgrade process, all BlackBerry devices receive new IT policies. BlackBerry devices that are running BlackBerry Device Software version 4.1 or later receive new service books and data synchronization occurs over the wireless network.

Advantages of this upgrade process include:

- You do not require an extra computer to perform this upgrade.
- When the upgrade process completes, user accounts are active and no additional administrative action is required.

Disadvantages of this upgrade process include:

- After you upgrade the BlackBerry Enterprise Server Express, you cannot return to an earlier version of the software automatically.
- You must turn off the BlackBerry Enterprise Server Express during the upgrade process. The interruption to services for BlackBerry devices lasts for as long as it takes the upgrade process to complete.

Upgrade the BlackBerry Enterprise Server Express software by overwriting the existing version and use the existing BlackBerry Configuration Database

The in-place upgrade process requires that you restart the computer.

Before you begin:

- If a remote Microsoft SQL Server hosts the BlackBerry Configuration Database, upgrade the BlackBerry database notification system.
1. Log in to the computer using the Windows account that the BlackBerry Enterprise Server Express services run on.
 2. In the BlackBerry Enterprise Server Express installation files, double-click **setup.exe**. If the operating system in your organization's environment is Windows Server 2008 or later or Windows Small Business Server 2008 or later, run **setup.exe** as an administrator.
 3. Accept the BlackBerry Enterprise Server Express license agreement. Click **Next**.
 4. In the **Database information** dialog box, in the **Database location** section, verify the location of the BlackBerry Configuration Database that you want to upgrade.
 5. In the **Microsoft SQL Server name** field, verify the name or IP address of the computer that hosts the Microsoft SQL Server.
 6. In the **BlackBerry Configuration Database name** field, verify the name for the BlackBerry Configuration Database that you want to upgrade.
 7. Verify the port configuration. If the configuration is static, in the **Port** field, verify the port number that the BlackBerry Enterprise Server Express will use to connect to the BlackBerry Configuration Database.
 8. If you want to back up the existing BlackBerry Configuration Database before you upgrade it, click **Back up the existing BlackBerry Configuration Database before upgrading**. It is a best practice to back up the existing BlackBerry Configuration Database.
 9. In the **Database authentication** section, perform one of the following actions:
 - If you want the BlackBerry Enterprise Server Express to connect to the BlackBerry Configuration Database on the Microsoft SQL Server using Windows authentication, select **Windows authentication**.
 - If you want the BlackBerry Enterprise Server Express to connect to the BlackBerry Configuration Database on the Microsoft SQL Server using database authentication, select **SQL authentication**. In the **SQL user name** and **Password** fields, type the required login information.

10. Click **Next**.
11. When you receive a prompt to upgrade the BlackBerry Configuration Database, click **Yes**. The setup application notifies you when the database is created.
12. In the **Setup options** dialog box, under **Additional Components**, verify that the **BlackBerry Administration Service** is selected. You must install or upgrade the BlackBerry Administration Service if you upgrade the BlackBerry Configuration Database.
13. In the **Setup options** dialog box, for the first upgrade in the BlackBerry Domain, to install the BlackBerry Administration Service, under **Additional Components**, select **BlackBerry Administration Service**. If you do not want to install the BlackBerry Administration Service, you must perform the first upgrade in the BlackBerry Domain on a computer that the BlackBerry Administration Service is already installed on.
14. Click **Next**.
15. In the **Preinstallation checklist** dialog box, perform one of the following actions:
 - To continue, click **Next**.
 - To complete requirements that were identified in the checklist, click **Cancel**. You can restart the installation or upgrade at a later time.
16. In the **Accounts and Folders** dialog box, in the **Windows account information** section, in the **Password** field, type the password of the Windows account that you are using to install the BlackBerry Enterprise Server Express. Click **Next**.
17. In the **Summary** dialog box, verify the setup information.
18. Click **Install** to start the installation process.
19. If you receive a prompt to restart the computer, click **Yes**.
20. Log in to the computer using the same account that you used in step 1.
21. In the **Administration settings** dialog box, perform the following actions:
 - In the **Pool name** field, type an FQDN that the setup application can use to create the BlackBerry Administration Service web address. If you install only one BlackBerry Administration Service instance in the BlackBerry Domain, you can accept the default pool name. If you install more than one BlackBerry Administration Service instance in the BlackBerry Domain, you must create a DNS entry for the pool name that is not the name of a computer and that is mapped to the IP address of each BlackBerry Administration Service instance.
 - If necessary, in the **New password** and **Confirm password** fields, type the password for the SSL certificate that the BlackBerry Administration Service uses to authenticate with browsers. You must use the same password for every BlackBerry Administration Service instance in the BlackBerry Domain.
22. Click **Next**.
23. In the **Start services** dialog box, click **Start Services**. When all of the BlackBerry Enterprise Server Express services start, click **Next**.
24. In the **Console addresses** dialog box, click **Finish**. By default, the setup application writes the BlackBerry Administration Service web address and BlackBerry Web Desktop Manager web address to a .txt file.

After you finish:

- If you configured the BlackBerry Administration Service instances in the pool to communicate across network subnets with TCP before you upgraded the BlackBerry Enterprise Server Express components, you must restore the configuration files. For more information, visit www.blackberry.com/support to read article KB19654.
- The size of log files for the BlackBerry Enterprise Server Express components varies based on the number of users in your BlackBerry Enterprise Server Express environment and the level of user activity. It is a best practice to monitor and control the amount of disk space taken up by the BlackBerry Enterprise Server Express log files. For more information about configuring logging, visit www.blackberry.com/go/serverdocs to see the *BlackBerry Enterprise Server Express Administration Guide*.

Upgrading the BlackBerry Enterprise Server Express using the cutover upgrade process and upgrading the existing BlackBerry Configuration Database

You can use the cutover upgrade process to install a BlackBerry Enterprise Server Express on a new computer and move user accounts and server information from a previous BlackBerry Enterprise Server Express to the new one.

If you upgrade the existing BlackBerry Configuration Database, you can move user accounts from the previous BlackBerry Enterprise Server Express to the new one using the BlackBerry Administration Service.

The BlackBerry Configuration Database and all BlackBerry Administration Service instances in the BlackBerry Enterprise Server Express domain must be the same version. Before you upgrade the BlackBerry Configuration Database, you must stop the BlackBerry Administration Service services that run on all other computers in the BlackBerry Domain until you upgrade the computers.

Advantages of the cutover upgrade process include:

- You can move user accounts back to the previous BlackBerry Enterprise Server Express if you experience issues with the new one.
- You can upgrade server hardware.
- Users experience minimal service interruptions because user accounts remain active on the previous BlackBerry Enterprise Server Express until you start the new one.

Disadvantages of this upgrade process include:

- You require an extra computer.
- The BlackBerry Enterprise Server Express sends new service books to all devices that can synchronize data over the wireless network.

Upgrade a BlackBerry Configuration Database

If you are not a database administrator and you do not have permissions to modify the BlackBerry Configuration Database, you can request that a database administrator with the appropriate permissions upgrades the BlackBerry Configuration Database before you run the setup application and upgrade the BlackBerry Enterprise Server Express.

Before you begin: Verify that you configured the proper permissions on the database server.

1. Log in to the computer that hosts the database server as a local administrator or using a Windows account that has SQL administrator permissions.
2. Copy the BlackBerry Enterprise Server Express installation files to the database server that hosts the BlackBerry Configuration Database.
3. Extract the contents to a folder on the computer.
4. Navigate to `<extracted_folder>\Database` .
5. Open the `BesMgmt.cfg` file in a text editor.
6. Change the file to include information that is specific to your organization's environment.
7. Save and close the file.
8. Open a command prompt window.
9. Navigate to `<extracted_folder>\Database` .
10. Type **CreateDB.exe BESMgmt.cfg**.

BESMgmt.cfg properties

Property	Description
CMD	This property specifies the type of action that the CreateDB executable must complete (for example, whether to install or upgrade the BlackBerry Configuration Database).
DATABASE_NAME	This property specifies the name of the BlackBerry Configuration Database.
SERVER	This property specifies the name of the database server that hosts the BlackBerry Configuration Database. If a database instance hosts the BlackBerry Configuration Database, follow the format <code>database_server_name\database_instance_name</code> .

Property	Description
USERID	If you use database authentication, this property specifies the user name of the 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 in the same root folder that the CreateDB.exe file is located in.
LOG_DIR	This property specifies the path to the folder that you want to create log files in. By default, this folder is in the same root folder that the CreateDB.exe file is located in.
DBMS	This property specifies the database management system that your organization uses.
DB_FILE_DIR	This property specifies an existing folder that you want to save the database files in. By default, this folder is in the same root folder that the CreateDB.exe file is located in.
BACKUP_DIR	This property specifies an existing folder where you want to save the database backup in. By default, this folder is located in the same root folder that the CreateDB.exe file is located in.
BES_TYPE	This property specifies the messaging server that your organization uses.

