

Worker Thread Issues, MAPI, and BlackBerry Enterprise Server v3.6

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Affected software versions

- BlackBerry Enterprise Server™ version 3.6
- Integration with Microsoft® Exchange
- Messaging Application Programming Interface (MAPI)
- BlackBerry Wireless Handhelds™

Summary

The following document describes the symptoms and possible causes of unresponsive worker threads that can occur when using the BlackBerry Enterprise Server for Microsoft Exchange.

See the Microsoft web site for information about the Messaging Application Programming Interface (MAPI) and threads.

Overview

The BlackBerry Enterprise Server uses the Microsoft MAPI protocol to communicate with the Microsoft Exchange Server. The BlackBerry Enterprise Server sends worker threads over the MAPI connection to process mail delivery requests for user accounts. Occasionally, worker threads can become unresponsive. In many cases, the threads automatically recover. However, if some or all of the threads are blocked and unable to recover, they can become deadlocked. It is this deadlocked state that prevents message redirection to and from BlackBerry Wireless Handhelds.

Possible causes of unresponsive worker threads

One or more of the following can cause unresponsive threads, which might lead to a deadlocked state:

- The Exchange Server on which a BlackBerry-enabled user mailbox resides has been turned off. After the Exchange Server is turned on, the BlackBerry Enterprise Server should be restarted to re-establish MAPI connections to the mailbox and Exchange Server.
- A new or existing communication problem on the network is interrupting a current connection or preventing a connection from being established between the BlackBerry Enterprise Server and the Exchange Server.
- The Exchange Server might have a problem with software or hardware, such as a faulty network interface card.
- The Exchange Server does not have enough resources to respond to MAPI calls.
- A backup or other maintenance task is preventing the Exchange Server from responding to the MAPI calls.

Diagnosing unresponsive worker threads

Unresponsive worker threads can prevent message redirection or result in mail processing delays for BlackBerry users. Numerous messages that appear in the BlackBerry Enterprise Server debug log and Windows Event Viewer Application log can be used to confirm that unresponsive worker threads are causing mail processing delays. These messages are displayed in the following debug log sample entries:

- [20226] (04/06 07:25:35):{0xBB0} **At least one worker thread seems to be blocked**
- [20301] (04/06 03:53:55):{0xFA4} {awahl@testdomain.com} **Unable to save configuration settings or statistics**
- [50020] (04/06 03:45:35):{0xBB0} **Some worker threads have been blocked for 4 health checks**

Additionally, the following BlackBerry Enterprise Server debug log entry might appear:

```
[30038] (04/03 12:26:41):{0xCB0} Thread: *** No Response *** Thread
Id=0x1270, Handle=0xB24, WaitCount=2, RESCAN_MAILBOX event for User:
awahl@testdomain.com on Server: TESTSERVER1
```

The preceding debug log entry also includes the email address and Exchange Server of the user account being processed when the worker thread stopped responding. The email address of the user account is awahl@testdomain.com and the user's Exchange Server is TESTSERVER1 as shown in the preceding log sample.

"No Response" and "WaitCount" are defined below.

- **No Response:**

When the Exchange Server does not respond to a MAPI call from the BlackBerry Enterprise Server, a status of "No Response" appears in the debug log. Worker threads that become unresponsive while processing requests for BlackBerry users, might cause mail processing delays for other user accounts on the BlackBerry Enterprise Server.

For more information, see the "Possible causes of unresponsive worker threads" section on page 1.

- **WaitCount:**

When a thread is unresponsive, a "WaitCount" status appears in the BlackBerry Enterprise Server debug log entry along with "No Response". The value associated with the WaitCount status indicates the length of time the BlackBerry Enterprise Server has waited for a response to its MAPI call. Each increment of this value means that 10 minutes has expired. For example, if the WaitCount=2, then 20 minutes have passed while waiting for a reply.

Additional resources

See the following documents for more information on diagnosing and troubleshooting issues involving unresponsive worker threads and the BlackBerry Enterprise Server:

- Microsoft Knowledge Base Article – 330304 *Troubleshooting Microsoft Exchange 2000 Server Performance*
- Technical Knowledge Center White Paper *BlackBerry Enterprise Server version 3.6 for Microsoft Exchange Performance White Paper*.
http://www.blackberry.com/knowledgecenterpublic/livelink.exe/fetch/2000/7979/278286/278425/BlackBerry_Enterprise_Server_version_3.6_for_Microsoft_Exchange_Performance_White_Paper?nodeid=627129

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