



# **Zimbra Connector for BlackBerry Enterprise Server**

## **Administrator's Guide**

**ZCB 7.2**

**April 2012**

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Zimbra Connector for BlackBerry Enterprise Server 7.2

GA - April 2012

Rev 2 - November 2013

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# 1 Product Overview

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This document describes installation prerequisites, installation, provisioning and troubleshooting for Zimbra™ Connector for BlackBerry® Enterprise Server (ZCB).

With ZCB, users can access the Zimbra Collaboration Server (ZCS) using their BlackBerry mobile devices. ZCB is a plug-in that enables synchronization of mail, address books (including GAL), calendars, and tasks between ZCS and a BlackBerry Enterprise Server for Microsoft® Exchange (BES) or BlackBerry Enterprise Server Express for Microsoft Exchange (BES Express).

Topics in this chapter include:

- ◆ [Considerations on page 5](#)
- ◆ [ZCB Features on page 5](#)
- ◆ [ZCB Architecture on page 6](#)

## Considerations

Consider the following:

- References to BES in this document apply to BES and BES Express.
- ZCB supports BES and BES Express, versions 5.0 through 5.0.3. Versions 5.0.4 and higher are not supported.

## ZCB Features

Key features include:

- Up to 250 users can be provisioned on any BES.
- Between 70-90 users per agent can be provisioned, not to exceed 250 users per BES.
- Administrators provision users directly in the BlackBerry Administration Console.
- Over-the-air synchronization of mail, address book, calendar, and tasks in the native BlackBerry user interface.
- Sync to all BlackBerry devices.

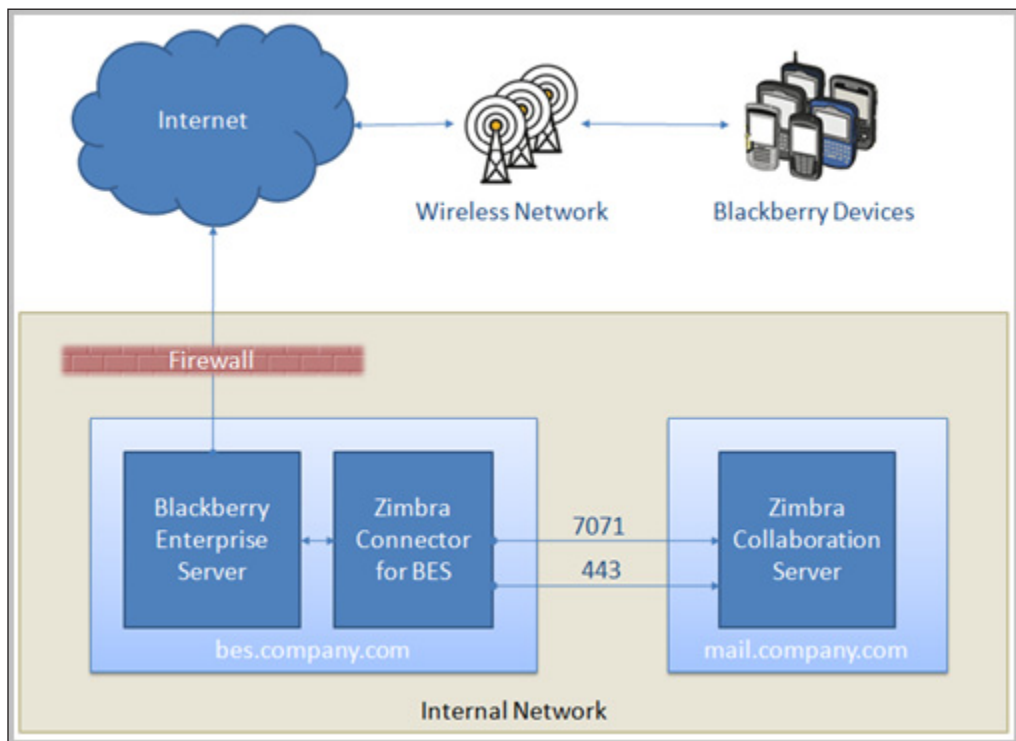
- Full access to Zimbra global address list (GAL).
- Search messages.
- View attachments.
- Manage calendar events including accepting and declining meeting invites.

## ZCB Architecture

ZCB is a plug-in that enables synchronization of mail, address books (including GAL), calendars, and tasks between ZCS and BES. The following figure shows how ZCB interacts with ZCS, BES, and BlackBerry devices.

How ZCB connects to ZCS, BES, and BlackBerry Devices

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## 2 Installing ZCB

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Installing ZCB on the BES server is a multi-part process, including preparing the BES server, installing ZCB, creating mail profiles, and installing BES.

Topics in this chapter include:

- ◆ [Installation Prerequisites on page 8](#)
- ◆ [Preparing the BES Server on page 9](#)
- ◆ [Installing ZCB on page 11](#)
- ◆ [Manually Creating Mail Profiles on page 13](#)
- ◆ [Installing BES on page 15](#)

## Installation Prerequisites

To install and run ZCB, confirm you have the following installation requirements.

**Important:** All servers and software must have the latest service packs and updates installed.

### Zimbra Collaboration Server (ZCS)

- ZCS single server or multi-server environment at ZCS 7.2 or later.
- ZCB connects to ZCS on ports 443 and 7071. These ports must be open for ZCB to run. To verify these ports, enter:  

```
zmprov gs <mail.mydomain.com> zimbraAdminPort  
zmprov gs <mail.mydomain.com> zimbraMailSSLPort
```
- In order for ZCB to run, your ZCS server's mail port must be SSL enabled. If you need to configure this, use the CLI command **zmtlsctl** to switch your mail port to **Both**. You must restart ZCS if you run this command. To verify this port, enter:  

```
zmprov gs <hostname> -f zimbraMailMode
```
- Create a delegated administrator account in ZCS for the BES administrator. Having a BES administrator account separate from the ZCS administrator account allows you to specifically monitor BES use and statistics.

1. Create a delegated administrator account.

```
zmprov ca besadmin@<example>.com test123 zimbraIsDelegatedAdminAccount  
TRUE
```

**Important:** The use of a delegated admin account becomes significant when the DoSFilter is enabled on the ZCS server. The use of a global admin account against a DoSFilter-enabled ZCS server leads to undesirable throttling or request failures. The DoSFilter can be bypassed by adding the BES server to the DoSFilter **ipWhitelist**.

2. Grant **besAdminDomainRights** right on each domain the administrator needs to access.

```
zmprov grr domain domain1.com usr besadmin@<example>.com  
besAdminDomainRights
```

3. Grant **besAdminServerRights** right on each server the administrator needs to access.

```
zmprov grr server server1.com usr besadmin@<example>.com  
besAdminServerRights
```

For more information about creating a delegated administrator account, see the *ZCS Administrator's Guide*.

## Server Hardware

Server hardware required for the dedicated BES server, with no other applications installed or running, includes:

- For less than 80 users and one agent: Dual Core, 2 GB RAM, 200+ GB hard drive space.
- For 81 to 250 users and more than one agent: Two - 4 Cores, 4 GB RAM, 500+ GB hard drive space.

## Operating System

One of the following operating systems:

- Microsoft Windows<sup>®</sup> Server 2003 SP2 or R2, or SP3
- Microsoft Windows Server 2008 32-bit SP2, or
- Microsoft Windows Server 2008 64-bit SP2 or R2

## Microsoft Office Outlook<sup>®</sup>

Microsoft Office Outlook<sup>®</sup> 2007 with Service Pack 3 (SP3) messaging and collaboration client. Make sure you install all the latest Microsoft Office Outlook 2007 SP3 updates.