Install the BlackBerry Enterprise Server Express on a new computer and upgrade the existing BlackBerry Configuration Database

To administer the BlackBerry Enterprise Server Express, you must install the BlackBerry Administration Service. You can install the BlackBerry Administration Service on the computer that hosts the BlackBerry Enterprise Server Express or on a separate computer. The first time you run the setup application in your organization's BlackBerry Domain, install the BlackBerry Administration Service, then run the setup application again if you want to install additional BlackBerry Enterprise Server Express components or remote components.

During the BlackBerry Enterprise Server Express installation process, you must restart the computer.

Before you begin: If you want to install a new BlackBerry Enterprise Server Express in your organization's BlackBerry Domain, you must download a new copy of the BlackBerry Enterprise Server Express software with new BlackBerry Client Access License key and SRP information.

1. Log in to the computer using the Windows account that you want the BlackBerry Enterprise Server Express services to run on.
2. In the BlackBerry Enterprise Server Express installation files, double-click **setup.exe**. If the operating system in your organization's environment is Windows Server 2008 or later or Windows Small Business Server 2008 or later, run **setup.exe** as an administrator.
3. Accept the BlackBerry Enterprise Server Express license agreement. Click **Next**.
4. In the **Setup type** dialog box, click **Use an existing BlackBerry Configuration Database**. Click **Next**.
5. In the **Database information** dialog box, specify the information for the BlackBerry Configuration Database that you upgraded. Click **Next**.
6. In the **Setup options** dialog box, in the **Components** section, select the BlackBerry Enterprise Server Express components that you want to install. The setup application upgrades any components that you installed previously that you select.

If you installed a BlackBerry Enterprise Server Express component on the computer previously, the component is selected. If you clear the checkmark for the component, the setup application removes the component from the computer.
7. Click **Next**.
8. In the **Preinstallation checklist** dialog box, perform one of the following actions:
 - To continue, click **Next**.
 - To complete requirements that were identified in the checklist, click **Cancel**. You can restart the installation or upgrade at a later time.
9. In the **Accounts and Folders** dialog box, in the **Windows account information** section, in the **Password** field, type the password of the Windows account that you are using to install the BlackBerry Enterprise Server Express components.
10. In the **Summary** dialog box, verify the setup information.
11. Click **Install** to start the installation process.
12. If the setup application prompts you to restart the computer, click **Yes**.
13. After the computer restarts, log in to the computer using the same account that you used in step 1.
14. In the **CAL and SRP Information** dialog box, type the SRP credentials that the BlackBerry Enterprise Server Express that you are replacing uses. Click **Next**.
15. In the **Administration settings** dialog box, perform the following actions:
 - In the **Pool name** field, type an FQDN that the setup application can use to create the BlackBerry Administration Service web address. Since you are installing a second instance of the BlackBerry Administration Service in the BlackBerry Domain, you must create a DNS entry for the pool name that is not the name of a computer and is mapped to the IP address of each BlackBerry Administration Service instance. If you upgrade the first instance of the BlackBerry Administration Service, you must use the new DNS entry that you specify.

- In the **New password** and **Confirm password** fields, type the password for the SSL certificate that the BlackBerry Administration Service uses to authenticate with browsers. You must use the same password for every BlackBerry Administration Service instance in the BlackBerry Domain.
16. Click **Next**.
 17. In the **Start services** dialog box, if you used the SRP credentials of an existing BlackBerry Enterprise Server Express in the BlackBerry Domain, do not start the BlackBerry Enterprise Server Express services. Click **Next**.
 18. In the **Console addresses** dialog box, click **Finish**. By default, the setup application writes the BlackBerry Administration Service and the BlackBerry Web Desktop Manager web addresses to a .txt file.

After you finish:

- If you configured the BlackBerry Administration Service instances in the pool to communicate across network subnets with TCP before you upgraded BlackBerry Enterprise Server Express components, you must restore the configuration files. For more information, visit www.blackberry.com/support to read article KB19654.
- Move user accounts to the new BlackBerry Enterprise Server Express using the BlackBerry Administration Service.
- Prevent the previous BlackBerry Enterprise Server Express from connecting to the BlackBerry Infrastructure.
- Start the new BlackBerry Enterprise Server Express.
- The size of log files for the BlackBerry Enterprise Server Express components varies based on the number of users in your BlackBerry Enterprise Server Express environment and the level of user activity. It is a best practice to monitor and control the amount of disk space taken up by the BlackBerry Enterprise Server Express log files. For more information about configuring logging, visit www.blackberry.com/go/serverdocs to see the *BlackBerry Enterprise Server Express Administration Guide*.

Move user accounts to a new BlackBerry Enterprise Server Express using the BlackBerry Administration Service

To complete the cutover upgrade process, you must move user accounts to the new BlackBerry Enterprise Server Express. After you move the user accounts to the current BlackBerry Enterprise Server Express, the BlackBerry Enterprise Server Express sends new service books to the BlackBerry devices automatically.

1. In the BlackBerry Administration Service, on the **BlackBerry Solution management** menu, expand **User**.
2. Click **Manage Users**.
3. Click **Advanced**.
4. In the **BlackBerry Enterprise Server criteria** section, click the BlackBerry Enterprise Server Express that you want to move user accounts from.

5. Click **Search**.
6. Click **Manage multiple users**.
7. Select the user accounts that you want to move to the new BlackBerry Enterprise Server Express at the same time
8. Click **Switch BlackBerry user to different BlackBerry Enterprise Server**.
9. Select the new BlackBerry Enterprise Server Express from the list.
10. Click **Save All**.

After you finish: Reassign the IT policies to the user accounts.

Prevent the previous BlackBerry Enterprise Server Express from connecting to the BlackBerry Infrastructure

If you try to connect two BlackBerry Enterprise Server Express instances to the BlackBerry Infrastructure using identical SRP credentials, the BlackBerry Infrastructure deactivates the credentials, and wireless traffic stops.

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

Start the new BlackBerry Enterprise Server Express

In the Windows Services, start the BlackBerry Enterprise Server Express services in the following order:

- BlackBerry Controller
- BlackBerry Router
- BlackBerry Dispatcher
- all remaining 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 Software or BlackBerry Web Desktop Manager to receive new SRP routing and service name information.

Upgrading the BlackBerry Enterprise Server Express using the cutover upgrade process and creating a BlackBerry Configuration Database

Using the cutover upgrade process, you can install the BlackBerry Enterprise Server Express on a new computer and move user accounts and server information from the previous BlackBerry Enterprise Server Express to the new one.

You can use the cutover upgrade process to create a new BlackBerry Configuration Database and BlackBerry Enterprise Server Express domain. If you create a new BlackBerry Configuration Database, you require SRP credentials for the new BlackBerry Enterprise Server Express. You can move user accounts from the previous BlackBerry Configuration Database to the new BlackBerry Configuration Database using the BlackBerry Enterprise Transporter.

When you use the cutover upgrade process, all BlackBerry devices receive new IT policies. BlackBerry devices that are running BlackBerry Device Software version 4.1 or later receive new service books and wireless data synchronization occurs.

Advantages of this upgrade process include:

- You can move user accounts back to the previous BlackBerry Enterprise Server Express if you experience any issues with the new one.
- You can upgrade server hardware.
- Users experience minimal service interruptions because user accounts remain active on the previous BlackBerry Enterprise Server Express until you start the new one.

Disadvantages of this upgrade process include:

- You require an extra computer.
- The BlackBerry Enterprise Server Express sends new service books to all of the BlackBerry devices that are capable of synchronizing data over the wireless network.

Create a BlackBerry Configuration Database

If the security required by your organization does not allow applications to have permissions to create or upgrade databases, you can run the CreateDB executable on the database server to create the BlackBerry Configuration Database instead of using the setup application. After you create or upgrade the BlackBerry Configuration Database using the CreateDB executable, you can run the setup application using a Windows account with minimum requirements to the database server.

Before you begin: Verify that the appropriate permissions are configured on the database server.

1. Log in to the computer that hosts the database server using a local administrator account or a Windows account that has SQL administrator permissions.
2. Copy the BlackBerry Enterprise Server Express installation files to the database server that you want to configure as the host server for the BlackBerry Configuration Database.
3. Extract the contents to a folder on the computer.
4. Navigate to `<extracted_folder>\Database`.
5. Open the **BESMgmt.cfg** file in a text editor.
6. Change the file to include information that is specific to your organization's environment.
7. Save and close the file.
8. Open a command prompt window.
9. Change to `<extracted_folder>\Database`.
10. Type **CreateDB.exe BESMgmt.cfg**.

