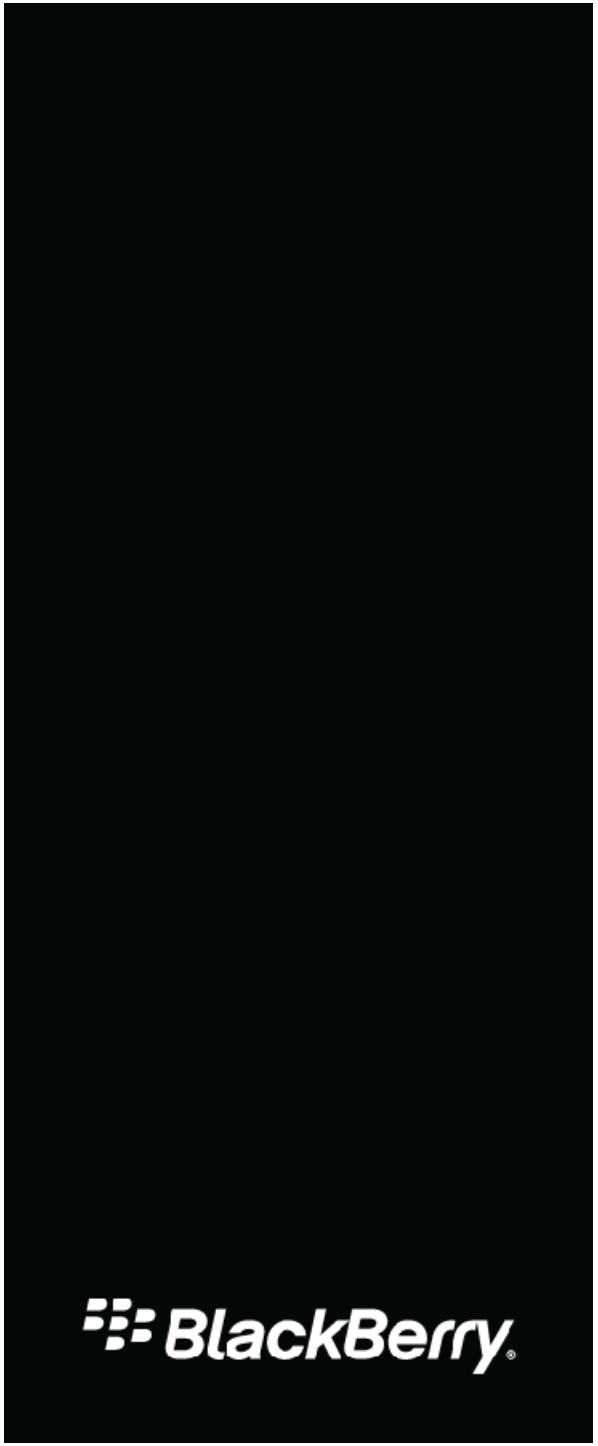
# Introducing BlackBerry Enterprise Server Debug Log Files

**Brian Bernard**

**Date**



# Module outline

This webcast includes the following modules:

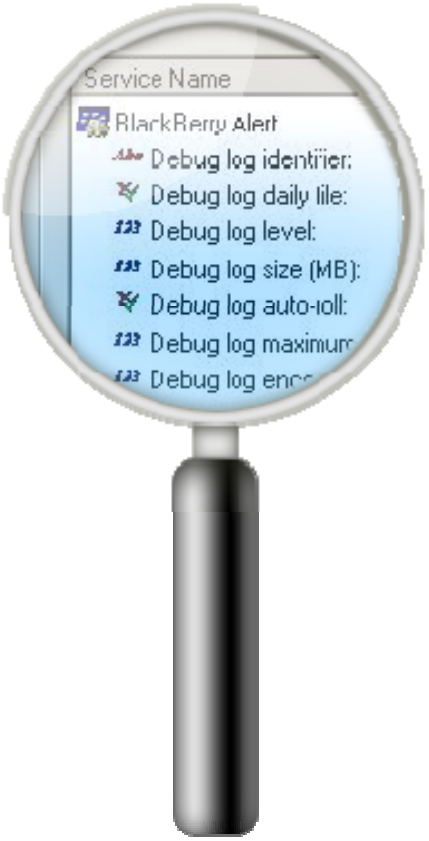
- Overview of BlackBerry® Enterprise Server debug log files
- Understanding the need for messaging server health
- Investigating specific BlackBerry Enterprise Server issues
- Troubleshooting connectivity issues
- Troubleshooting enterprise activation issues
- Analyzing BlackBerry Enterprise Server service interruptions
- Using the BlackBerry® Enterprise Server Resource Kit

# Overview of BlackBerry Enterprise Server log files

# Overview of BlackBerry Enterprise Server log files

**Topics in this module:**

- Available debug log files
- Locating debug log files
- Controlling the size of debug log files
- Configuring debug log files
- Debug log file format




BlackBerry

# Overview of BlackBerry Enterprise Server log files

## BlackBerry Enterprise Server log files

| | |
|---|---|
| **ACNV** | BlackBerry® Attachment Service attachment conversion |
| **ALRT** | BlackBerry Enterprise Server Alert Tool |
| **APP** | BlackBerry Monitoring Service Application Core |
| **ASCL** | BlackBerry Attachment Service client |
| **ASMN** | BlackBerry Attachment Service attachment monitor |
| **ASRV** | BlackBerry Attachment Service component |
| **BBAS-AS** | BlackBerry Administration Service - Application Server |
| **BBAS-NCC** | BlackBerry Administration Service – Native Code Container |
| **BBIM** | BlackBerry Collaboration Service |
| **BBMS** | BlackBerry Monitoring Service Console |
| **BBMS-APP** | BlackBerry Monitoring Service Application core |

# Overview of BlackBerry Enterprise Server log files

## BlackBerry Enterprise Server log files (continued)

| | |
|---|---|
| **BBMS-DCS** | BlackBerry Monitoring Service Data Collection Subsystem |
| **BMS-ENG** | BlackBerry Monitoring Service Data Collection Subsystem |
| **CBCK** | backup connector |
| **CEXC** | Microsoft® Exchange Connector |
| **CTRL** | BlackBerry Controller |
| **CMNG** | management connector |
| **CONN** | BlackBerry Synchronization Connector |
| **DBNS** | BlackBerry data notification system |
| **DCS** | BlackBerry Monitoring Service Data Collection Subsystem |
| **DISP** | BlackBerry Dispatcher |
| **EXTS** | extension connector |

# Overview of BlackBerry Enterprise Server log files

## BlackBerry Enterprise Server log files (continued)

| | |
|---|---|
| **HHGG** | BlackBerry Configuration Panel |
| **MAGT** | BlackBerry Messaging Agent |
| **MAST** | BlackBerry Mail Store Service |
| **MDAT** | BlackBerry MDS Connection Service |
| **MDSS** | BlackBerry MDS Integration Service |
| **POLC** | BlackBerry Policy Service |
| **ROUT** | BlackBerry Router |
| **SYNC** | BlackBerry Synchronization Service |
| **TAT** | BlackBerry Threshold Analysis Tool |

BlackBerry MDS – BlackBerry® Mobile Data System

# Overview of BlackBerry Enterprise Server log files

## Locating log files

- By default, log files are located in:

  `C:\Program Files\Research In Motion\BlackBerry Enterprise Server\Logs\<date>`

  where <*date*> is the date in the format YYYYMMDD

- You can change the folders where log files are stored during installation. You can also change the location at a later time using the BlackBerry Server Configuration Panel

# Overview of BlackBerry Enterprise Server log files

## Locating log files

- The file name indicates the BlackBerry® Enterprise Server instance, the affected component, and the date. The last segment is useful if multiple files are generated for each component each day.
- For example:

```
SERVER1_DISP_01_20100928_0001.txt
```

# Overview of BlackBerry Enterprise Server log files

## Typical log file sizes

| Number of BlackBerry smartphone users | Daily log file size (MB) |
|---|---|
| 10 | 1 – 15+ |
| 250 | 15 – 80+ |
| 500 | 80 – 300+ |
| 1000 | 300 – 1000+ |
| 2000 | 500+ |

# Overview of BlackBerry Enterprise Server log files

Log file size and growth rate vary with the following factors:

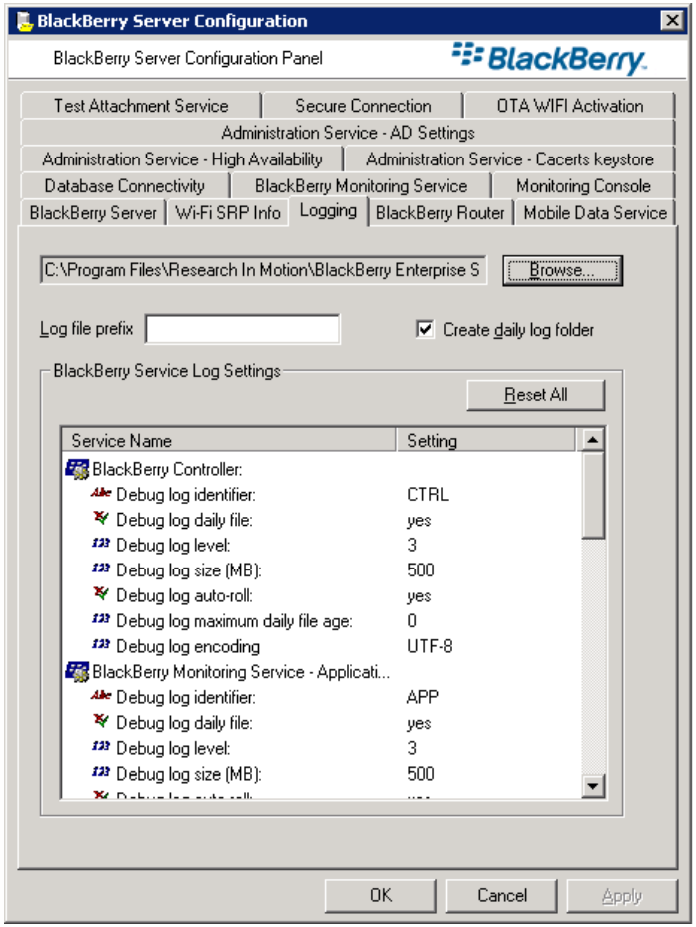
- Number of BlackBerry smartphone users
- Logging level configured for each component
- Activity levels of the BlackBerry smartphone users

# Overview of BlackBerry Enterprise Server log files

Use the BlackBerry Server Configuration Panel to configure log file settings.

Administrators can set the following options:

- Default log folder
- Log file prefix
- Whether a new folder is created for each day
- Settings for each service




Changes to log levels are dynamic for most services.

BlackBerry

# Overview of BlackBerry Enterprise Server log files

## BlackBerry Administration Service

– The following BlackBerry Enterprise Server component log files can be managed from the Server and components menu:

| | | |
|---|---|---|
| CEXC | ASRV | CTRL |
| MAGT | CBCK | DISP |
| EXTS | SYNC | BBAS-AS |
| ALRT | CMNG | BBAS-NCC |
| ASCL | POLC | |
| ACNV | MDSS | |

# Overview of BlackBerry Enterprise Server log files

## BlackBerry Administration Service

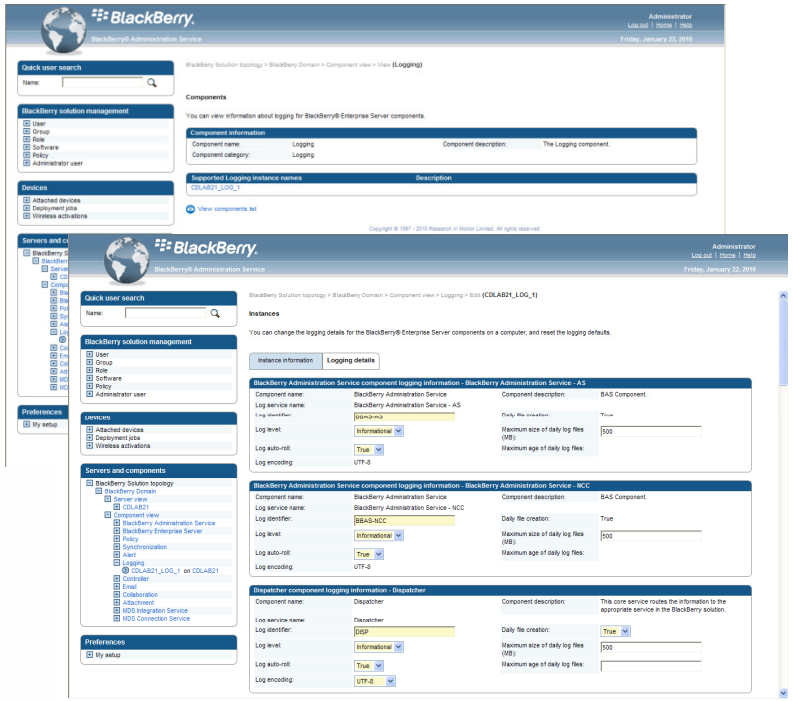
- To open the BlackBerry Administration Service in Windows® Internet Explorer® use the following web address:
  - https://<*servername*>/webconsole/login
  - Where <*servername*> is the server name of the BlackBerry Administration Service

# Overview of BlackBerry Enterprise Server log files

## BlackBerry Administration Service

– Provides administrators with a method for modifying the necessary settings

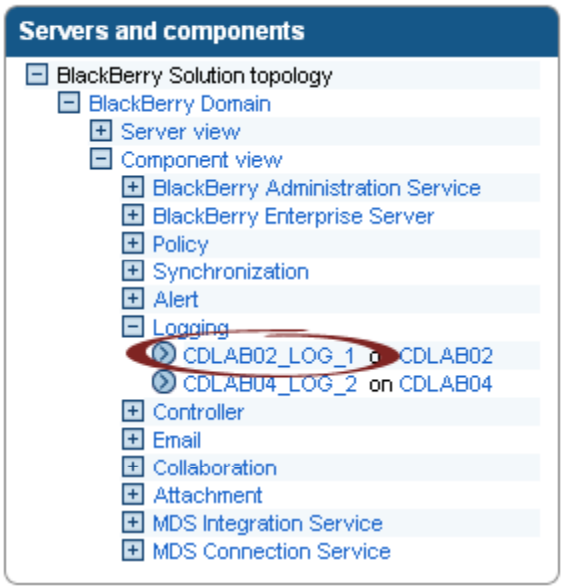
- Managing BlackBerry Enterprise Server component log files
- Managing BlackBerry MDS Connection Service log files



# Overview of BlackBerry Enterprise Server log files

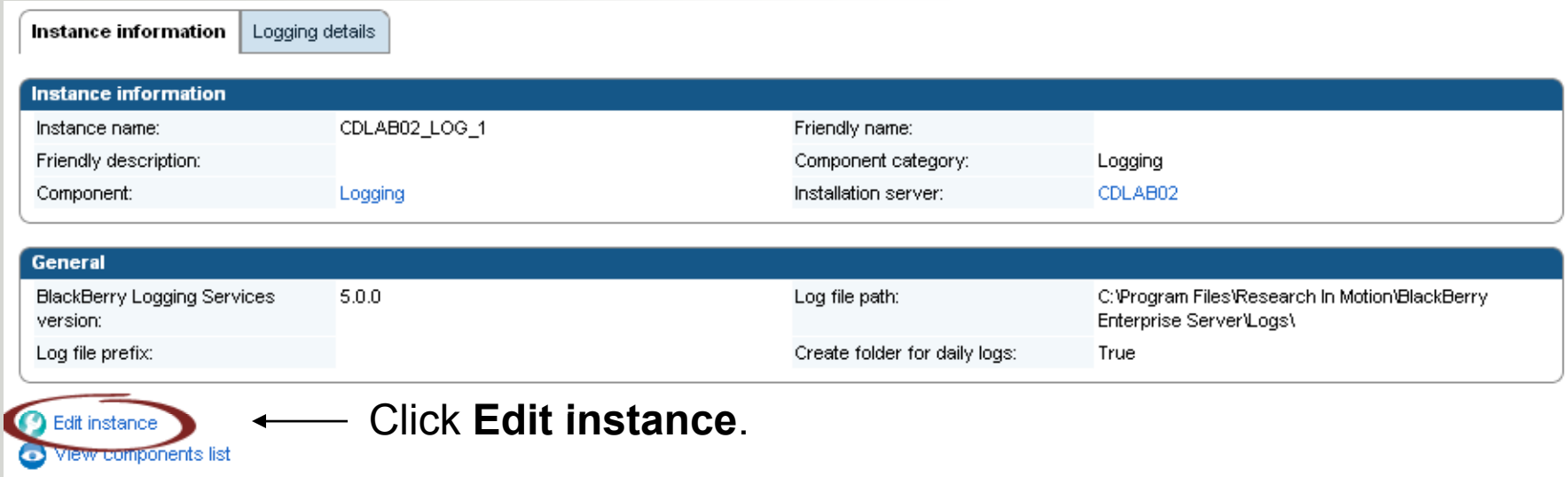
## Managing BlackBerry Enterprise Server component log files

Manage BlackBerry Enterprise Server component log files in the Server and components menu.



