

TIBCO iWay® Service Manager

Business Activity Monitor User's Guide

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Chapter

Introducing TIBCO iWay[®] Business Activity Monitor

This section provides an overview of $iWay^{\ensuremath{\mathbb{R}}}$ Business Activity Monitor, including key features and components.

In this chapter:

iWay Business Activity Monitor Architecture

iWay Business Activity Monitor Architecture

iWay Business Activity Monitor is an extension of TIBCO iWay[®] Service Manager and provides an end-to-end, non-invasive view into transaction life cycles as they span across multiple channels and/or iWay[®] Service Manager servers. It enables you to capture, analyze, resolve, and act upon business transaction events gathered by iWay Business Activity Monitor. The architecture of iWay Business Activity Monitor is based on iWay Service Manager (iSM) and uses standard iSM components to provide a seamless integration with an existing application life cycle.

iWay Business Activity Monitor consists of two layers, a data capture layer facilitated by the iWay Business Activity Monitor driver facility, and a data presentation layer facilitated by the iWay Business Activity Monitor web application console.

iWay Business Activity Monitor Driver Facility

After iWay Business Activity Monitor is configured on iSM, an internal iSM activity facility is created that enables iWay Business Activity Monitor to capture data about the transactions that flow through the server (iSM). The activity driver runs in parallel to the business application logic providing a non-invasive data capture of transaction events. Even though the iWay Business Activity Monitor activity driver is exposed in the iSM Administration Console, it is not recommended to change this configuration directly, unless it is required for advanced IT operations. All of the essential iWay Business Activity Monitor tools, as described in *Configuring and Using iWay Business Activity Monitor* on page 25.

Database Prerequisites

The iWay Business Activity Monitor activity driver uses a database for metric definitions, performance metric data archival, and so on. As a result, a database is also a prerequisite of iWay Business Activity Monitor. Currently, iWay Business Activity Monitor supports:

- □ Oracle 8i, 9i, 10g, and 11g
- □ MS SQL Server 2005 and higher
- DB2 non-Mainframe

iWay Business Activity Monitor Web Application Console

iWay Business Activity Monitor also includes a web application console that presents you with all of the information that is captured. This console is developed using the iSM non-blocking HTTP listener with an underlying process for data rendering as provided in the pre-configured channel for iWay Business Activity Monitor. This channel is called BAMChannel. The BAM web application console enables you, among other things, to view and analyze captured transaction data. It also provides a facility to resubmit messages that enables you to repair and reprocess transactions. The iWay Business Activity Monitor web application console can be accessed using the following default URL once the BAMChannel is deployed:

http://localhost:8087

For more information on using the web application console, see *Configuring and Using iWay Business Activity Monitor* on page 25.



Installing iWay Business Activity Monitor

This section describes how to install iWay Business Activity Monitor.

In this chapter:

- Prerequisites
- Installing iWay Business Activity Monitor

Prerequisites

Before continuing, ensure that the following components are available:

- iSM Version 8.0
- During the iSM installation (using the Windows or Java-based installer), ensure that the Business Activity Monitor feature is selected.

After iSM has been installed, confirm that the *iwcpBAM.jar* file is located in your <*iway_home*>\etc\manager\console directory.

In the iSM Administration Console, click *Tools* in the top menu and verify that *Business Activity Monitor* displays in the left pane.

- Ensure that one of the following supported database systems is installed:
 - Oracle 8i, 9i, 10g, and 11g
 - MS SQL Server 2005 and higher
 - Db2 non-Mainframe

These are the only databases that are supported by iWay Business Activity Monitor.

- Ensure that the corresponding .jar file for your database driver is located in your <*iway_home*>\lib directory. If you have to copy the .jar file to this directory, ensure to first stop iSM and then start iSM when finished.
- Web Browsers:
 - □ Mozilla Firefox Version 31.0 and higher.

iWay Business Activity Monitor is currently tested with Mozilla Firefox Version 55.0.3 (32 bit) and Version 57.0 (64 bit).

Google Chrome Version 40 and higher.

iWay Business Activity Monitor is currently tested with Google Chrome Version 61.0.3163.100 (64 bit).

□ Microsoft Internet Explorer Version 10 and higher.

iWay Business Activity Monitor is currently tested with Microsoft Internet Explorer Version 11.0.9600.18817.

Note: Support for JavaScript and Cookies must be enabled in your browser settings. There are known issues with browser caching where the caching must be cleared periodically to reload data. In addition, several pop-up windows may have their corners cut off slightly, which does not prevent the functionality. This will be resolved in a future release.

Installing iWay Business Activity Monitor

This section describes how to install iWay Business Activity Monitor.

Procedure: How to Install iWay Business Activity Monitor

1. Open your database management tool. For example, in SQL Server Management Studio, right-click *Databases*, and then select *New Database*.

3		New	Database		_ D X	
Select a page	🔊 Script 👻 🚺	Help				
Filegroups	Database name:		BAMDB	BAMDB		
	Qwner:	ndexing	<default></default>			
	Database files:					
	Logical Name	File Type	Filegroup	Initial Size (MB)	Autogrowth / Maxsize	
	BAMDB	ROWS	PRIMARY	4	By 1 MB, Unlimited	
	BAMDB_log	LOG	Not Applicable	e 1	By 10 percent, Unlimited	
Connection						
Server: IWISM\SQLEXPRESS						
Connection: sa						
Wew connection properties						
Progress						
C Ready	<	Ш		Add	> <u>R</u> emove	
					OK Cancel	

The New Database dialog box opens, as shown in the following image.

2. In the Database name field, enter *BAMDB* and then click *OK*.

The Data Definition Language (DDL) scripts are provided to generate database tables. They are located in the following directory:

<iway_home>\etc\bam\scripts



Note that each set of scripts is database specific, as shown in the following image.

There are also *storepro* and *tablescripts* folders for each database, as well as a *readme* file in the directory, as shown in the following image.

👪 l 💽 🚯 👳 l	sqlserver		- 🗆 X
File Home Share View			~ 📀
	× ¢	Search sqlserver	٩
☆ Favorites	Name	Date modified	Туре
Positop Desktop Downloads Positop Desktop Desktop Documents Documents Downloads Music Pictures Pictures Videos Local Disk (C:) Network	 ▶ storepro ▶ tablescripts ▲ IBAM_INSTALL_MSSQL_README.TXT ▲ IBAM_UPDATE_MSSQL_README.TXT 	10/23/2017 11:31 10/23/2017 11:31 10/23/2017 11:31 10/23/2017 11:35	File folder File folder Text Document Text Document
4 items	٢ - ١١		> 8== •

3. In SQL Server Management Studio, highlight the database name (BAMDB) and click *New Query* at the top of the screen.

File Edit View Query Project Debug Tools Window	Help		
1 51 - 11 - 12 🖬 🚅 🗳 New Query 🗅 🔂 🖓 🖓 🕺	10 (%) (*) - (*) - (%) (%) (*) (*)	- 100	
1 37 22 BAMDE	- = √ 13 = □ 17 % 0 € 0 7 \$ 8 8 5 .		
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Connect - 1/ 2/ = 7 7 3			Current connection parameters
= A INISM/SQLEXPRESS (SQL Server 12.0.4237 - sa)			
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B TPM 707			Elapsed time
8 TPM_708			Finish time
ж 🧃 ТРМ_800			Name IWISM\SQLEXPRESS
B BAMDB			Kows recurred U
# Construction Streets			State Open
H 🗀 Replication			 Connection
🛞 🦢 Management			Connection name IWISM\SQLEXPRESS (sa
			Connection Details
			Connection finish
			Connection rows 0
			Connection start t
			Connection state Open
			Login parter 14
			Server name IWISM/SQLEXPRESS
			Server version 12.0.4237
			Session Tracing ID
			SPID 65
	100 % - <		Name 7
	Connected. (1/1)	IWISM/SQLEXPRESS (12.0 SP1) 5a (65) BAMDB 00:00:00	rows
Parts		141	641 (b) NS
includy in the second se			

A query palette opens, as shown in the following image.

4. From the *tablescripts* folder, select *BAM_Tables_Create.sql*, as shown in the following image.

🏭 🔒 🔁 =		tab	lescripts				- • ×
E Home Share View							~ 🔁
💿 👻 🕆 🕌 דhis PC 🕨 Local Disk	k (C:) 🕨	iway8	 tablescripts 			✓ C Search tablescrip	ts P
🎉 icons	^	Name	Date modified	Туре	Size		
images .		BAM_Tables_Create.sql	7/25/2017 5:30 PM	Microsoft SQL Ser	65 KB		
is reports		BAM_Tables_Upgrade.sql	7/25/2017 5:30 PM	Microsoft SQL Ser	8 KB		
i resubmit							
3 scripts							
db2							
tablescripts							
Jb db2z							
🎉 storepro							
light tablescripts							
a oracle	-						
tablescripts	-						
🁪 sqlserver							
storepro							
licenses							
🎉 manager							
🎉 repository							
🕌 samples	~						
2 items	<u>.</u>						III 🖬

5. Drag the script and drop it into the editor palette. You can also open it in your text editor by pressing *Ctrl+A* to select all, *Ctrl+C* to copy, and *Ctrl+V* to paste into SQL Server Management Studio.

وا	8AM_Tab	les Create.sol - IWISM\S	OLEXPRESS.BAMDB (sa (66)) - Mic	rosoft SQL Server Management Studio		- 0 X
Ele Edit View Query Project Debug Icols Window P	Help	ics_createsq.				
1 51 - 11 - 12 A 4 2 New Query 12 12 12 13	13 B 9 - 8 - 2 - 3	3 N	- 100			
1 17 22 BAMDE . Execute > Debuy	a = v II = 🖬 I' 4 (65 J			
Object Explorer 🔷 🗘 🗙	BAM_Tables_CreateSS.BAMDB (sr	s (66)) × SQLQuery11.sql - L	ESS.BAMDB (sa (65))			Properties - 9 ×
Connect - 3/ 3/ = 7 7 3	8				÷	Current connection parameters
= K IWISM.SQLEXPRESS (SQL Server 12.0.4237 - sa)	BAN DATABASE CREATE	E TABLES SCRIPT FOR SQL	SERVER 2012, 2008, 2005		<u>^</u>	A1 A1 123
😑 🛄 Databases	POOIFIED:	s database namine conver	tion			11 Z 1 1 2
🛞 🔛 System Databases	34N 25,2012 -corre	ect foreign key names, m	odifiy User Def Columns			 Aggregate Status
itt 😝 🛪	34N 30,2012 -TID /	thanged to char(48) in B	AM_RESUBNIT_QUEUE			Connection failure
8 🧃 TPM_707	FEB 7,2012 -modif	fied column names in BAN	Annotations table			Elapsed time
8 8 TPM_708	SEP 24,2013 -creat	ted Enable Dashboard and	Report section (BAN_Reports)			Firishtime
E TPM_800	FEB 24,2014 -JIRA	SPO-3572 add BAM_COLUMN	ATTRIBUTE create			Name IWISM\SQLEXPRESS
B BAMDB	Mar 15,2014 -J184	SEV-295 added records t	5 BAM_PREFERENCE to control			Rows returned 0
III 🛄 Security	Nec 29 1914 - 1794	SEV-244 added seconds #	A PAN REDITE			Start time
Server Objects	and (MAN ROLE HAS REPORTS	a mail and an and a mail			State Open
H 🛄 Replication	Jun 16,2014 -adder	d columns SOAPACTION, SC	APSERVICE, SCAPHETHOD, REQUESTER	19		 Connection
🕫 🛄 Management	to 8/	AM_Activity_Extended tab	le; Added for JIRA SEV-538			Connection name IWISM/SQLEXPRESS (sa
	Nov 26,2014 -add o	column retryCount to BAM	retryCount to BAM_Activity table for JIRA SP0-3912			 Connection Details
	Dec 11,2014 -add c	column IDX to BAM_COLUMN	ATTRIBUTE for JIRA SEV-714			Connection elaps-
	Jan 5,2015 -remov	VE FK BAM_RESUBRIT_RESSA	SE_USERNA_FK from			Connection finish
	to Apr 2 2015 cadd	2 BAN_RESUBNLI_MESSAGE T	or JIRA 52V-750 AN CORPLE HISTORY Pable for 1184	\$594-1122		Connection rows 0
	Nav 20, 2015 -add (columns emitCount, inter	Lum commercises (complement state for short version) Lum selfCourt, internalEntCourt, biFerorCourt, selfType, and entID ACTIVITY table for JIBA SV-1223 Lum biFratSLOON to BM/ACTIVITY for JIBA SV-1223			Connection start t
	to 8	AN ACTIVITY table for 31				Connection state Open
	Jun 17,2015 -add r	column bizFatalCount to				Display name EWISM-SOLEXPRESS
	31y 16,2015 -added	d TID index to BAN_ACTIV	ITY table			Losio parter Sa
	31y 31,2015 -incre	rased size of bam_activi	ty.signature col to 128 from 64	/IRA SEV-1062		Server name (WISASC) EVERSS
						Security Harrison 12.0.4227
	Table names are in	alphabetial order				Server version
	in followed by depen	d at top or script				Session intering to
	followed by data (inserts				SPID 60
	Deploy using Micros	soft SQL Server Manageme	nt Studio			
	SET DATEFORMAT yed;					
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	tstarp	atetime NOT NULL				
	, recordtype in	at NULL				
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	, recordkey101 c	har(32) NULL				
	,correlid c	tar(32) NULL				
	version cr	sar(16) NULL				
	status	North March				
	, subtype	IL MOLE				
	.resubmitCount in	nt NULL				
	resubmitSourceKey C	har(32) MULL			~	Name
	100 % + <				2	The name of the connection.
	Connected. (1/1)			IWISM/SQLEXPRESS (12.0 SP1) s	sa (66) BAMDB 00:00:00 0 rows	
- Ready					le 1	Cell Chil INS