BESMgmt.cfg properties

Property	Description
CMD	This property specifies the type of action that the CreateDB executable must complete (for example, whether to install or upgrade the BlackBerry Configuration Database).
DATABASE_NAME	This property specifies the name of the BlackBerry Configuration Database.

Property	Description
SERVER	This property specifies the name of the database server that hosts the BlackBerry Configuration Database. If a database instance hosts the BlackBerry Configuration Database, follow the format <i>database_server_name\database_instance_name</i> .
USERID	If you use database authentication, this property specifies the user name of the 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 in the same root folder that the CreateDB.exe file is located in.
LOG_DIR	This property specifies the path to the folder that you want to create log files in. By default, this folder is in the same root folder that the CreateDB.exe file is located in.
DBMS	This property specifies the database management system that your organization uses.
DB_FILE_DIR	This property specifies an existing folder that you want to save the database files in. By default, this folder is in the same root folder that the CreateDB.exe file is located in.
BACKUP_DIR	This property specifies an existing folder where you want to save the database backup in. By default, this folder is located in the same root folder that the CreateDB.exe file is located in.
BES_TYPE	This property specifies the messaging server that your organization uses.

Install the BlackBerry Enterprise Server Express on a new computer and create a new BlackBerry Configuration Database

To administer the BlackBerry Enterprise Server Express, you must install the BlackBerry Administration Service. You can install the BlackBerry Administration Service on the computer that hosts the BlackBerry Enterprise Server Express or on a separate computer. The first BlackBerry Administration Service or BlackBerry Enterprise Server Express that you install creates and populates the BlackBerry Configuration Database if you did not create the BlackBerry Configuration Database previously using the SQL scripts. If you create a BlackBerry Configuration Database you must also install the BlackBerry

Administration Service. The first time you run the setup application in your organization's BlackBerry Domain, install the BlackBerry Administration Service and the BlackBerry Configuration Database, then run the setup application again if you want to install additional BlackBerry Enterprise Server Express components or remote components.

During the BlackBerry Enterprise Server Express installation process, you must restart the computer.

Before you begin: If you want to install a new BlackBerry Enterprise Server Express in your organization's BlackBerry Domain, you must download a new copy of the BlackBerry Enterprise Server Express software with new BlackBerry Client Access License key and SRP information.

1. Log in to the computer that you want to install the BlackBerry Enterprise Server Express on using the Windows account that you created and that has correct permissions. This account runs the BlackBerry Enterprise Server Express services.
2. In the BlackBerry Enterprise Server Express installation files, double-click **setup.exe**. If the operating system in your organization's environment is Windows Server 2008 or later or Windows Small Business Server 2008 or later, run **setup.exe** as an administrator.
3. Accept the BlackBerry Enterprise Server Express license agreement. Click **Next**.
4. In the **Setup type** dialog box, select **Create a BlackBerry Configuration Database**. Click **Next**.
5. In the **Setup options** dialog box, specify whether you want the setup application to install all the components of the BlackBerry Enterprise Server Express on the computer that you logged into or some of the BlackBerry Enterprise Server Express components on a different computer. Click **Next**.
6. In the **Preinstallation checklist** dialog box, perform one of the following actions:
 - To continue, click **Next**.
 - To complete requirements that were identified in the checklist, click **Cancel**. You can restart the installation or upgrade at a later time.
7. In the **Database options** dialog box, perform one of the following actions:
 - If you want to install the BlackBerry Configuration Database on the computer that you are running the setup application on, and you want to install a local database for the BlackBerry Configuration Database, select **Install Microsoft SQL Server 2008 R2 Express Edition on this computer**.
 - If you want install the BlackBerry Configuration Database on an existing database (local or remote), select **Use a Microsoft SQL Server database**.
8. Click **Next**.
9. In the **Accounts and Folders** dialog box, in the **Windows account information** section, in the **Password** field, type the password of the Windows account that you are using to install the BlackBerry Enterprise Server Express.
10. In the **BlackBerry Enterprise Server** section, in the **Name** field, type the name of the BlackBerry Enterprise Server Express that you want the BlackBerry Administration Service to display. Click **Next**.
11. In the **Summary** dialog box, verify the setup information.
12. Click **Install** to start the installation process.
13. If the setup application prompts you to restart the computer, click **Yes**.
14. After the computer restarts, log in to the computer using the same account that you used in step 1.

15. In the **Database information** dialog box, in the **Database location** section, perform one of the following actions:
 - If you want to install the BlackBerry Configuration Database on a local Microsoft SQL Server on the computer, select **Local**.
 - If you want to install the BlackBerry Configuration Database on a Microsoft SQL Server on a remote computer, select **Remote**.
16. If necessary, in the **Microsoft SQL Server name** field, type the name or IP address of the computer that hosts the Microsoft SQL Server.
17. In the **BlackBerry Configuration Database name** field, type a name for the BlackBerry Configuration Database.
18. Specify the port configuration (static configuration is originally specified using the database server). If the configuration is static, in the **Port** field, specify the port number that the BlackBerry Enterprise Server Express can use to connect to the BlackBerry Configuration Database.
19. In the **Database authentication** section, perform one of the following actions:
 - If you want the BlackBerry Enterprise Server Express to connect to the BlackBerry Configuration Database on the Microsoft SQL Server using Windows authentication, select **Windows authentication**.
 - If you want the BlackBerry Enterprise Server Express to connect to the BlackBerry Configuration Database on the Microsoft SQL Server using database authentication, select **SQL authentication**. In the **SQL user name** and **Password** fields, type the required login information.
20. Click **Next**.
21. When you receive a prompt to create the BlackBerry Configuration Database, click **Yes**. The setup application notifies you when the database is created.
22. In the **BlackBerry CAL and SRP information** dialog box, type the BlackBerry Client Access License key, SRP host, and SRP authentication information that you received with your installation package.
23. In the **SRP host** and **SRP authentication** information sections, click **Verify** to verify that the information is correct. Click **Next**.
24. In the **Administration settings** dialog box, in the **Port settings** section, if necessary, change the default port information.
25. If necessary, in the **Password for the SSL certificate** section, type and confirm a password for the SSL certificate that the setup application creates to establish communication between the BlackBerry Administration Service and web browsers that you use to access the BlackBerry Administration Service. Click **Next**.
26. In the **Microsoft® Active Directory® settings** dialog box, in the **User password** field, type the password for the Microsoft Active Directory account (for example, BESAdmin) that the BlackBerry Enterprise Server Express uses to authenticate to Microsoft Active Directory. If you want to specify a different user name and user domain, you must make sure that the user domain belongs to the same Microsoft Active Directory forest as the Microsoft Exchange organization.
27. Click **Next**. If the setup application cannot locate any of the global catalog servers that are associated with the Microsoft Active Directory account after you click the **Next** button, you must choose the global catalog servers that you want to add to the list manually. To add a global catalog server to the list, click the **Add** button and select the appropriate server. Each global catalog server that you add to the list must belong to the same domain as the Microsoft Active Directory user account.

28. In the **Advanced administration settings** dialog box, select the type of authentication that you want to use to log in to the BlackBerry Administration Service:
 - If you select **Use Windows authentication**, you can select whether you want to use the credentials of the current account that you are using to install the BlackBerry Enterprise Server Express, or you can specify account information for a Microsoft Active Directory administrator.
 - If you select **Use BlackBerry Administration Service authentication**, type the login information that you want to use to log in to the BlackBerry Administration Service.
29. Click **Next**.
30. In the **Start services** dialog box, click **Start Services**. When all of the BlackBerry Enterprise Server Express services start, click **Next**.
31. In the **Console addresses** dialog box, click **Finish**. By default, the setup application writes the BlackBerry Administration Service and the BlackBerry Web Desktop Manager web addresses to a .txt file.

After you finish:

- Verify that the collation setting for the BlackBerry Configuration Database is default case-insensitive.
- If you reinstalled the BlackBerry Administration Service, in Windows Internet Explorer, delete the cache.
- If you configured the BlackBerry Administration Service instances in the pool to communicate across network subnets with TCP before you upgraded BlackBerry Enterprise Server Express components, you must restore the configuration files. For more information, visit www.blackberry.com/support to read article KB19654.
- Move user accounts to the BlackBerry Enterprise Server Express using the BlackBerry Enterprise Transporter. For more information about moving user accounts, see the *BlackBerry Enterprise Transporter Installation and Administration Guide*.
- The size of log files for the BlackBerry Enterprise Server Express components varies based on the number of users in your BlackBerry Enterprise Server Express environment and the level of user activity. It is a best practice to monitor and control the amount of disk space taken up by the BlackBerry Enterprise Server Express log files. For more information about configuring logging, visit www.blackberry.com/go/serverdocs to see the *BlackBerry Enterprise Server Express Administration Guide*.