# Overview of BlackBerry Enterprise Server log files

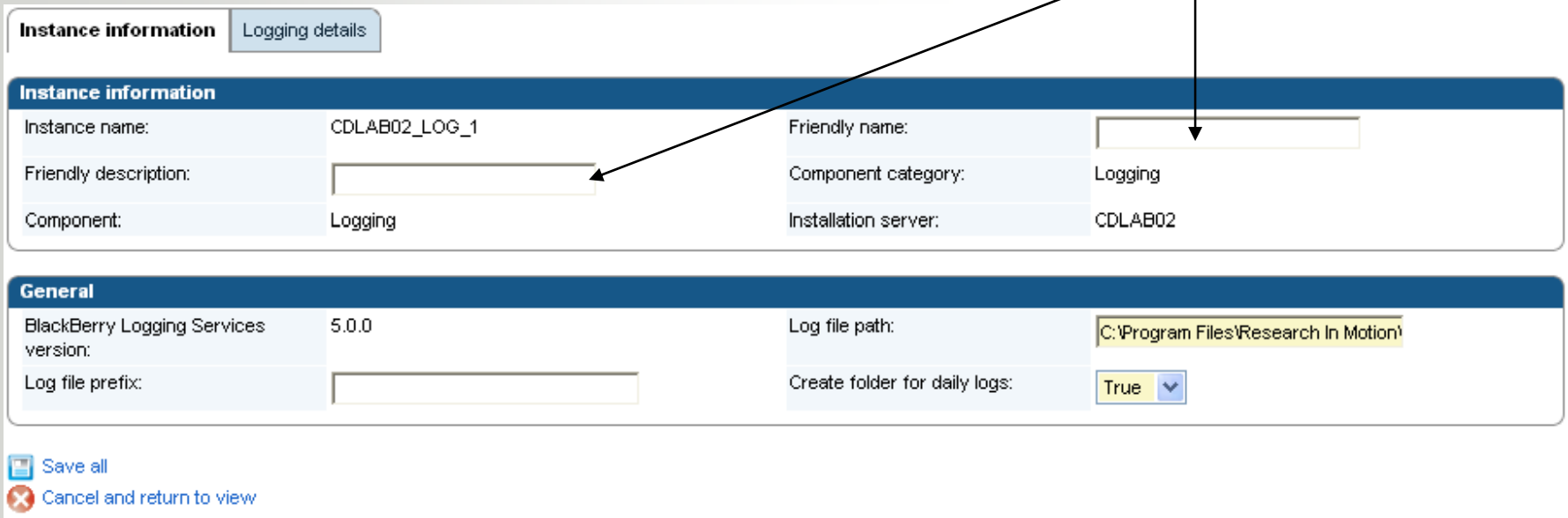
## Managing BlackBerry Enterprise Server component log files (continued)



# Overview of BlackBerry Enterprise Server log files

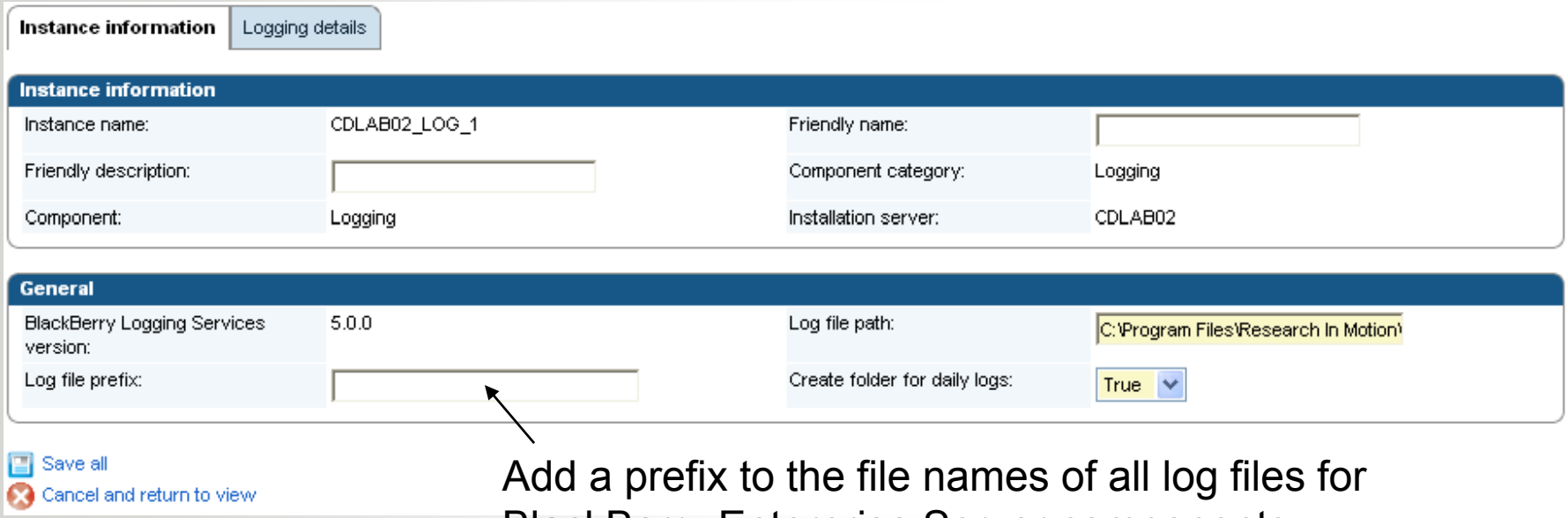
## Instance information tab

Add a display name and description to the log files for all BlackBerry Enterprise Server components.



# Overview of BlackBerry Enterprise Server log files

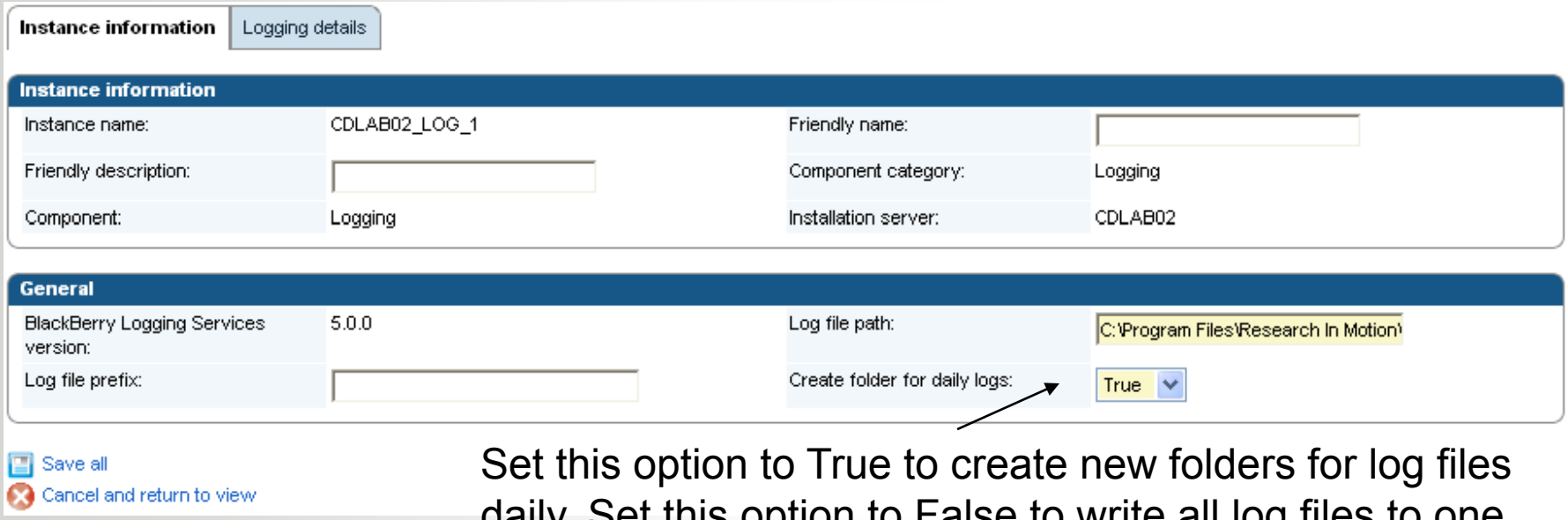
## Instance information tab




Add a prefix to the file names of all log files for BlackBerry Enterprise Server components.

# Overview of BlackBerry Enterprise Server log files

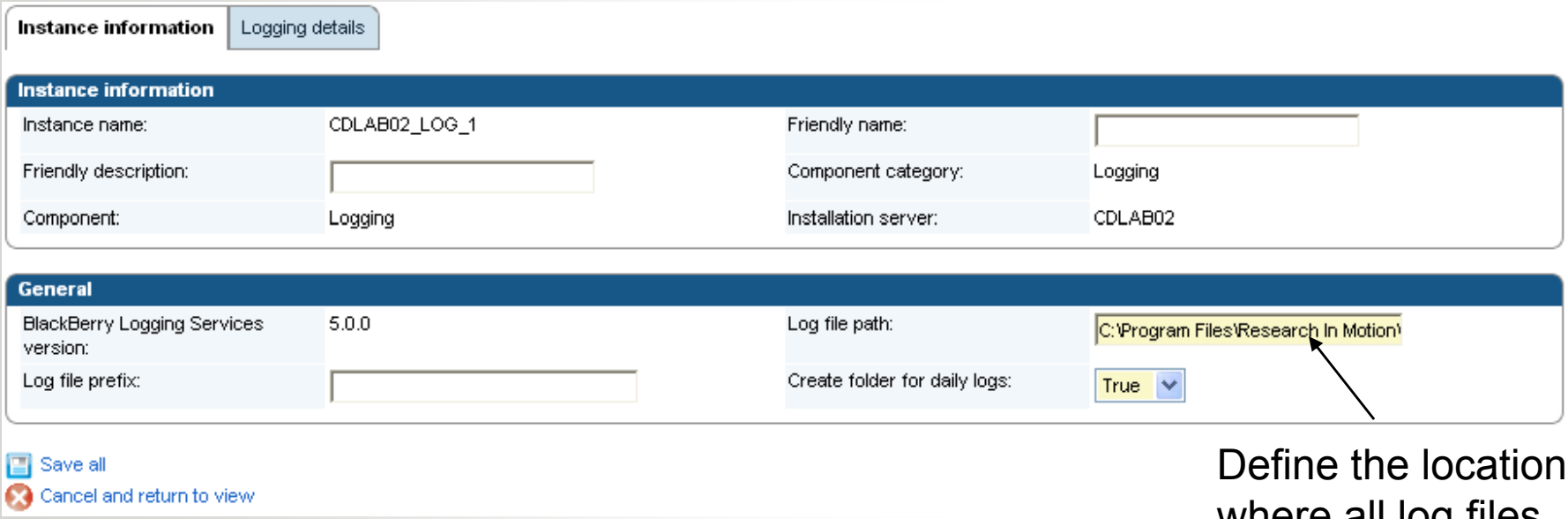
## Instance information tab




Set this option to True to create new folders for log files daily. Set this option to False to write all log files to one folder.

# Overview of BlackBerry Enterprise Server log files

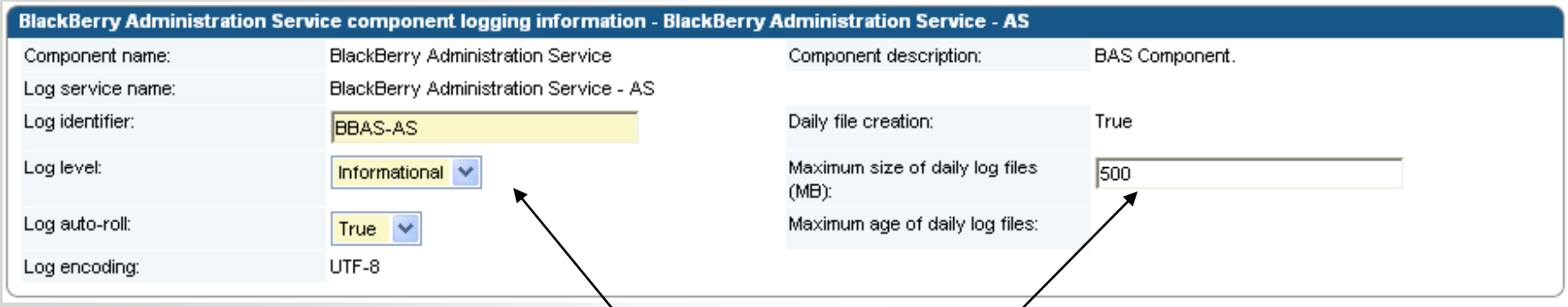
## Instance information tab




Define the location where all log files are written.