- 6. Click Execute.
- 7. At completion, note any errors and then close the open palette.
- 8. Repeat Steps 3 to 7 to run the seven stored procedures from the *storepro* folder in the following order:
 - 01_f_INITCAP.sql
 - 02_f_SetStringWildCard.sql
 - 03_f_Script_DynCol.sql
 - 04_f_TxChannelStatus.sql
 - □ 05_p_BAM_Activity_TransHistory.sql
 - □ 06_p_BAM_ActivityMgt.sql
 - 07_p_BAM_ActivityMgt_TransActivity.sql
- 9. After you run the seven stored procedures, minimize or close the SQL Server Management Studio.

10. From the iSM Administration Console, click *Management*, and then on the left pane under Application Management, click *Applications*, as shown in the following image.

iWay Service Mar Server Registry Dep	lager Novments Too	ls	Ma	nagement base	~
Application Management Deployments	Applications Upload/Downloa be deployed, sta	d/Delete applications arted, stopped and de	. iWay Integration eleted without affect	Application (IIA) is an ting other IIAs.	integration solution with
Applications	Application	Actions	Owner	Version]
Events	TPM	🗴 🞒 🕼 🍪 🕥	iwayqa@iwism	10/10/17 11:11:53]
Server Management	New	port			
Servers					
Users					
Server Roles					
Test Servers					
Remote Servers					

11. Click Import.

The Applications - Upload pane opens, as shown in the following image.

Applications - Upload Upload Application	
Upload application	
Select an application to upload * Choose File No file chosen	
<< Back Finish Reset	

12. Click Choose File.

The Open dialog box displays, as shown in the following image.

🎐 Open					×
\leftarrow \rightarrow \checkmark \uparrow \blacksquare \rightarrow This PC	> OS (C:) > Program	Files (x86) > iway8 > etc > setup > BAM	ٽ ~	Search BAM	م
Organize 🔻 New folder					
a OneDrive	^	Name	Date modified	Туре	Size
This DC		BAM.iia	10/11/2018 1:31 PM	IIA File	87 KB
2D Objects		BAM.ita	10/11/2018 1:31 PM	ITA File	3 KB
Deckton					
Desktop					
- Downloads					
Music					
Dictures					
Videos					
Home (H:)					
	×				
File <u>n</u> ame:	BAM.iia		~	All Files	~
				<u>O</u> pen v	Cancel

13. Navigate to the following location on your file system:

<iway_home>\etc\setup\BAM

where:

<iway_home>

Is the root installation folder where iSM is installed.

14. Select the BAM.iia file and then click Open.

You are returned to the Applications - Upload pane, as shown in the following image.

Applications - Upload Upload Application
Upload application
Select an application to upload * Choose File BAM.iia
<< Back Finish Reset

15. Click Finish.

16. From the Application Management section on the left pane of the console, click *Templates*, as shown in the following image.

iWay Service Man Server Registry Depl	ager oyments Tools		Management	base	~
Application Management Deployments	Templates Template creation and m deployments. Use server	anagement. Tem r configuration fac	plate - a user defined serve ilities to fill in attributes of	r configuration profile the template, e.g. co	to support on nsole setting
Applications	Name Actions	Description			
Events	TPM 💿 🐼 🗙	TPM			
Server Management	New Import				
Servers					
Users					
Server Roles					
Test Servers					
Remote Servers					

17. Click Import.

The Templates - Import pane opens, as shown in the following image.

Templates - Import Template creation and management. Template - a user defined server configuration profile to support development, test and production deployments. Use server configuration facilities to fill in attributes of the template, e.g. console settings.
Problems
Template archive to import
Template archive to import * Choose File No file chosen
<< Back Next >> Reset

18. Click Choose File.

The Open dialog box displays, as shown in the following image.

🌀 Open					×
← → × ↑ 📙 → This PC	> OS (C:) > Program	Files (x86) > iway8 > etc > setup > BAM	ٽ ~	Search BAM	Q
Organize 🔻 New folder					• 🔳 🕜
a OneDrive	^	Name	Date modified	Туре	Size
This DC		BAM.iia	10/11/2018 1:31 PM	IIA File	87 KB
		BAM.ita	10/11/2018 1:31 PM	ITA File	3 KB
Desites					
Desktop					
Documents					
Downloads					
J Music					
Pictures					
Videos					
🛀 OS (C:)					
🛫 Home (H:)	~				
File <u>n</u> ame:	BAM.ita		~	All Files	~
				<u>O</u> pen	Cancel

19. Navigate to the following location on your file system:

<iway_home>\etc\setup\BAM

where:

<iway_home>

Is the root installation folder where iSM is installed.

20. Select the BAM.ita file and then click Open.

You are returned to the Templates - Import pane, as shown in the following image.

Templates - Import Template creation and management. Template - a user defined server configuration profile to support development, test and production deployments. Use server configuration facilities to fill in attributes of the template, e.g. console settings.							
Problems							
Template archive to import							
Template archive to import * Choose File BAM.ita							
< Back Next >> Reset							

21. Click Next.

In the Template Name field, *BAM* is already pre-populated for you, as shown in the following image.

iWay Service Man Server Registry Depl	ager Management base V 🖉 © © 00.0-SNAPSHOT.1091 syments Tools Licenses About Logout
Application Management Deployments	Templates - Import - Provide Name Template creation and management. Template - a user defined server configuration profile to support development, test and production deployments. Use server configuration facilities to fill in attributes of the template, e.g. console settings.
Applications	Provide a name for the template
Templates	Template Name BAM
Events	
Server Management	<< Back Finish Reset
Servers	
Users	
Server Roles	
Test Servers	
Remote Servers	

- 22. Click Finish.
- 23. At the top of the iSM Administration Console, click *Management*, and then in the dropdown list, select *BAM* under the Templates section.

iWav Service Man	ager		BAM	🖉 🔘 🕐 8.0.0-SNAPSHOT.1091		
Server Registry Depl	loyments		Admin	Licenses About Logout		
Application	Templates		base			
Management	Template c	reation and m	anagement. Tem	plate - a user defined server	Applications	rt development, test and production
Deployments	deploymen	ts. Use server	configuration fac	cilities to fill in attributes of t	TPM_TPM	tings.
Applications	Mama	Antiona	Description	1	Templates	
Templates	Ivame	Actions	Description		BAM	
Events	BAM	💌 🕼 🗶	BAM		TPM	
Conver Management	TPM	💿 🕼 🗙	TPM		Test	
Servers	New	Import				
Users						
Server Roles						
Test Servers						
Remote Servers						

24. In the menu bar of the iSM Administration Console, click *Tools*, then under Applications on the left pane, click *Business Activity Monitor*.

The iWay Business Activity Monitor access handler has been pre-configured. Note the preconfigured DB Provider Name, as shown in the following image.

iWay Service Ma	nager	Management BAM 🗸 🔗 📀 80.0-SNAPSHOT.1091									
Server <u>Tools</u>											
Applications	Business Activity Monitor	Properties Manager									
Business Activity Monitor	Configuration and managem	ent of business Activity Monitor Properties.									
Trading Partner	rroperues manager										
Manager		BAM Properties Correlation Properties									
Diagnostics	BAM is Active	Makes BAM active or inactive. Making BAM inactive will stop the collection of transaction activity.									
Log Viewer		true									
Imports/Exports		Pick one v									
Package Manager	BAM Realm Provider	Authentication/Authorization realm for user validation									
Archive Manager											
Info	BAM Database Provider	JDBC Data Provider configured for the BAM database									
Release Information		BAMDBProvider									
Diagnostic Zip	Want Events	Should event messages be included?									
		false									
		Pick one v									
	Worker Count *	Number of worker threads to process log entries in parallel									
		3									
	Batch Size	How many log entries should be accumulated before updating the database? Each log entry generates three inserts into the database. Enter 0 or 1 to the at a single entry as a transaction. For values greater than 1, inserts will be batched until the imits reached. At this point, the three batches will be becketed and the transaction will be committed. This can improve performance, but increases the amount of data that can be lost if the connection to the database fails.									
	BAM Work Queue Manag	ement									
	High Mark	If set, if queue length goes above this, named listener(s) are passivated and/or put access to this queue is inhibited.									
	Low Mark	If set, if queue length fails below this, passivated listener(s) are activated and/or put access to this queue is restored.									
		U									

25. In the iSM Administration Console, click Server, as shown in the following image.

iWay Service Manager		Management TPM v	🖉 🔘 🕜 8 0 0-SNAPSHOT 1091					
Server Tools			Licenses About					
Properties	General Properties	for the TOM see Countries of this second						
General Properties	usted below are the general properties for the TPM configuration of this server.							
Java Properties	General							
Settings	Name / Home	n/a - C:/iway8/						
General Settings	Version	8.0.0-SNAPSHOT.1091						
Console Settings	Build Date	ASGARD October 05 2017 1016						
Java Settings	Usage	Live						
Register Settings	Configuration							
Log Settings	Name	TPM - C:/iway8/config/TPM						
Path Settings	User Security Access	Read / Write						
Data Settings	Language and Locale							
Backup Settings	Locale / Timezone	n/a / America/New_York; time zone offset is -4 hours						
Providers	Language	Japanese v Save						
Data Provider		The server has to be stopped, and started for the languag	e change to take effect.					
Services Provider								
LDAP Directory Provider								
Security Provider								

26. Under the Providers section in the left pane, click *Data Provider*, as shown in the following image.



- V 🔕 ... 💿 ... 😨 ... 8.0.0-SNAPSHOT.109 Management[®] BAM Data Provider - JDBC Properties Listed below is the definition of the selected JDBC data provider. Add/Update the values as required. General Properties **JDBC Connection Pool Properties** Java Properties Name BAMDBProvider Settings Driver Class The JDBC driver class is the name of the class that contains the code for this JDBC Driver General Settings Console Settings com.microsoft.sglserver.jdbc.SQLServerDriver Select a predefined database or enter your own. Java Settings Register Settings Connection URL The JDBC connection URL to use when creating a connection to the target database. The URL generally includes Trace Settings the server name or IP address, the port or service, the data source name, and a driver specific prefix Log Settings jdbc:sqlserver://localhost:1443;databaseName=BAMDB Path Settings Data Settings Backup Settings Select a predefined connection URL template or enter your own. Providers User name with respect to the JDBC URL and driver. User Data Provider sa Services Provider Password with respect to the JDBC URL and driver Password LDAP Directory Provider Security Provider XML Namespace Map **Connection Pool Properties** Provider Initial Pool Size * Number of connections to place in the pool at startup. HTTP Pooling Providers Authentication Realms 3 Maximum Number of Idle Maximum number of idle connections to retain in the pool. 0 means no limit except what is enforced by the Facilities Connections * maximum number of connections available from the pool. Activity Facility 3 Correlation Facility Maximum number of connections available from the pool. 0 means no limit. Connections above the Idle Maximum Number of Template Connections limit are not retained in the pool Connections * Template Bindings з Deployment Options Login Timeout Time in seconds to wait for a pooled connection before throwing an exception. 0 means wait forever, 240
- 27. In the JDBC section, click BAMDBProvider, as shown in the following image.