Upgrading the BlackBerry Enterprise Server Express software in phases

If you use the phased upgrade process, you can maintain previous versions of the BlackBerry Enterprise Server Express software, install additional BlackBerry Enterprise Server Express instances over time, and move user accounts to the latest BlackBerry Enterprise Server Express versions.

When you use the phased upgrade process, all BlackBerry devices receive new IT policies. Devices that are running BlackBerry Device Software version 4.0 or later receive new service books and wireless data synchronization occurs.

The BlackBerry Configuration Database and all BlackBerry Administration Service instances in the BlackBerry Enterprise Server Express domain must be the same version. Before you upgrade the BlackBerry Configuration Database, you must stop the BlackBerry Administration Service services that run on all other computers in the BlackBerry Enterprise Server Express domain until you upgrade the computers.

Advantages of the phased upgrade process include:

- You can move user accounts to the new BlackBerry Enterprise Server Express instances gradually to limit the number of service books and IT policies that the BlackBerry Policy Service sends to devices at the same time.
- You can monitor system performance while you add user accounts.
- You can change your organization's environment during the upgrade process by changing which user accounts you associate with each BlackBerry Enterprise Server Express instance.

Disadvantages of this upgrade process include:

- You require extra computers.
- You require additional SRP credentials.
- If you move user accounts from one BlackBerry Configuration Database to another, you lose the device options that you backed up in the BlackBerry Configuration Database.
- You cannot use some new features (for example, one-to-many relationships between a BlackBerry MDS Connection Service and multiple BlackBerry Enterprise Server Express instances) in the BlackBerry Enterprise Server Express until all BlackBerry Enterprise Server Express components are the same version.

Upgrade multiple BlackBerry Enterprise Server Express instances in phases

You can upgrade the BlackBerry Enterprise Server Express instances in your organization's environment in phases to minimize the impact on users.

Before you begin: If you want to create a new BlackBerry Configuration Database, instruct users to back up their BlackBerry devices. Any BlackBerry device options that are stored in the existing BlackBerry Configuration Database are deleted when you add user accounts to the new BlackBerry Configuration Database.

1. Install the latest BlackBerry Enterprise Server Express version with the BlackBerry Administration Service on a separate computer.
2. If you create a new BlackBerry Configuration Database, create administrator accounts, groups, IT policies, and software configurations for your organization's environment.
3. Move user accounts to the upgraded BlackBerry Enterprise Server Express by performing one of the following actions:
 - To upgrade an existing BlackBerry Configuration Database, move user accounts using the BlackBerry Administration Service.
 - To create a new BlackBerry Configuration Database, move user accounts using the BlackBerry Enterprise Transporter.
4. Upgrade instances of the central push server for the BlackBerry MDS Connection Service.
5. Upgrade the earlier BlackBerry Enterprise Server Express version using an in-place upgrade process. You can use the upgraded BlackBerry Enterprise Server Express instance as the destination for user accounts that you move from earlier BlackBerry Enterprise Server Express versions.
6. Move user accounts to the upgraded BlackBerry Enterprise Server Express instances, and upgrade the old BlackBerry Enterprise Server Express instances until all BlackBerry Enterprise Server Express instances are running the latest software version.

After you finish: To enable BlackBerry device users to access the features that are part of the latest version, upgrade the BlackBerry Device Software. For more information, see the *BlackBerry Device Software Update Guide*.

Upgrade a standalone BlackBerry Router

Note: You cannot manage the BlackBerry Controller that monitors a standalone BlackBerry Router in the BlackBerry Administration Service. You must manage the BlackBerry Controller in the BlackBerry Configuration Panel on the computer that hosts the standalone BlackBerry Router.

1. Log in to the computer using the Windows account that you want to use to run the BlackBerry Router.
2. In the BlackBerry Enterprise Server Express installation files, double-click **setup.exe**. If the operating system in your organization's environment is Windows Server 2008 or later or Windows Small Business Server 2008 or later, run **setup.exe** as an administrator.
3. Accept the BlackBerry Enterprise Server Express license agreement. Click **Next**.
4. In the **Setup type** dialog box, select **Upgrade the BlackBerry Router and BlackBerry Controller on this computer but do not install other BlackBerry Enterprise Server components**.
5. In the **Setup options** dialog box, click **Next**.
6. In the **Preinstallation checklist** dialog box, click **Next**.
7. In the **Accounts and Folders** dialog box, in the **Windows account information** section, in the **Password** field, type the password of the Windows account that you are using to install the BlackBerry Enterprise Server Express. Click **Next**.
8. In the **Summary** dialog box, verify the setup information.
9. Click **Install** to start the installation process.
10. After the setup application installs the necessary components, click **Continue**.
11. In the **Start services** dialog box, click **Start Services**. When all of the BlackBerry Enterprise Server Express services start, click **Next**.
12. In the **Console addresses** dialog box, click **Finish**. By default, the setup application writes the BlackBerry Administration Service and the BlackBerry Web Desktop Manager web addresses to a .txt file.

Test the connection from the BlackBerry Router to the BlackBerry Infrastructure

To make sure that the BlackBerry Router can connect to the BlackBerry Infrastructure, you can test the connection using the BBSRPTest tool that is included with the BlackBerry Enterprise Server Express installation files. The BBSRPTest tool tries to connect to the BlackBerry Infrastructure using the SRP address and SRP port that you specified for the BlackBerry Infrastructure during the BlackBerry Router installation process.

1. On the computer that you want to test the connection to the BlackBerry Infrastructure on, at a command prompt, navigate to `<drive>:\Program Files\Research In Motion\BlackBerry Enterprise Server .`
2. Type **bbsrptest <srp_address> -<port>**, where `<srp_address>` is the SRP address that you provided during the installation process and `<port>` is the SRP port number. For example, at the command line, type `bbsrptest.exe –host server1.example.com –port 3101`.

After you finish: If the test does not complete, use the Windows Socket (WINSOCK) error code to diagnose the problem. For more information, visit <http://msdn.microsoft.com> to read article *Windows Socket Error Codes*.

Postupgrade tasks

10

Restore the BlackBerry MDS Connection Service configuration files

You can use the BlackBerry MDS Connection Service configuration files, `MdsLogin.conf` and `krb5.conf`, to configure how the BlackBerry MDS Connection Service authenticates BlackBerry devices with content servers that use NTLM or Kerberos. The BlackBerry MDS Connection Service configuration files are located in `<drive>:\Program Files\Research In Motion\BlackBerry Enterprise Server\MDS\Servers\Instance\config`.

When you upgrade a BlackBerry Enterprise Server Express, the setup application creates new `MdsLogin.conf` or `krb5.conf` files and creates backup versions of the old BlackBerry MDS Connection Service configuration files in the same location. If you changed the `MdsLogin.conf` or `krb5.conf` files before you perform the upgrade, you should restore the backup versions of the files so that the BlackBerry MDS Connection Service can authenticate BlackBerry devices with the content servers that use NTLM or Kerberos.

Upgrade the BlackBerry database notification system

The BlackBerry database notification system is a publish/subscribe system that is designed to reduce the number of database queries that a BlackBerry Enterprise Server Express makes to the BlackBerry Configuration Database.

If you upgrade the BlackBerry Configuration Database on the computer that hosts the BlackBerry Enterprise Server Express, the BlackBerry database notification system upgrades automatically.

If you upgrade the BlackBerry Configuration Database on a database server that you installed on a computer that is not the computer that hosts the BlackBerry Enterprise Server Express, you can upgrade the BlackBerry database notification system manually after you complete the BlackBerry Enterprise Server Express installation process.

Before you begin:

You must have the system administrator permission for the database.

1. On the database server, open the BlackBerry Enterprise Server Express installation files.

2. Perform one of the following actions:
 - If a 32-bit Microsoft SQL Server 2005 is running in your organization's environment, in the **Tools\DBNS\x86** folder, copy the **RimEsp.dll** file to C:\Program Files\Microsoft SQL Server\MSSQL\Binn .
 - If a 64-bit Microsoft SQL Server 2005 is running in your organization's environment, in the **Tools\DBNS\x64** folder, copy the **RimEsp.dll** file to C:\Program Files\Microsoft SQL Server\MSSQL\Binn .
3. Open the Microsoft SQL Server Management Studio.
4. Using the Microsoft SQL Server Management Studio, navigate to Database\DBInstallScripts\SQLServer\5.0 in the BlackBerry Enterprise Server Express installation files.
5. Open the **NotifyMasterInstall.sql** file.
6. Run the script.
7. Open the **NotifyInstall.sql** file.
8. Change `<_DATABASENAME_>` to the name of the BlackBerry Configuration Database (for example, BesMgmt).
9. Run the script.
10. Confirm that the Microsoft SQL Server Management Studio displays the `Function dbo.xp_RIMxxxx` registered message.
11. To add additional BlackBerry Configuration Database instances in your organization's environment, repeat steps 7 to 10.
12. Restart the database server and the computer that hosts the BlackBerry Enterprise Server Express.