# Overview of BlackBerry Enterprise Server log files

## Logging details tab

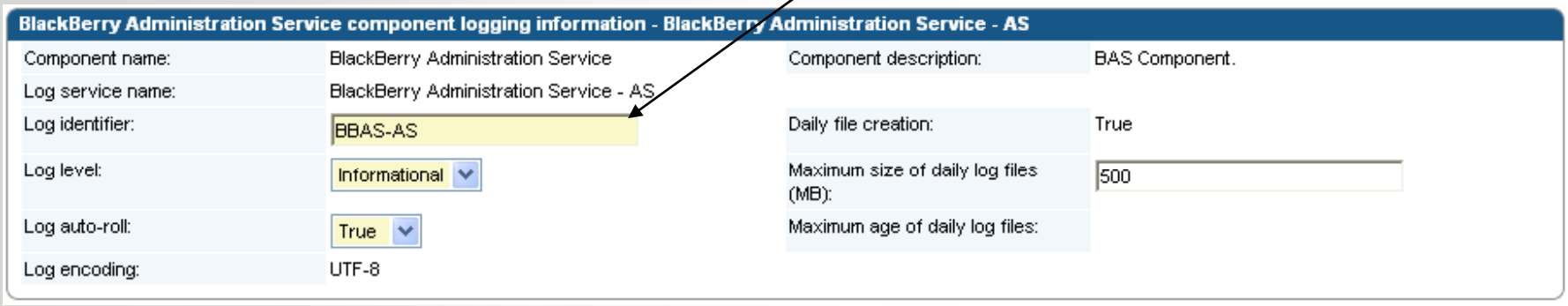



Change the logging level to one of the following:
**Error:** Write error messages to the log files
**Warning:** Write warning messages to the log files
**Informational:** Write daily activities to the log files
**Debug:** Write additional information to the log files for troubleshooting purposes

# Overview of BlackBerry Enterprise Server log files

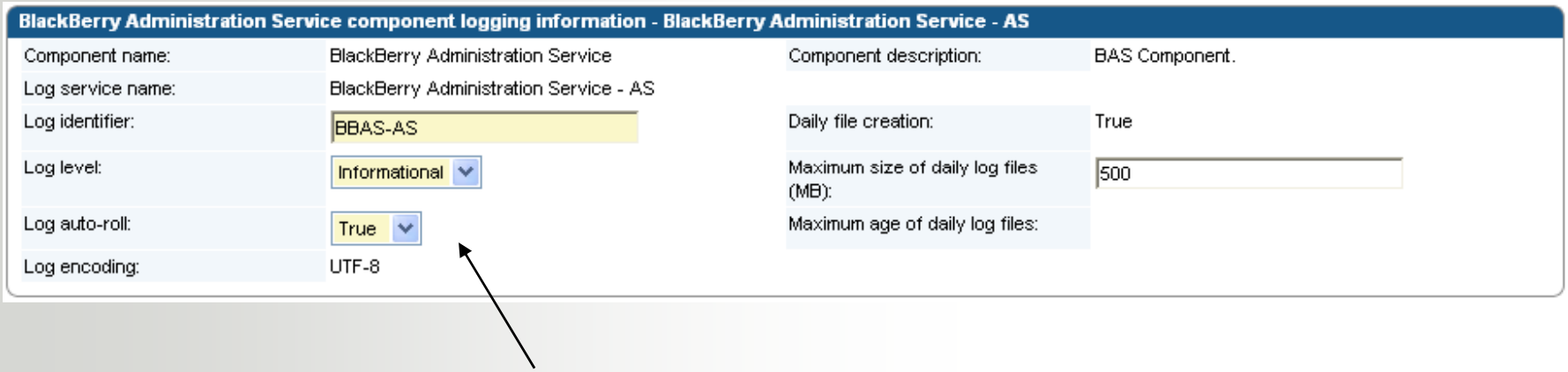
## Logging details tab

Change the name of the log identifier.



# Overview of BlackBerry Enterprise Server log files

## Logging details tab

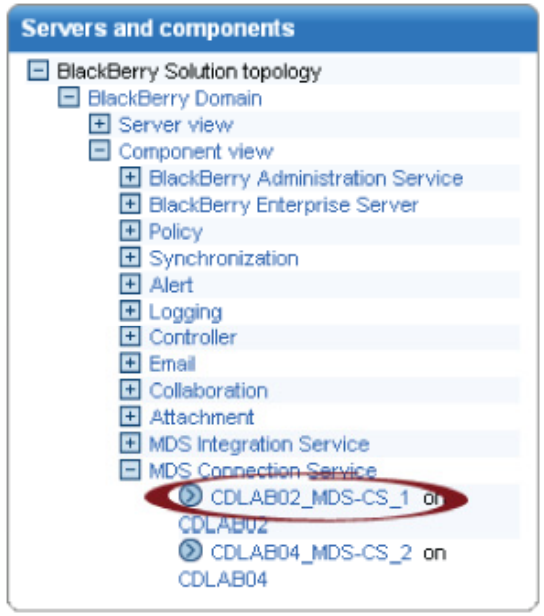



Set the Log auto-roll field to **True** to create a new log file when the log file reaches the maximum size. Set the Log auto-roll field to **False** to overwrite the existing log file when it reaches the maximum size.

# Overview of BlackBerry Enterprise Server log files

## Managing BlackBerry MDS Connection Service log files

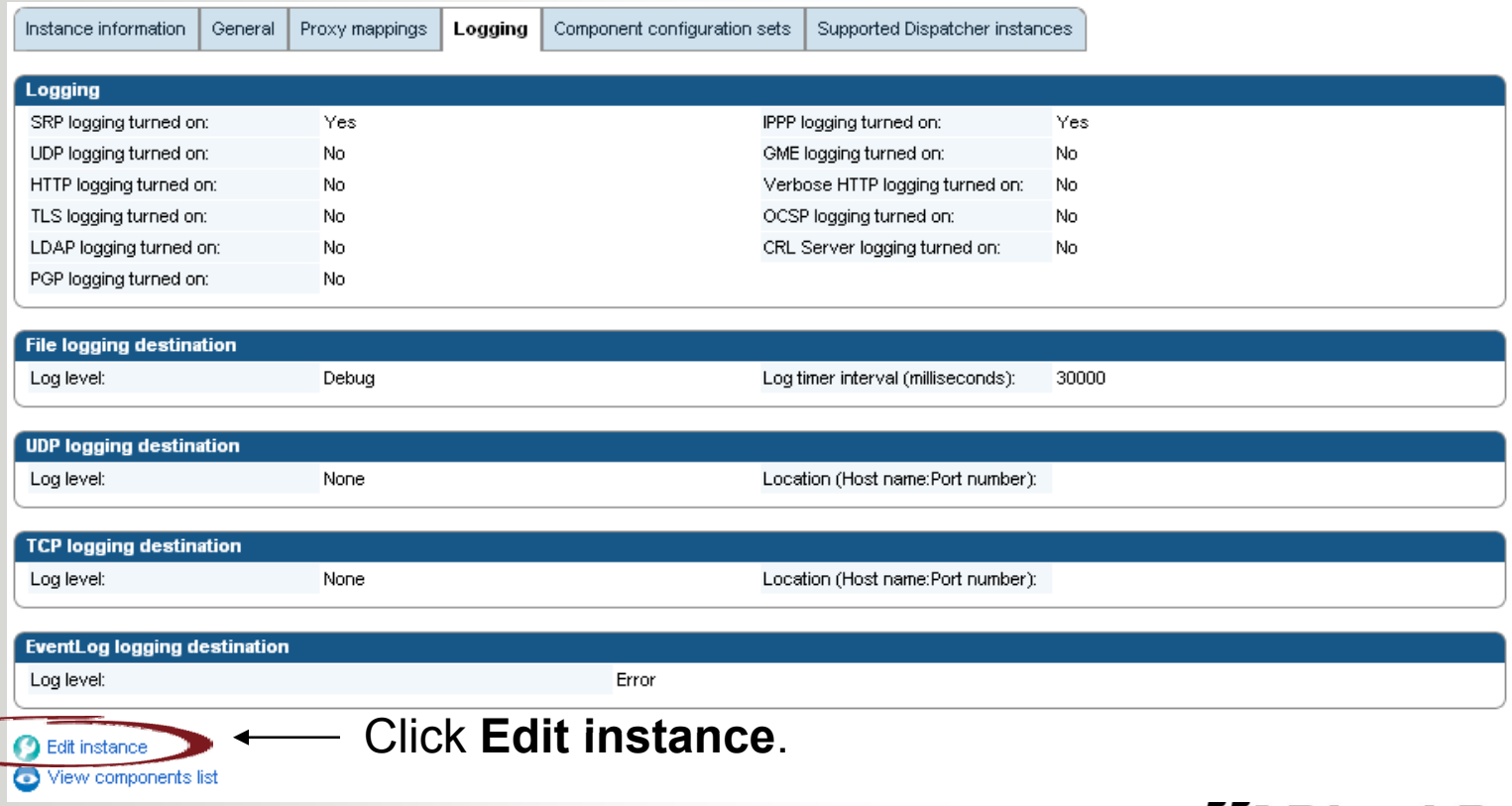
In the **Servers and components** menu, click the BlackBerry MDS Connection Service to manage log files.



# Overview of BlackBerry Enterprise Server log files

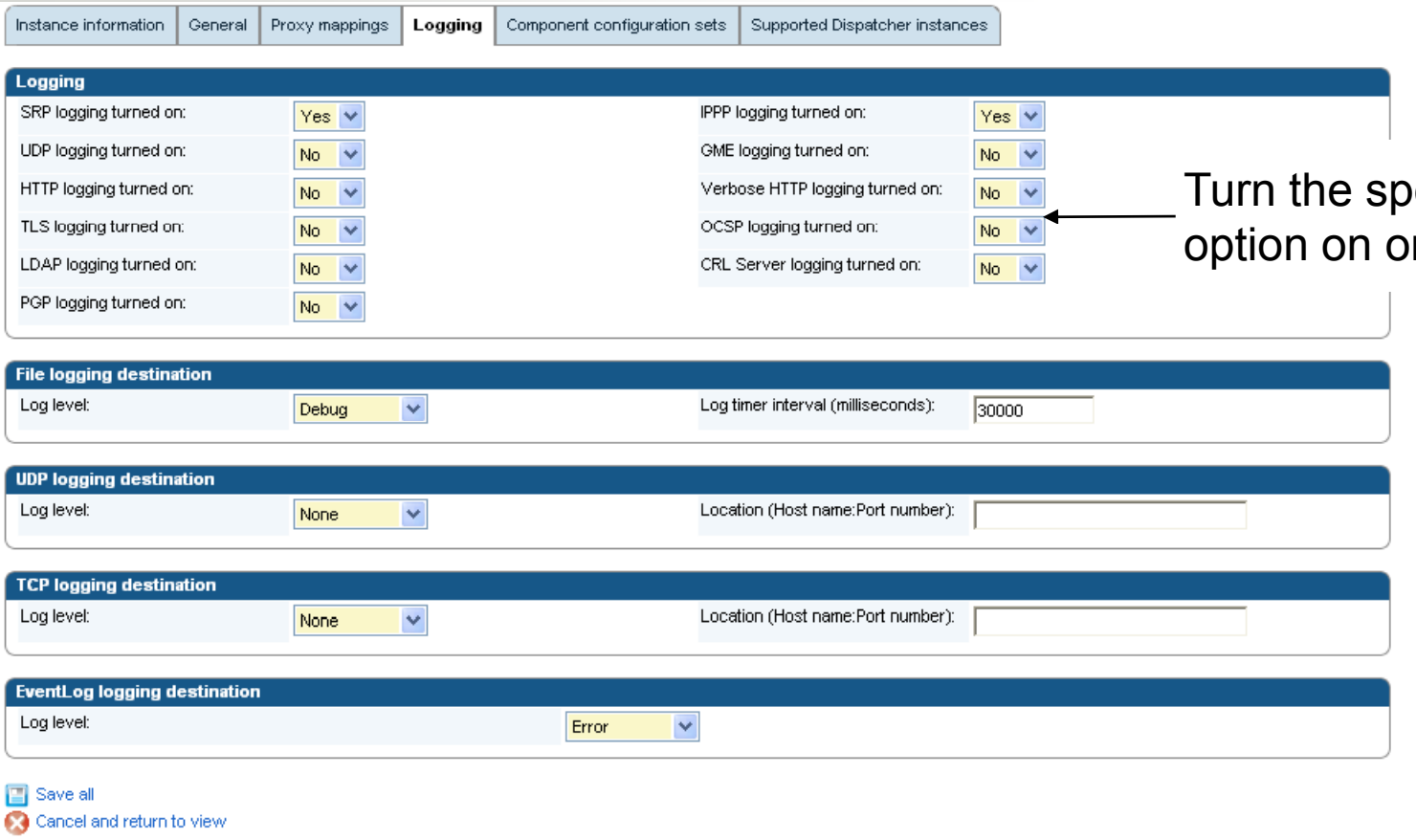
## Managing BlackBerry MDS Connection Service log files (continued)

On the **Logging** tab, click **Edit instance** to change settings.



# Overview of BlackBerry Enterprise Server log files

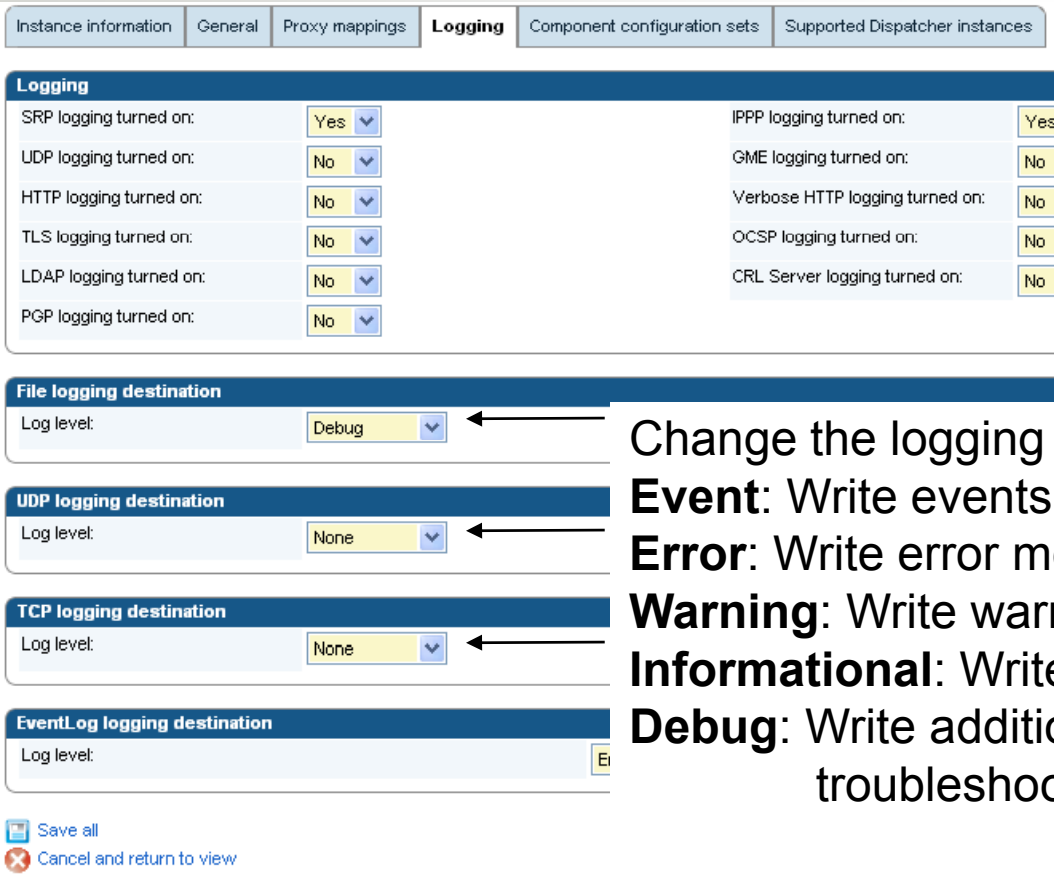
## Managing BlackBerry MDS Connection Service log files (continued)