## Zimbra Connector for Blackberry Enterprise Server

Zimbra Connector for Blackberry Enterprise Server 7.2 (ZCB 7.2)

## BlackBerry Enterprise Server

BlackBerry Enterprise Server 5.x (BES 5.x) and all associated components.

## Wireless Devices

Wireless devices enabled with BES services and a Zimbra Mobile license associated with the device.

## Preparing the BES Server

Prepare the BES server by completing and making available all prerequisites and installing the Windows server and Outlook 2007. Use the appropriate software documentation to install the following applications in the order given.

**Important:** *Be sure to follow the order of installation detailed in this section or your installation might fail.*

1. Make sure all prerequisites are complete and/or available, as described in [Installation Prerequisites](#).

2. Install **Microsoft Windows Server 2003, Microsoft Windows Server 2008 32-bit** or **Microsoft Windows Server 2008 64-bit** operating system and the latest service packs.

**Important:** *The server running BES should not have Windows Search or any email searching, scanning, or indexing applications running. These type of applications attempt to use the same message store that ZCB references or they install add-ins in Outlook. Any of these applications can cause .zdb file corruption that can cause account sync issues. But, if you do install anti-virus scanning, **do not scan the folders that contain .zdb files.***

3. Install **Microsoft Office Outlook 2007 SP3**.

---

**Note:** *Make sure you install all the latest Outlook 2007 updates at this time and activate Outlook 2007 after it is installed. If Outlook 2007 is not activated, calendar related Outlook 2007 features might be disabled after the evaluation period.*

1. Open Outlook.
  2. Click **Help** on the toolbar.
  3. Select **Check For Updates**.
- 

To avoid disruption of ZCB services, schedule Windows Server updates to deploy during non-business hours or during regularly scheduled service intervals.

---

**Note:** *If you want to run additional Windows updates after installing ZCB, see [Updating Windows After Installing ZCB](#).*

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4. Reboot your system, even if not prompted during the update process, otherwise the installer might fail.
5. Continue to [Installing ZCB](#).

### Updating Windows After Installing ZCB

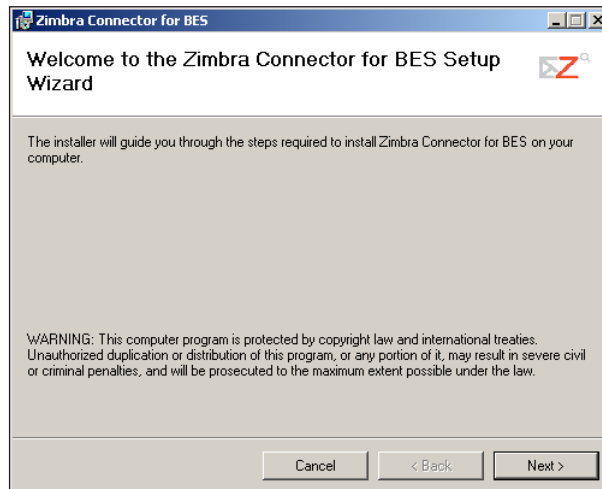
To run additional Windows updates after installing ZCB:

1. Stop the BlackBerry Controller.
2. Run Windows updates.
3. Open Add/Remove Programs or Programs and Features and run a repair on the ZCB connector.
4. Start BlackBerry Controller.

## Installing ZCB

After preparing the BES server, install the ZCB plug-in. The installation program for ZCB is in the Windows Installer .msi format.

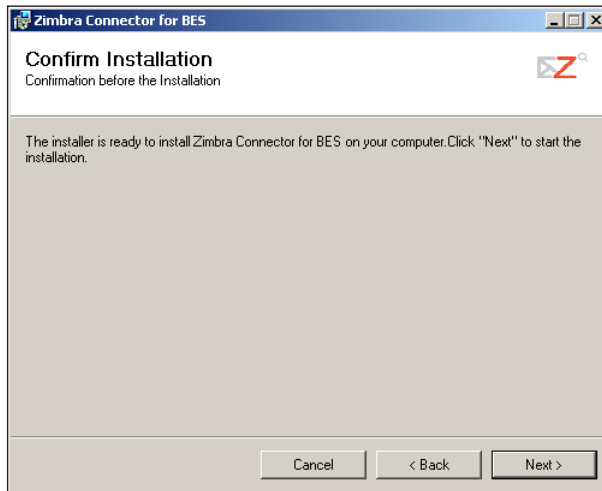
1. Open the .msi file to start the **Zimbra Connector for BES Setup Wizard**. Click **Next** to continue.



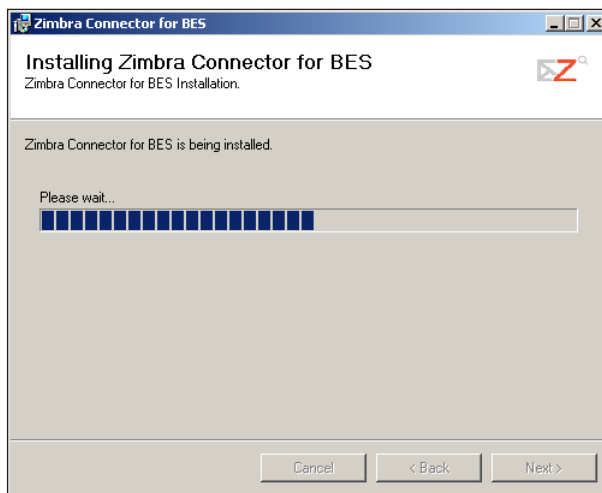
2. Accept the license agreement. Click **Next**.



3. The Confirm Installation dialog displays. Click **Next** to start the installation.



4. ZCB is being installed, as indicated by the progress bar. When complete, the Installation Complete dialog displays, or you can click **Next** to continue.

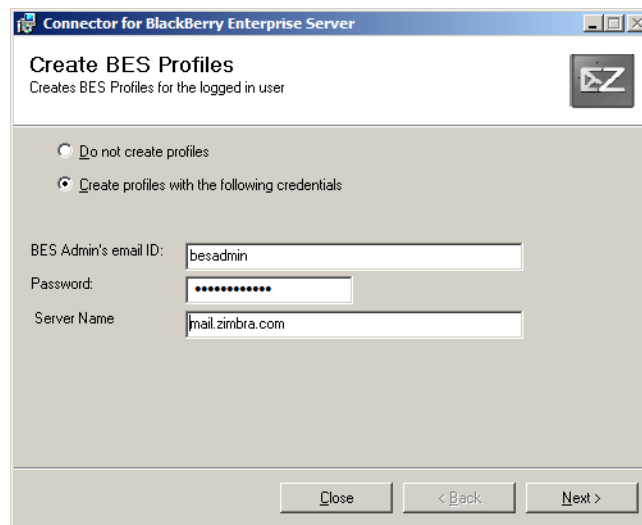


5. Continue by creating BES profiles, either automatically or manually.
  - Automatically create BES profiles by selecting **Create profiles with the following credentials**. Enter credential information and the system validates and automatically creates BES profiles.
  - Manually create BES profiles by selecting **Do not create profiles**, which allows you to manually create BES profiles after the installation process completes. Go to [Manually Creating Mail Profiles on page 13](#).