Best practice: Running the BlackBerry Enterprise Server Express

Best practice	Description
Do not change the startup type for the BlackBerry Enterprise Server Express services.	<p>When you install or upgrade the BlackBerry Enterprise Server Express, the setup application configures the startup type for the BlackBerry Enterprise Server Express services to automatic or manual. For example, the setup application configures the startup type for the BlackBerry Mail Store Service, BlackBerry Policy Service, and BlackBerry Synchronization Service to manual.</p> <p>To avoid errors in the BlackBerry Enterprise Server Express, do not change the startup type for the BlackBerry Enterprise Server Express services.</p>
Do not change the account information for BlackBerry Enterprise Server Express services.	When you install or upgrade the BlackBerry Enterprise Server Express, the setup application configures the account information for the BlackBerry Enterprise Server Express services.

Best practice	Description
Run the BlackBerry Configuration Panel as an administrator.	<p>Do not change the account information for the BlackBerry Enterprise Server Express unless the BlackBerry Enterprise Server Express documentation specifies that you can.</p> <p>Consider the following guidelines if you are running the BlackBerry Configuration Panel on Windows Server 2008:</p> <ul style="list-style-type: none"> • Log in to the computer with a user account that is in the Administrator group on the Windows Server. • Right-click the BlackBerry Configuration Panel icon and click Run as administrator.

Configuring support for Unicode languages

Configure support for Unicode languages

You can make sure that the messaging application can display the Unicode messages that the BlackBerry device sends by configuring the BlackBerry Enterprise Server Express to support Unicode languages (for example, Japanese, Korean, or Simplified Chinese).

1. On the computer that hosts the BlackBerry Enterprise Server Express, on the taskbar, click **Start > Run**.
2. Type **regedit**.
3. Click **OK**.
4. Perform one of the following actions:
 - If you are running a 32-bit version of Windows, go to HKEY_LOCAL_MACHINE\SOFTWARE\Research In Motion\BlackBerry Enterprise Server\Agents.
 - If you are running a 64-bit version of Windows, go to HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Research In Motion\BlackBerry Enterprise Server\Agents.
5. If the **MAPIEncoding** registry key exists, perform one of the following actions:
 - Delete the key.
 - Change the value of the key to **1**.
6. Perform one of the following actions:
 - If you are running a 32-bit version of Windows, go to HKEY_LOCAL_MACHINE\SOFTWARE\Research In Motion\BlackBerry Enterprise Server\Setup.

- If you are running a 64-bit version of Windows, go to HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Research In Motion\BlackBerry Enterprise Server\Setup.
7. Verify that the **ConfigKeystoreCountry** registry key is set to one of the following values, depending on your organization's environment:
 - CN for Simplified Chinese
 - JP for Japanese
 - KR for Korean
 8. In the Windows Services, restart the BlackBerry Dispatcher.

Change the character encoding that the BlackBerry Enterprise Server Express uses to send Unicode messages

By default, when the BlackBerry Enterprise Server Express receives Unicode messages from BlackBerry devices, it uses UTF-8 character encoding to process the Unicode messages. If email applications cannot correctly display Unicode messages that devices send (for example, if email applications cannot display attachment file names or contact lists correctly), you can configure the BlackBerry Enterprise Server Express to select another character encoding to use to process Unicode messages.

Before you begin: Configure support for Unicode languages.

1. On the computer that hosts the BlackBerry Enterprise Server Express, on the taskbar, click **Start > Run**.
2. Type **regedit**.
3. Click **OK**.
4. Perform one of the following actions:
 - If you are running a 32-bit version of Windows, go to HKEY_LOCAL_MACHINE\SOFTWARE\Research In Motion\BlackBerry Enterprise Server\Agents.
 - If you are running a 64-bit version of Windows, go to HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Research In Motion\BlackBerry Enterprise Server\Agents.
5. Create a DWORD value that is named **AutoSelectOutgoingEncoding**.
6. Double-click the new DWORD value.
7. In the **Value data** field, perform one of the following actions:
 - To configure the BlackBerry Enterprise Server Express to select the most appropriate character encoding when it encodes plain-text messages, type **1**. If the BlackBerry Enterprise Server Express cannot identify which character encoding to use, the BlackBerry Enterprise Server Express encodes plain-text messages in UTF-8.
 - To configure the BlackBerry Enterprise Server Express to select the most appropriate character encoding when it encodes email messages that use RTF or HTML, type **2**. If the BlackBerry Enterprise Server Express cannot

identify which character encoding to use, the BlackBerry Enterprise Server Express encodes email messages that use RTF or HTML in UTF-8.

- To configure the BlackBerry Enterprise Server Express to select the most appropriate character encoding when it encodes plain-text messages and email messages that use RTF or HTML, type **3**. If the BlackBerry Enterprise Server Express cannot identify which character encoding to use, the BlackBerry Enterprise Server Express encodes all email messages in UTF-8.
8. In the Windows Services, restart the BlackBerry Dispatcher.

Configure support for Unicode text in calendars on BlackBerry devices in a Microsoft Exchange environment

Before you begin: In a Microsoft Exchange 2003 environment, install the following hotfixes for wireless calendar synchronization:

- Visit <http://support.microsoft.com/kb/913643> to download and install the required hotfix on the messaging server.
- Visit <http://support.microsoft.com/kb/923537/en-us> to download and install the required hotfix on the computer that will host the BlackBerry Enterprise Server Express.

You must complete this task for all Microsoft Exchange versions to ensure calendar items use the correct Unicode characters in fields such as subject, location, or notes.

1. On the BlackBerry Enterprise Server Express, on the **Start** menu, click **Run**.
2. Type **regedit**.
3. Click **OK**.
4. Perform one of the following actions:
 - If you are running a 32-bit version of Windows, navigate to HKEY_LOCAL_MACHINE\Software\Research In Motion\BlackBerry Enterprise Server\Agents.
 - If you are running a 64-bit version of Windows, navigate to HKEY_LOCAL_MACHINE\Software\WOW6432Node\Research In Motion\BlackBerry Enterprise Server\Agents.
5. Create a DWORD value that is named **SetLocaleIDs**.
6. Set the value to **1**.
7. In the Windows Services, restart the BlackBerry Messaging Agent.

Configuring the BlackBerry Enterprise Server Express to use Microsoft Exchange Web Services

By default, the BlackBerry Enterprise Server Express uses Microsoft Exchange Web Services to manage calendars on BlackBerry devices. The BlackBerry Enterprise Server Express monitors periodically whether a user account can use Microsoft Exchange Web Services. If a user account cannot use Microsoft Exchange Web Services, for example, because of a configuration error in Microsoft Exchange, the BlackBerry Enterprise Server Express uses MAPI and CDO libraries to manage calendars on devices. A BlackBerry Messaging Agent on the BlackBerry Enterprise Server Express can include a dynamic mix of user accounts that use Microsoft Exchange Web Services and user accounts that use MAPI and CDO libraries.

You can use the BlackBerry Enterprise Trait Tool to configure the BlackBerry Enterprise Server Express to use only Microsoft Exchange Web Services or only MAPI and CDO libraries to manage calendars on devices. You can configure a specific BlackBerry Messaging Agent instance, a specific BlackBerry Enterprise Server Express instance, or all BlackBerry Enterprise Server Express instances that share one BlackBerry Configuration Database.

To use Microsoft Exchange Web Services, your organization's environment must include Microsoft Exchange 2007 SP1 or later.

For more information about Microsoft Exchange Web Services, visit <http://msdn.microsoft.com/en-us/library/bb204119.aspx>.

For more information about configuring the BlackBerry Enterprise Server Express to use Microsoft Exchange Web Services, see the *BlackBerry Enterprise Server Express Administration Guide*.

Prerequisites: Configuring the BlackBerry Enterprise Server Express to use Microsoft Exchange Web Services

- Install an SSL certificate on a BlackBerry Enterprise Server Express so that the BlackBerry Enterprise Server Express can communicate with Microsoft Exchange Web Services. You must export the SSL certificate from the client access server for Microsoft Exchange and import the SSL certificate to the BlackBerry Enterprise Server Express. The BlackBerry Enterprise Server Express supports a self-signed security certificate or a certificate that a certificate authority issues. For more information about installing an SSL certificate, visit support.microsoft.com to read article KB 962624.

- Configure Microsoft Exchange Impersonation for a BlackBerry Enterprise Server Express administrator account. For more information about configuring Microsoft Exchange Impersonation, visit msdn.microsoft.com/en-us/library/bb204095.aspx and select the appropriate tab for Microsoft Exchange 2007 or Microsoft Exchange 2010.
- Assign IIS permissions to a BlackBerry Enterprise Server Express administrator account on the Microsoft Exchange Server that hosts the client access server role. For more information about assigning IIS permissions, visit support.microsoft.com to read article KB 816117.