Turn the specified logging option on or off

# Overview of BlackBerry Enterprise Server log files

## Managing BlackBerry MDS Connection Service log files (continued)




Change the logging level to one of the following:

**Event**: Write events to the log files

**Error**: Write error messages to the log files

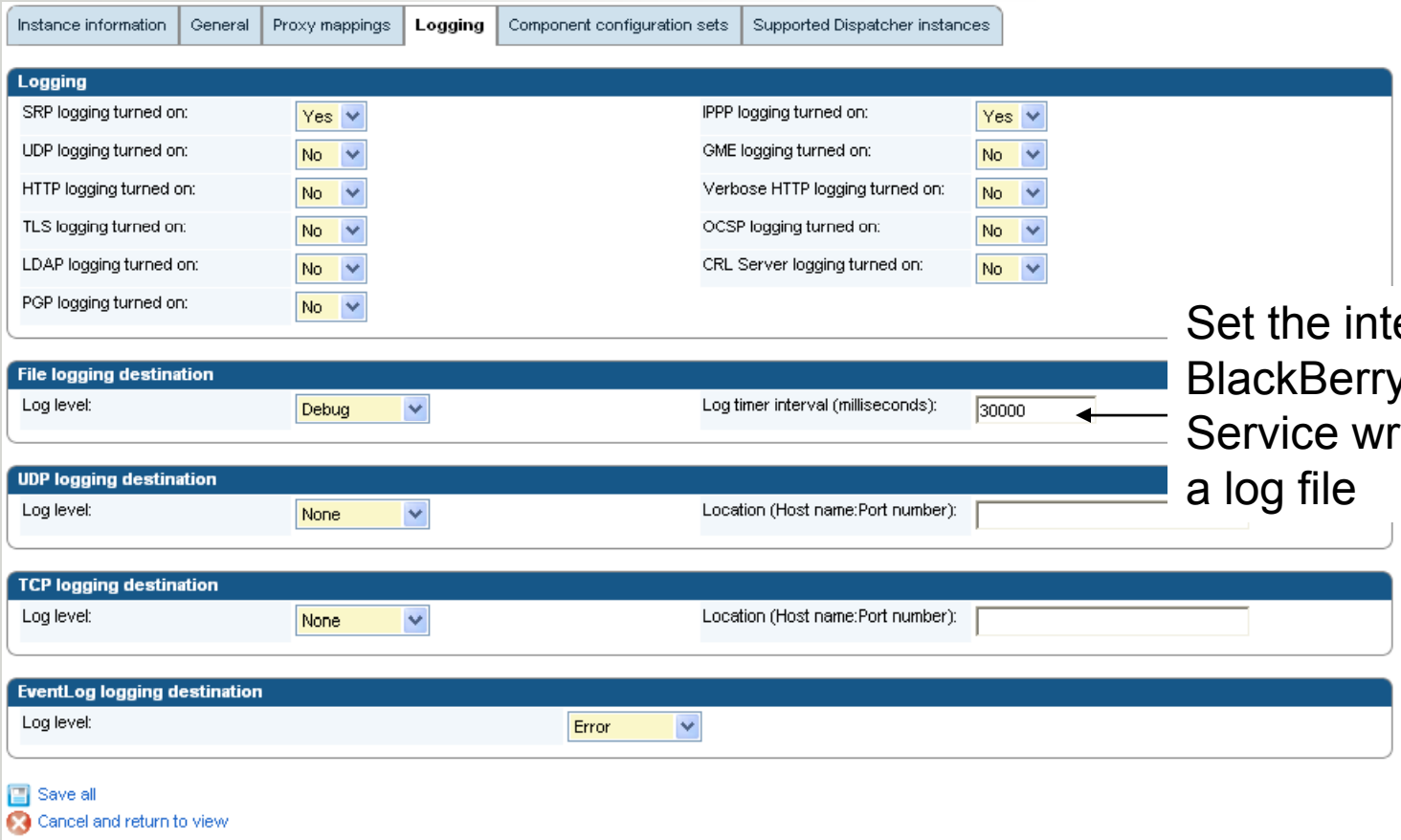
**Warning**: Write warning messages to the log files

**Informational**: Write daily activities to the log files

**Debug**: Write additional information to the log files for troubleshooting purposes

# Overview of BlackBerry Enterprise Server log files

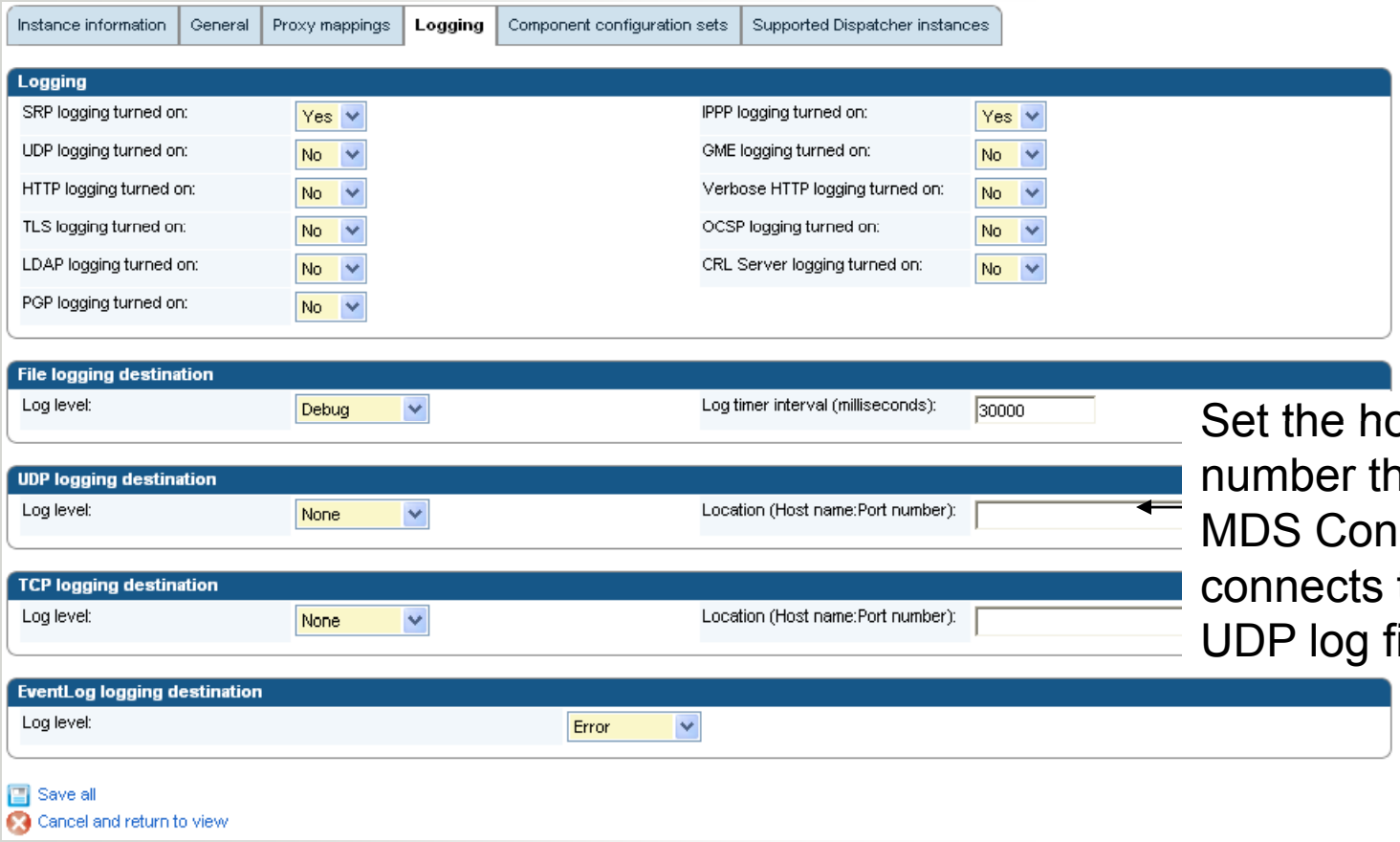
## Managing BlackBerry MDS Connection Service log files (continued)




Set the interval at which the BlackBerry MDS Connection Service writes information to a log file

# Overview of BlackBerry Enterprise Server log files

## Managing BlackBerry MDS Connection Service log files (continued)

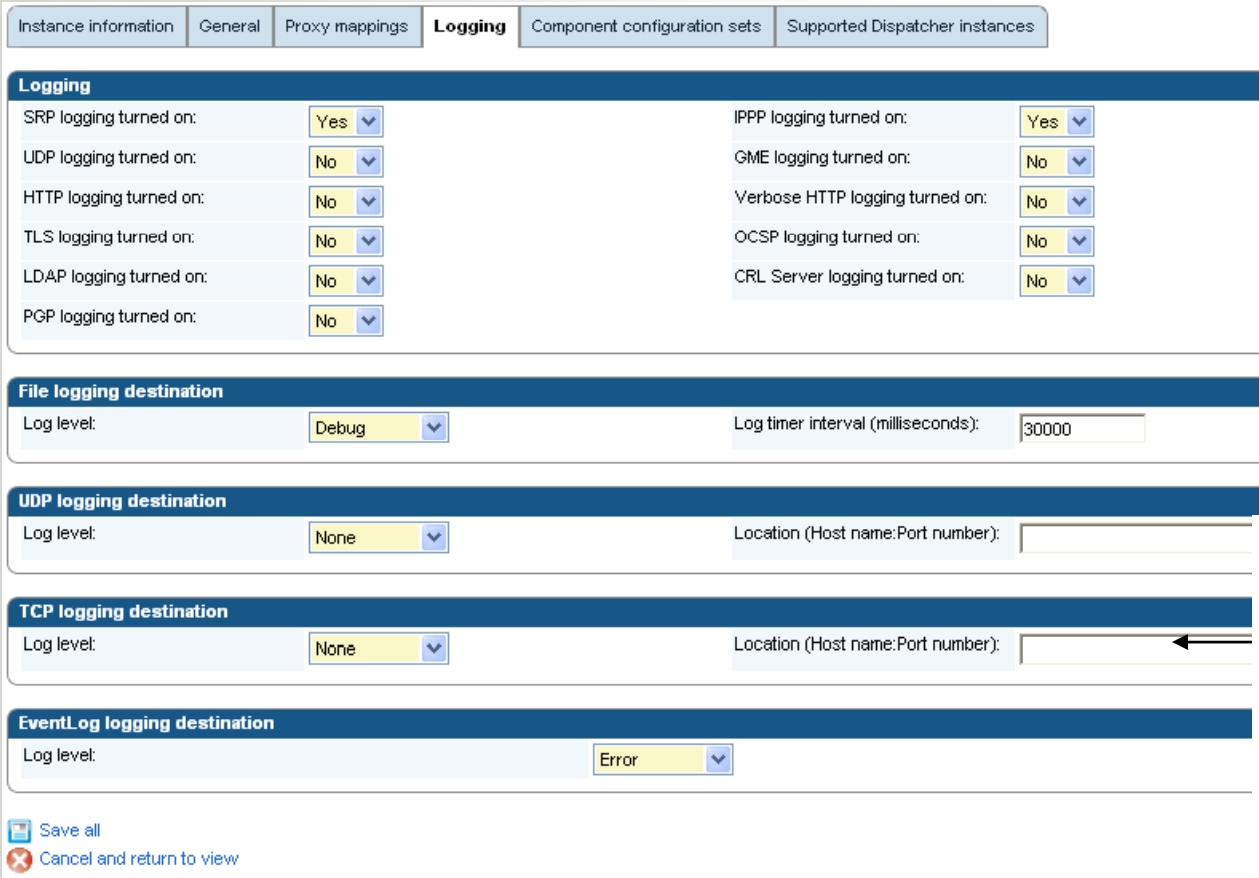



Set the host and port number that the BlackBerry MDS Connection Service connects to when it sends UDP log file messages

UDP User Datagram Protocol

# Overview of BlackBerry Enterprise Server log files

## Managing BlackBerry MDS Connection Service log files (continued)




Set the host and port number that the BlackBerry MDS Connection Service connects to when it sends TCP log file messages

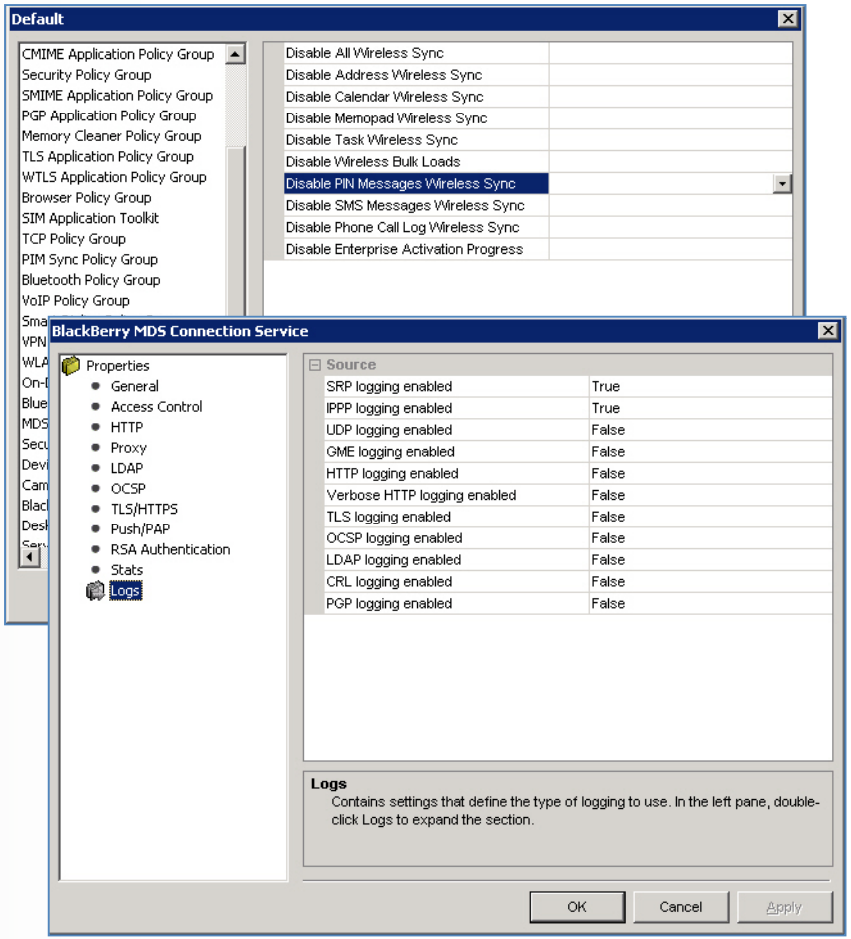
TCP Transmission Control Protocol

# Overview of BlackBerry Enterprise Server log files

BlackBerry Manager is used to configure log file settings in BlackBerry Enterprise Server version 4.1.6 and earlier

