### Introducing BlackBerry Enterprise Server Debug Log Files

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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

BlackBerry.



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#### **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 Enterprise Server log files**

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



#### **BlackBerry Enterprise Server log files (continued)**

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



#### **BlackBerry Enterprise Server log files (continued)**

HHGG	BlackBerry Configuration Panel	POLC	BlackBerry Policy Service
		ROUT	BlackBerry Router
MAGT	BlackBerry Messaging Agent	SYNC	BlackBerry Synchronization Service
MAST	BlackBerry Mail Store Service	TAT	BlackBerry Threshold Analysis Tool
MDAT	BlackBerry MDS Connection Service		
MDSS	BlackBerry MDS Integration Service	BlackBerry MDS - F	NackBerry® Mohile Data System
		Diackberry WDO - L	



#### **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



#### **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



#### **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+



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



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 Server Configuration Panel	SlackBerry	2
Test Attachment Service Secure Loni	AD Settinge	1
Administration Service	- AD Settings dministration Setuine - Capacita kousta	
Database Connectivity DelackBerry Monito	ving Service - Cacerts Reyston	le b
BackBerry Server Wij-Ei SBP Info   000000	Black Berry Bouter   Mohile Data Serv	e vice
	blackbelly flocker   Mobile bala Serv	nce
C:\Program Files\Besearch In Motion\BlackBer		
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BlackBerry Service Log Settings		
	<u>R</u> eset All	
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Black Dame Camballan	setting	
BlackBerry Controller:		
	стрі	
Debug log identifier:	CTRL	
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#### **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	<b>BBAS-AS</b>
ALRT	CMNG	<b>BBAS-NCC</b>
ASCL	POLC	
ACNV	MDSS	



#### **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



#### **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





### Managing BlackBerry Enterprise Server component log files

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





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

Instance information Loggin	ig details		
Instance information			
Instance name:	CDLAB02_LOG_1	Friendly name:	
Friendly description:		Component category:	Logging
Component:	Logging	Installation server:	CDLAB02
General			
BlackBerry Logging Services version:	5.0.0	Log file path:	C:\Program Files\Research In Motion\BlackBerry Enterprise Server\Logs\
Log file prefix:		Create folder for daily logs:	True
Edit instance	— Click Edit instance.		



Instance information tab			Add a display name and description to the log files for BlackBerry Enterprise Server components.	
Instance information Loggin	ig details			
Instance information				
Instance name:	CDLAB02_LOG_1	Friendly name:	+	
Friendly description:		Component category:	Logging	
Component:	Logging	Installation server:	CDLAB02	
General				
BlackBerry Logging Services version:	5.0.0	Log file path:	C:\Program Files\Research In	Motion
Log file prefix:		Create folder for daily logs:	True 💌	
Save all Cancel and return to view				



#### **Instance information tab**

Instance information Logging	details		
Instance information			
Instance name:	CDLAB02_LOG_1	Friendly name:	
Friendly description:		Component category:	Logging
Component:	Logging	Installation server:	CDLAB02
General			
BlackBerry Logging Services version:	5.0.0	Log file path:	C:\Program Files\Research In Motion\
Log file prefix:		Create folder for daily logs:	True 💌
(	$\sim$		)
🛅 Save all	Add a prefix to	the file names o	f all log files for
🚫 Cancel and return to view			
BlackBerry Enterprise Server components.			



#### **Instance information tab**

Instance information Logging	details		
Instance information			
Instance name:	CDLAB02_LOG_1	Friendly name:	
Friendly description:		Component category:	Logging
Component:	Logging	Installation server:	CDLAB02
Ceneral			
BlackBerry Logging Services version:	5.0.0	Log file path:	C: Program Files Research In Motion
Log file prefix:		Create folder for daily logs:	True 💌
Save all	Set this ontion t	o True to create	new folders for log files

👩 Cancel and return to view

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.