The template has been pre-configured for MSSQL. You can make any required changes to the Connection URL, User, and Password parameters to connect to your own database. You will have to change the Driver Class if you are using ORACLE or Db2.

If you changed the configuration, be sure to click the *Update* button at the bottom of the page.

Note: You cannot test a data provider in a template as it is not a running application. You can only test run after the application is deployed.

28. In the iSM Administration Console, click Server, then in the left pane, click Register Settings.

The listener HTTP port number for iWay Business Activity Monitor (the BAM_PORT Special Register) is shown in the following image.

iWay Service Mar	nager	Man	sgement BAM_BAM	• 🕢 🕲 🕐 80.0-SNAPSH						
Server Sources Monit	toring Tools									
Properties Properties Register Settings Special registers are named variables that reference values which are carried throughout the system. Once defined, these variables become availat to all components of the system. Any changes to the register settings do not take effect until the server is restarted/redeployed. Listed below are t register settings for the BAH_BAM configuration of this server. Special Registers										
Settings	Name	Value	Description	Туре						
General Settings	iwayyersion	80.0	system define	(readoply) string						
Lonsole Settings	hayveraren	0.0.0	ayatam daflaa	d (readonly) string						
Register Settings	iwaynome	C://way6/	system define	d (readonly) string						
Trace Settings	📄 iwaydata	C:/iway8/	system define	d (readonly) string						
Log Settings	iway.startup.	time 1508424028986	system define	ed (readonly) string						
Path Settings	iway.config	BAM_BAM	system define	ed (readonly) string						
Data Settings	engine	BAM BAM	system define	ed (readonly) string						
Backup Settings	- iwayconfin	BAM BAM	evetem define	ad (readonly) etring						
Providers	Inaycomy		ayatem denne	d (readonly) adding						
Data Provider	iwayworkdir	C:/iway8/contig/BA	M_BAM system define	d (readonly) string						
Services Provider	iway.workdir	C:/iway8/config/BA	M_BAM system define	ed (readonly) string						
LDAP Directory Provider	iway.serverig	172.19.23.171	system define	d (readonly) string						
Security Provider	iway.serverh	ost iwism	system define	ed (readonly) string						
XML Namespace Map Provider	iway serverf	ullhost iwism ibi com	system define	ed (readonly) string						
HTTP Pooling Providers	iway old	2169	system define	d (readaply) string						
Authentication Realms	iway.pio	2100	system denne	d (readomy) sung						
Facilities	jce.unlimited	false	system define	d (readonly) string						
Activity Facility	BAM_PORT	8087	BAM port	string						
Correlation Facility	Add Delete									

29. Click *Management* at the top of the iSM Administration Console, and ensure that *base* is selected from the drop-down list, as shown in the following image.

iWay Service Ma Server Registry De	nager ployments Tool					nt base		~	 Licenses 	8.0.0-SM	
Application Management	Deployments Monitor and man	age deploye	d applica	tions							
Deployments	Deployment	Actions	State	Since	Application	Template	Source				
Templates	No deployment	ts are define	d				1	1			
Events	New							_			
Server Management											
Servers											
Users											
Server Roles											
Test Servers											
Remote Servers											

30. Highlight the template and application names, as shown in the following image. Type your own application description and then click *Deploy*.

iWay Service Mar	lager	Management base v	@ 🔘 😢 8.0.0-SNAPSHOT.1091
Server Registry <u>De</u> r	oloyments Tools		
Application Management Deployments	Deployments - New Deplo Deploy an application	pyment	
Applications Templates Events Server Management Jervers Users Server Roles Test Servers Remote Servers	Deployment Name	Use an auto-generated name below or provide a custom name. BAM_BAM	
	Configuration Template	A 'raw' template is used by default. BAM TPM	~ ~
	Application *	ВАМ ТРМ	∧
	Port	Port the console will listen on 10004]
	Application Description	An automatic description is generated by default.	
	<	Reset	

31. Click the red minus (-) symbol to start the application, as shown in the following image.

iWay Service Man Server Registry Dep		ient base		V 🔕	icenses About Logo	T.1091 out			
Application Management	Deployments Monitor and man	age deployed	applicatior	15					
Applications	Deployment	Actions	State	Since	Application	Template	Source		
Templates	BAM_BAM	💿 🛸 🗙	0	10/18/17 15:35:10	BAM	BAM		-	
Events	TPM_TPM	💿 🚭 🗙	0	10/10/17 11:52:08	TPM	TPM			
Server Management	New	-							
Users									
Server Roles									
Test Servers Remote Servers									

When the application has started, the red minus (-) symbol changes to a green check mark, as shown in the following image.

iWay Service Man Server Registry <u>Dep</u>		base		ັ ⊘ີ ເ	icenses Abo	D-SNAPSHOT.1091 ut Logout			
Application Management	Deployments Monitor and man	age deployed	application	ıs					
Applications	Deployment	Actions	State	Since	Application	Template	Source		
Templates	BAM_BAM	ی 😒 🕲	٢	10/18/17 15:35:10	BAM	BAM		1	
Events	TPM_TPM	💿 🛸 🗙	0	10/10/17 11:52:08	TPM	TPM			
Server Management Servers Users Server Roles Test Servers Remote Servers	New	•		- -				-	

32. Open your browser and enter the following URL:

```
http://localhost:8087
```

Ensure that the port number specified for the BAM_PORT Special Register (shown in Step 28) is used.

- 33. Log on to iWay Business Activity Monitor using the following credentials.
 - User Name: admin
 - Password: iway

	🔏 iWa	y Service Manager Admii	nist 🗙	iWay Business Activity Moni	tor × +									-	•	x
¢	→ C	ن ۵	(i)	localhost:8087				🛛	☆	Q Search	Ŧ	lif\	٩	f	1	≡
iWa	y Busi	ness Activity Mo	nito								 					
					BAM Login											
					User Name: *	admin										
					Password: *	••••										
							Login									

34. Click Login.

The iWay Business Activity Monitor console opens, as shown in the following image.

	_									
iW	ay	Business Activity Monitor							About	Logout
Acti	with	Management Administration Correlation Manag	gement							
Tra	ransaction Activity V5Transaction Activity									
Tre	Transaction D Choose Protocol W. Source Name Search By Saart Time W. 2017/10/15 18 08 2017/10/15 19 08									
l.										
-										
14	🕴 🔍 Page 🚺 of 1 👂 🖓 💭 🍓 Search 📓 Reset 🗟 Add to Guever (9) View Guevar(0), 🤤 Force Close, Group By 100 Grouping 💌 🔗 🗛 ザ 🗸 🖓 🖢 🖓 🗍 🕞 👘 🔂 Search 📓 Search 🔒 Reset (1)									
		Transaction ID	Start Time (UTC) -	End Time (UTC)	Protocol	Source Name	Status	Resubmit Count	TX History	Message
	1	b1ba50fc-911b-45f3-921b-ed68045f6797	2017/10/16 19:08:32 150Z	2017/10/16 19:08:32:167Z	SOAPH	SOAP	1	0	View	View
	2	713e2547-5986-45d8-95d0-d413d9b1178b	2017/10/16 16:40:50.857Z	2017/10/16 16:40.51.060Z	PLE .	x12997c001_5010.x12	1	0	View	View
	3	2d38dbd6-116d-4ceb-a49a-9717561e3495	2017/10/16 16:40:50.827Z	2017/10/16 16:40:50.857Z	FLE	x12997c001_4010.x12	1	0	View	View
	4	b25b2463-bcc3-4073-af3b-0b500ecdecaf	2017/10/16 16:40:50:653Z	2017/10/16 16:40:50.827Z	FLE	×12856C001_5010.×12	1	0	View	View
	5	e1bdc00c-70d1-4afd-9a03-5579199a7364	2017/10/16 16:40:50.467Z	2017/10/16 16:40:50.653Z	FLE	X12856C001_4010.x12	1	0	View	View
	6	e23c3d49-e5b2-4891-89e8-3d77158fd1e6	2017/10/16 16:40:50.247Z	2017/10/16 16:40:50.467Z	FLE	X12850C001_5010.x12	1	0	View	View
	7	81%a190-5818-4171-abf3-7a7905d20e02	2017/10/16 16:40:50.060Z	2017/10/16 16:40:50:230Z	FLE	X12850C001_4010.x12	1	0	View	View
	8	58a3b28c-ff18-4f83-93e1-9109fa94d39c	2017/10/16 16:40:49.623Z	2017/10/16 16:40:50.060Z	FLE	X12810C001_5010.x12	1	0	View	View
	9	740c2a31-21c5-4eb2-84c4-c6886dcf34373	2017/10/16 16:40:49.420Z	2017/10/16 16:40:49:623Z	FLE	X12810C001_4010.x12	1	0	View	View
1	10	1cda2be7-d1a0-411d-8e50-f134e2dea6a1	2017/10/16 16:40:49.170Z	2017/10/16 16:41:30.857Z	FILE	Outbound Key Foods 810.data	1	0	View	View
	11	d1d0049b-9084-461e-9f76-4c1c4f635dda	2017/10/16 16:40:48.840Z	2017/10/16 16:42:13:903Z	FLE	Outbound Giant 810.data	•	0	View	View
1	12	65b70fc4-9c7e-46d1-8c61-ad71c06d8fc2	2017/10/16 16:40:48.777Z	2017/10/16 16:40:49.420Z	FLE	Inbound WalMart-Sams 850.data	1	0	View	View
	13	1c21fedc-6735-484e-a094-a6a0710a46d7	2017/10/16 16:40:47.920Z	2017/10/16 16:42:37.873Z	FLE	Inbound CVS 852.data	1	0	View	View
	14	50fa992e-1235-489b-8a4a-8f1f23c36ebe	2017/10/16 16:40:47.920Z	2017/10/16 16:40:49:153Z	FLE	bad Inbound Wall/art-Sams 850.data	4	0	View	View
1	15	2fe67094-52a7-41fa-925e-b3b685910f4c	2017/10/16 16:40:47.920Z	2017/10/16 16:40:48:763Z	FLE	good inbound WalMart-Sams 850 data	1	0	View	View
1	16	bc7b1de5-d21b-4266-89e3-262e92c03e35	2017/10/16 16:40:47.920Z	2017/10/16 16:40:52:153Z	FLE	Inbound Target 850.data	1	0	View	View
	17	45d58ee0-19c5-41a9-93ec-2d8441843591	2017/10/16 16:40:47.920Z	2017/10/16 16:40:48:810Z	FLE	Inbound BJs 820.data	4	0	View	View



Configuring and Using iWay Business Activity Monitor

This section describes how to configure and use iWay Business Activity Monitor.

In this chapter:

- Accessing the iWay Business Activity Monitor Console
- Activity Management Tab
- Administration Tab
- Correlation Management Tab
- iWay Business Activity Monitor Driver Recovery
- Using iWay Business Activity Monitor Commands

Accessing the iWay Business Activity Monitor Console

iWay Business Activity Monitor includes a web console that presents you with a view of all of the available transaction data. The console enables you, among other things, to view and analyze captured transaction data. It also provides a facility to resubmit messages that enables you to repair and reprocess transactions.

Procedure: How to Access the iWay Business Activity Monitor Console

To access the iWay Business Activity Monitor console:

1. Enter the following URL in your web browser:

http://localhost:port/

where:

port

Is the port that is defined in the BAMChannel. The default port is 8087.