BlackBerry Manager includes controls for the following:

1. Auditing BlackBerry smartphone user activity
2. BlackBerry MDS Connection Service logging



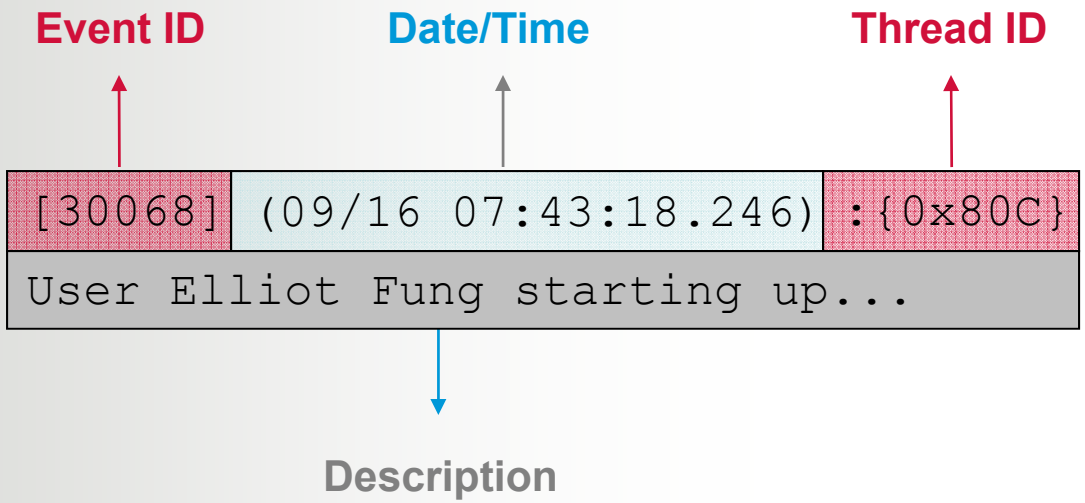

BlackBerry MDS BlackBerry Mobile Data System

# Overview of BlackBerry Enterprise Server log files

## Log file format

– The majority of BlackBerry Enterprise Server components are based on C++

– These components have the following log file format:



# Overview of BlackBerry Enterprise Server log files

## BlackBerry Enterprise Server logging differences

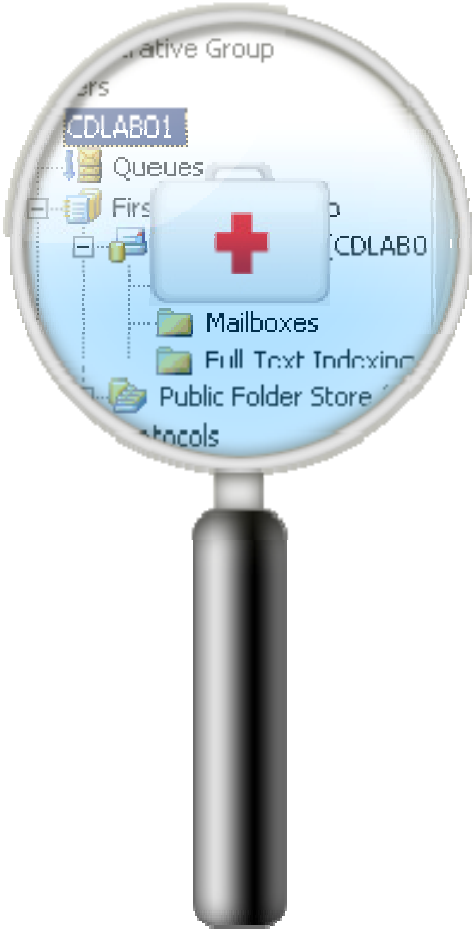
- The BlackBerry Administration Service, BlackBerry Mobile Data System, and BlackBerry Collaboration Service are components based on Java® technology that have a slightly different log file architecture from components based on C++
  - Components based on Java do not have a unique Event ID
  - Components based on C++ go up to level 15 in debug log levels, but components based on Java do not

# Understanding the need for messaging server health

# Understanding the need for messaging server health

## Topics in this module:

- Effects of messaging server health issues on the BlackBerry® Enterprise Server
- Indicators of messaging server health issues on the BlackBerry Enterprise Server



# Understanding the need for messaging server health

## How poor messaging server performance affects BlackBerry Enterprise Server performance

- Reduces the ability of the BlackBerry Enterprise Server to complete work.
  - Delays message delivery to the email application
  - Prevents timely calendar and organizer data synchronization

# Understanding the need for messaging server health

**Some indicators of messaging server health issues**

- Busy or non-responsive threads
- Increased number of errors in log files
- Problems adding, removing, viewing, or modifying BlackBerry smartphone user accounts in the BlackBerry Administration Service for BlackBerry Enterprise Server version 5.0 or in BlackBerry Manager for BlackBerry Enterprise Server version 4.1.6 and earlier
- Problems viewing or modifying BlackBerry® Desktop Manager or BlackBerry® Desktop Redirector settings (Microsoft® Exchange Server only)
- RPC latency

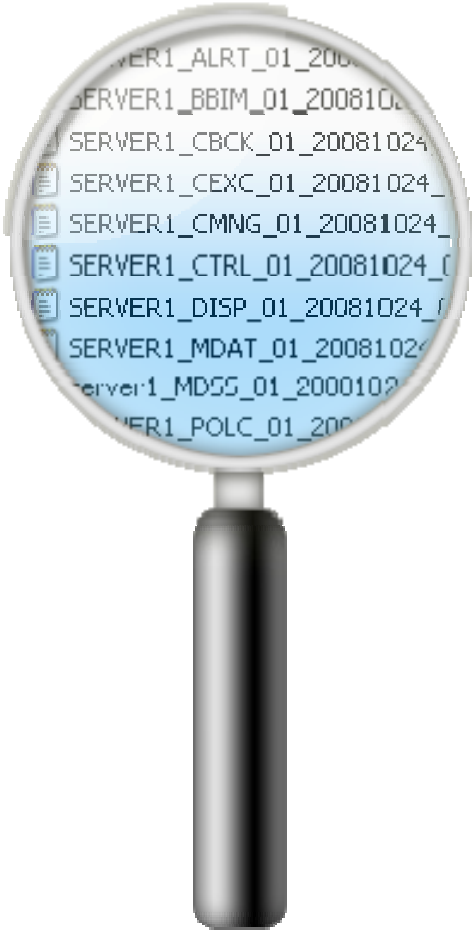
RPC remote procedure call

# Investigating specific BlackBerry Enterprise Server issues

# Investigating specific BlackBerry Enterprise Server issues

**Topics in this module:**

- What tools to use to read debug log files
- What to search for in debug log files
- Isolating specific activities
- Which debug log files to review in various circumstances

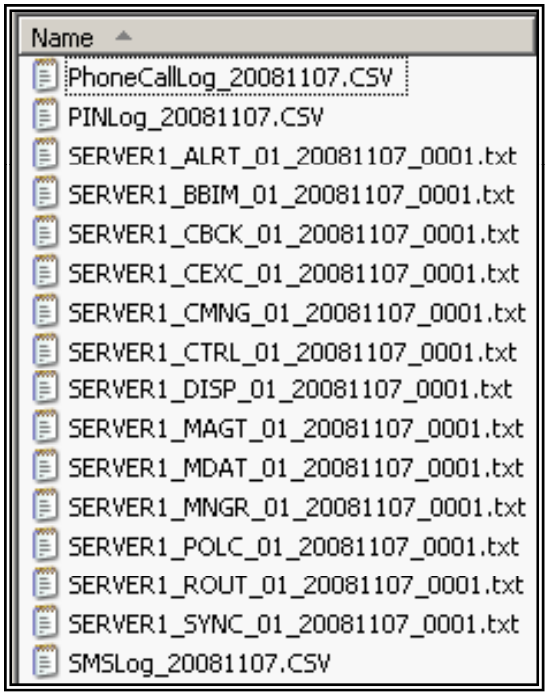



BlackBerry

# Investigating specific BlackBerry Enterprise Server issues

## Opening log files

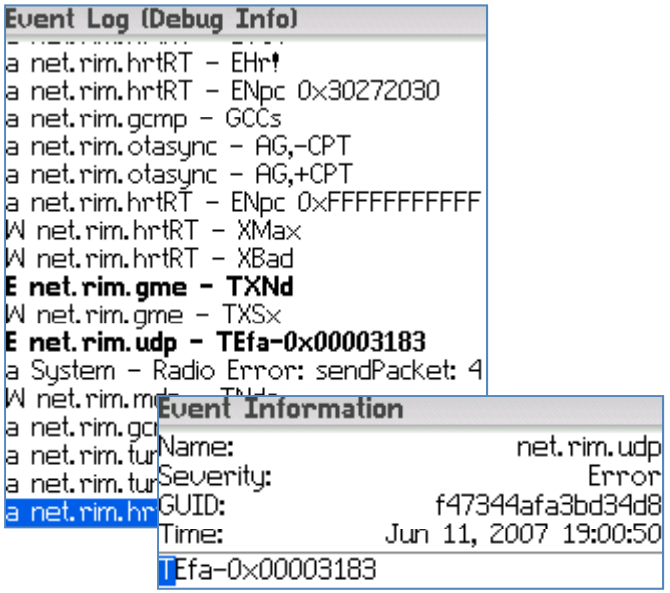
- The BlackBerry® Enterprise Server saves log files as .txt files that can be opened by any application that supports large text files
- The BlackBerry® Enterprise Server Resource Kit includes a number of command line tools that can generate files with useful troubleshooting information



# Investigating specific BlackBerry Enterprise Server issues

## BlackBerry smartphone Event Log

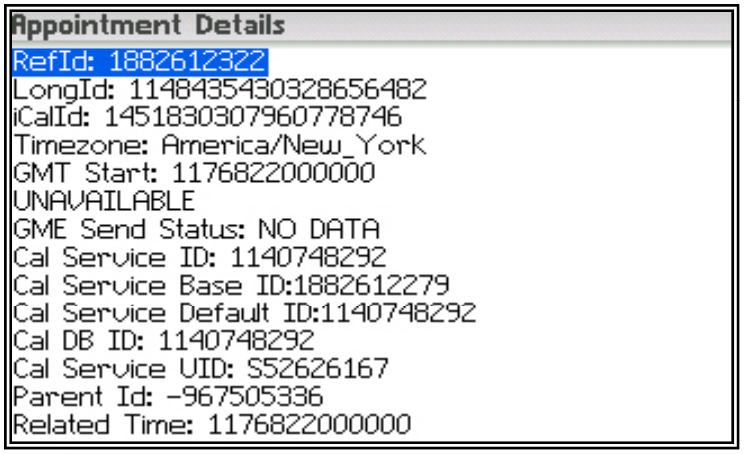
- On the Home screen, hold the Alt key and type LGLG
- Depending on the type of issue, use these logs to assist with troubleshooting



# Investigating specific BlackBerry Enterprise Server issues

**Use an isolating factor to track a transaction through the log files**

- Email address
- Tag
- RefId
  - To determine the RefId of a message on the BlackBerry smartphone, hold the Alt key and type VIEW

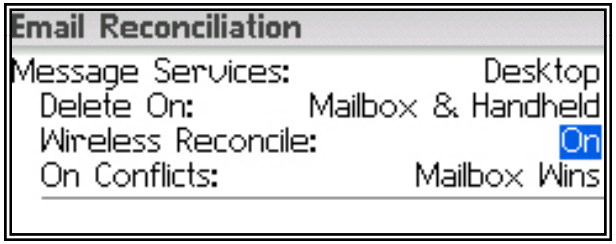



RefId Reference Identification

# Investigating specific BlackBerry Enterprise Server issues

## Troubleshooting email message reconciliation issues

- BlackBerry smartphone settings must be configured properly
- Wireless email reconciliation must be enabled in the BlackBerry Administration Service
- If the settings are correct, use the log files to determine the cause of the issue




BlackBerry

# Investigating specific BlackBerry Enterprise Server issues

## Messaging log file lines in IBM Lotus Domino

```
[40000] (01/18 14:19:21.122):{0x1CC0} {Elliot Fung/ORG} {Elliot Fung/ORG}
Constructing message (CMIME) (msgType=mail), size=562, RefId=-866215679,
TransactionId=0, Tag=4520, PHXCAP=0x00000000, PHXCFG=0x00100000, PHXMTR=0x00000000

[30305] (01/18 14:19:21.122):{0x1CC0} {Elliot Fung/ORG} Message sent to handheld
(PIN <PIN>, "mail\elliot.fung.nsf" on CN=OrgMail01/O=ORG): folder "($I****)",
posted date 01/18/2007 02:19:00 PM, added date 01/18/2007 02:19:14 PM, TID=4520,
RID=-866215679, NID=277A

[30302] (01/18 14:19:23.887):{0x1CC0} {Elliot Fung/ORG} SRP: TID=4520, RID=-
866215679, NID=277A, type MAIL returned DELIVERED
```

- **RefId** – negative value indicates that the message was sent to the BlackBerry smartphone
- **Tag** – traces the item from the MAGT log to the DISP log
- **TID** – TransactionId the BlackBerry Messaging Agent references when it confirms that the message was delivered

# Investigating specific BlackBerry Enterprise Server issues

## Messaging log file lines in Microsoft Exchange Server

```
[40724] (07/10 09:30:27):{0x1070} {elliot.fung@rim.com} Get record key for this
MAPI object, EntryId=142

[40435] (07/10 09:30:27):{0x1070} {elliot.fung@rim.com} Queuing new mail through
notification. EntryId=142. Msgs Pending 0

[30085] (07/10 09:30:27):{0x1070} {elliot.fung@rim.com} New mail has arrived,
EntryId=142

[40287] (07/10 09:30:27):{0x1070} {elliot.fung@rim.com} Queuing message, RefId=-
2084637423, EntryId=142, Posted=07/10 09:30:15, Delivered=07/10 09:30:28

[30066] (07/10 09:30:27):{0x1070} Total Msgs Pending 1

[30081] (07/10 09:30:27):{0x1070} {elliot.fung@rim.com} Sending message to device,
size=917, EntryId=142, RefId=-2084637423, TransactionId=-994998021, Tag=33

[40279] (07/10 09:30:27):{0x1070} {elliot.fung@rim.com} SubmitToRelaySendQ, Tag=33

[40000] (07/10 09:30:27):{0x105C} [BIPP] Send data, Tag=33

[40000] (07/10 09:30:28):{0x2CC} [BIPP] Received status DELIVERED, Tag=33

[30097] (07/10 09:30:28):{0x1070} {elliot.fung@rim.com} Message has been delivered
to device, Tag=33, EntryId=142
```

- **TransactionId**
- **EntryID**
- **Tag**

# Investigating specific BlackBerry Enterprise Server issues

## Messaging log file lines in Novell GroupWise

```
[40000] (05/01 11:54:05):{0x15D8} {Kate Strike} PopulateRIMMessage MailSyncId=201,
    RefId=0, Delivered=Mon May 01 11:53:58 2006
    GWID=4455F6D7.ONT1.PO1.100.16A7231.1.6F94.1

[30085] (05/01 11:54:05):{0x15D8} {Kate Strike} New mail has arrived, EntryId=11

[40287] (05/01 11:54:05):{0x15D8} {Kate Strike} Queuing message, RefId=-2118443213,
    EntryId=11, Posted=05/01 11:53:58
```

1. **GWID** – unique identifier that tracks the item back to the GroupWise CheckNew Connector (GWQM) or the GroupWise SOAP Connector (GWSC) log file
2. **MailSyncId** – row in the mbmailsync table where the item reference resides – tracks the item back to the GWQM or the GWSC log
3. **RefId** – can help find time of processing in the MAGT log file

SOAP Simple Object Access Protocol

# Investigating specific BlackBerry Enterprise Server issues

## Troubleshooting calendar issues

- Can the issue be reproduced?
- How many BlackBerry smartphone users are affected?
- Do affected BlackBerry smartphone user accounts reside on the same messaging server or BlackBerry Messaging Agent instance?