#### **Instance information tab**

Instance information Logging	g details		
Instance information			
Instance name:	CDLAB02_LOG_1	Friendly name:	
Friendly description:		Component category:	Logging
Component:	Logging	Installation server:	CDLAB02
General			
BlackBerry Logging Services version:	5.0.0	Log file path:	C:\Program Files\Research In Motion\
Log file prefix:		Create folder for daily logs:	
Save all Sav			Define the location where all log files are written.
			SlackBerry.

#### Logging details tab

BlackBerry Administration Service component logging information - BlackBerry Administration Service - AS							
Component name:	BlackBerry Administration Service	Component description: BAS Component.					
Log service name:	BlackBerry Administration Service - AS						
Log identifier:	BBAS-AS	Daily file creation: True					
Log level:	Informational 💌	Maximum size of daily log files 500 (MB):					
Log auto-roll:	True 💌	Maximum age of daily log files:					
Log encoding:	UTF-8						

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



#### Logging details tab

Change the name of the log identifier.

BlackBerry Administration Service component logging information - BlackBerry Administration Service - AS								
Component name:	BlackBerry Administration Service	Component description:	BAS Component.					
Log service name:	BlackBerry Administration Service - AS							
Log identifier:	BBAS-AS	Daily file creation:	True					
Log level:	Informational 💌	Maximum size of daily log files (MB):	500					
Log auto-roll:	True 🗸	Maximum age of daily log files:						
Log encoding:	UTF-8							



#### Logging details tab

BlackBerry Administration Service component logging information - BlackBerry Administration Service - AS						
Component name:	BlackBerry Administration Service	Component description:	BAS Component.			
Log service name:	BlackBerry Administration Service - AS					
Log identifier:	BBAS-AS	Daily file creation:	True			
Log level:	Informational 💙	Maximum size of daily log files (MB):	500			
Log auto-roll:	True 🗸	Maximum age of daily log files:				
Log encoding:	UTF-8					

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.



#### **Managing BlackBerry MDS Connection Service log files**



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



### Managing BlackBerry MDS Connection Service log files

(continued)

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

Instance information General	Proxy mappings Loggi	ng Component configuration sets	Supported Dispatcher instanc	ces
Logging				
SRP logging turned on:	Yes	IPPP	logging turned on:	Yes
UDP logging turned on:	No	GME	Elogging turned on:	No
HTTP logging turned on:	No	Ver	bose HTTP logging turned on:	No
TLS logging turned on:	No	ocs	SP logging turned on:	No
LDAP logging turned on:	No	CRL	Server logging turned on:	No
PGP logging turned on:	No			
File logging destination				
Log level:	Debug	Log	timer interval (milliseconds):	30000
UDP logging destination				
Log level:	None	Loc	ation (Host name:Port number):	
TCP logging destination				
Log level:	None	Loc	ation (Host name:Port number):	
EventLog logging destination	n			
Log level:		Error		
		dit instanco		
Edit instance				
Niew components list				
The first compendance not				
				E Rlack

Instance information	General	Proxy mappings	Logging	Component configuration sets	Supported Dispatcher instan	ces	
			_				
SRP logging turned or	ר:	Yes 💙		IPPP	logging turned on:	Yes 💌	
UDP logging turned or	n:	No 💌		GME	logging turned on:	No 💌	
HTTP logging turned o	on:	No 💌		Verb	oose HTTP logging turned on:	No 💌	Turn the specified logging
TLS logging turned or	1:	No 💌		ocs	P logging turned on:	No 💌	ontion on or off
LDAP logging turned	on:	No 💌		CRL	Server logging turned on:	No 💌	
PGP logging turned or	n:	No 💌					J
File logging destina	rtion						
Log level:		Debug	*	Logt	timer interval (milliseconds):	30000	
UDP logging destina	ation						
Log level:		None	*	Loca	ation (Host name:Port number):		
TCP logging destination	ation						
Log level:		None	~	Loca	ation (Host name:Port number):		
EventLog logging d	estination						
Log level:				Error 💌			
<ul> <li>Save all</li> <li>Cancel and return t</li> </ul>	o view						
							<b>BlackBerry</b>