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**Note:** *In Microsoft Office Outlook, Profiles should be set to **Prompt for a profile to be used** and not the default profile. You can verify this setting by going to **Control Panel>Mail>General** tab.*

---



6. ZCB is installed. Continue to [Installing BES on page 15](#).

## Manually Creating Mail Profiles

If you selected to manually create BES profiles, create the **BlackBerryServer** and **BlackBerryServer\_MailStoreProfile** mail profiles using the account information from the BES Administrator account created on ZCS. Use the following steps to create these two mail profiles. The steps to create both of these profiles are the same.

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**Note:** *In Microsoft Office Outlook, Profiles should be set to **Prompt for a profile to be used** and not the default profile. You can verify this setting by going to **Control Panel>Mail>General** tab.*

---

### To create the BlackBerryServer\_MailStoreProfile:

1. On your computer, click **Start>Settings>Control Panel**.
2. Go to **Mail>Show Profiles**.
3. Click **Add**, to create a new profile.
4. Type **BlackBerryServer\_MailStoreProfile** in the New Profile dialog. Click **OK**.
5. Select **Additional Server Types** in the Server Type dialog. Click **Next**.
6. Select **Zimbra Collaboration Server** from the Additional Server Types list in the Additional Server Types dialog.
7. In the Server Configuration tab in the Zimbra Server Configuration Settings dialog, type the following information:

- **Server Name.** This is set to your ZCS server name and port number. This should be in the form of example.domain.com:7071.
- Select **Secure Connection.**
- **Email Address.** This is the name of the BES administrator account created on the ZCS server. This should be in the form of adminname@example.com.
- **Password.** This is the password of the BES administrator account created on the ZCS server.

8. Click **OK.**

#### To create the BlackBerryServer profile

1. On your computer, click **Start>Settings>Control Panel.**
2. Go to **Mail>Show Profiles.**
3. Click **Add,** to create a new profile.
4. Type **BlackBerryServer** in the New Profile dialog. Click **OK.**
5. Select **Additional Server Types** in the Server Type dialog. Click **Next.**
6. Select **Zimbra Collaboration Server** from the Additional Server Types list in the Additional Server Types dialog.
7. In the Server Configuration tab in the Zimbra Server Configuration Settings dialog, type the following information:
  - **Server Name.** This is set to your ZCS server name and port number. This should be in the form of example.domain.com:7071.
  - Select **Secure Connection.**
  - **Email Address.** This is the name of the BES administrator account created on the ZCS server. This should be in the form of adminname@example.com.
  - **Password.** This is the password of the BES administrator account created on the ZCS server.
8. Click **OK.**
9. Continue to the next section, [Installing BES.](#)

## Installing BES

**Important:** Be sure to follow the order of installation detailed in this section or your installation might fail.

**Important:** When ZCB is configured in ZCS, there must not be a proxy server between ZCB and ZCS. The proxy configuration must be changed to allow direct access. See the [Zimbra Wiki article Installing BlackBerry Enterprise Server in a Zimbra Proxy Environment](#).

After installing ZCB and creating mail profiles, you can now install BES 5.x and associated components in the following order:

1. Install a standalone version of Microsoft® Collaboration Data Objects 1.2.1 (CDO), available at:

<http://www.microsoft.com/downloads/en/details.aspx?FamilyID=2714320d-c997-4de1-986f-24f081725d36&DisplayLang=en>

2. Install BES 5.x.

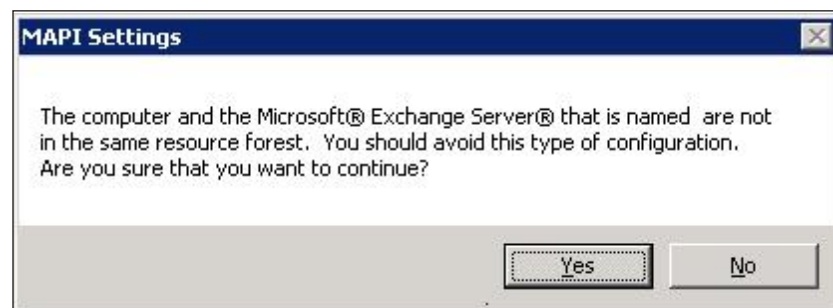
**Important:** Do not install the combined MAPI/CDO prerequisite stated in the BES product documentation, as this will conflict with the standalone version of CDO installed in step 1 and prevent ZCB from working properly.

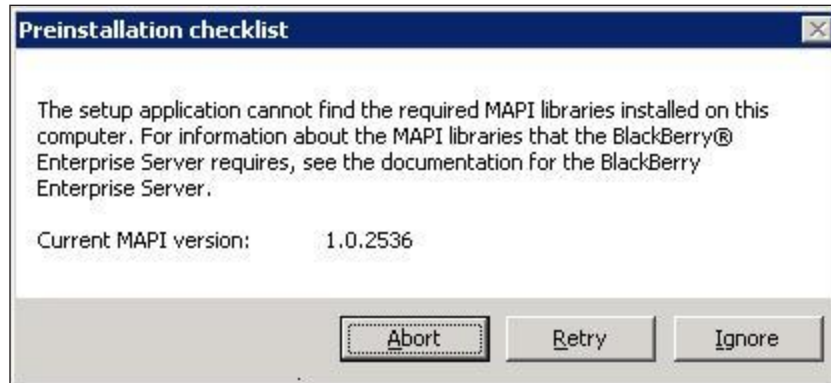
**Important:** Consider the following sections regarding [MAPI Settings](#) and [MAPI Libraries Error Messages](#) and [Installing Active Directory](#) during your installation process.

For more information about installing BES 5.x, see RIM's BlackBerry Enterprise Server product documentation.

### MAPI Settings and MAPI Libraries Error Messages

Ignore error messages the installer generates regarding the MAPI Settings and/or MAPI libraries being used, as shown in the following screens. ZCB uses a client-side MAPI, which is a different version than the server MAPI BES 5.x uses.





## Installing Active Directory

In order to pass the Microsoft® Active Directory (AD) authentication screen during BES installation, it is suggested to do the following:

- Use existing remote AD credentials installed in your domain.
- Use the radio button to specify custom BlackBerry Administration Service admin credentials and avoid AD authentication.

If the BES server is not a part of a domain and there is no option to specify custom BlackBerry Administration Service credentials, you must build a Windows server and create a domain controller using dcpromo.

**Important:** *There should be a domain created that has one or more domain controllers. The BES server should be joined as a member server in that domain. Never run any server that can access the domain controller through insecure channels. This can cause a major security breach.*

1. On the Windows server run **dcpromo** to promote the machine to a domain controller.
2. Add an account called **BESAdmin** to the domain.
3. Ensure the **BESAdmin** account is a part of **Domain Admins** group.
4. Ensure the **BESAdmin** account has **Allow logon locally** and **log on as a service** privileges enabled in the domain security policy.

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## 3 Provisioning ZCB

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This chapter contains information about how to provision ZCB.

Topics in this chapter include:

- ◆ [Provisioning Accounts on BES on page 17](#)
- ◆ [Customizing Settings in the Registry \(optional\) on page 18](#)
- ◆ [Hosted BES and Multi-tenancy on page 20](#)
- ◆ [Changing Service Account Password on BES on page 22](#)

### Provisioning Accounts on BES

Once BES is installed and the BlackBerry Controller service is started, BES begins to synchronize the Global Address List (GAL).