# Investigating specific BlackBerry Enterprise Server issues

## Troubleshooting calendar issues (continued)

- Is a single meeting occurrence affected or the entire series? Are there any exceptions to the series and is the issue associated with those exceptions?
- How large is the BlackBerry smartphone calendar database on the BlackBerry smartphone?
- How many updates to the meeting instance were made?
- Does synchronization occur as expected?

# Investigating specific BlackBerry Enterprise Server issues

## Troubleshooting calendar issues (continued)

- In a Microsoft® Exchange environment
  - What version of CDO is installed?
  - What version of Microsoft® Outlook® is installed?
  - Is there a delegate involved?
  - Does the BlackBerry smartphone user have cache mode enabled?


CDO Collaboration Data Object

# Investigating specific BlackBerry Enterprise Server issues

Search for the following terms in the debug log files:

| Messaging server environment | Tool |
|---|---|
| IBM® Lotus® Domino® | OTAC, CICAL, or CALENDAR |
| Microsoft Exchange Server | CICAL, CDOCalendar,CDO helper, or CalHelper |
| Novell® GroupWise® | CICAL, SC_CALENDARUPDATE, or NEW CALENDAR ITEM |

CICAL compressed ICAL
OTAC over-the-air calendar

# Investigating specific BlackBerry Enterprise Server issues

## Calendar log file lines in IBM Lotus Domino

```
[30513] (08/16 16:31:34):{0x1200} OTAC Receiving ota new event refID=555816772
t=To n st=17/8/2004 14:00 rpt=W2U17/8/2010 unid=428C9F36D349CBAB04256EF20070C101
nid=0 hSeq=0 dSeq=2 for user CN=Elliot Fung/O=RIM
```

- **refID** – reference identifier for the item
- **t** – hash of the appointment subject
- **st** – appointment start date/time
- **rpt** – recurrence type and parameters
- **unid** – universal identifier
- **nid** – IBM® Lotus Notes® identifier (NoteID)
- **hSeq/dSeq** – host sequence and BlackBerry smartphone sequence numbers

# Investigating specific BlackBerry Enterprise Server issues

## Calendar log file lines in Microsoft Exchange Server

```
[40700] (09/12 11:49:43):{0x1E18} {elliot.fun@rim.com} Receiving packet from
device, size=110, TransactionId=-220487760, Tag=660, content type=CICAL, cmd=0x3

[40000] (09/12 11:49:43):{0x1E18} {elliot.fun@rim.com}-
HandleAppointmentToSynchronize-Entering-Tag=660

[30193] (09/12 11:49:43):{0x1E18} {elliot.fun@rim.com} Receiving calendar update
from device, RefId=1620665993, Tag=660, TransactionId=-220487760

[40000] (09/12 11:49:43):{0x1E18} Starting new CDO helper 00e0d8b0

[40574] (09/12 11:49:43):{0x1FC4} CDO helper 00e0d8b0 started

[40122] (09/12 11:49:44):{0x1FC4} {elliot.fun@rim.com}
CDOCalendar::UpdateAppointment - Receiving synchronization request from device
[Parent Id=1620665993, RefId=1620665993]

[40294] (09/12 11:49:45):{0x1E18} {elliot.fun@rim.com} Calendar appointment
synchronized for device, Tag=660
```

- TransactionId
- Tag
- Parent Id and RefId

# Investigating specific BlackBerry Enterprise Server issues

## Calendar log file lines in Novell GroupWise

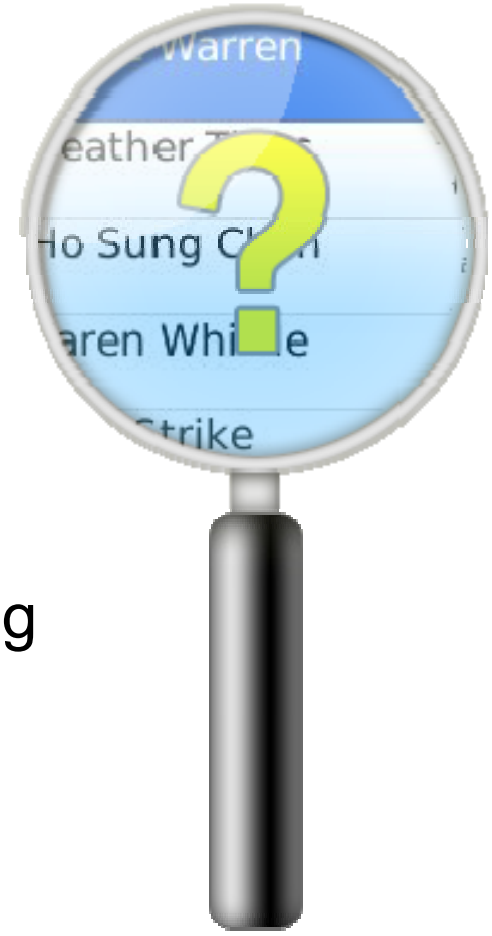
```
[40700] (02/09 16:31:08.859):{0x1378} {elliot.fung} Receiving packet from device,
size=92, TransactionId=-960738001, Tag=56, content type=CICAL, cmd=0x3

[40000] (02/09 16:31:08.859):{0x1378} {elliot.fung}-HandleAppointmentToSynchronize-
Entering-Tag=56

[30193] (02/09 16:31:08.889):{0x1378} {elliot.fung} Receiving calendar update from
device, RefId=1019502721, Tag=56, TransactionId=-960738001

[40294] (02/09 16:31:08.929):{0x1378} {elliot.fung} Calendar appointment
synchronized for device, Tag=56

[40000] (02/09 16:31:08.929):{0x1378} {elliot.fung}-HandleAppointmentToSynchronize-
Exit-rc=Ok

[40279] (02/09 16:31:08.929):{0x1378} {elliot.fung} SubmitToRelaySendQ, Tag=56
```

- Tag
- TransactionId
- RefId

# Investigating specific BlackBerry Enterprise Server issues

**Troubleshooting other organizer data synchronization issues**

- Is the BlackBerry smartphone configured for organizer data synchronization?
- How many BlackBerry smartphone users are affected?
- Do problems occur when synchronizing over a wired connection or wirelessly?




BlackBerry

# Investigating specific BlackBerry Enterprise Server issues

## Troubleshooting other organizer data synchronization issues (continued)

- Does synchronization occur in only one direction, and if so, which direction?
- What is the RefId for the item?
- Does an error message appear on the BlackBerry smartphone?
- Do errors appear in the debug log files?


BlackBerry

# Investigating specific BlackBerry Enterprise Server issues

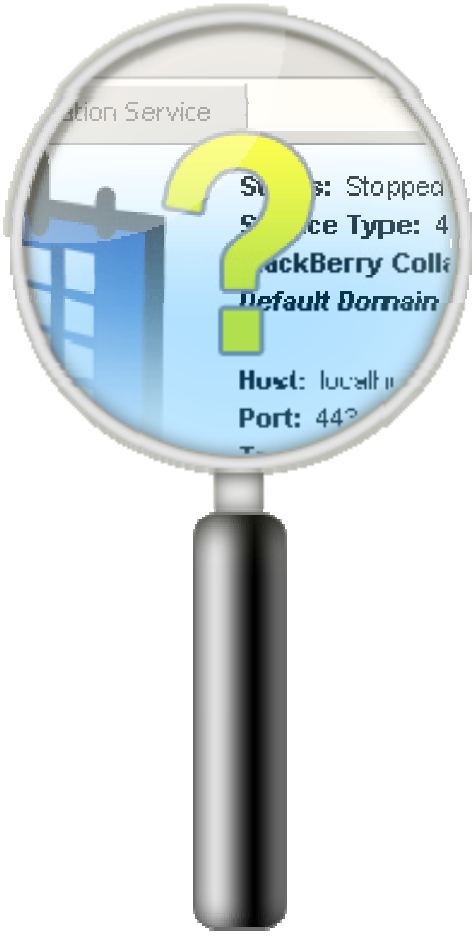
## Organizer item in BlackBerry Synchronization Service (SYNC) log files

```
[40800] (03/14 11:19:56):{0xDA4} {Elliot Fung} Starting Address Book rescan

[40804] (03/14 11:19:56):{0xDA4} {Elliot Fung} RescanPIMItems - Address Book
rescan completed, changes detected

[40795] (03/14 11:19:56):{0xDA4} {Elliot Fung} Rescan - starting to get items from
list of changed items and generate XML.  Target=Address Book

[40796] (03/14 11:19:56):{0xDA4} {Elliot Fung} Rescan - request generated for the
PIM Connector. Target=Address Book ( 0 Add, 2 Update, 0 Delete - 2 total )

[40797] (03/14 11:19:56):{0xDA4} {Elliot Fung} Sending the rescan request to the
PIM Connector.  Target=Address Book

[30315] (03/14 11:19:56):{0xDA4} {Elliot Fung} Sending data to PIM Connector,
size=2241

[40279] (03/14 11:19:56):{0xDA4} {Elliot Fung} SubmitToRelaySendQ, Tag=135

[40798] (03/14 11:19:56):{0xDA4} {Elliot Fung} Rescan request sent to the PIM
Connector.  Target=Address Book
```

# Investigating specific BlackBerry Enterprise Server issues

## Troubleshooting instant messaging login issues

- Error code 102 indicates that the login information is invalid
- Error code 110 indicates that incorrect account information is specified in the login information
- Use the BlackBerry Collaboration Service (BBIM) log files to troubleshoot



# Troubleshooting connectivity issues

# Troubleshooting connectivity issues

**Topics in this module:**

- Identifying SRP connection issues
- Troubleshooting other common connectivity issues


SRP server routing protocol

# Troubleshooting connectivity issues

## Considerations for troubleshooting connectivity problems

- Inefficient network connectivity
- RPC protocol latency
- Network latency


RPC remote procedure call

BlackBerry

# Troubleshooting connectivity issues

## Successful SRP connection in the debug log files

The BlackBerry® Enterprise Server pings the SRP host

- The BlackBerry Router (ROUT) log file shows the ping response

```
[40000] (04/19 17:53:55):{0x1234}
[SERVICE_SRP:T35723298:00796600] Send_PING_RESPONSE,
VERSION=1, TAG=13249
```

- The ping response is received

```
[40000] (04/19 17:53:55):{0x1234}
[SERVICE_RELAY_SESSION:T35723298:0079caf0] Ping Response
13249 received
```

# Troubleshooting connectivity issues

## Unsuccessful SRP connection in the debug log files

If the BlackBerry Enterprise Server receives no response, it tries to reconnect to the SRP host.

– The BlackBerry Synchronization Service log file (SYNC) shows an SRP error

```
[20000] (04/19 19:51:33):{0x15E0} [SRP] Connection failed
```

For more information on the disconnected SRP status go to www.blackberry.com/btsc

# Troubleshooting connectivity issues

## Lost SRP connections in the debug log files

The log file lines below show an SRP connection being lost and re-established.

```
[40000] (03/20 06:05:22):{0x165} SRPClient::ReceivePacket: Error receiving Header(10054)
[30155] (03/20 06:05:22):{0x12E} SRP connection dropped, Error=10054
[30000] (03/20 06:05:22):{0x12E} [SRP] Connection lost
[40000] (03/20 06:05:22):{0x12E} [SRP] Connecting to "srp.na.blackberry.net"
[40000] (03/20 06:05:22):{0x12E} SRPClient::Authenticate: Authentication successful
```

# Troubleshooting connectivity issues

Look for the following event descriptions in the log files to troubleshoot an SRP connection problem:

```
[10000] (03/05 08:01:24):{0x68C} [SRP] Ping Response not received
[10109] (03/05 08:01:24):{0x68C} [SRP] No server name configured
[30000] (02/03 02:17:38.625):{0x1828} [SRP] Connection lost
```

# Troubleshooting connectivity issues

| Error code | Log file descriptor | Description |
|---|---|---|
| 10054 | Connection reset by peer<br>The connection was reset by a remote host | A connected party disconnected. |
| 10056 | Socket is already connected | A request to connect was made on a socket that is already connected |
| 10060 | Connection timed out<br>Socket has been shut down | A request to connect failed because the connected party did not respond. This is often related to firewall configuration. |
| 10061 | Connection refused<br>Connection is forcibly rejected | A connection was forcibly closed by a remote host. |
| 11001 | Host not found<br>Authoritative answer | A connect request was made on an already connected socket. |

# Troubleshooting enterprise activation issues

# Troubleshooting enterprise activation issues

## Topics in this module

- Overview of the enterprise activation process
- Successful enterprise activation processes in the debug log files
- Troubleshooting enterprise activation issues