### Managing BlackBerry MDS Connection Service log files

Instance information	General	Proxy mappings	Logging	Component configuration sets	Supported Dispatcher instanc	ces
Logging			-			
SRP logging turned or	ר:	Yes 💌		IPPP	logging turned on:	Yes 🗸
UDP logging turned or	n:	No 💌		GME	logging turned on:	No 😪
HTTP logging turned o	on:	No 💌		Vert	oose HTTP logging turned on:	No 💌
TLS logging turned or	1:	No 💌		ocs	P logging turned on:	No
LDAP logging turned	on:	No 💌		CRL	Server logging turned on:	No
PGP logging turned or	n:	No 💌				

File logging destination



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



Instance information	General	Proxy mappings	Logging	Component configuration sets	s Supported Dispatcher instan	ces			
Logging							1		
SRP logging turned or	Ľ	Yes 💙		IPP	P logging turned on:	Yes 💙			
UDP logging turned or	i:	No 💌		GM	IE logging turned on:	No 💙			
HTTP logging turned a	n:	No 💌		Ve	rbose HTTP logging turned on:	No 💙			
TLS logging turned on	C	No 💌		oc	SP logging turned on:	No 💙			
LDAP logging turned o	on:	No 💌		CR	L Server logging turned on:	No 💙			
PGP logging turned or	C	No 💌						Sat tha int	erval at which the
File logging destina	tion							BlackBerry	v MDS Connection
Log level:		Debug	*	Log	g timer interval (milliseconds):	30000	•	Service w	rites information to
	A <sup>1</sup>								
UDP logging destina	uon			Lor	estion (Host name:Bort number):			a log file	
Logievei.		None	¥	200	cation (nost name.Port namber).				J
TCP logging destina	tion								
Log level:		None	~	Loc	cation (Host name:Port number):				
					· · ·				ļ
EventLog logging d	estination								
Log level:				Error 💙					
📳 Save all 🚫 Cancel and return to	o view								
								## B	lackBerry

Instance information General	Proxy mappings Logging	Component configuration sets Su	upported Dispatcher instances	es
Logging				
SRP logging turned on:	Yes 💙	IPPP logg	jing turned on:	Yes 🗸
UDP logging turned on:	No 😽	GME logg	ging turned on: N	
HTTP logging turned on:	No 😽	Verbose	HTTP logging turned on: N	
TLS logging turned on:	No 💙	OCSP log	gging turned on: N	No 💌
LDAP logging turned on:	No 💙	CRL Serv	ver logging turned on: N	No 💌
PGP logging turned on:	No 💌			
File logging destination				
Log level:	Debug 💙	Log timer	r interval (milliseconds): 30	Set the host and port
IDD logging doctiontion				number that the BlackBe
Log level:	Nope	Location	(Host name:Port number):	
	None		· · ·	MDS Connection Service
CP logging destination				connects to when it send
Log level:	None 💌	Location	(Host name:Port number):	
ventLog logging destination Log level:		Error		
-				
Save all Cancel and return to view				
			n Dotogram Drot	
		UDP Use	er Datagram Prote	
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Instance information G	eneral Proxy mappings	Logging	Component configuration sets	Supported Dispatcher instance	es	
		_				
SRP logging turned on:	Yes 🗸		IPPP I	logging turned on:	Yes 🗸	
UDP logging turned on:	No 💙		GME	logging turned on:	No 💙	
HTTP logging turned on:	No 🗸		Verb	ose HTTP logging turned on:	No 💙	
TLS logging turned on:	No 💌		ocsi	P logging turned on:	No 💌	
LDAP logging turned on:	No 💌		CRL	Server logging turned on:	No 💙	
PGP logging turned on:	No 💌					
File logging destinatio	n					
Log level:	Debug	*	Logt	imer interval (milliseconds):	30000	
UDD leaging destingtic						
Log level:	None	*	Loca	tion (Host name:Port number):		Sat the best and part
						Set the nost and port
TCP logging destination	n					number that the BlackBerry
Log level:	None	~	Loca	tion (Host name:Port number):		MDS Connection Service
EventLog logging des	tination					connects to when it sends
Log level:			Error 💙			TCP log file messages
Save all						
Cancel and return to v	iew					
			TCP T	ransmission Cont	rol Protocol	BlackBerry
715-01946-123			© 20	010 Research In Motion Li	nited	