The Login dialog box opens	as shown in	the following image.
----------------------------	-------------	----------------------

iWay Business Activity M	Ionitor			
	BAM Login			
	User Name: *	admin		
	Password: *	•••••		
			Login	

- 2. Enter admin as the user name (default) and iway as the password.
- 3. Click Login.

The iWay Business Activity Monitor console opens, as shown in the following image.

iV	TWay Business Activity Monitor About Logout								
Ac	ctivi	y Management Administration Correlation Manageme	ent						
Tr	ransaction Activity Charnel Activity EDI Activity Partner Activity								
14	4	Page 1 of 2 🕨 🕅 🦿 🏙 Search 🎯 Reset 🗟 A	dd to Resubmit Queue 💿 View Resubmit	Queue(1) Group By No Grouping	V 🔺 V 🗸 V 🔶 V 🗘			Displayi	ing Rows 1 -
		Transaction ID	Start Time (UTC)	End Time (UTC)	Protocol	Source Name	Status	TX History	Message
	1	cb0f8b64-e086-4c2f-b472-5025ab20d250	2012/04/03 19:54:12.063Z	2012/04/03 19:54:12.773Z	FLE	order_success_march8.xml	1	View	View
	2	df186297-8591-44b5-8bb6-c9a7b82f967a	2012/03/26 16:06:46.723Z	2012/03/26 16:07:16.820Z	FILE	out.xml	1	View	View
	3	6a579d71-a344-4f2d-af5e-a2c69c2e7d04	2012/03/26 16:05:44.667Z	2012/03/26 16:06:14.833Z	FLE	out.xml	1	View	View
	4	36e1339c-46a4-49ab-aeed-184bda5317c8	2012/03/26 15:27:22.270Z	2012/03/26 15:27:52.530Z	FILE	in2 - Copy.xml	1	View	View
	5	02f48229-a99b-497c-addd-ff8b14c8e89f	2012/03/22 20:05:27.143Z	2012/03/22 20:05:27.193Z	FLE	101010.xml	1	View	View
	6	a19025bd-e469-4992-976a-d5e44731609f	2012/03/22 20:05:23.530Z	2012/03/22 20:05:25.193Z	FLE	order_success_WAR.xml	1	View	View
	7	69e79571-721e-4d31-82a0-b010fa1a190f	2012/03/22 20:05:23.503Z	2012/03/22 20:05:23.527Z	FLE	order_fail_WAR.xml	A	View	View
	8	b283ed19-1717-427a-ad73-86171f131a0b	2012/03/22 20:05:23.237Z	2012/03/22 20:05:23.490Z	FILE	order_bizerror_WAR.xml	4	View	View
	9	767dde7f-a1e4-4030-b326-5fdb412de60d	2012/03/22 19:52:26.720Z	2012/03/22 19:52:26.757Z	FLE	5432111.xml	1	View	View
	10	d6f22640-f5e3-4353-a294-2e2c09eb1866	2012/03/22 19:52:24.020Z	2012/03/22 19:52:24.783Z	FLE	order_success_AAA.xml	1	View	View
	11	94507739-b5#6-458b-a91b-78bf7ea2571c	2012/03/22 19:52:23.817Z	2012/03/22 19:52:24.007Z	FLE	order_fail_march8.xml	A	View	View
P	12	a8bd9add-1973-46ce-84c7-4522928be44e	2012/03/22 14:40:50.427Z	2012/03/22 14:40:50.503Z	FLE	order_success_AAA.xml	A	View	View

Note: The initial view will have no data displayed, unless there were some transactions processed by the system.

The various iWay Business Activity Monitor facilities can be accessed by clicking the corresponding tabs at the top of the pane. The following sections describe the iWay Business Activity Monitor facilities in more detail.

Activity Management Tab

The Activity Management tab allows you to monitor activities at the iSM channel level. In the iWay Business Activity Monitor console, four tabs are provided in the Activity Management facility for configuration purposes:

- Transaction Activity tab
- Channel Activity tab
- EDI Activity tab
- Partner Activity tab

The following image shows the top pane of the iWay Business Activity Monitor console, where the main tabs are located.

iWay Business Activity Monitor						
Activity Management	Administration Correlation Management					
Transaction Activity	Channel Activity EDI Activity Partner Activity					

iWay Business Activity Monitor provides several levels of monitoring. The three major types of monitor categories are:

- **Channel Level Monitoring.** This includes Channel Activity and EDI Activity.
- **Transaction Level Monitoring.** This includes Transaction Activity and Partner Activity.
- **Correlated Transaction Monitoring.** This includes Correlation Management.

Channel Level Monitoring provides a view into the transaction life cycle as it passes through a single channel with a unique Transaction ID. The message is tracked within a single channel with a single Transaction ID. This functionality enables backward compatibility with prior 6.0.1 releases of iWay Business Activity Monitor. It is still useful in isolated implementations where the transaction life cycle is of interest only within a single channel and not across multiple channels. This is true for monitoring EDI-based transactions where the entire transaction is processed by a single channel or for transactions which carry single partner information for each channel and can be monitored through Partner Activity.

Transaction Level Monitoring provides an enhanced view into the transaction life cycle as it passes through multiple channels or multiple servers. This is the recommended method of monitoring transactions for most applications. It is important to note that with this enhanced functionality, there is the additional application responsibility to incorporate Transaction ID management into its process. For example, if you have multiple channels through which a transaction is propagated and they are linked by an internal iWay component, such as Internal Queue mechanism, there is no additional work that needs to be performed by an application. The Transaction ID will remain the same through the message life cycle even as it is processed by multiple internal channels. However, if the link between a multi-channel architecture is externalized, it is the responsibility of the application to incorporate Marshaling services to manage and propagate the message across multiple channels or even servers maintaining its Transaction ID. This provides a unified view into its entire message life cycle united by a single Transaction ID. For more information about Marshaling services, see the *TIBCO iWay*[®] Service Manager Component Reference Guide.

Correlated Transaction Monitoring uses correlation services to link long-running transactions with different Transaction IDs into a single view. An example would be an invoice that is sent for processing, which can take several hours. In this case, the sending of the invoice, which has a unique Transaction ID will be linked with Payment processing, which also has its own Transaction ID through a unified and propagated Correlation ID. This implementation is most applicable when used as an addition to Transaction level monitoring. For more information about correlation services, see the *TIBCO iWay*[®] Service Manager Component Reference Guide.

The following sections provide more information on each available tab in the Activity Management facility.

Transaction Activity Tab

Prior releases of the iWay Business Activity Monitor console relied on a channel-based view of the environment. This allowed operational people to monitor channels and deal with issues from a channel perspective.

However, it has been determined that a transaction-based view has greater business and operational benefits. The transaction screen allows users to watch a transaction through its life within the iWay service bus.

Note that the Transaction History and Message views found in the Transaction Activity tab are the same as in the Channel Activity tab.

Most implementations involve transactions spanning multiple channels. Tracking this activity from a channel perspective forces the user to have to understand the application infrastructure (for example, what channels relate to each other and why). The transaction channel removes the need to understand the application architecture and allows users to logically follow the life cycle of the transaction in realtime.

The following image shows an architecture that uses three channels to process a transaction.





The Channel Activity view gives you a view of channel activity, as shown in the following image.

The iWay Business Activity Monitor console provides the option to define which channel to view, as shown in the following image.

iWay Business	Activity Monitor							_		
Activity Hanagemen	Activity Hanagement Administration Correlation Hanagement									
Channel Activity	Aaneel Activity EDI Activity Partner Activity Transaction Activity									
	Choose Protocol 💌 Configuration Name	Source Name Search By St	art Time 💌 2011/11/21 📑 19	21 2011/110	21 🖪 21	21				
ROUTE_SS	Transaction D Document D	Message Type	Partner To Partner From							
Out_Channel				100						
Channel2) 귀 े 的Search GReset	Add to Resubmit Queue O View Res	ubmit Queue(I) Group By No Grouping	~						
Channel1		Configuration Name	Channel Name		Protocol	Start Time (UTC) ~	End Time (UTC)	Source Name		
USD_Channel	4387-81b6-77cbf1e3925f	base	Transin		FLE	2011/11/21 21:21:21:9002	2015/15/21 21:21:21:8202	crap_0005.xml		
1 2 314V/5/2-043/	4615-a0c3-7d5963307611	base	Transin		FLE	2011/11/21 21:19:31.897Z	2011/11/21 21:19:31.910Z	sampleDOC_W		
3 294d4c66-de2c	-4019-8613-81a354078951	base	Transin		FILE	2011/11/21 21:19:31.8062	2011/11/21 21:19:31.8902	sampleDOC_No		

Transaction View

The transaction view allows transactions to be monitored as they pass through multiple channels, as shown in the following image.



The transaction view provides a quick way to see the overall situation. This allows you to easily diagnose a problem and trace it back to the source of the problem, as shown in the following image.

iW	Way Business Activity Monitor									
Act	ivity Management Administration Correlation Mana	gement								
Tra	Transaction Activity Channel Activity EDI Activity Partner Activity									
Tr	Transaction D FLF Source Name Search By Start Time v 2012/03/01 To 15 22 2012/04/18 To 16 22									
De	po									
14	🖣 Page 1 of 2 🕨 🔰 🤯 🛛 🏙 Search 🔯 Reset	Add to Resubmit Queue 💿 View	Resubmit Queue(2) Group By No	Grouping 🔽 🖉 🖌						
	Transaction ID	Start Time (UTC)	End Time (UTC)	Protocol	Source Name	Status				
	1 cb0f8b64-e086-4c2f-b472-5025ab20d250	2012/04/03 19:54:12.063Z	2012/04/03 19:54:12.773Z	FILE	order_success_march8.xml	1				
	2 df186297-8591-44b5-8bb6-c9a7b82f967a	2012/03/26 16:06:46.723Z	2012/03/26 16:07:16.820Z	FILE	out.xml	1				
	3 6a579d71-a344-4f2d-af5e-a2c69c2e7d04	2012/03/26 16:05:44.667Z	2012/03/26 16:06:14.833Z	FILE	out.xml	1				
	4 36e1339c-46a4-49ab-aeed-f84bda53f7c8	2012/03/26 15:27:22.270Z	2012/03/26 15:27:52.530Z	FILE	in2 - Copy.xml	\checkmark				
	5 02f48229-a99b-497c-addd-ff8b14c8e89f	2012/03/22 20:05:27.143Z	2012/03/22 20:05:27.193Z	FILE	101010.xml	\checkmark				
	6 a19025bd-e469-4992-976a-d5e44731609f	2012/03/22 20:05:23.530Z	2012/03/22 20:05:25.193Z	FILE	order_success_WAR.xml	\checkmark				
	7 69e79571-721e-4d31-82a0-b010fa1a190f	2012/03/22 20:05:23.503Z	2012/03/22 20:05:23.527Z	FILE	order_fail_WAR.xml	A				
	8 767dde7f-a1e4-4030-b326-5fdb412de60d	2012/03/22 19:52:26.720Z	2012/03/22 19:52:26.757Z	FILE	5432111.xml	1				
	9 d6f22640-f5e3-4353-a294-2e2c09eb1866	2012/03/22 19:52:24.020Z	2012/03/22 19:52:24.783Z	FILE	order_success_AAA.xml	\checkmark				
1	0 94507739-b5f6-458b-a91b-78bf7ea2571c	2012/03/22 19:52:23.817Z	2012/03/22 19:52:24.007Z	FILE	order_fail_march8.xml	A				
1	1 a8bd9add-f973-46ce-84c7-4522928be44e	2012/03/22 14:40:50.427Z	2012/03/22 14:40:50.503Z	FILE	order_success_AAA.xml	A				
1	2 ed759f0e-3090-4529-8d30-e20930a0fa54	2012/03/22 14:14:58.507Z	2012/03/22 14:14:58.583Z	FILE	54321.xml	1				

The following table lists and describes all of the columns that are available in the Channel Activity tab of the Activity Management facility.