Configure the BlackBerry Enterprise Server Express to use Microsoft Exchange Web Services

You can configure the BlackBerry Enterprise Server Express to use only Microsoft Exchange Web Services to manage calendars on BlackBerry devices.

1. Copy the BlackBerry Enterprise Server Express installation files to the computer that hosts the BlackBerry Enterprise Server Express.
2. Extract the contents to a folder on the computer.
3. At a command prompt, navigate to `<extracted_folder>\tools`.
4. Perform one of the following actions:
 - To configure a specific BlackBerry Messaging Agent on a specific BlackBerry Enterprise Server Express to use Microsoft Exchange Web Services, type **traittool -server <server_name> -agent <agent_id> -trait EWSEnable -set true**, where `<server_name>` is the name of the BlackBerry Enterprise Server Express and `<agent_id>` is the ID for the BlackBerry Messaging Agent.
 - To configure all BlackBerry Messaging Agent instances on a specific BlackBerry Enterprise Server Express to use Microsoft Exchange Web Services, type **traittool -server <server_name> -trait EWSEnable -set true**, where `<server_name>` is the name of the BlackBerry Enterprise Server Express.
 - To configure all BlackBerry Messaging Agent instances on all BlackBerry Enterprise Server Express instances to use Microsoft Exchange Web Services, type **traittool -global -trait EWSEnable -set true**.
5. Restart the BlackBerry Messaging Agent instances that you made changes to.

After you finish:

In the logs folder verify that the file named `<server_name>_CALH_<agent_id>_<date>.txt` appears. In the file name, `<server_name>` is the name of the BlackBerry Enterprise Server Express, `<agent_id>` is the ID of the BlackBerry Messaging Agent, and `<date>` is the date that you configured the BlackBerry Enterprise Server Express to use Microsoft Exchange Web Services.

Manage the BlackBerry Enterprise Server Express performance in a Microsoft Exchange 2010 environment

Before you begin:

You must install version 6.5.8211.0 of the Microsoft Exchange Server MAPI Client and CDO 1.2.1 on the BlackBerry Enterprise Server Express computer. For more information, visit www.microsoft.com/downloads to read the article named "Microsoft Exchange Server MAPI Client and Collaboration Data Objects 1.2.1".

1. Verify that you configured Microsoft Exchange 2010 performance as suggested by Microsoft. For more information, visit technet.microsoft.com to read "Understanding the Mailbox Database Cache" in the Microsoft Exchange 2010 SP1 help.
2. If necessary for your organization's environment, verify that you installed the Microsoft hotfixes that are located in the following articles:
 - 2155311
 - 979149

For more information about the hotfixes, visit support.microsoft.com.

3. Configure the BlackBerry Enterprise Server Express to use LDAP to retrieve email addresses and organizer data. For more information, see "Configuring the BlackBerry Enterprise Server Express to use LDAP to retrieve email addresses and organizer data" in the *BlackBerry Enterprise Server Express Administration Guide*.
4. Configure the BlackBerry Enterprise Server Express to use Microsoft Exchange Web Services to manage calendars on devices. For more information, see "Configuring the BlackBerry Enterprise Server Express to use Microsoft Exchange Web Services or MAPI and CDO libraries" in the *BlackBerry Enterprise Server Express Administration Guide*.

Log in to the BlackBerry Administration Service for the first time

To open the BlackBerry Administration Service, you can use a browser on any computer that has access to the computer that hosts the BlackBerry Administration Service.

Before you begin: To manage a BlackBerry device using the BlackBerry Administration Service while the BlackBerry device is connected to the computer, the browser must permit Microsoft ActiveX controls.

1. In the browser, type **https://<server_name>:<https_port>/webconsole/app**, where <server_name> is the name of the computer that hosts the BlackBerry Administration Service.
2. In the **User name** field, type **admin**.
3. In the **Password** field, type the password that you created during the installation process.
4. In the **Log in using** drop-down list, click **BlackBerry Administration Service** or **Active Directory Authentication**.
5. Click **Log in**.

There is a problem with this website's security certificate

Description

The browser displays this error message when you try to navigate to the BlackBerry Administration Service using Windows Internet Explorer version 7 or later.

Possible solution

Add the web address for the BlackBerry Administration Service to the list of trusted web sites in Windows Internet Explorer, and install the certificate for the BlackBerry Administration Service in the certificate store of your computer.

1. In Windows Internet Explorer, navigate to the BlackBerry Administration Service console.
2. Click **Continue to this website (not recommended)**.
3. On the **Tools** menu, click **Internet Options**.
4. On the **Security** tab, click **Local Intranet**.
5. Click **Sites**.
6. Click **Add** to add the console to the list of trusted web sites.
7. Click **Close**.
8. Click **OK**.
9. In the browser window, on the toolbar, click **Certificate Error**.
10. Click **View certificates**.
11. Click **Install certificate**. The Certificate Import Wizard opens.
12. Complete the instructions in the Certificate Import Wizard. If you are trying to log in to the BlackBerry Administration Service using a computer that runs Windows Vista, perform the following actions in the Certificate Import Wizard.
 - a. In the Certificate Store dialog box, click **Place all certificates in the following store**.

- b Click **Browse**.
- c Click **Trusted Root Certification Authorities**.
- d Click **OK**.

13. Close and reopen the browser.

Configuring support for new attachments

Configure an upgraded BlackBerry Enterprise Server Express to support new attachment extensions

When you upgrade a BlackBerry Enterprise Server Express instance, the upgrade process does not automatically add the new attachment extensions that the latest BlackBerry Enterprise Server Express version supports. You must add the new attachment extensions after the upgrade process completes so that the BlackBerry Enterprise Server Express can recognize the new attachment extensions and send them to a BlackBerry Attachment Service instance for processing.

1. In the BlackBerry Administration Service, on the **Servers and components** menu, expand **BlackBerry Solution topology > BlackBerry Domain > Component view > Attachment > Connector**.
2. Click the BlackBerry Attachment Connector instance for the BlackBerry Enterprise Server Express.
3. Click **Edit instance**.
4. Click **Supported Attachment Server instances**.
5. For the BlackBerry Attachment Service instance that you want the BlackBerry Enterprise Server Express to send new attachments to, click the **Edit** icon.
6. Add the new attachment extensions to the attachment extensions list.
7. Click **Save all**.

Configure an upgraded BlackBerry Attachment Service to support new attachment distillers

During the upgrade process for a BlackBerry Attachment Service instance, the setup application does not turn on the new attachment distillers automatically. If you want the BlackBerry Attachment Service to process new attachments, you must turn on the attachment distillers for these file formats.

1. In the BlackBerry Administration Service, on the **Servers and components** menu, expand **BlackBerry Solution topology > BlackBerry Domain > Component view > Attachment > Server**.
2. Click the instance that you upgraded.
3. Click **Edit instance**.
4. In the **Distiller** section, in the **Allowed** column, turn on the attachment distillers that you want the BlackBerry Attachment Service to support.
5. If required, in the **Distiller** section, in the **Attachment size (KB)** column, change the attachment size, in KB, for the new attachments.
6. Click **Save**.

Assigning an IT policy to a group

After you complete the upgrade process, you can assign an IT policy to a group. When you assign an IT policy to a group, the BlackBerry Enterprise Server Express can assign the IT policy to each user account in the group. However, if an IT policy is already assigned to a user account in a group, the BlackBerry Enterprise Server Express sends the IT policy that is assigned to the user account to the BlackBerry device. To use the IT policy that is assigned to the group, you must remove the IT policy that is assigned to the user account.

Remove an IT policy from a user account

Before you begin: Assign an IT policy to a group that includes the user account.

1. In the BlackBerry Administration Service, on the **BlackBerry solution management** menu, expand **User**.
2. Click **Manage users**.
3. Search for the user account.
4. Click the user account.
5. On the **Policies** tab, click **Edit user**.
6. In the drop-down list, click the blank option (the first entry in the drop-down list) to remove the IT policy.
7. Click **Save all**.

After you finish: Resend the IT policy to the user account.

Restrict database permissions for the BlackBerry Attachment Service

The BlackBerry Attachment Service accesses the BlackBerry Configuration Database to read attachment data using a Windows account or a SQL authentication account. To limit the access that the BlackBerry Attachment Service account has to the tables in the BlackBerry Configuration Database, you can configure a BlackBerry Attachment Service account that has limited database permissions. This account is not the same as the account that the BlackBerry Enterprise Server Express uses to access the BlackBerry Configuration Database.