**Important:** *Be sure you have configured the ZCS server's mail port mode to **Both** to ensure the GAL in ZCS is accessible. If you need to configure this, use the CLI command `zmtlscctl` to switch your mail port to **Both**. You must restart ZCS if you run this command.*

---

**Note:** *It might take several minutes before BES is able to synchronize the GAL. Larger GALs might take longer to synchronize, and you might be unable to provision users until the GAL has been fully synchronized.*

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**Note:** *A GAL sync account is automatically created for the default domain. If you want to create a GAL sync account other than this, see the *Zimbra Collaboration Server Administrator's Guide*.*

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Once the GAL has finished syncing, use BlackBerry Administration Service console to provision user accounts and create the Activation Password. (Refer to BES documentation for details about how to provision accounts.)

---

**Note:** *ZCB only supports over the air (OTA) activation, so you must set an activation password. For more information on provisioning accounts using the BlackBerry Administration Service console, refer to your BES documentation.*

---

## Multi-Agent Configuration

When a single instance of BES is used and ZCB is expected to support more than 80 users, the Zimbra Multi-agent Configuration (MAC) for BES must be used. In the multi-agent configuration, processing of users provisioned on BES is distributed among multiple static agents. See [Appendix A ZCB Supports Multi-Agent BES Configuration](#).

## Activating devices

When user accounts are provisioned in BES, ZCB syncs with the ZCS server to build a local cache of each user's data. Each user's data is stored in a file called a ZDB. Internally, a ZDB is actually a Microsoft PST.

To view a list of the ZDB files:

1. Go to **Control Panel > Mail Applet > Select BlackBerryServer profile > Properties > Data Files**.
2. Select a file and click **Open Folder** to open the directory that contains all of the ZDBs.

Once this synchronization is complete, users can activate their devices over the air (OTA).

OTA activation is performed through the Enterprise Activation application on users' devices. To activate a device, users use the email address that was provisioned for them in BES and the enterprise activation password.

**Important:** *If users reprovision their BlackBerry mobile device, they must first wipe the device before activating their accounts.*

## Customizing Settings in the Registry (optional)

The following default settings for syncing user's mail and calendar can be modified from the registry keys.

- Initial age of the email messages that are added to the cache. The default is 2 days.
- Maximum number of days email messages reside in the user's local cache. The default is 30 days.
- How frequently messages are removed from the local cache. The default is 24 hours.
- The initial age of calendar items that are initially synced. The default is 2 days.

## Modifying Registry Keys

Modifying the registry keys is optional. Below is a list of the registry keys for ZCB.

**Important:** Before you change any registry key values, be sure to create a backup of the original registry key values.

Key Name	Value Type	Description
The following keys are located under HKEY_LOCAL_MACHINE\Software\Zimbra\		
MaxEmailAge	REG_DWORD	This registry key indicates the maximum number of days an email can reside in the local cache. Emails older than the specified MaxEmailAge are removed from the local cache. The default is 30 days.
StaleMessageCleanFreq	REG_DWORD	This registry key indicates how frequently, in hours, messages should be scanned to see if they should be removed from the local cache based on the MaxEmailAge value. Default is 24 hours.
MaxInitialAge	REG_DWORD	<p>This registry key indicates the amount of mail to initially add to the cache. Emails that are older than the specified MaxInitialAge are not initially added to the cache.</p> <hr/> <p><b>Note:</b> Significantly increasing the MaxInitialAge registry key will create a larger cache, increasing the time to initialize the user's account. For faster performance, Zimbra recommends a smaller MaxInitialAge value. The default is 2 days.</p> <hr/>

Key Name	Value Type	Description
MaxInitialCalAge	REG_DWORD	<p>This registry key indicates the cut-off age for calendar items that are initially synced. Calendar items older than the value of this key are not synced. The default is 2 days</p> <hr/> <p><b>Note:</b> <i>Calendar items older than the value of this key will be synced if they are part of an ongoing recurring series.</i></p>
turnOffInboxFailures	REG_DWORD	If this registry key is not set or is set to 0 (default), local failures messages will be sent to the user's device. If this key exists and is set to 1, this feature is turned off.
CalendarSerialization	REG_DWORD	To stabilize BES performance with multi-agent configuration, calendar conversion requests can be serialized. The default is off, the value of this key is set to 0. To turn this on, set the value of this key to 1.

## Hosted BES and Multi-tenancy

### Enable GAL-based Hosted Mode

This section contains steps to enable GAL-based hosted mode and provides information about what to look for in the BES logs. To enable hosted mode:

1. Set the following DWORD:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Research In Motion\BlackBerry
EnterpriseServer\Agents\HostedServer = 1
```

2. When hosted mode is enabled, the MAGT log shows the company name retrieved from the GAL when starting a mailbox:

```
User test1@xx.example.net starting up...
```

```
{test1@gj.example.net} Mailbox Advise, Connection=3
```

```
{test1@gj.example.net} Mailbox name is test1@xx.example.net, Company name
is xxxx
```

After hosted mode is enabled, device lookups only display users within the same company.

---

**Note:** For more information about multi-tenancy, see [Configure how users search for email addresses in a Hosted BlackBerry services environment on the RIM web site](#).

---

## Enable BES Domain to Search Across GAL for All Domains

Use the steps in this section to enable Multi-tenancy.

### On the Zimbra Server

Create a new domain so that the BES Admin has its own domain where the entire GAL is available.

1. Create a domain.

**bes.domain.com**

2. Modify the search base set to ROOT for search and sync.

```
zmprov md bes.domain.com zimbraGalInternalSearchBase ROOT
```

```
zmprov md bes.domain.com zimbraGalSyncInternalSearchBase ROOT
```

3. Create an admin account in the domain:

```
zmprov ca besadmin@bes.domain.com <password> zimbraIsAdminAccount TRUE
```

**Important:** If the ZCS server DoSFilter is enabled, the IP addresses of all BES servers should be added to the DoSFilter **ipWhitelist** on the ZCS server.

4. Auth to Zimbra in BES profiles as besadmin@bes.domain.com and GAL search/sync will return entries in all domains.
5. Make sure that all BES users have the 'Company' field populated under the Zimbra Admin user interface.

### On the BES Server

This section contains steps to enable GAL-based hosted mode and provides information about what to look for in the BES logs.

To enable hosted mode:

1. Set the following DWORD