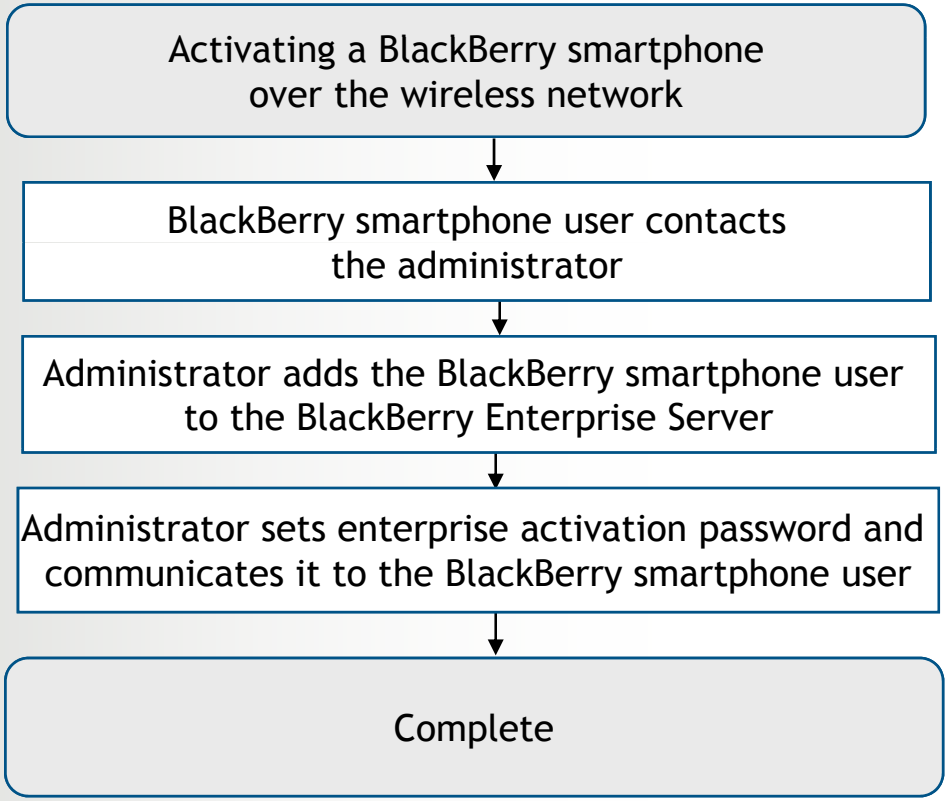

BlackBerry

# Troubleshooting enterprise activation issues

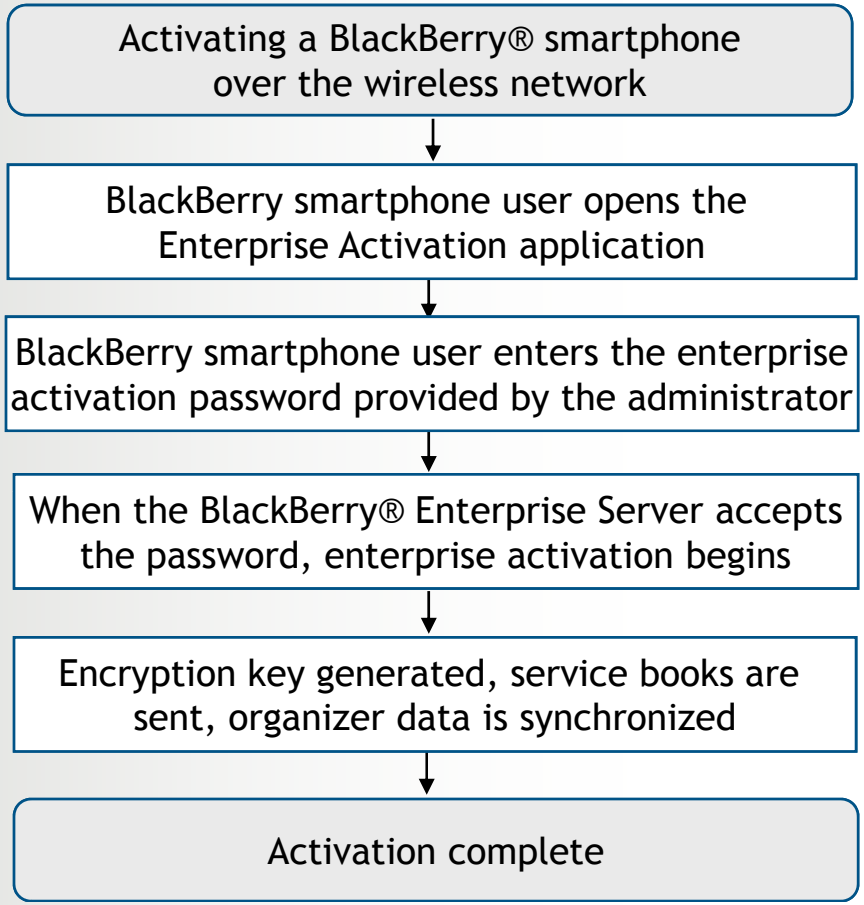
## Stages of the enterprise activation process

1. Activation
2. Encryption verification
3. Receiving services
4. Slow synchronization

# Troubleshooting enterprise activation issues



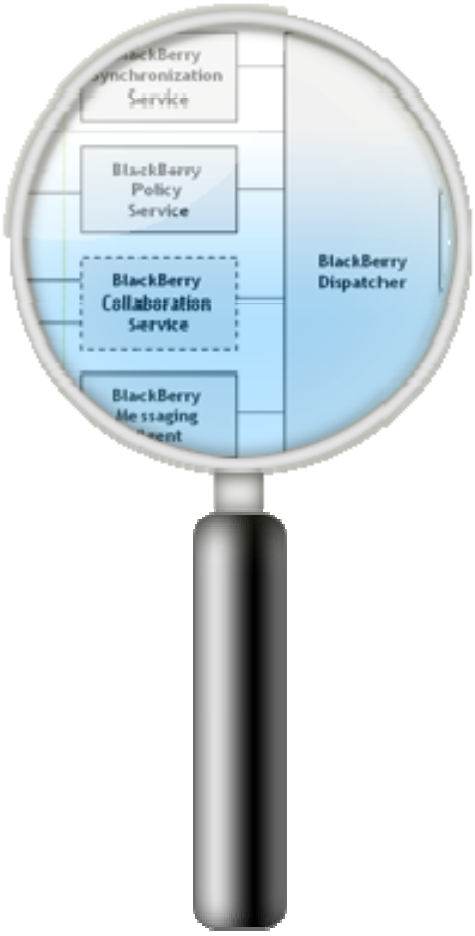
# Troubleshooting enterprise activation issues



# Troubleshooting enterprise activation issues

Enterprise activation involves the following BlackBerry Enterprise Server components:

- BlackBerry Messaging Agent
- BlackBerry Policy Service
- BlackBerry Synchronization Service
- BlackBerry Dispatcher
- BlackBerry Router

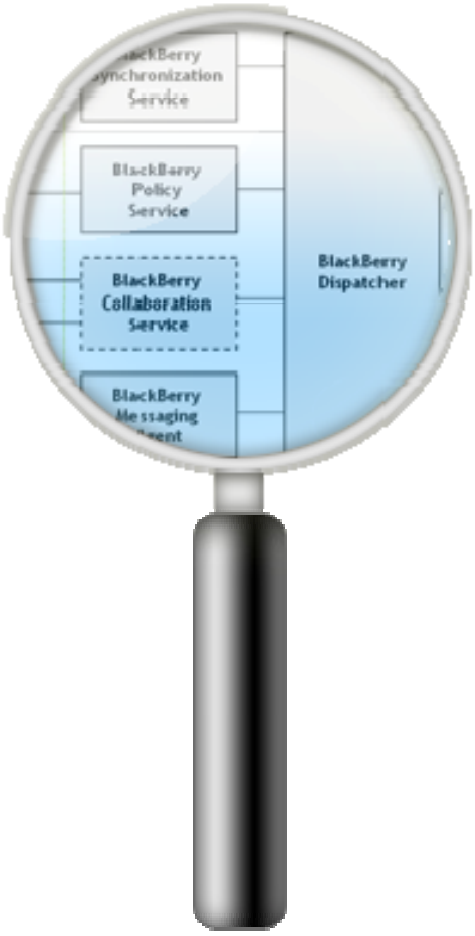



BlackBerry

# Troubleshooting enterprise activation issues

**Functions of BlackBerry Enterprise Server components in the enterprise activation process**

- BlackBerry Messaging Agent
- BlackBerry Policy Service
- BlackBerry Synchronization Service




BlackBerry

# Troubleshooting enterprise activation issues

The following lines appear in the BlackBerry Messaging Agent (MAGT) log files:

- The BlackBerry Enterprise Server receives the enterprise activation message

```
[40282] (06/27 08:07:40):{0x1114):{0x13B8} {elliot.fun@rim.com} Queuing DATA from
network@etp1002.etp.na.blackberry.net, Tag=1552549626, EntryId=494
```

- An encryption key is generated

```
[40000] (06/27 08:07:40):{0xF74} {elliot.fun@rim.com} Generating 3DES key
```

- A service book request is sent to the BlackBerry Policy Service

```
[40000] (06/27 08:07:44):{0x1114} {elliot.fung@rim.com} SendToDispatcher, Tag=4789

[40000] (06/27 08:07:44):{0x1114} {elliot.fung@rim.com} *** OTAKEYGEN *** Queuing
service book data to Policy Server
```

# Troubleshooting enterprise activation issues

The following lines appear in the BlackBerry Policy Service (POLC) log files:

- The BlackBerry Policy Service sends the IT policy to the BlackBerry smartphone

```
[30000] (06/27 08:08:40):{0xAAC} {elliot.fung@rim.com,
PIN=<PIN>,Ushered=2}RequestHandler::SendQueuedITAdminCommandToDevice Sending data
to device, contentType=ITADMIN, size=301, Raid=0, TransactionId=-996158132,
Tag=251
```

- The IT policy is successfully delivered to the BlackBerry smartphone

```
[40000] (06/27 08:08:43):{0x37C} {elliot.fung@rim.com,
PIN=<PIN>,UserId=2}RequestHandler::DoITPolicyDeviceSentProcessing - ITPolicy GME
Receive ACK for the command SET_IT_POLICY_COMMAND - Processing packet, Tag=251
```

# Troubleshooting enterprise activation issues

The following lines appear in the BlackBerry Policy Service (POLC) log files (continued):

- The BlackBerry Policy Service sends the service books to the BlackBerry smartphone

```
[40000] (06/27 08:08:50):{0x15FC} {elliot.fung@rim.com, PIN=<PIN>,
UserId=2}RequestHandler::SendServiceBooks - Sending service book data to device
```

- The BlackBerry smartphone sends confirmation that it received and decrypted the service books

```
[40000] (06/27 08:09:00):{0xF74} {elliot.fung@rim.com} *** OTAKEYGEN *** received
packet was successfully decrypted
```

# Troubleshooting enterprise activation issues

The following lines appear in the BlackBerry Messaging Agent (MAGT) log files:

- The BlackBerry smartphone is active and able to send and receive messages

```
[40446] (06/27 08:07:44):{0x1114} {elliot.fung@rim.com} Handheld just activated on
this server
```

- On new BlackBerry smartphones, message prepopulation is triggered if prepopulation settings are enabled on the BlackBerry Enterprise Server

```
[30292] (06/27 08:07:44):{0x1114} {elliot.fung@rim.com} New or changed Device -
email pre-population triggered
```

- The Calendar slow synchronization process begins

```
[40753] (06/27 08:09:03):{0xF74} {elliot.fung@rim.com} Receiving CICAL_SLOW_SYNC
request from device, Tag=5156, TransactionId=2016556545
```

BlackBerry

# Troubleshooting enterprise activation issues

The following lines appear in the BlackBerry Synchronization Service (SYNC) log files:

- The BlackBerry smartphone initiates the slow synchronization process

```
[46046] (06/27 08:09:02):{0xBCC} [SYNC-DSession] Received "GetConfig"
command from device. [Fung,Elliot:2]
```

- The slow synchronization process is complete

```
[36023] (06/27 08:13:12):{0x1428} [SYNC-DSession] *** SLOWSYNC COMPLETE ***
[Fung,Elliot:2]
```

# Troubleshooting enterprise activation issues

Enterprise activation issues may occur if:

- The Windows® account has insufficient permissions to access the BlackBerry smartphone user's mailbox
- There is an error in the BlackBerry smartphone user's mailbox
- The email address or enterprise activation password is invalid or incorrect

# Troubleshooting enterprise activation issues

Enterprise activation issues may occur if (continued):

- BlackBerry Enterprise Server has connectivity issues
- Existing IT policy rejects the new one
- BlackBerry Policy Service is not running or has problems
- BlackBerry Messaging Agent is not initialized

# Troubleshooting enterprise activation issues

Enterprise activation issues may occur if (continued):

- Spam filters are modifying the etp.dat attachments

For more information on how to identify and troubleshoot enterprise activation issues go to www.blackberry.com/btsc

# Analyzing BlackBerry Enterprise Server service interruptions

# Analyzing BlackBerry Enterprise Server service interruptions

**Topics in this module:**

- Identify some causes of a memory .dmp file
- Locate log file entries related to a memory.dmp file
- Set up the Microsoft® User Mode Process Dumper utility (Userdump.exe)
- Identify symptoms of a silent crash


BlackBerry

# Analyzing BlackBerry Enterprise Server service interruptions

## Symptoms of crashes

Sometimes the cause of a service interruption is obvious. Others are more subtle or include only specific components. Look for the following:

- Delays or failures in message delivery
- Debug log files show the line **Default Handler – Killing Program**
- Debug log files show **Memory dump** errors
- Services restart, or the log file indicates that they restarted when they did not actually restart

# Analyzing BlackBerry Enterprise Server service interruptions

## What is a memory dump?

- A record of the contents of the virtual memory for a particular process. Saved as a dump (.dmp) file during a service interruption
- Can be run manually or automatically
- Tools such as Microsoft ADPlus and Userdump.exe can be used to collect dump files
- A memory dump is also performed after five waitcounts for a thread


BlackBerry

# Analyzing BlackBerry Enterprise Server service interruptions

## When memory dumps occur on the BlackBerry Enterprise Server

- Non-responsive threads show `WaitCount=5`
- An exception occurs, preventing normal BlackBerry® Enterprise Server operation
- The following MAGT log file sample indicates that a crash has occurred, followed by a memory dump:

```
[10000] (10/18 13:36:44):{0x544} DefaultHandler - exception caught thread Id=0x544
[10000] (10/18 13:36:44):{0x544} DefaultHandler - Killing program
[30000] (10/18 13:36:44):{0x544} Exception code: C0000005 ACCESS_VIOLATION
...
[30000] (10/18 13:36:44):{0x544} Memory dump 05E3F790, length 1024
```

BlackBerry

# Analyzing BlackBerry Enterprise Server service interruptions

## Memory dumps in IBM Lotus Domino

- The memory .dmp file captures the current state of the process memory space
- Can be useful when log.nsf shows memory errors such as the following:
  - `Insufficient Memory`
  - `Maximum Number of Memory Segments that Notes Can Support Has Been Exceeded`
  - `NSF Pool is Full`

NSF Network Specific Facility

# Analyzing BlackBerry Enterprise Server service interruptions

## Memory dumps in Microsoft Exchange

- Memory .dmp files capture the contents of the virtual memory for a specific process
- Analyze the .dmp file contents to diagnose the problem
- In the Windows® Event Viewer, look for a log file line such as the following:
  - A .dmp file was saved in: `C:\WINNT\MEMORY.DMP`
- In the debug log files, look for a line similar to the following:

```
[30000] (02/02 17:27:24):{0x96C} 'server01' agent 4: dump file
Agent4_20070202_1728.dmp generated
```

BlackBerry®

# Analyzing BlackBerry Enterprise Server service interruptions

## Memory dumps in Novell GroupWise

- Can be run manually using the Novell® NetWare® internal debugger
- In Windows® Event Viewer, look for log file lines like the following:

```
A dump was saved in: C:\WINNT\MEMORY.DMP
```

- In the log files, look for a line similar to the following:

```
[30000] (02/02 17:27:24):{0x96C} 'server01' agent 1: dump file
Agent1_20070202_1728.dmp generated
```

BlackBerry

# Analyzing BlackBerry Enterprise Server service interruptions

## Userdump.exe

- Command line tool that can capture the virtual memory for a process when it stops responding or encounters an unhandled exception


- If you cannot determine the cause of the issue by using the term **Default Handler - Killing Program** to perform a stack trace, install and use Userdump.exe to monitor processes and create .dmp files

BlackBerry

# Analyzing BlackBerry Enterprise Server service interruptions

## Microsoft ADPlus

- Used to collect .dmp file contents
- Part of Microsoft Product Support Services
- Can be used instead of Microsoft Internet Information Server Exception Monitor and Userdump.exe