Before you begin:

- Create a Windows account for the BlackBerry Attachment Service.
 - To use database authentication, create a SQL authentication account for the BlackBerry Attachment Service.
1. In the Microsoft SQL Server management console, create a SQL login for the Windows account or SQL authentication account.
 2. Assign the account to the rim_db_AttachmentServer role in the BlackBerry Configuration Database.
 3. If you want the BlackBerry Attachment Service to use a SQL authentication account to access the BlackBerry Configuration Database, perform the following actions:
 - a. On the computer that you installed the BlackBerry Attachment Service on, log in using the Windows account that the BlackBerry Attachment Service is running on.
 - b. Click **Start > Run**.
 - c. Type **regedit**. Click **OK**.
 - d. If you are running a 32-bit version of Windows, navigate to HKEY_CURRENT_USER\SOFTWARE\Research In Motion.
 - e. If you are running a 64-bit version of Windows, navigate to HKEY_CURRENT_USER\SOFTWARE\WOW6432Node\Research In Motion.
 - f. Create the BBAttachServer\Database keys.
 - g. In the Database key, create the **Login** and **Password** string values for the SQL authentication account.

After you finish: After you complete the BlackBerry Attachment Service installation process, in the Windows Services, verify that the service for the BlackBerry Attachment Service is using the Windows account that you configured. If you need to change the account information, restart the BlackBerry Attachment Service.

Configuring minimum Microsoft SQL Server permissions for the Windows account

The BlackBerry Enterprise Server Express setup application requires the Windows account that it uses during the installation process or upgrade process to have Microsoft SQL Server permissions to create or upgrade the BlackBerry Configuration Database. The setup application requires the Windows account to have more Microsoft SQL Server permissions to install the BlackBerry Enterprise Server Express than the BlackBerry Enterprise Server Express requires to run.

After the installation or upgrade process completes, you can change the Microsoft SQL Server permissions of the Windows account to the Microsoft SQL Server permissions that the BlackBerry Enterprise Server Express requires to run. When you change the Microsoft SQL Server permissions of the Windows account, you can use Microsoft SQL Server security to minimize the operations that the Windows account can perform on the BlackBerry Configuration Database.

The following table describes the Microsoft SQL Server permissions for the setup application and the Windows account that the BlackBerry Enterprise Server Express uses to run.

Server and database roles	Description
db_owner	The setup application requires this role to upgrade the BlackBerry Configuration Database. This role is the default permission in Microsoft SQL Server for running the BlackBerry Enterprise Server Express.
rim_db_bes_server	The setup application or the createDB executable creates the role automatically when it creates the BlackBerry Configuration Database. This role is the minimum permission in Microsoft SQL Server for running the BlackBerry Enterprise Server Express.

Configure minimum Microsoft SQL Server permissions for the Windows account

You can configure the minimum Microsoft SQL Server permissions for the Windows account that the BlackBerry Enterprise Server Express uses to run.

1. Open the Microsoft SQL Server console.
2. Expand **Microsoft SQL Server > Security > Logins**.
3. Right-click the Windows account that the BlackBerry Enterprise Server Express uses to run. Click **Properties**.

4. Map the Windows account to the BlackBerry Configuration Database.
5. Change the **Database role membership** to **rim_db_bes_server**.
6. Remove all other database role memberships.
7. Apply your changes.

Instructing users with personal BlackBerry devices to use the BlackBerry Desktop Software to manage personal and work data

You can add BlackBerry device users that have personal BlackBerry devices that are associated with the BlackBerry Internet Service to the BlackBerry Enterprise Server Express. You must instruct the users to use their personal BlackBerry Desktop Software to manage personal data synchronization settings, and the BlackBerry Desktop Software or BlackBerry Web Desktop Manager that was distributed by their organization to manage synchronization settings for work data. Data conflicts should not occur on devices if users manage personal data settings using their personal BlackBerry Desktop Software and work data settings using the BlackBerry Desktop Software that was distributed by their organization.

Troubleshooting the BlackBerry Enterprise Server Express upgrade process

11

Failed to write License Key to the Database

This error message appears when you try to add the BlackBerry Client Access License key during the installation process.

Possible solution

After you restart the computer during the BlackBerry Enterprise Server Express installation process, you must log in using the same Windows account that you used to start the installation process.

1. Close the setup application.
2. Log out of the computer.
3. Log in to the computer.
4. Restart the setup application.

Previous version detected but no database available

This error message appears when you cannot start the setup application or the setup application stops responding.

Possible solution

Verify that the registry keys that identify the BlackBerry Configuration Database exist in the Windows registry.

1. On the computer that you want to install or upgrade the BlackBerry Enterprise Server Express on, on the **Start** menu, click **Run**.

2. Type **regedit**.
3. Click **OK**.
4. In the left pane, navigate to HKEY_LOCAL_MACHINE\Software\Research In Motion\BlackBerry Enterprise Server \Database.
5. If necessary, create case-sensitive strings that you name **DatabaseName** and **DatabaseServerMachineName**.
6. Specify the name of the BlackBerry Configuration Database as the value for **DatabaseName**.
7. Specify the FQDN name of the database server as the value for **DatabaseServerMachineName**.
8. Restart the setup application.

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\Logs\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.

You cannot resolve errors that occur when you move users

Possible solution

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

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

Possible solution

1. On the BlackBerry Enterprise Server Express 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 Express setup application.

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

Possible solution

Create and change the MAPI profile manually.

1. On the BlackBerry Enterprise Server Express installation media, open the **Tools** folder.
2. Double-click the **Fixmapisvc.exe** file.
3. Verify that **mapisvc.inf** is installed in 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 Windows account that is associated with the MAPI profile.
7. Click **OK**.

Restore a BlackBerry Configuration Database

If you created a copy of the BlackBerry Configuration Database using the CreateDB tool, you can restore the copy if you determine that the upgrade process did not complete successfully.

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

Users experience unexpected behavior with message lists and calendars on BlackBerry devices

Possible cause

If the MAPI and CDO client version 6.5.8022 was installed without uninstalling previous versions of the MAPI and CDO client (including the associated .DLL files), users might experience unexpected behavior with message lists and calendars on BlackBerry devices.

Possible solution

For more information about Microsoft Exchange Server MAPI Client and CDO version 1.2.1, visit www.microsoft.com.

1. In the Windows Services, stop the services for the BlackBerry Enterprise Server Express and any processes that use the MAPI and CDO client.
2. Remove the MAPI and CDO client version 6.5.8022.
3. Verify that the following files are not present in `C:\Windows\System32` or any other directory in the environment path:

- CDO.DLL
- EMSABP32.DLL
- EMSMDB32.DLL
- EMSUI32.DLL
- EMSUIX32.DLL
- GAPI32.DLL
- MAPISP32.EXE
- MSPST32.DLL
- WMSUI32.DLL

4. In C:\Windows\System32 , run the FixMapi.exe application.
5. Install the MAPI and CDO client version 6.5.8022.
6. Restart the services for the BlackBerry Enterprise Server Express and any processes that use the MAPI and CDO client.

If you run the BlackBerry Enterprise Server Express setup application after you complete the possible solution, when the setup application displays the preinstallation checklist, an error message indicates that the setup application could not detect the MAPI and CDO client. The setup application displays this error message because you installed the MAPI and CDO client version 6.5.8022 in a different directory than the directory that you installed it in for previous versions. The error message does not prevent the BlackBerry Enterprise Server Express setup application from completing the installation process successfully.

Some BlackBerry Enterprise Server Express components do not start

Possible cause	Possible solution
The BlackBerry Administration Service and BlackBerry MDS Connection Service are configured to use a dynamic port when they connect to the BlackBerry Configuration Database, but the database server uses a static port.	<p>Configure a static port for the BlackBerry Configuration Database.</p> <ol style="list-style-type: none"> 1. On the computer that hosts the BlackBerry Enterprise Server Express component, on the taskbar, click Start > All Programs > BlackBerry Enterprise Server. 2. Right-click BlackBerry Server Configuration and select Run as administrator. 3. On the Database Connectivity tab, clear the Use dynamic ports or specify SQL port check box.

Possible cause	Possible solution
	<ol style="list-style-type: none"> In the Use dynamic ports or specify SQL port field, type the correct port number. Click OK. In the Windows Services, restart the services for the BlackBerry Enterprise Server Express component.
The BlackBerry Administration Service and BlackBerry MDS Connection Service are configured to use an incorrect static port number when they connect to the BlackBerry Configuration Database.	<p>Configure the component to use the correct port number.</p> <ol style="list-style-type: none"> On the computer that hosts the BlackBerry Enterprise Server Express component, on the taskbar, click Start > All Programs > BlackBerry Enterprise Server. Right-click BlackBerry Server Configuration and select Run as administrator. On the Database Connectivity tab, clear the Use dynamic ports or specify SQL port check box. In the Use dynamic ports or specify SQL port field, type the correct port number. Click OK. In the Windows Services, restart the services for the BlackBerry Enterprise Server Express component.