```
HKEY_LOCAL_MACHINE\SOFTWARE\Research In Motion\BlackBerryEnterpriseServer\Agents\HostedServer = 1
```

2. Restart the BlackBerry Controller Service.
3. When hosted mode is enabled, the MAGT log shows the company name retrieved from the GAL when starting a mailbox:

User test1@xx.example.net starting up...

{test1@gj.example.net} Mailbox Advise, Connection=3

{test1@gj.example.net} Mailbox name is test1@xx.example.net, Company name is  
XXXX

After hosted mode is enabled, device lookups only display users within the same company.

## Changing Service Account Password on BES

When the Windows server administration password is changed, to keep the Window's password and the BES server passwords synchronized, the new Windows password must be updated on BES.

1. Stop the BlackBerry Controller.
2. Change the service account's password.
3. Change the logon password for all of the BlackBerry-related windows services.
4. Restart the server to have the password changes take affect.

## Resetting Password for BES Admin Account in ZCS

If the password for the BES Admin account is reset on the Zimbra server, then you need to update the BlackBerryServer\_MailStoreProfile and BlackBerryServer profiles with the password configured for the ZCS administrator account.

1. Stop the BlackBerry Controller.
2. Go to **Mail Profiles**. Open up properties of the **BlackBerryServer\_MailStoreProfile** profile and proceed to **Zimbra Server Configuration Settings** panel.
  - Enter the correct Zimbra BES admin password on this panel.
  - Click OK to make sure that the connection to Zimbra server succeeded.
3. Return to the Mail tab, select BlackBerryServer and repeat steps 2.
4. Start the BlackBerry Controller. Verify that the email service is restored.

---

## 4 Administering ZCB Using the Command Line

---

This chapter contains information about the ZCB command line tool, **zcbadmin**, used to administer ZCB installation.

The command line tool must be run at the Microsoft Windows command line prompt.

The **zcbadmin** tool is located at either:

**C:\Program Files\Common Files\System\MSMAPI\<Locale ID> (32 bit OS)**, or

**C:\Program Files (x86)\Common Files\System\MSMAPI\<Locale ID> (64 bit OS)**

### Syntax Conventions

Commands use:

- the “-” character to specify a command or argument
- a comma (,) to separate multiple values within an argument

### zcbadmin Tool

The **zcbadmin** tool performs administration tasks for ZCB. Each operation is invoked through command-line options.

Some commands require the BES Controller Service to be stopped before proceeding. An error displays if it is required to stop the service.

The syntax is **zcbadmin [cmd] [argument]**.

To see help for each command, type **zcbadmin -h**

<b>zcbadmin -h -checkZdb</b>	Check ZDBs for errors
<b>zcbadmin -h -scanZdb</b>	Scan ZDBs and correct errors
<b>zcbadmin -h -compactZdb</b>	Compact ZDBs
<b>zcbadmin -h -purgeZdb</b>	Purge unused ZDBs
<b>zcbadmin -h -listAgents</b>	List BES agents for a server
<b>zcbadmin -h -assignAgents</b>	Assign users to BES agents

<code>zcbadmin -h -listServers</code>	List BES servers
<code>zcbadmin -h -findUsers</code>	Find users

## zcbadmin Tool Definitions and Examples

The following are **zcbadmin** tool definitions with examples.

---

**Note:** All commands that support the **-e** option do a wildcard match.

---

### Check ZDB for Errors

The command **checkzdb** checks ZDBs for errors and marks them so they can later be scanned using the **scanzdb** command with the **-m** option.

This is done as a two-stage process. Once MAPI has logged on to a store, you cannot scan it.

The command **zcbadmin -h -checkzdb** options are:

- **-p** The profile name.
- **-e** email1 email2 ...
- **-v** Show verbose output.

Example:

```
C:\src\main\mapi\Win32\rtl>zcbadmin -checkzdb -p BlackBerryServer -e test20
CheckZdb: Checking 11 MAPI stores...
Checking store for 'test200@xx.example.net'
....
....
All stores are OK
Shutting down stores...
Done
```

---

**Note:** The command **checkzdb** uses a thread pool to make it faster.

---

### Scan ZDBs and Correct Errors

The command **scanzdb** scans ZDBs and repairs errors. Used with the **checkzdb** command, it provides a quick way to scan only the problem stores making down time much shorter.

The command **zcbadmin -h -scanzdb** options are:

- **-p** The profile name to be scanned.
- **-d** The profile store(s) to be deleted.

- -r Scan or delete root store zdb only for this profile. Ignore secondary stores.
- -m Scan stores marked as corrupted for this profile.
- -v Show verbose output.

Example:

```
C:\src\main\mapi\Win32\rtl>zcbadmin -scanzdb -p BlackBerryServer -m
No .zdb files have been marked as corrupt with [BlackBerryServer] profile
```

### Compact ZDBs

The command **compactzdb** compacts all ZDBs in a profile if **-e** is not specified, or compacts a set of ZDBs if **-e** is specified.

The command **zcbadmin -h -compactzdb** options are:

- -p The profile name.
- -e email1 email2 ...
- -v Show verbose output.

Example:

```
C:\src\main\mapi\Win32\rtl>zcbadmin -compactzdb -p BlackBerryServer -e test10
compacting test100@xx.example.net
Compacting done
compacting test101@xx.example.net
...
...
Compacting done
```

**Note:** ZDBs are periodically purged to ensure that messages older than the **MaxEmailAge** registry setting are removed. Purging ZDBs in this way prevents them from growing indefinitely. Due to the way PSTs are implemented, it is necessary to occasionally perform a compaction operation. The **zcbadmin** tool's **compactZdb** command can be used to compact all ZDBs within a single command. The BES controller service must be stopped in order to compact ZDBs.

### Purge Unused ZDBs

When a user is removed using the BlackBerry Administration Console, the user's ZDB is orphaned. Orphaned ZDBs are usually removed by ZCB within an hour, but sometimes they are locked and cannot be removed until the controller is restarted. You can also use the command **purgezdb** to show a list of orphaned ZDBs, and to remove them.

When using **purgezdb** to find unused ZDBs and to remove them, the **-f** option must be specified for the delete to actually happen. The default behavior is to perform a dry run and output which files will be deleted when the **-f** flag is used.

---

**Note:** *This command can only check for unused ZDBs within the current Windows user's MAPI profiles. Use caution when storing ZDBs in a common location which is used by multiple Windows users.*

---

---

**Note:** *Unused ZDBs are only deleted when the **-f** flag is used.*

---

The command **zcbadmin -h -purgezdb** options are:

- **-f** Force a non dry run.
- **-v** Show verbose output.
- **-o** Causes zcbadmin to check for orphan stores in the profile, and remove them if **-f** is specified.
- **-d** Causes zcbadmin to check for duplicate stores in the profile, and remove them if **-f** is specified.

Example:

```
C:\src\main\mapi\Win32\rtl>zcbadmin -purgezdb
Unused Zdb: 'blackberryserver(test324xx@xx.example.net)250.zdb'
Size: 6217 KB
Last access time: 2012-02-29 19:17:32
Deleting:
c:\users\besadmin\appdata\local\microsoft\outlook\BlackBerryServer(test324xx@xx.example.net)250(test54@xx.example.net).idm
...
...
```

### Assign Users to BES Agents

The command **assignagents** assigns users to agents. The default values for **-b** and **-n** is to assign the users between two static agents. Static agent ids start at 200.

The command **zcbadmin -h -assignagents** options are:

- **-p** The profile name.
- **-b** The base agentid.
- **-n** The number of agents.
- **-v** Show verbose output.

Example:

```
C:\src\main\mapi\Win32\rtl>zcbadmin -assignagents -p BlackBerryServer
Base Agentid=200
Number of Agents=2
Assigned 170 of 250 users ...
...
...
Done
```

---

**Note:** *It is recommended that this command be run after adding a batch of users. It ensures that all users from the same ZDB are placed in the same agent. This is important for reliability and performance.*

---

### List BES Agents for a Server

The command **listagents** lists the agents and user counts for the specified BES server (the name is obtained using the **listservers** command).

The command **zcbadmin -h -listagents** options are:

- -s The BES server name.
- -v Show verbose output.

Example:

```
C:\src\main\mapi\Win32\rtl>zcbadmin -listagents -s bes
AgentId: 200
Users: 90

AgentId: 201
Users: 80
```

---

**Note:** *The example shows there are two static agents, with 170 users divided between them. The users were assigned to these two agents using the **assignagents** command.*

---

### List BES Servers

The command **listservers** lists the BES server(s) and shows the number of users on each server:

The command **zcbadmin -h -listservers** options are:

- -c Display user counts.
- -v Show verbose output.

Example:

```
C:\src\main\mapi\Win32\rtl>zcbadmin -listservers -c
Id: 1
Users: 170
MachineName: BES
```

### Find Users

The command **findUsers** helps identify the ZDB file for a user. ZCB supports a concept of "embedded stores", where other users are embedded within the ZDB.

The command **zcbadmin -h -findUsers** options are:

- -p The profile name.
- -e email1 email2 ...
- -v Show verbose output.

Example:

```
C:\src\main\mapi\Win32\rtl>zcbadmin -findUsers -p BlackBerryServer -e test100
Email: test100@xx.example.net
Type: ZDB store
ZDB: blackberryserver(test100@xx.example.net)5.zdb
```

---

**Note:** *The command output also shows the embedded users which share the same ZDB.*

---

---

**Note:** *It is possible for the findUsers command to find non-embedded users which have been deleted from BES. A ZDB can only be unmounted when all embedded stores are also no longer in use.*

---

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# 5 Maintenance and Troubleshooting

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This chapter includes information about troubleshooting ZCB.

Topics in this chapter include:

- ◆ [Microsoft Support Cases on page 29](#)
- ◆ [Resolving ZCB Issues on page 30](#)
- ◆ [Using Logging Control for Troubleshooting on page 35](#)
- ◆ [Additional Resources on page 35](#)
- ◆ [Contacting Zimbra Support on page 36](#)

---

**Note:** *For information about known issues, see the product release notes.*

---

## Maintenance

ZDBs are periodically purged to ensure that messages older than the **MaxEmailAge** registry setting are removed. Purging ZDBs in this way prevents them from growing indefinitely. Due to the way PSTs are implemented, it is necessary to occasionally perform a compaction operation. The `zcbadmin` tool's **compactZdb** command can be used to compact all ZDBs within a single command. The BES controller service must be stopped in order to compact ZDBs.

## Microsoft Support Cases

Additionally, the following Microsoft Support Cases might impact ZCB installation or performance.

- SRX080703601614 — This support case outlines periodic crashes in the Microsoft `mspst32.dll` file. These crashes put ZCB in a bad state which requires a restart of the server. The crashes are more frequent with a larger number of users in BES.
- SRX080703600580 — This support case outlines potential deadlock in the Microsoft `mspst32.dll` file. This deadlock puts ZCB in a bad state which requires a restart of the server. The deadlock is more frequent with a larger number of users in BES.

## Resolving ZCB Issues

The following are issues encountered when using ZCB.

- ZCB installation fails
- Devices stop receiving email
- Device does not activate
- Duplicate emails
- Previous calendar items do not appear in Calendar
- Receiving Data Execution Prevention Feature alert messages
- The BES controller fails to start a user

The following sections describe these common issues, troubleshooting tips, and possible resolutions.

### ZCB Installation Failure

The most common installation problems are due to deviation from the step-by-step installation instructions outlined in this document or deviation from the installation prerequisites.

How to resolve:

- Verify that the installation process is started with none of the prerequisite software installed and that all user applications are closed before starting the installation process for ZCB. Then verify that the steps are followed in the order they are given.
- If problems with the installation still exist, the installer can be run in verbose mode to generate debug logs. These logs can be sent to Zimbra support for analysis.

To run the installer in verbose mode, run the following command in the folder where the installer file (this has an .msi extension) is located.

```
msiexec /i [msi-filename] /lv [output log file path name]
```

For example, the following command launches the zcb<version>.msi installer in verbose mode, and will output the verbose logs to out.txt in the current directory.

```
msiexec /i zcb_<version>.msi /lv out.txt
```

### Devices Stop Receiving Email

Common situations where successfully activated devices stop receiving new email, calendar events, and contacts include:

- Some of the BES services are not running
- BlackBerry Agent is not responding
- User might not have initialized

- Device needs to be rebooted

The following sections discuss these scenarios in more detail.

**Some of the BES Services are Not Running.** For BES to function properly, all BlackBerry services should be running. There is a known timing issue with BES where if the database service has not started in a timely fashion, other BES services do not start. If the timing issue preventing other BES services from starting consistently occurs, contact Research in Motion technical support for information about starting the BES services through a start-up script.

**User Might Not Have Initialized.** If only a subset of users are not receiving data on their device, some users might not have been initialized properly by the BlackBerry Agent. To verify if this is the case, open the Agent Logs and search for a particular user's email address. If the user's email address or display name is associated with log statements similar to those below, then the user might not have been initialized properly.