Column Name	Description
Transaction ID	Unique ID that is automatically generated by the processing channel.
Start Time (UTC)	Start time (shown in GMT) at which iWay Business Activity Monitor logged the start time of the message.
End Time (UTC)	End time (shown in GMT) at which iWay Business Activity Monitor logged the end time of the message.
Protocol	Protocol on which transactions have been received and processed.
Source Name	Name of the transaction, depending on the protocol. For example, File-based and FTP-based protocols generate the name of the file read. The Queuing (MQ) protocol generates the name based on the header values. This value can also be set using the bam_sourcename register.

Column Name	Description
Status	Overall transaction status, that is shown as a flag.
	 Success icon indicates that the message execution has executed successfully.
	 Warning icon indicates that a business level warning has generated.
	 Error icon indicates that the message execution has failed.
	 In Progress icon indicates that the message execution status is currently in progress.
	 Resubmit icon indicates the resubmission status (for example, if the message has been resubmitted after a failure).
TX History	Shows the transaction history and transaction path of the given transaction.
Message	Hyperlink opens the message with which the transaction was started.

You can also customize the view and clear or select any column for viewing. Some of the additional non-default columns are shown in the following table.

Column Name	Description
Duration	Total time it took to complete the execution process.
Resubmit Count	Count of the number of times the transaction was resubmitted.
Record Key	Internal reference for this specific record in the iWay Business Activity Monitor table. This is used for debugging or specific data retrieval purposes.

Note: Any user-defined register columns can also be added.

Transaction History View

To view a detailed transaction history of the event message, click the *View* hyperlink under the TX History column, as shown in the following image.



The information displayed by the TX History view depends on the iWay Business Activity Monitor options that are configured.

- □ The Startentry and Endentry options (success/fail) are always displayed.
- Based on the Emit option configuration, the Emit messages may or may not be displayed.
- □ Based on the Want Events option configuration, the internal steps of the transaction (such as every single step of the process) may or may not be displayed.
- □ Based on whether the application uses the specialized Log Message services, the Business Error events and Check Point events may or may not be displayed.

Note: The application design process determines the account performance requirements and detailed view requirements. For example, increased logging that is performed for each transaction will result in a loss of performance. It is recommended to disable the Want Events option to maximize performance and to utilize specialized Log Message services to log transaction check points at needed locations. For more information about Log Message services, see the *TIBCO iWay*[®] Service Manager Component Reference Guide.

Transaction History							X
Channel Name	Protocol	Event Message	E	St	Time Stamp	ТΧ	
Demo.Reciever.Channel		Pflow performing is Order ID Valid? from Set Depo Code on	131	1	2012/05/30 1	Vi	^
Demo.Reciever.Channel		Pflow performing Open Correlation ID from Is Order ID Valid	131	\checkmark	2012/05/30 1	Vi	
Demo.Reciever.Channel		Pflow performing Is Order Quantity Valid? from Open Correl	131	\checkmark	2012/05/30 1	Vi	
Demo.Reciever.Channel		Pflow performing Send for Processing from Is Order Quanti	131	\checkmark	2012/05/30 1	Vi	
Demo.Reciever.Channel	FILE	EmiEntry	181	\checkmark	2012/05/30 1	Vi	m
Demo.Processing.Channel		EnqueueEntry	100	\checkmark	2012/05/30 1	Vi	
Demo.Reciever.Channel		Pflow performing End from Send for Processing on edge su	131	\checkmark	2012/05/30 1	Vi	
Demo.Reciever.Channel	FILE	EmitEntry	181	\checkmark	2012/05/30 1	Vi	
Demo.Reciever.Channel		SUCCESS	191	\checkmark	2012/05/30 1	Vi	
Demo.Processing.Channel	Internal	StartEntry	101	\checkmark	2012/05/30 1	Vi	Е
Demo.Processing.Channel		Parse begins	131	\checkmark	2012/05/30 1	Vi	
Demo.Processing.Channel		Parse ends	132	\checkmark	2012/05/30 1	Vi	
Demo.Processing.Channel		Pflow performing Start from subflowStart on edge success	131	\checkmark	2012/05/30 1	Vi	
Demo.Processing.Channel		Pflow performing Process Transaction from Set Depo Code	131	\checkmark	2012/05/30 1	Vi	
Demo.Processing.Channel		Pflow performing Set Depo Code from Start on edge \$compl	131	\checkmark	2012/05/30 1	Vi	
Demo.Processing.Channel		Pflow performing Update Correlation ID from Process Trans	131	\checkmark	2012/05/30 1	Vi	
Demo.Processing.Channel	Internal	EmitEntry	181	1	2012/05/30 1	Vi	+

An example of the Transaction History view is shown in the following image.

Notice that the transaction has maintained its transaction ID and was executed by multiple channels. It was first received by Demo.Receiver.Channel and then sent for processing to Demo.Processing.Channel. This is one of the key features, which enables a single view into the transaction life cycle as it spans across multiple channels, or even servers, as long as it maintains its transaction ID.

For a more detailed perspective, clicking *View* under the TX Context column enables the view of the transaction contexts (SREGs) at a given step of the process. This view enables the user to identify what has happened to the transaction and view the attributes, as shown in the following image.

Transaction Context			
SREG Scope	SREG Key	SREG Value	
CFG	ibse-port	9000	^
CFG	ipconfig	172.30.173.155	
DOC	pdm	1	
DOC	basename	input	
DOC	tid	cba5f5a1-f36f-4742-a614-16bcc1af1c47	
DOC	msgsize	13	
DOC	parent	C:\\input\\testextension	
DOC	extension	txt	
DOC	source	C:\\input\\testextension\\input.txt	
DOC	chanseq	1	
DOC	filename	input.txt	
DOC	ExtensionTest.Chan	78883c562346484bbe47cb5f0ebe2321	
SYS	iwayworkdir	c:/iway613/config/base	
SYS	iwayconfig	base	
SYS	console-master-port	9999	
SYS	iway.pid	7568	
SYS	name	ExtensionTest.Channel	
SYS	protocol	FILE	
SYS	engine	base	
SYS	iway.serverip	172.30.173.155	
SYS	iwayversion	6.1.3	
SYS	iway.serverhost	gerberwin7	
SYS	iway.serverfullhost	gerberwin7.ibi.com	
eve	iwayhama	or finance 127	$\mathbf{\mathbf{v}}$
Channel Activity Tab

The Channel Activity tab is used to display activities that are occurring within a channel. It provides the channel name, when the activity happened, and when the activity ended. Status information (completed, failed, active) is also provided. You can also view the specific message with which the transaction was executed and the transaction history of that particular transaction. In a multi-channel environment where a single transaction passes through multiple channels, an entry line for each channel executed for the given transaction will appear in the Channel Activity. Each entry line contains its own Transaction ID auto-generated by the processing channel. To track transactions across multiple channels or iSM servers or configurations, it is recommended to use the Correlation view for long running transactions or the Transaction Activity view for short running transactions in which case the same Transaction ID is preserved across multiple channels and servers through an internal mechanism or explicit marshaling of the message.

iWay Business Activity Monitor							
Activity Management Administration Correlation Management							
Channel Activity EDI Activity Partner Activity							
Choose Channel Choose Protocol	Search By Time	Date From 🖪 Hr Min Date To	🖪 Hr Min				
Transaction Status	Source Name						
14 4 Page 1 of 2 🕨 🔰 😂 🛛 🏙 Searc	ch 🛛 🎯 Reset 🛛 Group By 🛛 No Gro	uping 💌					
Transaction ID	Configuration Name	Channel Name	Protocol Start Time (I	JTC) - End Time (UTC)	Source Name		
W.source.channel.1.20101011161153690.0	Standalone_Config	source.channel	2↓ Sort Ascending	6:11:53.690 2010/10/11 16:11:54	4.59E depot2_batch_big.xml		
W.source.channel.1.20101011051601434.3	Standalone_Config	source.channel	Z↓ Sort Descending)5:16:01.434 2010/10/11 05:16:01	1.622 log		
W.source.channel.1.20101011051601059.2	Standalone_Config	source.channel	Columns b	15-10-01 055 2010 HOMO HA 05-10-91	1.387 fail		
W.source.channel.1.20101011051600543.1	Standalone_Config	source.channel	Columns P	V Iransaction ID 10	0.825 B2BIT.GUESS.DATA.TXT		
W.source.channel.1.20101011051600324.0	Standalone_Config	source.channel	FILE 2010/10/11	Configuration Name	0.526 biz		
W.source.channel.1.20101011044544278.5	Standalone_Config	source.channel	FILE 2010/10/11	Channel Name	8.82E log		
W.source.channel.1.20101011044544138.4	Standalone_Config	source.channel	FILE 2010/10/11	Protocol 14	4.231 B2BIT.GUESS.DATA.TXT		
W.source.channel.1.20101011041024855.3	Standalone_Config	source.channel	FILE 2010/10/11	Start Time (UTC)	5.011 log		
W.source.channel.1.20101011041024495.2	Standalone_Config	source.channel	FILE 2010/10/11	End Time (UTC)	4.80E fail		
W.source.channel.1.20101011041023948.1	Standalone_Config	source.channel	FILE 2010/10/11	Duration 24	4.23C B2BIT.GUESS.DATA.TXT		
W.source.channel.1.20101011041023745.0	Standalone_Config	source.channel	FILE 2010/10/11	Source Name	3.932 biz		
W.source.channel.1.20101011030836229.33	Standalone_Config	source.channel	FILE 2010/10/11	Message Size (Bytes)	6.339 biz		
W.source.channel.1.20101011025455760.32	Standalone_Config	source.channel	FILE 2010/10/11	Status 55	5.854 log		
W.source.channel.1.20101011024659444.31	Standalone_Config	source.channel	FILE 2010/10/11	Message 59	9.565 log		
W.source.channel.1.20101011024659116.30	Standalone_Config	source.channel	FILE 2010/10/11	TX History	9.397 fail		

The following table lists and describes all the columns that are available in the Channel Activity tab of the Activity Management facility.

Column Name	Description
Transaction ID	Unique ID that is auto-generated by the processing channel.
Configuration Name	Name of the configuration where the transaction has been processed. In a multi-node deployment, it can be used to identify multiple client configurations.

Column Name	Description
Channel Name	Name of the processing channel on which the message is being executed.
Protocol	Protocol on which transactions have been received and processed.
Start Time (UTC)	Start time is shown in GMT at which iWay Business Activity Monitor logged the start time of the message.
End Time (UTC)	End time is shown in GMT at which iWay Business Activity Monitor logged the end time of the message.
Source Name	Name of the transaction depending on the protocol. For example, File-based and FTP-based protocols generate the name of the file read. The Queuing (MQ) protocol generates the name based on the header values. This value can also be set using the bam_sourcename register.

Column Name	Description
Status	The overall transaction status that is shown as an icon.
	 Success icon indicates that the message execution has executed successfully.
	 Warning icon indicates that a business level warning has generated.
	 Error icon indicates that the message execution has failed.
	 In Progress icon indicates that the message execution status is currently in progress.
	 Resubmit icon indicates the resubmission status (for example, if the message has been resubmitted after a failure).
TX History	Shows the transaction history and transaction path of the given transaction.
Message	Hyperlink opens the message with which the transaction was started.

You can also customize the view and clear or select any column for viewing. Some of the additional non-default columns are shown in the following table.

Column Name	Description
Duration	Total time it took to complete the execution process.
Message Size	Size of the processed execution.
Resubmit Key	Internal reference key for the record that has been resubmitted.

Note: Any user-defined register columns can also be added.

Message View

To view the input message received by the channel for processing, click the *View* hyperlink under the Message column, as shown in the following image.



Transaction Data X File Name: B2BIT.GUESS.DATA.TXT Channel: * source.channel Protocol:* FILE TX ID:* W.source.channel.1.20101011051600543.1 Raw Message * TX Context* <document> <ediMessage errors="0"> <con> <clientRef>114593</clientRef> <specialDelInstr>47507804/0000820652300496515/114593/PER RIC. 8 COLLI</specialDelInstr> <goodsValue/> <localPickupDt/> <deptActionDt/> <numPieces>00001</numPieces> <toConGrossWt>12.550</toConGrossWt> <totConVol>0.000 </totConVol> <InvoiceUnif>157560</InvoiceUnif> <offerNr>00010</offerNr> <invoiceDiv>VARIE</invoiceDiv> <accountRef>03397464 </accountRef> <sourceName>B2BIT.GUESS.DATA.TXT</sourceName> <outboundTradingPtnr>Depot_000112</outboundTradingPtnr> </con> <ReceiverAddress> <addressLine1>VIA ISONZO 55</addressLine1> <townName>CASALECCHIO</townName> <postCode>40033</postCode> <country>Italy</country> <contactNm>NIKE IT</contactNm> <telNr1>UNKN</telNr1> </ReceiverAddress> Add to Resubmit Queue

The Transaction Data dialog box opens, as shown in the following image.