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

fault		×
MIME Application Policy Group ecurity Policy Group MIME Application Policy Group emory Cleaner Policy Group IS Application Policy Group /TLS Application Policy Group /TLS Application Policy Group IM Application Toolkit CP Policy Group IM Sync Policy Group IM Sync Policy Group DiP Policy Group MackBerry MDS Connection S	Disable All Wireless Sync Disable Address Wireless Sync Disable Calendar Wireless Sync Disable Memopad Wireless Sync Disable Task Wireless Sync Disable PIN Messages Wireless Sync Disable PIN Messages Wireless Sync Disable PIN Messages Wireless Sync Disable PIN Call Log Wireless Sync Disable Enterprise Activation Progress	
/LA Properties Inf General Access Control DS HTTP ect Proxy ev LDAP am OCSP lac TLS/HTTPS est Push/PAP TSA Authentication Stats Inf Logs	Surce SRP logging enabled IPPP logging enabled UDP logging enabled GME logging enabled TLS logging enabled CSP logging enabled UDAP logging enabled CRL logging enabled CRL logging enabled PGP logging enabled PGP logging enabled CRL logging enabl	True True False False False False False False False False False
		OK Cancel Apply

BlackBerry MDS BlackBerry Mobile Data System



#### Log file format

- The majority of BlackBerry Enterprise Server components are based on C++
- These components have the following log file format:



#### **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
     BlackBerry.

# Understanding the need for messaging server health



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# 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)







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#### **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





#### **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





#### **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

Event Log (Debug Info)	
a net.rim.hrtRT - EHr!	
a net.rim.nrtki – ENpc UX3U2720	030
a net.rim.gcmp - GUUS	
a net rim otasync - HG,-CPT	
a net.rim.otasync – AG,+CPT	
a net.rim.hrtRT – ENpc O×FFFFF	FFFFFF
W net.rim.hrtRT – XMa×	
W net.rim.hrtRT – XBad	
E net.rim.gme - TXNd	
W net.rim.gme – TXS×	
E net.rim.udp - TEfa-0x0000318	83
a System – Radio Error: sendPa	icket: 4
W net.rim.mcuent Information	
a net.rim.oci	
a net.rim.tur <sup>Name:</sup>	net.rim.udp
a net. rim. turSeverity:	Error
a net.rim.brGUID:	f47344afa3bd34d8
Time: Ji	un 11, 2007 19:00:50
TEfa-0×00003183	



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

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

Appointment Details
RefId: 1882612322
LongId: 1148435430328656482
iCalId: 1451830307960778746
Timezone: America/New_York
GMT Start: 1176822000000
UNAVAILABLE
GME Send Status: NO DATA
Cal Service ID: 1140748292
Cal Service Base ID:1882612279
Cal Service Default ID:1140748292
Cal DB ID: 1140748292
Cal Service UID: S52626167
Parent Id: -967505336
Related Time: 1176822000000

Refld Reference Identification



#### **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

Email Reconciliation	1
Message Services:	Desktop
Delete On:	Mailbox & Handheld
Wineless Reconcile	e: On
On Conflicts:	Mailbox Wins



#### **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=OrgMail01/0=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

- Refld 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



#### **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



#### **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.P01.100.16A7231.1.6F94.1

[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.Refld** can help find time of processing in the MAGT log file SOAP Simple Object Access Protocol

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#### **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?