```
MAPIMailbox::MAPIMailbox(2) -  
ResolveName[3] failed for DisplayName='Joe Smith', giving up  
MAPIMailbox::MAPIMailbox(2) - OpenMsgStore (0x8004011d) failed,  
MailboxDN=jsmith@zcs.myserver.com, ServerDN=  
o=zcs.myserver.com/ou=First Administrative Group/cn=Configuration/  
cn=Servers/cn=zcs.myserver.com/cn=Microsoft Private MDB
```

---

**Note:** Users that are not properly initialized receive log statements similar to the above log.

---

If the user is not properly initializing, BlackBerry Agent needs to be restarted from the BlackBerry Controller, using the following steps.

1. Shut down the BlackBerry Controller Windows service.
2. In the Windows Task Manager, wait for BlackBerryAgent.exe and Outlook.exe to shut down. If this process takes more than a minute, you might need to manually shut down these tasks.
3. Restart the BlackBerry Controller Windows service.

**Device Needs to be Rebooted.** If only a subset of users are not receiving data on their devices, the issue can be a user-specific issue. This is likely if the user's mailbox has been successfully opened by the BlackBerry Agent. (You can check this in the Agent logs.) A full reboot of the BlackBerry device is required to resolve this situation.

To fully reboot a BlackBerry device have the user follow the steps below.

1. Open up the back of the BlackBerry device.

2. Remove the battery from the device.
3. Wait a minute.
4. Place the battery back into the device.

Following these steps, the user can restart the device. Once the user has restarted the device, enable the wireless connection again.

### Device Does Not Activate

If a user is provisioned through the BlackBerry Administration Service console but Enterprise Activation fails on the device, the following troubleshooting steps might resolve the issue.

- **Check that all BlackBerry services are running.** For BES to function properly, all BlackBerry services should be running. There is a known timing issue with BES where if the database service has not started in a timely fashion, other BES services do not start. If the timing issue preventing other BES services from starting consistently occurs, contact Research in Motion technical support for information about starting the BES services through a start-up script.
- **Check to make sure that the wireless carrier has enabled BES service for the device.** There is a difference between the available BlackBerry Internet Service (BIS) and BES services that are offered by most carriers. Users might need to indicate that they wish to connect their device to the BES located in their corporate network.
- **Check email routing settings and email filters for that user's account.** The initial stages of Enterprise Activation are performed through email sent from the device to BES and vice versa. If these activation emails are not properly routed to/from that user's account or if mail filters exist, this can interfere with this process, causing activation to fail.
- **Verify that the Enterprise Activation password for the user was set and that it has not expired.** Sometimes Enterprise Activation credentials are not current or are not set, which causes activation to fail.

Also verify that the user is using the correct email address, by comparing their login email with the email listed for the user in the BlackBerry Administration Service console.

- **Verify that the user is properly initialized in the BlackBerry Agent.** To verify this, open the BlackBerry Agent Logs, which can be found in the daily logs folder for BES. The Agent Logs file contains **\_MAGT\_** in its filename. Search for the user's email address. If errors regarding initializing the user or opening their message store are in the logs, then they might not have properly initialized. To resolve this issue, restart the BlackBerry Agent using the following steps.
  1. Shut down the Black Berry Controller Windows service.

2. In the Windows Task Manager, wait for BlackBerryAgent.exe and Outlook.exe to shut down. If this process takes more than a minute, you might need to manually shut down these tasks.

3. Restart the BlackBerry Controller Windows service.

- **Delete and add the user in the BlackBerry Administration Service console.** If the Enterprise Activation problems persist, you might want to delete the user from the BlackBerry Administration Service console and add him/her again. When adding new users, assign an Enterprise Activation password before notifying the user to activate their device.

### Duplicate Email Messages

If a user has previously activated BlackBerry Internet Service (BIS) to access their corporate mail, activating their device on BES could cause duplicate messages to be delivered to their device. Contact your carrier for instructions on disabling BIS once it has been set up. The user might be forced to wipe his device before performing the Enterprise Activation against ZCB.

### Previous Calendar Items Do Not Appear in Calendar

If a user is able to view some previous appointments, but others appear to be missing, the **MaxInitialCalAge** registry key might be preventing previous appointments from being synced. Calendar items older than the MaxInitialCalAge are not synced to users' calendars, unless they are part of an ongoing recurring series.

If you are going to change this registry key you must remove the account and recreate it again. The order to do this is as follows:

1. Remove the user's account.
2. Set the MaxInitialCalAge to a larger value.
3. Create the user's account again.

When their account is recreated, the new MaxInitialCalAge is applied.

---

**Note:** *Significantly increasing the MaxInitialCalAge registry key creates a larger cache, increasing the time to initialize the user's account. For faster performance, Zimbra recommends a smaller MaxInitialCalAge value.*

---

### Turning Off the Data Execution Prevention Feature

If you are receiving message alerts from the Data Execution Prevention feature (DEP), you can disable this feature. Below are the steps to turn off the DEP for key BES processes:

1. On your computer, click **Start**.
2. Select **Control Panel**.

3. Select **System**.
4. Click the **Advanced** tab.
5. In the **Performance** region select **Settings**.
6. Click the **Data Execution Prevention** tab in the dialog box that opens.
7. Select **Turn on DEP for all programs and services except for those I select**.
8. Click **Add**.
9. The open dialog box will open. Browse and select applications (BlackBerryAgent.exe, CalHelper.exe, BlackBerryMailStoreSrvr.exe).
10. Click **Open**.
11. Click **Apply**.
12. Click **OK**.
13. Reboot your system.

### The BES Controller Fails to Start a User

If the BES controller is failing to start a user, this might be due to database corruption. The following steps will help to resolve the problem:

1. Stop the **BlackBerry Controller Service**.
2. Using the Task Manager, ensure that all instances of **BlackBerryAgent.exe** and **CalHelper.exe** have stopped.
3. Run **zcbadmin -checkZdb -p BlackBerryServer** to check all ZDBs in the BlackBerryServer profile for errors.
4. If there are errors, run **zcbadmin -scanzdb -p BlackBerryServer -m** to scan any ZDBs marked as having errors (while running the **checkZdb** command).
5. Run **zcbadmin -checkZdb -p BlackBerryServer** to check all errors have been resolved.

---

**Note:** Occasionally a second **scanZdb** command will help to resolve more serious errors.

---

## Using Logging Control for Troubleshooting

**Note:** *Enable Logging should be unchecked to disable logging when not being used for troubleshooting. If logging is on continuously, performance might be affected.*

**ZCologCtl.exe** is installed when ZCB is installed. If users encounter problems when accessing their Zimbra accounts using their BlackBerry mobile device, you can enable the logging control tool to log errors and events that occur while users are using ZCB. Logging Control is used for troubleshooting.

Contact Zimbra Support to guide you through configuring the logging control tool options. Once you have enabled logging and have recreated the issue, you can send the log to Zimbra Support for analysis.

The logging control tool is in the local ID directory, **\Program files\Common Files\System\MSMAPI\1033**.

The screenshot shows the ZCologCtl.exe configuration window. It has a title bar and a main area with several sections:

- Enable Logging:** A checked checkbox.
- Log File:**
  - Path to 'ZCologs' Log File directory: (empty text box)
  - Prefix: (text box containing 'zco')
  - Example file name with path 'c:\' and prefix 'zco': c:\ZCologs\zco-20071015T095453.302-OUTLOOK.EXE-2832.log
- Log File Purging:**
  - Delete Log Files older than: (spin box with '7') days
- Log File Rolling:**
  - Max size of single Log File: (spin box with '10') MB
  - Preserve Log File backups (multiple .bak files): (checked checkbox)