The following table lists and describes the available fields and tabs in the Transaction Data dialog box.

Field/Tab	Description
File Name	Name of the file received for processing (availability depends on protocol).

Field/Tab	Description
Channel	Associated channel for the message.
Protocol	Protocol on which the message is received.
TX ID	Transaction ID for the message.
Raw Message tab	Displays the actual raw data of the message.
TX Context tab	Provides information regarding the Special Registers (SREGs) associated with the processed messages. Based on your permissions, all field values can be edited and resubmitted. For more information, see <i>Message Resubmission</i> on page 52.

Transaction History View

To view a detailed transaction history of the event message, click the *View* hyperlink under the TX History column, as shown in the following image.



The information displayed by the TX History view depends on the iWay Business Activity Monitor options that are configured.

- □ The Startentry and Endentry options (success/fail) are always displayed.
- Based on the Emit option configuration, the Emit messages may or may not be displayed.
- □ Based on the Want Events option configuration, the internal steps of the transaction (such as every single step of the process) may or may not be displayed.
- □ Based on whether the application uses the specialized Log Message services, the Business Error events and Check Point events may or may not be displayed.

Note: The application design process determines the account performance requirements and detailed view requirements. For example, increased logging that is performed for each transaction will result in a loss of performance. It is recommended to disable the Want Events option to maximize performance and to utilize specialized Log Message services to log transaction check points at needed locations. For more information about Log Message services, see the *TIBCO iWay*[®] Service Manager Component Reference Guide.

In the example that is shown, all of the events are enabled to demonstrate a full cycle of the transaction.

Transaction History Protocol Event Message Channel Name Event... Status Time Stamp TX Con.. ExtensionTest.Channel Com.ibi.agents.XDMoveAgent 131 9 2012/04/20 16:22:16.477Z View ExtensionTest.Channel FILE StartEntry 101 7 2012/04/20 16:22:16.477Z View ExtensionTest.Channel Before emitting 131 9 2012/04/20 16:22:16 480Z View ExtensionTest.Channel Com.ibi.agents.XDMoveAgent 132 7 2012/04/20 16:22:16.480Z View ExtensionTest.Channel FILE EmitEntry 4 2012/04/20 16:22:16.487Z View 181 ExtensionTest Channel After emitting 132 9 2012/04/20 16:22:16.493Z View ExtensionTest.Channel SUCCESS 191 2012/04/20 16:22:16.493Z View 4

The following image shows the steps and transactions that occurred in the process flow.

After the start node, the Source Name node has been executed, followed by the Decision Test node to test, followed by a call to IWFAIL, indicating an error. It is up to the application to put as much detailed information into the node and its message to enable you to track the information and identify each step of the process. You can immediately see what step the transaction failed to process.

For a more detailed perspective, clicking *View* under the TX Context column enables the view of the transaction contexts (SREGs) at a given step of the process. This view enables the user to identify what has happened to the transaction and view the attributes, as shown in the following image.

Transaction Co	ontext		×
SREG Scope	SREG Key	SREG Value	
CFG	ibse-port	9000	^
CFG	ipconfig	172.30.173.155	
DOC	pdm	1	
DOC	basename	input	
DOC	tid	cba5f5a1-f36f-4742-a614-16bcc1af1c47	
DOC	msgsize	13	
DOC	parent	C:\\input\\testextension	
DOC	extension	txt	
DOC	source	C:\\input\\testextension\\input.txt	
DOC	chanseq	1	
DOC	filename	input.txt	
DOC	ExtensionTest.Chan	78883c562346484bbe47cb5f0ebe2321	
SYS	iwayworkdir	c:/iway613/config/base	
SYS	iwayconfig	base	
SYS	console-master-port	9999	
SYS	iway.pid	7568	
SYS	name	ExtensionTest.Channel	
SYS	protocol	FILE	
SYS	engine	base	
SYS	iway.serverip	172.30.173.155	
SYS	iwayversion	6.1.3	
SYS	iway.serverhost	gerberwin7	
SYS	iway.serverfullhost	gerberwin7.ibi.com	
eve	iwayhama	or finance (212)	$\mathbf{\mathbf{x}}$

EDI Activity Tab

The EDI Activity tab is used to display EDI activities. These activities are automatically identified based on the configured Ebix for the specific channel in the iSM Administration Console. This view is populated only if there is a valid EDI-based channel running on the system. The transaction details are similar to channel activity and are based per transaction.

For EDI-specific transactions, there are two types of statuses: an overall transaction status as it is processed, and an acknowledgment status indicating the state of the acknowledgment for the transaction. Note that the transaction can be successfully processed even though there are warnings or errors in the acknowledgment document. Properly handled errors in the application channel generates a successful state for the transaction as the execution has been able to complete all the steps in the application.

Activity Management Administration Correlation Management							
Channel Activity ED	I Activity Partner Act	wity					
Choose Channel	✓ Docume	nt Type Searc	h By Entry Time 👻	Date From	🕈 🛛 Min 🖉 Date To 🔀	Hr 🛛 Min 🔹 Oroup Result 💌	
Message Status	🕜 🏙 Search 🏼 🔒	Reset					
EDI Type	EDI Version	Ack Status	EDI Transaction ID	Configuration Name	Channel Name	Start Time	End Time
X12	004010	9	850	Standalone_Config	X12ToXini.Channel	2010/02/04 17:45:08.940Z	2010/02/04 17:45:21.880Z
X12	004010	9	850	Standalone_Config	X12ToXini.Channel	2010/02/04 17:39:27.281Z	2010/02/04 17:39:43:513Z
14 4 Page = of 1 > >1 2							

Column Name	Description
EDI Туре	Displays the type of EDI document that is received (for example, X12).
EDI Version	Displays the version of the EDI document that is received (for example, 4010).
Ack Status	 The acknowledgment status is shown as a flag. A green flag indicates that the message is accepted. A red flag indicates that the message is rejected.
EDI Transaction ID	Displays the EDI transaction ID of the EDI document that is received (for example, 850).
Configuration Name	Name of the iWay Business Activity Monitor configuration that was provided during the multi-node configuration.

The following table lists and describes all the columns that are available in the EDI Activity tab of the Activity Management facility.

Column Name	Description
Channel Name	Name of the channel on which the message is being executed.
Start Time	Start time is shown in GMT at which iWay Business Activity Monitor logged the start time of the message.
End Time	End time is shown in GMT at which iWay Business Activity Monitor logged the end time of the message.
Status	The overall message status is shown as a flag.
	A green flag indicates that the message execution has executed successfully.
	A red flag indicates that the message execution has failed.
	A yellow flag indicates a business level warning has generated.
	A blue flag indicates that the message execution status cannot be determined.
Message	Hyperlink opens the message with which the transaction was started.
TX History	Shows the transaction history and transaction path and steps of the given transaction.

Partner Activity Tab

The Partner Activity tab is used to display the activity that is occurring for partners. This is useful for business users to know how many transactions were executed for a particular partner. Activities are captured only if the bam_tpm_partnerid and bam_tpm_partnername Special Registers (SREGs) are set. If these SREGs are not set, then the Partner Activity tab will be empty. The values of these special registers are set in the process flow dealing with the transaction, either based on the information available from the incoming document or based on the TIBCO iWay[®] Trading Partner Manager look up. The Partner Activity enables you to group and organize transactions for any given partner and filter them based on various criteria.

Note: In the current release, the monitoring of partner information can also be achieved in the Transaction Activity tab by utilizing monitoring of the user-defined registers for partner information.

The following image shows the contents of the Partner Activity tab displayed in the iWay Business Activity Monitor console.

iWAY Business Activity Monitor 🔅	
Way Business Activity Monitor	
Activity Management Administration Correlation Management	
Channel Activity EDI Activity Partner Activity	
Thoose Channel 🛪 Choose Protocol 🗴 Search By Time 🛪 Date From 🖪 Hr Min Date To 🖪 Hr Min	
ransaction Status 🗸 Transaction ID Source Name Partner Name 🗸	
🕴 🖣 Page 1 of 1 👂 🕅 📚 earch 📪 Reset Group By No Grouping 💌	
Yransaction ID Partner Name Start Time (UTC) End Time (UTC) Source Name	Status Me
shange_source.Channel.FLE.W.change_source.Channel.1_2010102517/ Partner Not Found new 2010/1025 17:08:53.904Z 👌 Sort Ascending 0Z depot1_jog.xml	💐 Vi
shange_source.Channel-FILE-Wichange_source.Channel.1_2010102517/ Partner Not Found 2010/10/2517:06:39.616Z 🕺 I Sort Descending 8Z log	eij Vi
shange_source.Channel-FLE-W.change_source.Channel.1_2010102321- Depot_0001 2010/10/23 21:41:52.6402	<i>iiiiii ii</i> 🖓 🗸 🖓
shange_source_Channel-FLE-W.change_source_Channel.1_2010102321- Depot_0001 2010/10/23 21:41:50.625Z	🥰 Vi
:hange_source.Channel-FLE-W.change_source.Channel.1_2010102321: Depot_0001 2010/10/23 21:41:50.546Z 2010/10/23 21:41:50.546Z	🗳 Vi
shange_source.Channel.FLE-W.change_source.Channel.1_2010102321: Depot_0001 2010/10/23 21:41:50.375Z 2010/10/23 21:41:50.375Z	🥰 Vi
shange_source.Channel.FLE-W.change_source.Channel.1_2010102321-Depot_0001 2010/10/23 21:41:43.437Z 2010/10/23 21:41:50.3	Vi
banne source Channel-FLE-W channe source Channel 1 2010/102221: Dept 1001 2010/1022 21:21:21:1147 2010/1022 21:21:21:21	
Hanne Source Channel-FIE FW channel source Channel 1 2010/02221 Deput 0001 2010/0222 121:20 9747 2010/022 21:21:20 9747	
Denne source (Denne) E E SWicksone source (Denne) 1 2010/02221: David 0001 2010/02221: 2016072 21: 201	
Tange_Source Annumer-r_c=vx/range_Source Annumer-r_2010102221.2.1.93.032	4 VI
hange_source_channel+LE+W.change_source_channel,1_2010102221: Depot_0001 2010/10/22 21:21:18:1782 2010/10/22 21:21:19:17	
(i) Status	
2 Police	
2 Thebau	

The following table lists and describes all the columns that are available in the Partner Activity tab of the Activity Management facility.

Column Name	Description
Transaction ID	Unique ID auto-generated by the processing channel.
Partner Name	Name of the partner for whom the transaction is being processed.
Start Time (UTC)	Start time is shown in GMT at which iWay Business Activity Monitor logged the start time of the message.
End Time (UTC)	End time is shown in GMT at which iWay Business Activity Monitor logged the end time of the message.

Column Name	Description			
Source Name	Name of the transaction depending on the protocol. For example, File and FTP protocols generate the name of the file read. The Queuing (MQ) protocol generates the name based on the header values. This value can also be set using the bam_sourcename register.			
Status	The message status is shown as a flag.			
	A green flag indicates that the message execution has executed successfully.			
	A yellow flag indicated a business level warning has generated.			
	A red flag indicates that the message execution has failed.			
	A blue flag indicates that the message execution status cannot be determined.			
Message	Hyperlink opens the message with which the transaction was started.			
TX History	Shows the transaction history and transaction path and steps of the given transaction.			

You can also customize the view and clear or select any column for viewing. Some of the additional non-default columns are shown in the following table.