# Analyzing BlackBerry Enterprise Server service interruptions

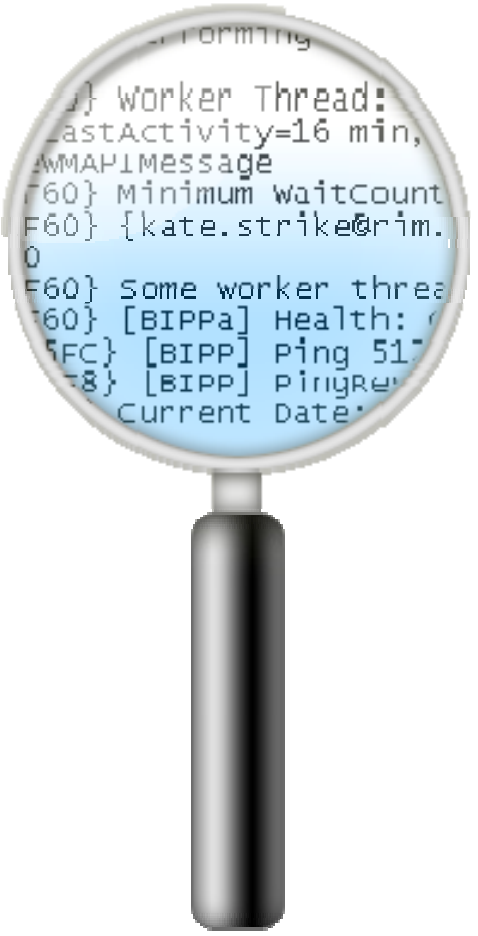
## The Debug Diagnostic Tool (DebugDiag)

- Assists in troubleshooting issues, such as crashes, in any user-mode process
- Composed of the debugging service, the debugger host, and the user interface
  - The debugging service monitors and collects information on the states of processes
  - The debugger host generates and analyzes memory .dmps files

# Analyzing BlackBerry Enterprise Server service interruptions

## Silent crashes

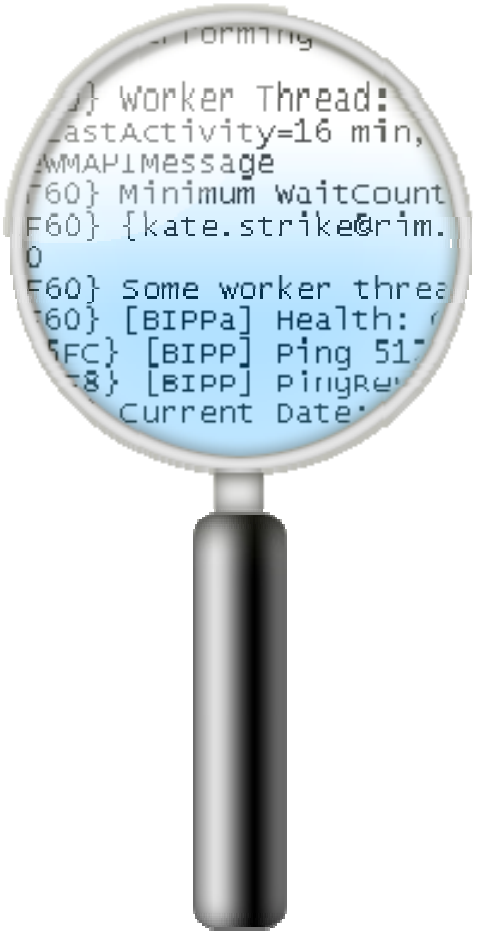
- When a silent crash occurs, errors and events that are usually logged do not necessarily appear in the log files
- The log files state that the service restarts
- Search for the expression `DefaultHandler - Killing program` in the debug log files. If you do not find it, this may indicate a silent crash



# Analyzing BlackBerry Enterprise Server service interruptions

## Silent crashes (continued)

- Use the BlackBerry Controller (CTRL) log
- The CTRL log file shows overall BlackBerry Enterprise Server component health
- It also indicates when BlackBerry Enterprise Server components restart



# Analyzing BlackBerry Enterprise Server service interruptions

## Lines for a manually stopped process in the BlackBerry Controller (CTRL) log file

```
[50000] (10/23 13:36:58.457):{0x4F4} Controller: closing

[50000] (10/23 13:36:58.457):{0x4F4} Controller: Requested to stop

[50106] (10/23 13:36:58.832):{0x8E4} Stopping BlackBerry Mailbox Agent 1 for Server
PRESIDENT

…

[40507] (10/23 13:36:59.457):{0x4F4} ExtUDPLogThread: Code on closing = 0

…

[30065] (10/23 13:36:59.598):{0x8E4} BlackBerry Mailbox Agent 1 for Server PRESIDENT
shutdown complete

[30000] (10/23 13:37:01.676):{0x12D4} Current Date: 2010/10/23
```

# Analyzing BlackBerry Enterprise Server service interruptions

## Lines for a silent crash in the BlackBerry Controller (CTRL) log file

```
[30000] (09/02 10:38:01):{0xCCC} DBES: starting up

[30000] (09/02 10:46:12):{0xCCC} BlackBerry Agent Controller will assume silent
crash after 10 minutes of inactivity, and will restart Domino & BES

[30000] (09/02 10:46:32):{0xCD0} Performing system health check (Domino BES
Controller Version 4.0.0.43)

[20000] (09/02 10:48:02):{0xCCC} Domino BES: no heartbeat for 10 minutes; assuming
silent crash.

[30000] (09/02 10:48:02):{0xCCC} Domino BES: crash detected

[30000] (09/02 10:48:02):{0xCCC} Domino BES: requesting the restart

[30000] (09/02 10:48:22):{0xCCC} BlackBerry Mobile Data Service detected and will
be stopped...

[30000] (09/02 10:48:23):{0xCCC} BlackBerry Mobile Data Service stopped!

...

[30000] (09/02 10:48:23):{0xCCC} BlackBerry Mobile Data Service restarted

[30000] (09/02 10:48:33):{0xCCC} Launching Domino & BES
(C:\Lotus\Domino\nserver.exe) ...

[30000] (09/02 10:49:03):{0xCCC} Success!
```

# Using the BlackBerry Enterprise Server Resource Kit

# Using the BlackBerry Enterprise Server Resource Kit

## Topics in this module

- Debug log file analysis tools
- BlackBerry® Syslog Service

# Using the BlackBerry Enterprise Server Resource Kit

**Log file analysis tools**

- Command line tools to check debug log files
- Generate output files containing information on the following:
  - BlackBerry smartphone users
  - Data flow
  - BlackBerry® Enterprise Server performance
  - Historical statistics

# Using the BlackBerry Enterprise Server Resource Kit

## Command line tools

Enterprise Activation Status Tool

- Checks MAGT, POLC, and SYNC log files and creates a statistical report of BlackBerry smartphone status during the enterprise activation process

MessageFlow Tool

- Checks DISP, MAGT, and ROUT log files and tracks message flow through the BlackBerry Enterprise Server

# Using the BlackBerry Enterprise Server Resource Kit

NoResponseCheck Tool

- Checks all log files except MDAT log files and determines thread statuses
- Can determine whether threads were truly non-responsive or simply busy

OutofCoverage Tool

- Checks DISP logs and identifies BlackBerry smartphones that have not sent or received packets for a specified time period

# Using the BlackBerry Enterprise Server Resource Kit

Pending Tool

- Checks MAGT log files and detects increasing numbers of messages in the queue

HistoricalStats Tool

- Checks MAGT and DISP log files and provides statistical information for specific BlackBerry smartphones within a 24-hour period

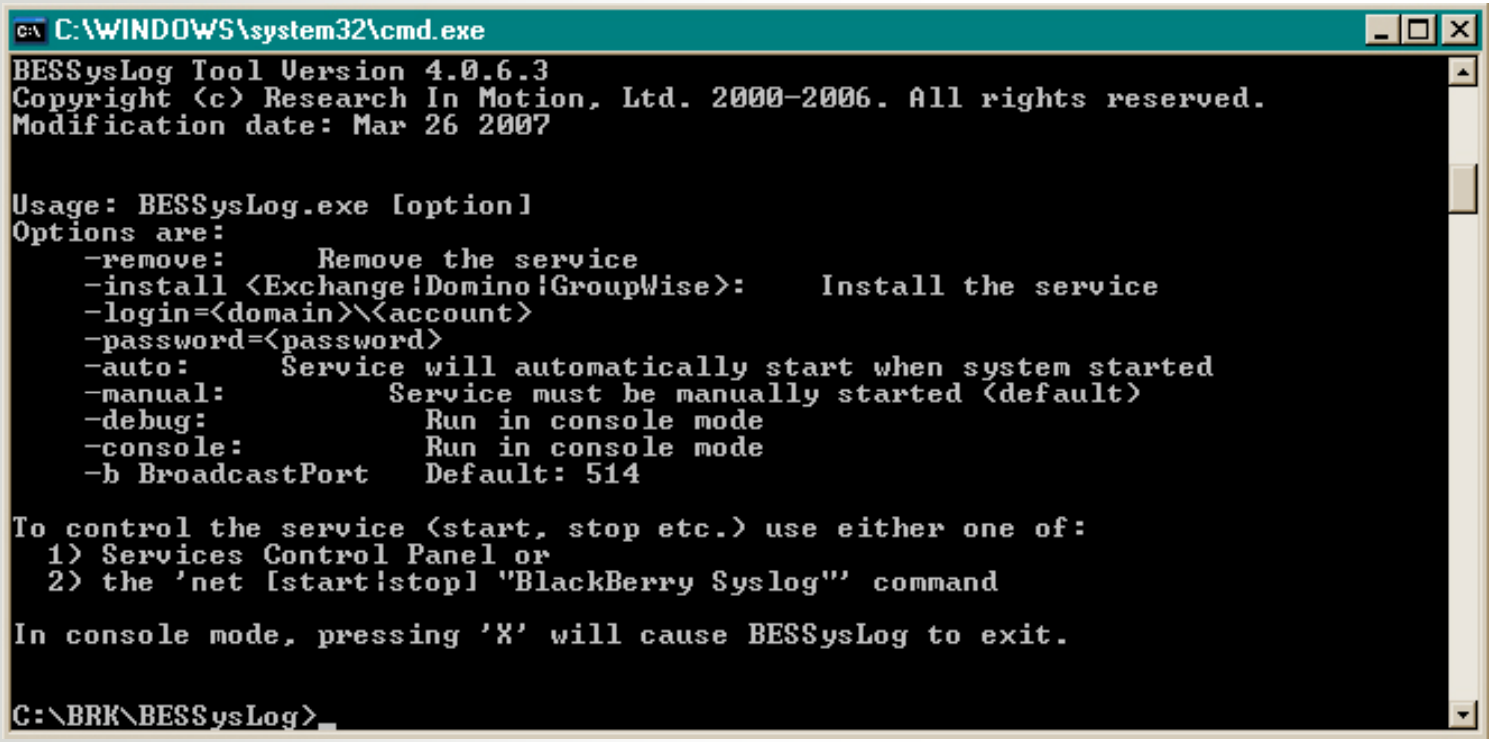
# Using the BlackBerry Enterprise Server Resource Kit

MDSPushvsPull Tool

- Checks MDAT log files and shows the amount of push data and pull data that the BlackBerry MDS Connection Service processes

# Using the BlackBerry Enterprise Server Resource Kit

## Using BESSysLog at a command prompt



# Using the BlackBerry Enterprise Server Resource Kit

## BlackBerry Syslog Service

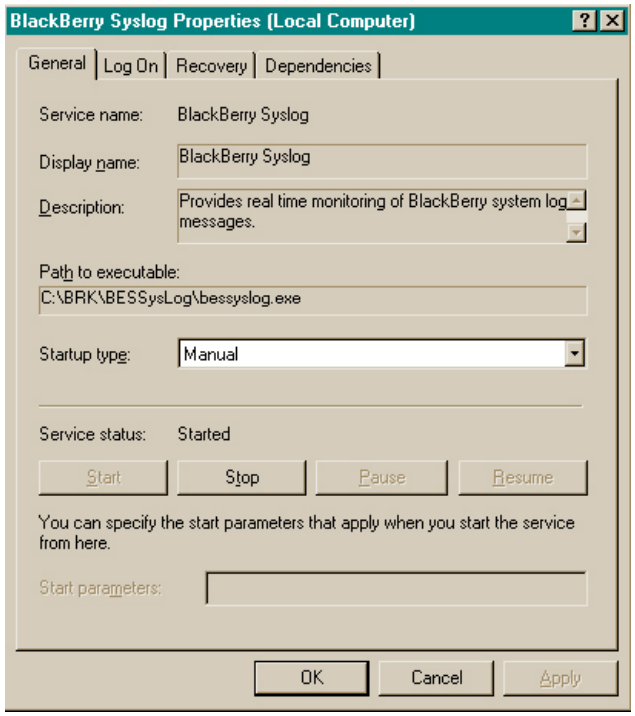
- Checks DISP and MAGT log files
- Monitors debug log file events in real time
- Sends alert messages and nightly summary reports
- Has configurable event types for monitoring
- Has configurable notifications that can be sent to authorized recipients

# Using the BlackBerry Enterprise Server Resource Kit

## BESSysLog tool components

BESSysLog service

- Runs as a Windows® Service
- Cannot run on the computer that the BlackBerry Enterprise Server software is installed on

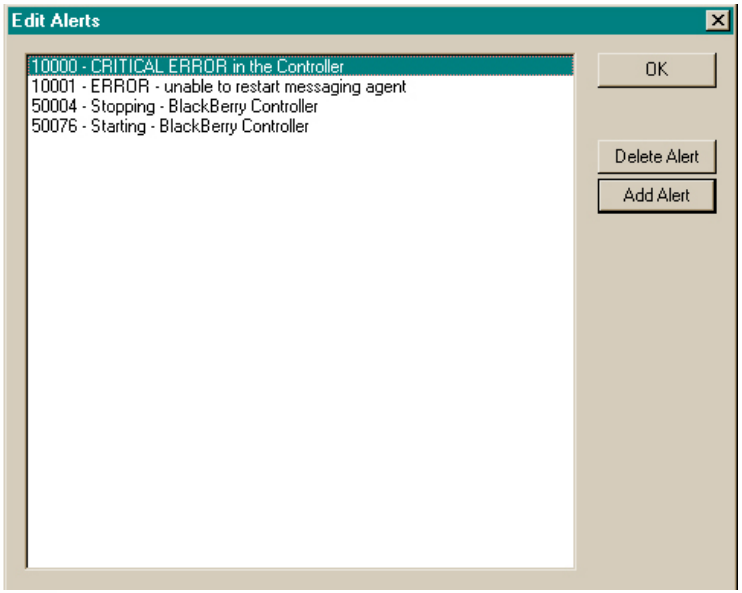


# Using the BlackBerry Enterprise Server Resource Kit

## BESSysLog tool components

BESSysLogConfig client

- Configure notifications and recipients
- Specify services for monitoring
- Specify log file events for alerts
- Customize event ID descriptions

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# Review

To effectively diagnose and troubleshoot problems, the following tools can be used in conjunction:

- BlackBerry Enterprise Server debug log files
- Messaging server log files
- BlackBerry smartphone Event Logs
- Third-party log file analysis tools and performance utilities
- BlackBerry® Enterprise Server Resource Kit log file analysis tools


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# Legal Disclaimer