#### 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?





#### 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



Search for the following terms in the debug log files:

Messaging server environment	ΤοοΙ
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



#### **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



#### **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 Refld



#### **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
- Refld



#### **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?





## Troubleshooting other organizer data synchronization issues (continued)

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





## 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



## 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







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#### **Topics in this module:**

- Identifying SRP connection issues
- Troubleshooting other common connectivity issues

d Messages: pired Messages: 0 Messages Failed: 0 BlackBerry MDS Connection Wireless Message Reconcilia SRP Status: Disconnected PID: 4824 BlackBerry Enterprise Serve

SRP server routing protocol



#### **Considerations for troubleshooting connectivity problems**

- Inefficient network connectivity
- RPC protocol latency
- Network latency







#### **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



#### **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 <u>www.blackberry.com/btsc</u>



#### 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



## 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



Error code	Log file descriptor	Description
10054	Connection reset by peer 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 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 Connection is forcibly rejected	A connection was forcibly closed by a remote host.
11001	Host not found Authoritative answer	A connect request was made on an already connected socket.





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#### **Topics in this module**

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





#### **Stages of the enterprise activation process**

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











Enterprise activation involves the following BlackBerry Enterprise Server components:

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




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

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





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



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



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



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



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]



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





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





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 <u>www.blackberry.com/btsc</u>







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#### **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





#### 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



#### 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





### 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
```



#### **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



#### **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
```



#### **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
```



#### Userdump.exe

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

cx C:\WINDOWS\system32\cmd.exe
C:\>cd userdump
C:\userdump>userdump.exe User Mode Process Dumper (Version 1.0) Copyright (c) 1998 Microsoft Corp.
Usage: userdump.exe <processid> <targetdumpfile> C:\userdump&gt;_</targetdumpfile></processid>

 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



#### **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



#### 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



#### **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





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





### 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



•••

### 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!





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#### **Topics in this module**

- Debug log file analysis tools
- BlackBerry® Syslog Service





#### 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



#### **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



NoResponseCheck Tool

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

OutofCoverage Tool

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



#### 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



MDSPushvsPull Tool

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



#### Using BESSysLog at a command prompt

C:\WINDOWS\system32\cmd.exe BESSysLog Tool Version 4.0.6.3 Copyright (c) Research In Motion, Ltd. 2000-2006. All rights reserved. Modification date: Mar 26 2007 Usage: BESSysLog.exe [option] Options are: -remove: Remove the service -install <Exchange {Domino {GroupWise>: Install the service -login=<domain>\\laccount> -password=<password> Service will automatically start when system started -auto: -manual: Service must be manually started (default) Run in console mode -debug: -console: Run in console mode -b BroadcastPort Default: 514 To control the service (start, stop etc.) use either one of: 1) Services Control Panel or 2) the 'net [start|stop] "BlackBerry Syslog"' command In console mode, pressing 'X' will cause BESSysLog to exit. C:\BRK\BESSusLog>\_



#### **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



**BESSysLog tool components** 

**BESSysLog service** 

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

BlackBerry Syslog	Properties (Local Computer)
General Log On	Recovery Dependencies
Service name:	BlackBerry Syslog
Display <u>n</u> ame:	BlackBerry Syslog
Description:	Provides real time monitoring of BlackBerry system log - messages.
Pat <u>h</u> to executabl C:\BRK\BESSys	e: _og\bessyslog.exe
Startup typ <u>e</u> :	Manual
Service status:	Started
<u>S</u> tart	Stop Pause Resume
You can specify the start parameters that apply when you start the service from here.	
Start para <u>m</u> eters:	
	OK Cancel Apply



**BESSysLog tool components** 

BESSysLogConfig client

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





### 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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