Column Name	Description
Duration	Total time it took to complete the transaction.
Message Size	Size of the processed transaction.
Configuration Name	Name of the configuration where the transaction has been processed. In a multi-node deployment, the name can be used to identify multiple client configurations.
Channel Name	Name of the processing channel.

Column Name	Description
Protocol	Protocol on which a transaction has been received and processed.

Messages View

To view the partner message, click the *View* hyperlink under the Message column, as shown in the following image.



The Transaction Data dialog box opens, as shown in the following image.

Transaction Data		X
File Name:	B2BIT.GUESS.DATA.TXT	
Channel: *	source.channel	
Protocol: *	FILE	
TX ID:*	W.source.channel.1.20101011051600543.1	
Raw Message *	TX Context *	
<document> <edimessage err<br=""><con> <clientref> <specialdell COLLI<goodsvalu <localpickup <deptaction <ducalpickup <deptaction <ducalpickup <deptaction <ducalpickup <deptaction <numpieces <tocongros <tocongros <tocongros <tocongros <tocongros <tocongros <tocongros <tocongros <tocongros <tocongros <tocongros <tocongros <sourcel <outbound </outbound </sourcel </tocongros </tocongros </tocongros </tocongros </tocongros </tocongros </tocongros </tocongros </tocongros </tocongros </tocongros </tocongros </numpieces </deptaction </ducalpickup </deptaction </ducalpickup </deptaction </ducalpickup </deptaction </localpickup </goodsvalu </specialdell </clientref></con> <receiveradd <addresslin <townname <postcodes <country>I <contactnin <telnr1>UN <th>rors="0"> 114593 nstr>47507804/0000820652300496515/114593/PER RIC. 8 tr> e/> Ot/> not/> >00001 sWt>12.550 >0.000 >0.000 <th></th></th></telnr1></contactnin </country></postcodes </townname </addresslin </receiveradd </edimessage></document>	rors="0"> 114593 nstr>47507804/0000820652300496515/114593/PER RIC. 8 tr> e/> Ot/> not/> >00001 sWt>12.550 >0.000 <th></th>	
	Add to Resubmit Queue	

The following table lists and describes the available fields and tabs in the Transaction Data dialog box.

Field/Tab	Description
File Name	Name of the file received for processing (availability depends on protocol).

Field/Tab	Description		
Channel	Associated channel for the message.		
Protocol	Protocol on which the message is received.		
TX ID	Transaction ID for the message.		
Raw Message tab	Displays the actual raw data of the message.		
TX Context tab	Provides information regarding the Special Registers (SREGs) associated with the processed messages. Based on your permissions, all field values can be edited and resubmitted. For more information, see <i>Message Resubmission</i> on page 52.		

Transaction History View

Clicking the *View* hyperlink under the TX History column enables the detailed view of the transaction history. It displays every step logged for the executed transaction. This helps determine the possible reason for a transaction failure.

For example, in the following image, you can see the transaction steps of the process flow. After the start node, the Source Name node has been executed, followed by the Decision Test node to test, followed by a call to IWFAIL, indicating an error. It is up to the application to put as much detailed information into the node and its message to enable you to track down the information and identify each step of the process. You can then see at what step the transaction failed to process.

Transaction History						
Channel Name	Protocol	Event Message	Event	Status	Time Stamp	TX Con
ExtensionTest.Channel		Com.ibi.agents.XDMoveAgent	131	9	2012/04/20 16:22:16.477Z	View
ExtensionTest.Channel	FILE	StartEntry	101	9	2012/04/20 16:22:16.477Z	View
ExtensionTest.Channel		Before emitting	131	9	2012/04/20 16:22:16.480Z	View
ExtensionTest.Channel		Com.ibi.agents.XDMoveAgent	132	9	2012/04/20 16:22:16.480Z	View
ExtensionTest.Channel	FILE	EmitEntry	181	9	2012/04/20 16:22:16.487Z	View
ExtensionTest.Channel		After emitting	132	9	2012/04/20 16:22:16.493Z	View
ExtensionTest.Channel		SUCCESS	191	9	2012/04/20 16:22:16.493Z	View

For more information, click *View* under the TX Context column. This enables the view of the transaction contexts (SREGs) at a given step of the process. This view provides more details and enables you to identify what happened to the transaction and view the attributes, as shown in the following image.

Transaction Co	ontext		×
SREG Scope	SREG Key	SREG Value	
CFG	ibse-port	9000	^
CFG	ipconfig	172.30.173.155	
DOC	pdm	1	
DOC	basename	input	
DOC	tid	cba5f5a1-f36f-4742-a614-16bcc1af1c47	
DOC	msgsize	13	
DOC	parent	C:\\input\\testextension	
DOC	extension	txt	
DOC	source	C:\\input\\testextension\\input.txt	
DOC	chanseq	1	
DOC	filename	input.txt	
DOC	ExtensionTest.Chan	78883c562346484bbe47cb5f0ebe2321	≡
SYS	iwayworkdir	c:/iway613/config/base	
SYS	iwayconfig	base	
SYS	console-master-port	9999	
SYS	iway.pid	7568	
SYS	name	ExtensionTest.Channel	
SYS	protocol	FILE	
SYS	engine	base	
SYS	iway.serverip	172.30.173.155	
SYS	iwayversion	6.1.3	
SYS	iway.serverhost	gerberwin7	
SYS	iway.serverfullhost	gerberwin7.ibi.com	
eve	iwayhama	o:liveov@12/	$\mathbf{\mathbf{x}}$

Message Resubmission

Message resubmission allows a message to be retrieved for a particular transaction. It returns the message to be retrieved for a transaction with which it was run.

The View hyperlink under Message in the Activity Management section enables you to view the specific data of the message used for the transaction and resubmit the message either with changes or as is prior to resubmission. The View of the message provides default parameters, which you can modify to assist in the resubmitting.

Click *View* in the Message column for a corresponding transaction, as shown in the following image.

Message 🔻
View

The Transaction Data dialog box opens, with the message that the selected transaction used to execute, as shown in the following image.



You can provide a file name to save the document and also change the document content as displayed. Click *Resubmit Message* once you are ready.

The document will be made available under the following directory:

iway_home\config\current_config\bam\resubmit\channel_name\file_name\TX_ID

where:

iway_home

Is the directory where iSM is installed.

current_config

Is the configuration where the server is running.

channel_name

Is the channel name provided in the iWay Business Activity Monitor Resubmit window. This enables you to resubmit the documents to a specified directory. The directory is autocreated if it does not exist.

file_name

Is the file name provided in the iWay Business Activity Monitor Resubmit window. This enables you to rename the file for resubmission or keep the default, which is the source name for the transaction.

TX_ID

TX ID provided in the iWay Business Activity Monitor Resubmit window. This should be left as the default value as it enables you to look up further information from the iWay Business Activity Monitor database for the specific Transaction ID. However, the value can be changed to anything else as mentioned in the application requirements.

The document is now available (for example, to run in a process flow). Additional logic to use the document must be designed accordingly, but in most cases, the logic can involve moving the document from this directory to another.

Once the transaction is stored in the resubmit directory, the application will implement a resubmit channel to process the transaction. In most cases, the resubmit channel should validate that the transaction is allowed to be resubmitted and to which channel it should be routed to based on the transaction information.

Resubmit Facility Overview

Resubmitting a transaction is an application-supported service. iWay Business Activity Monitor provides tools to assist in developing a resubmission facility, but does not, alone, affect a resubmission.

The main tools needed to develop a resubmission capability are:

❑ An Emit Agent that moves the message or message reference to be resubmitted to a queue or other location in which a channel can find and work with the message.

- □ The XDMarshallAgent (currently packaged with the iwgateway extension) that associates the current context with the message to be resubmitted.
- One or more application-defined special registers holding information, stored when the message is selected to be repaired and resubmitted, pertaining to the cause of the resubmission. This can be used during the resubmission present error information to a user, to the hold name of a channel to which the message is to be resubmitted, and so on.

Resubmission works most effectively with a multiple-channel architecture in which the application logic is separated from the initial acquisition of the message. In this case, the repaired and resubmitted message can be passed to the application logic at an appropriate stage of the execution.

Once a message is selected for resubmit, it needs to be written, by application logic, to an appropriate resubmit queue. From there, it might be passed to a repair station or simply set up for a later retry. Selection of a message is either by application logic (perhaps a communication failed or iWay Data Quality Center detected a rule violation in the original message) or manually in a form in which the message is selected and as a consequence written to the appropriate queue for resubmit handling.



A sample system is shown in the following image.

The application acquires the message through an input channel, which in the example elects to pass it on to the application logic. At some point(s) in the application logic, the message is tested. If the test passes, the message moves on, eventually passing to the delivery channel. If, however, the message fails the test (shown by the circle with the arrow) the message might be, depending on the test, written to the repair channel. Other errors might send it to a delay channel to simply await some triggering event. The scheduler facility can help with this. In our diagram, the repair channel sends the message to a repair station, where it is sent to a user to be modified, and from there the result arrives at the repaired message channel. From there, the message is passed back to the application logic.

The process of writing to the target repair or delay channel would encompass steps on the resubmit (failure) branch of the application logic flow, such as the following.

- 1. Load agreed-upon special registers with information needed to understand and repair the cause of the failure. Examples might include:
 - a. What test failed
 - b. What part of the message needs to be examined (if any)
 - c. Error message describing the failure
- 2. Use the XDMarshallAgent to associate the registers with the message to be passed. The record identifier (key) needed to obtain the actual message is previously stored by the iWay Business Activity Monitor driver in the resubmitSourceKey special register. An SQLAgent can load the message as it arrived on the Application Logic channel that issued the resubmit using this key. Alternatively, the message as it stood when it entered the Emit Agent to the resubmit queue is the message that reaches the resubmit queue.
- 3. The marshaled message is sent through an emit agent (probably internal emit, but perhaps another protocol) to the appropriate channel (repair channel or delay channel in our example diagram).

The Transaction ID will follow the message from channel to channel, enabling later analysis to associate the message with all of the steps (including the resubmission(s)) taken toward its final disposition.

The action on the repair channel itself or the delay is part of the application logic and is not a part of the resubmit facility.

Selecting Messages to be Resubmitted

A message can be resubmitted from various points of the process to provide extended flexibility to the application. Based on the user privileges, the message and its context (SREGs) can be modified for a resubmit process.

Two types of resubmit options are available:

- Message at hand resubmit
- Selectable resubmit

Message At Hand Resubmit

The message at hand resubmit option enables you to add the current message being viewed to the resubmit queue for processing. This type of resubmit takes the message with its context and adds it to the iWay Business Activity Monitor resubmit table directly without any preprocessing. This would include adding a message from the Message or Transaction History views.

Resubmit from the Message view

In the Message view, there is an option to add the selected message to the resubmit queue. This will add the original message to the resubmit queue.

Resubmit from the Transaction History view

Any Emit or Check point available in the Transaction History enables you to view the message under the Protocols column. The message can be added to the resubmit queue at any point, enabling you to add a partially processed message to the resubmit queue. This avoids duplicate work of the original application logic.

Selectable Resubmit

The selectable resubmit option enables you to add multiple messages to the resubmit queue at the same time. In this case, the transaction ID for each selected message is propagated to the pre-configured channel (BAM_TID_RESUBMIT_Channel), which, based on the configuration, selects the proper record to resubmit. The channel should be modified to meet your specific application requirements. By default, the original (101 event) message is added to the resubmit queue for the given transaction ID. For more information on the BAM_TID_RESUBMIT channel, see *Configuring the BAM_TID_RESUBMIT_CHANNEL* on page 59.

Mutli-message Resubmit

The Transaction Activity tab enables you to select multiple messages to be added to the resubmit queue by selecting multiple check boxes next to the messages. This will add the original message for each transaction to the resubmit queue.

Configuring the BAM_TID_RESUBMIT_CHANNEL

iWay Business Activity Monitor includes a pre-configured channel called BAM_TID_RESUBMIT_CHANNEL. This channel enables you to handle selective resubmits for multi-message resubmission. You must import, build, and deploy the channel to make it available to the application. If this channel is not available, then the resubmit facility will not work and will generate an error message indicating that the channel is not available.

The BAM_TID_RESUBMIT_CHANNEL is based on an internal listener and has a corresponding process flow, as shown in the following image.