You cannot access the BlackBerry Administration Service

Possible cause

The computer that hosts the BlackBerry Administration Service has more than one NIC and the production NIC is not first in the bind order in Windows network settings as it must be for you to access the BlackBerry Administration Service.

Possible solution

On the computer that hosts the BlackBerry Administration Service, in the Windows network settings, verify that the production NIC is first in the bind order. For more information, visit www.blackberry.com/btsc to read article KB18190.

You cannot create a user account in the BlackBerry Administration Service

Possible cause	Possible solution
The BlackBerry Administration Service is configured to use static ports when it connects to the BlackBerry Configuration Database server, but the BlackBerry Configuration Database server uses a dynamic port.	<p>Configure the BlackBerry Administration Service to use a dynamic port for the BlackBerry Configuration Database.</p> <ol style="list-style-type: none">1. On the computer that hosts the BlackBerry Enterprise Server Express component, on the taskbar, click Start > All Programs > BlackBerry Enterprise Server.2. Right-click BlackBerry Server Configuration and select Run as administrator.3. On the Database Connectivity tab, select the Use dynamic ports or specify SQL port check box.4. Click OK.5. In the Windows Services, restart the services for the BlackBerry Administration Service.

The BlackBerry Administration Service pool name is the same as the FQDN of the host computer

Possible cause

A DNS record was not created before a BlackBerry Administration Service instance was installed.

Possible solution

1. Create the DNS record for the BlackBerry Administration Service instance.

2. On the computer that hosts the BlackBerry Enterprise Server Express component, on the taskbar, click **Start > All Programs > BlackBerry Enterprise Server**.
3. Right-click **BlackBerry Server Configuration** and select **Run as administrator**.
4. On the **Administration Service - High Availability** tab, in the **Pool name** field, type the name of the BlackBerry Administration Service pool.
5. In the Windows Services, restart the services for the BlackBerry Administration Service.

You cannot add users in the BlackBerry Administration Service after an upgrade to BlackBerry Enterprise Server Express 5.0 SP4

The setup application for BlackBerry Enterprise Server Express 5.0 SP4 for Microsoft Exchange enables LDAP for populating your organization's directory. Previous versions of BlackBerry Enterprise Server Express used MAPI.

If a BlackBerry Enterprise Server Express instance exists in a child domain, users from the parent and parallel domains are not populated by default. When you attempt to add a user in the BlackBerry Administration Service using your organization's directory after an upgrade to BlackBerry Enterprise Server Express 5.0 SP4, you may not be able to add the user and the following error message may appear: "No records were found that match the email address. Edit the email address and try again."

Possible cause

The BlackBerry Enterprise Server Express setup application creates the following registry key in either HKEY_LOCAL_MACHINE\Software\Research In Motion\BlackBerry Enterprise Server\Agents or HKEY_LOCAL_MACHINE\Software\wow6432node\Research In Motion\BlackBerry Enterprise Server\Agents, depending on the version of Windows Server:

- Registry Key: LDAPSearch
- Data Type: DWORD (32 bit)
- Value: 1

In BlackBerry Enterprise Server Express 5.0 SP4, the Mailstore service uses LDAP instead of MAPI and the setup application changes the LDAPSearch registry value to 1 during an upgrade to BlackBerry Enterprise Server Express 5.0 SP4.

This LDAPSearch works for the default domain search, but in environments with multiple child domains the LDAPSearch may not work.

Possible solution

Disable the LDAPSearch on the BlackBerry Enterprise Server Express.

Document and back up the registry entries before you implement any changes.

1. On the computer that hosts the BlackBerry Enterprise Server Express, click **Start > Run**.
2. Type `regedit` and click **OK**. If the **User Account Control** dialog box appears, click **Continue**.
3. Navigate to the appropriate location (depending on the version of Windows Server):
 - HKEY_LOCAL_MACHINE\Software\Research In Motion\BlackBerry Enterprise Server\Agents
 - HKEY_LOCAL_MACHINE\Software\WOW6432Node\Research In Motion\BlackBerry Enterprise Server\Agents
4. Right-click on the **Agents** key in the left-hand pane and select **Export**.
5. Save the exported key in an accessible location in case it is needed for reference or rollback.
6. Set the LDAPSearch value to 0.
7. Restart the BlackBerry Controller service.

Possible solution

Create additional registry keys to take advantage of LDAP.

Document and back up the registry entries before you implement any changes.

1. On the computer that hosts the BlackBerry Enterprise Server Express, click **Start > Run**.
2. Type `regedit` and click **OK**. If the **User Account Control** dialog appears, click **Continue**.
3. Navigate to the appropriate location (depending on the version of Windows Server):
 - HKEY_LOCAL_MACHINE\Software\Research In Motion\BlackBerry Enterprise Server\Agents
 - HKEY_LOCAL_MACHINE\Software\WOW6432Node\Research In Motion\BlackBerry Enterprise Server\Agents
4. Right-click the **Agents** key in the left-hand pane and select **Export**.
5. Save the exported key in an accessible location in case it is needed for reference or rollback.
6. Create a LDAPDomain key:
 - a Right-click the **Agents** key in the left-hand pane and select **New > String Value**.
 - b Type LDAPDomain as the name.
 - c Right-click on LDAPDomain and select Modify.
 - d In the Value data field, type `<FQDN of Global Catalog Server>:3268`, for example `childdomain.example.com:3268`. Make sure you use a Global Catalog Server in the root domain (top level).

7. Create a LDAPBaseDN key.
 - a Right-click the **Agents** key in the left-hand pane and select **New > String Value**.
 - b Type LDAPBaseDN as the name.
 - c Right-click on LDAPBaseDN and select Modify.
 - d In the Value data field, type the distinguished name of the top level domain, for example DC=EXAMPLE,DC=COM.
8. Restart the BlackBerry Controller service.
9. Log in to the BlackBerry Administration Service.
10. Click **Refresh available user list from company directory**.

Related resources

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To read the following guides or additional related material, visit <http://www.blackberry.com/go/serverdocs>.

Guide	Information
<i>What's New in BlackBerry Enterprise Server 5.0 SP4 Job Aid</i>	<ul style="list-style-type: none">• Summary of new features
<i>BlackBerry Enterprise Server Express Update Guide</i>	<ul style="list-style-type: none">• Summary of updates to the administrator guides for BlackBerry Enterprise Server Express 5.0 SP4
<i>BlackBerry Enterprise Server Express Release Notes</i>	<ul style="list-style-type: none">• Description of known issues and potential workarounds
<i>BlackBerry Enterprise Server Express Installation and Configuration Guide</i>	<ul style="list-style-type: none">• System requirements• Installation instructions
<i>BlackBerry Enterprise Server Policy Reference Guide</i>	<ul style="list-style-type: none">• Descriptions of available IT policy rules and application control policy rules• Descriptions of Wi-Fi configuration settings and VPN configuration settings

Glossary

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AES	Advanced Encryption Standard
API	application programming interface
AJAX	Asynchronous JavaScript and XML
BlackBerry CAL	A BlackBerry Client Access License (BlackBerry CAL) limits how many users you can add to a BlackBerry Enterprise Server.
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
CAS	Client Access Server
CDMA	Code Division Multiple Access
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
FQDN	fully qualified domain name
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol over Secure Sockets Layer
IIS	Internet Information Services
IP	Internet Protocol
IP address	An Internet Protocol (IP) address is an identification number that each computer or mobile device uses when it sends or receives information over a network, such as the Internet. This identification number identifies the specific computer or mobile device on the network.
JDK	Java Development Kit
JRE	Java Runtime Environment

LAN	A local area network (LAN) is a computer network shared by a group of computers in a small area, such as an office building. Any computer in this network can communicate with another computer that is part of the same network.
MAPI	Messaging Application Programming Interface
messaging server	A messaging server sends and processes messages and provides collaboration services, such as updating and communicating calendar and address book information.
MSDE	Microsoft SQL Server Desktop Engine
NIC	network interface card
NTLM	NT LAN Manager
RAID	redundant array of independent (or inexpensive) disks
SMS	Short Message Service
SNMP	Simple Network Management Protocol
SQL	Structured Query Language
SRP	Server Routing Protocol
SSL	Secure Sockets Layer
TCP/IP	Transmission Control Protocol/Internet Protocol (TCP/IP) is a set of communication protocols that is used to transmit data over networks, such as the Internet.
TCP	Transmission Control Protocol
TLS	Transport Layer Security
Triple DES	Triple Data Encryption Standard
UDP	User Datagram Protocol
VoIP	Voice over Internet Protocol
WAN	wide area network
XML	Extensible Markup Language

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