  - Max size of ZCologs directory: (spin box with '100') MB
- Presets:** A group box containing buttons for Default, Changes, Full, Spooler, UI Thread, HTTP Only, Main Sync, and GAL Sync.
- Buttons:** Save, Cancel, Factory Reset, Force GAL update, Force GAL reset, and Advanced >>.

## Additional Resources

If your issue is not a known or common issue, or is persisting despite troubleshooting, you can use the following additional resources to search for information about your issue.

- **Zimbra Forums.** The Zimbra Forums, <http://www.zimbra.com/forums>, are a great place to find answers to problems and issues you might be experiencing.
- **BlackBerry/Research in Motion Forums.** Some problems might not be ZCB specific issues. For information on issues with the BES, you can use the BlackBerry Forums, <http://www.blackberryforums.com>, the BlackBerry Support Community Forums, <http://supportforums.blackberry.com/rim/>, or the BlackBerry Support & Services site, <http://na.blackberry.com/eng/support>.

## Contacting Zimbra Support

Zimbra Support can be contacted at [support@zimbra.com](mailto:support@zimbra.com). To provide the highest level of service, gather the following information before contacting support.

### ■ General Information

- **Hardware configuration.** CPU and RAM.
  - **Software configuration.** OS version, BES version, and ZCB version.
  - **Networking specifics.** Information about any proxy servers and firewalls.
  - **ZCS Configuration.** Information about any multi-node configuration.
  - **BES Configuration.** Information about multi-agent configuration, and any SQL databases.
  - **Additional information.** Any other information that you think can help diagnose the issue.
- **Log Files.** Two sets of logs that are very important in debugging ZCB problems. You need to include logs generated by ZCB Logging Control and BES logs, described in Using Logging Control for Troubleshooting on page 35. You also need to include the BES logs that are stored in daily folders. Refer to the BES documentation for information on how to locate and configure these logs.
- **Automatic Core Dumps.** If the BlackBerry Agent crashes, a core dump file is automatically generated. This core dump file contains useful information for support and engineering to help diagnose a particular problem. The core dump files are generated in the **%TEMP%\zco-cores** folder on the server. If these files exist, have them available for support.
- **Manual Core Dumps.** If the BlackBerry Agent process is hanging, you can manually generate a core dump to send to support. The steps to generate a core dump are located in the Zimbra Wiki, at [http://wiki.zimbra.com/index.php?title=Creating\\_a\\_Core\\_Dump\\_from\\_a\\_Running\\_Process\\_using\\_WinDbg](http://wiki.zimbra.com/index.php?title=Creating_a_Core_Dump_from_a_Running_Process_using_WinDbg).

---

**Note:** When following these directions, be sure to select *BlackBerryAgent.exe* from the list of processes instead of *Outlook.exe*.

---

---

**Note:** If you are running multiple agents, you must attach to the particular *BlackBerryAgent.exe* process in question. The BlackBerry Controller logs output the mapping of process ID to agent ID, which could facilitate attaching WinDbg to the right process.

---

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# Appendix A ZCB Supports Multi-Agent BES Configuration

---

This appendix contains information regarding ZCB support for multi-agent BES configuration.

Topics in this chapter include:

- ◆ [How It Works on page 37](#)
- ◆ [Configuring Multiple Agents on page 39](#)

When a single instance of BES used with the Zimbra Connector for BlackBerry Enterprise Server (ZCB) is expected to support more than 80 users, the Zimbra multi-agent configuration (MAC) for BES can be used. In the multi-agent configuration, processing of users provisioned on BES is distributed among multiple static agents.

---

**Note:** *If you assign multiple static agents, each one initiates a new BlackBerryAgent.exe process and a new CalHelper.exe process on BES.*

---

## How It Works

The multi-agent configuration for BES lets you set up different combinations of number of agents and number of users per agent. The maximum number of users that can be provisioned on BES with ZCB is 250.

In a BES configuration with 250 users, users can be distributed among multiple agents. For faster processing, use fewer agents with more users per agent.

A good balance for users per agent is shown in the following table.

Maximum # of users your BES server will support	# of Messaging Agents Required
70-90 users	1 agent
140-180 users	2 agents
250 users maximum	3 agents

Note the BlackBerry agent processes provisioned accounts sequentially. In many cases scheme with more agents might be more advantageous, as it allows reducing message delivery latency. In other words, the less accounts an agent handles the faster the delivery time.

### Setting maximum number of messaging agents to run

The maximum number of BlackBerry Messaging Agents that can run at a time is controlled by the following registry value.

**HKEY\_LOCAL\_MACHINE\SOFTWARE\Research In Motion\BlackBerry Enterprise Server\Agents\NumAgents**

To change the maximum number of BlackBerry Messaging Agents, complete the following steps:

1. To open the Registry Editor, click **Start > Run**, type **regedit** and click **OK**.
2. Go to **HKEY\_LOCAL\_MACHINE\SOFTWARE\Research In Motion\BlackBerry Enterprise Server\Agents**.
3. Double-click **NumAgents**.
4. In the **Value** data field, type the value and select the **Decimal** option.
5. Click **OK**.
6. Close the Registry Editor.

---

**Note:** *For additional information, use documentation available from Research in Motion (RIM).*

---

## Configuring Multiple Agents

You can setup the multi-agent configuration in one of the following ways:

- Distribute users one at a time
- Distribute users in batches

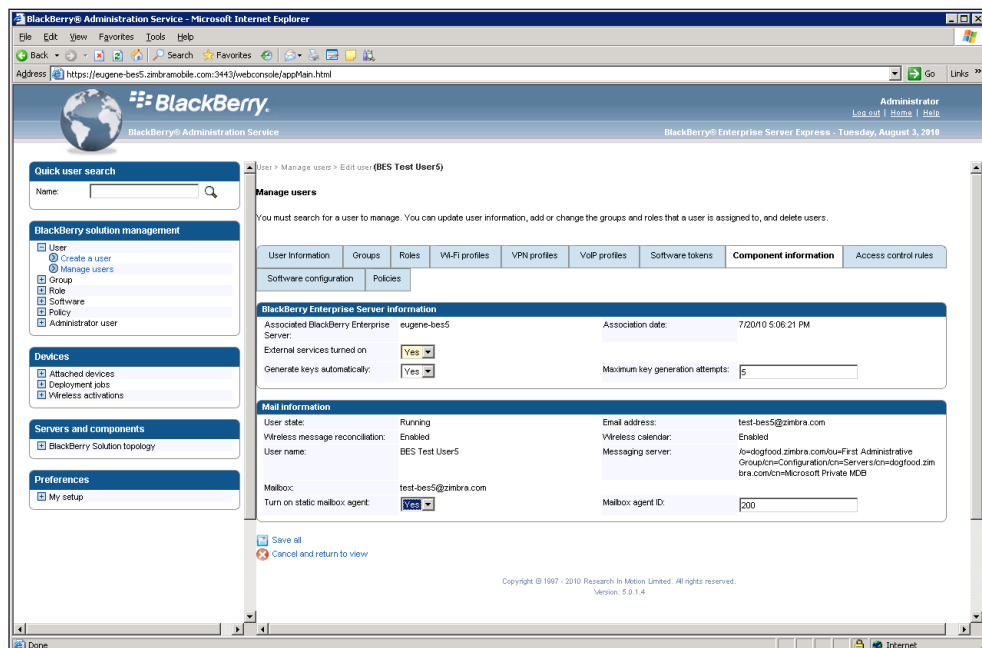
Users must be provisioned on BES before they can be reassigned to a different agent. See [Chapter 3, Provisioning ZCB](#) for information about provisioning users.

New users are assigned the default AgentId 0, the following steps distribute users to new static agents.

### Distribute users one at a time

Log on to BlackBerry Administration Service console.

1. Click **Manage Users** and select a user to be assigned to a static agent.
2. Click on the selection to open the user information page.
3. In the information page, click **Edit User**.
4. Select the **Component information** tab.
5. Change **Turn on static mailbox agent** to **Yes**.
6. Specify **Mailbox agent ID**.



## Distribute users in batches

When you are adding multiple users at once, you can use the standard **bulk add** functionality that is available on the BlackBerry Administration Service (BAS) console's Create User panel.

There are two ways to use the standard bulk add functionality:

1. Stop the BlackBerry Controller Service.
2. Bulk add the users in the BAS.
3. Run the **zcbadmin assignagents** command to assign agent ids.
4. Start the BlackBerry Controller Service.

or

1. Bulk add the users in the BAS.
2. At a later and convenient time, stop the BlackBerry Controller Service.
3. Run the **zcbadmin assignagents** command to assign agent ids.
4. Start the BlackBerry Controller Service.

**Important:** *You should not add more than 100 users at a time.*

---

## Appendix B Connecting the BlackBerry Smartphone Simulator to BES

---

This appendix contains useful links and tips about connecting the BlackBerry Smartphone Simulator to BES.

**Important:** *The information contained in this section is useful information only, and might or might not be correct. For more information about the BlackBerry Smartphone Simulator, see the following RIM documentation or the RIM web site:*

- [BlackBerry Smartphone Simulator User Guide](#)
- [How To - Connect the BlackBerry Device Simulator to a BlackBerry Enterprise Server](#)

### To install the BlackBerry Smartphone Simulator on BES:

1. Install the BlackBerry JDE <http://na.blackberry.com/eng/developers/javaappdev/javadevenv.jsp>.
2. Install the BlackBerry Desktop Manager.
3. Connect the Simulator to Desktop Manager using steps from the How To - Connect the BlackBerry Device Simulator to a BlackBerry Enterprise Server document listed above.
4. Provision your account in the BlackBerry Manager.
5. Assign the device to the account in the BlackBerry Manager.
6. Enterprise activation starts automatically right after the above step.

---

**Note:** *All components are installed on the same machine as BES.*

---

---

**Note:** *After the installation is complete, the simulated device is able to receive messages, appointments, and contacts in real-time, the same as a regular BlackBerry device.*

---