It is recommended that you modify this channel to meet your specific application requirements, as described in the following sections.

iWay Business Activity Monitor Web Console Perspective

Using the iWay Business Activity Monitor web console, when you select transactions and click *Add to Resubmit Queue*, the iWay Business Activity Monitor logic creates an XML document for each selected transaction, which includes the following information about the selected transaction:

Transaction ID for the selected transaction.

Record key 101 for the first record.

- □ Name of the channel to which the record key applies.
- User login ID.
- □ Host (IP address) from which the form was submitted.
- Date and time.

The generated XML document is written to an internal listener queue, called BAMTIDResubmit, which is hosted by the BAM_TID_RESUBMIT_CHANNEL. When a document for each selected transaction ID is created, the operation is considered complete and a message indicating *Done* is displayed in the console. If the internal queue name is not available for any reason, an error message is displayed in the console.

User Process Flow

The user process flow associated with the internal queue channel receiving the resubmit record can analyze the input request in any necessary manner. As a final step in the process flow, it must call the service called BAMTIDResubmitAgent to enable the resubmit action. No output is expected or required from the user process flow. However, since the process flow operates under normal rules, it can take any additional channel action desired by the application designer.

The actual resubmit record key that has been determined by the process flow from the resubmit document is the data that will be resubmitted.

The process flow must handle the result edges from the service that are listed in the following table.

Edge	Purpose
success	Request has been added to the resubmit release queue.
fail_notfound	Record key given to the service does not represent a record in the iWay Business Activity Monitor database.
fail_security	User does not have authority to submit this record.
fail_operation	Resubmit release queue could not be updated.

The original terminal user will not see these errors, as the internal channel is operating asynchronously. Therefore, the process flow must handle the error, perhaps by sending an email or adding a message to a queue to be reviewed by the appropriate authority.

Processing Resubmitted Messages

After the messages have been added to the resubmit queue, a user who has authorized credentials for the iWay Business Activity Monitor web console can view, modify, and release resubmission from this queue.

When a message is resubmitted, it is written to the BAMResubmit internal queue. An internal listener should be configured by the user to process this queue. If this internal queue does not exist, then the message will be written under the default location configured in the Preference tab.

On entry to the process flow of the channel, the message and context is configured according to the resubmitted message. The process flow can then take any desired action based on your application requirements. Common actions include:

- Sending the message through the Internal Emit service (XDInternalEmitAgent) to the queue associated with the application process for the message. For example, this might be a step in the actual application flow that can now deal with the message after it has been modified or repaired.
- Serializing the message and sending it to another appropriate protocol. The Marshal service (XDMarshalAgent) is available to assist in formatting such a message. iSM features such as Asynchronous Forward Transfer Interface (AFTI) can assist with this activity.
- Sending the data to another table for additional, application-assisted modification and handling.

Using the Search Function

Search functionality, as shown in the following image, is provided in all Activity Management facility tabs to filter the desired results.

Way Business Activity Monitor				
Activity Management	Administration	Correlation Management		
Channel Activity EC	I Activity Partner A	tivity		
hoose Channel	Choose Protocol	Search By Time	Date From	🖪 Hr Min Date To
ransaction Status	 Transaction ID 	Source Name		
🖣 🖣 Page 1 of 1	🕨 🕅 🤣 🗌 🖁	Search 🛛 🛃 Reset 🛛 Group By	No Grouping	*

Provide search criteria in the corresponding fields and click *Search* to display only the filtered records based on the search criteria. Click *Reset* to remove the selected search criteria and show all the records.

The following table lists and describes all the search fields that are available
--

Field Name	Description
Choose Channel	Allows data filtering based on a specific channel name. Channel data is displayed for which iWay Business Activity Monitor has collected the data.
Protocol	Allows searching based on the protocol type that is used in the channel (for example, Internal, File, MQ Series).
Search By	Start and End time indicating the filtering which should be applied to the processed transactions based on time stamp initialization or completion.
Time	Time at which the message was first monitored on iSM.
Date From	Date since the message was processed.
Hr	Hour from which the message starts to be monitored.
Min	Minutes from which the message starts to be monitored.
Date To	Date range up to which the message needs to be filtered.
Hr	Hour up to which the message needs to be filtered.
Min	Minute up to which the message needs to be filtered.
Transaction Status	Allows transaction search based on the transaction status of Success or Fail.
Transaction ID	Allows filtering based on the Transaction ID.
Source Name	Allows filtering based on the Source Name of the transaction.

The Partner Activity Facility provides an additional filtering capability to search by partner name, as shown in the following image.

iWay Business A	ctivity Monitor			
Activity Management	Administration Correla	ation Management		
Channel Activity EDI Ac	tivity Partner Activity			
Choose Channel	Choose Protocol	Search By Time	▼ Date From	🖪 Hr Min Date To
Transaction Status	Transaction ID	Source Name	Partner Name	~
🕅 🖣 Page 1 of 1	🕨 🕅 🦢 🛗 Search	📑 🛃 Reset 🛛 Group By	No Grouping	•

The following table lists and describes the additional search field in the Partner Activity tab.

Field Name	Description
Partner Name	Allows filtering based on the Partner Name for the transaction.

Administration Tab

The Administration tab, shown in the following image, allows users with administrator privileges to create users who can access an iWay Business Activity Monitor application.

iWay Business Activity Monitor				
Activity Management Administration	Correlation Management			
User Role Audit Preferences Setting	s User Defined Columns			
📀 Add User 🌸 Edit User 🤤 Delete User				
🛛 🖣 Page 🚺 of 1 🖒 🕅 🖉				
User Name	First Name	Last Name	Email Address	Role
admin	Internal	User	iway@ibi.com	administrator

Role Management

The Role tab allows administrators to manage existing roles or create new roles for users. Roles define specific access to given modules of the iWay Business Activity Monitor application, such as enabling fine control of grouping users into assigned roles for specific access. A new role can be added by clicking *Add Role* under the Role tab, as shown in the following image.

iWay Business Activity Monitor	
Activity Management Administration Correlation Management	gement
User Role Audit Preferences Settings User Defined C	Columns
📀 Add Role 🎥 Edit Role 🤤 Delete Role	
4	
Role Name	Role Description
administrator	Default Admin created by iWAY

Once a role is configured for a user, this user will only have access to the specific modules that have been assigned after logging into the iWay Business Activity Monitor console, as shown in the following image.

Add New Role		×	
Role Name:*	ActivityUser		
Role Description:*	User has access to activity management, but not System or Administration.		
Title	Description	Access	
∃ Module: ROOT			
Activity Management	Monitor Transaction Activity		
Administration	Ability to Add and Delete Roles and Users		
Correlation Management	Monitor Correlation Activity		
Dashboard	Dashboard Create, Modify and Delete Custom Dashboards		
Reports	Generate Custom Reports (Webfocus)		
Resubmit	Includes Multiple Resubmit		
☑ Module: Edit Context Variables			
CFG	Modify CFG Register Values		
DOC	Modify DOC Register Values		
HDR Modify HDR Register Values			
USR Modify USR Register Values			
	Save Role Information		

User Management

The User tab allows administrators to manage existing users or add new users, as shown in the following image.

Add New User		Iway@bi.com
User Name: *	johnd	
First Name:	John	
Last Name:	David	
Email: *	John_David@mymail.com	
Role: *	ActivityUser	
Password: *	••••	
Confirm Password: *	••••	
Block User:		
	Save User Information	

Added users are associated with specific roles that have been assigned to them. After logging into the iWay Business Activity Monitor console, each user is granted with the privileges that their role allows.

A new user can be added by clicking the *Add User* button under the User tab, as shown in the following image.

iWay Business Activity Monitor		
Activity Management Administration	Correlation Management	
User Role Audit Preferences Setting	gs User Defined Columns	
🐼 Add User 🤤 Edit User 🤤 Delete User		
Add User f 1 > > 2		
User Name	First Name	
admin	Internal	

The user configuration pane, shown in the following image, enables the administrator to create a new user account and associate it with the specific role available in the iWay Business Activity Monitor application.

iWay Business Activity Monitor				
Activity Management Administra	tion Correlat	tion Management	t	
User Role Audit Preferences	Settings Use	r Defined Columns		
🔕 Add User 🌧 Edit User 🤤 Delete U	ser			
🛛 🖣 Page 1 of 1 🕨 🕅				
User Name	First Name	Last Name	Email Address	Role
admin	Internal	User	iway@ibi.com	administrator
johnd	John	David	John_David@mymail.com	administrator

The newly created user appears in the list of existing users with its associated data. The administrator also has the authority to temporarily block user access by editing the user account. Blocking a user enables a temporary lock on the user account without actually deleting the user from the system.

User Audit

The Audit tab, shown in the following image, enables the administrator to monitor all the logon activity. The administrator can monitor all the successful and failed logon attempts with their corresponding date, time, and IP address. It is useful to monitor the overall user access status to the iWay Business Activity Monitor application.

iWay Business Activity Monitor				
Activity Management Administration	Activity Management Administration Correlation Management			
User Role Audit Preferences	Settings User Defined Colum	ins		
🕅 🖣 Page 1 of 2 🕨 🕅				
User Name	Status	Login Date and Time		
admin	Authentication Successful	2012/04/23 13:05:11		
admin	Authentication Successful	2012/04/20 14:55:43		
admin	Authentication Successful	2012/04/16 17:05:34		
admin	Authentication Successful	2012/04/16 16:53:18		
admin	Authentication Successful	2012/04/16 16:52:29		
admin	Authentication Successful	2012/04/12 15:52:00		

User Preferences

The Preferences tab provides additional configuration options, as shown in the following image.

iWay Business Activity Monitor		
Activity Management	Administration Correlation Management	
User Role Audit	Preferences Settings User Defined Columns	
Resubmit Message Loc	c:/iway613/config/base/bam/resubmit/	

Resubilit Message Location .	c./ wayors/ comg/ base/ barry resubmic/
Cache Time (min)*:	0
Page Size *:	25
TimeSpan *:	1
	Save

The following table lists and describes the available fields in the Preferences tab.

Field	Description
Resubmit Message Location	Default message resubmit location if a file-based resubmit is used.
Cache Time (min)	Cache setting used to improve the performance of the iWay Business Activity Monitor console. This value indicates how often the data in the Activity screens is refreshed for the following selections:
	Choose Channel
	Choose Protocol
	Configuration Name
	Transaction Status
	Setting a value of 0 will refresh the drop-down list selections immediately.
Page Size	Number of records to be displayed per page.
TimeSpan	Default time interval in hours for which data is displayed.

The following example shows the result in the iWay Business Activity Monitor console when TimeSpan is set to one hour.



Monitoring User-Defined Registers

Monitoring user-defined registers enables you to define additional columns in iWay Business Activity Monitor corresponding to the application-defined special registers for data monitoring. As a result, you can store additional information (for example, DepartmentCode, Country, MessageID, and so on) as a special register in the application and then display this information as an additional column in the iWay Business Activity Monitor console. To create user-defined columns, click the *Administration* tab and then the User Defined Columns tab, as shown in the following image.

iWay Business Activity Monitor								
Activity Management Administration Correlation Management								
User Role Audit Preferences Settings	User Role Audit Preferences Settings User Defined Columns							
🔇 Add User Defined Column 🎰 Edit User Defined	🔇 Add User Defined Column 🏨 Edt: User: Defined Column							
14 4 Page 1 of 1 🕨 🕅 🥸	4 4 Page 1 of 1 ▶ ▶ 🥹							
User Column User Label JDBC Type Field Len								
DEPO	DEPO	string	20					

Once it is added and the server is restarted, the column and its data are included as part of the column list available for display in the iWay Business Activity Monitor Transaction screen, as shown in the following image.

iWa	y Business Activity Monitor								About	Logout
Activ	ty Management Administration Correlation Man	agement								
Trans	action Activity Channel Activity EDI Activity Partne	er Activity								
14 4	Page 1 of 1 ▷ ▷ ②	Add to Resubmit Queue	Resubmit Queue(0) Group By No Gr	rouping 💌 🛛 🔺 🔍 🗸	V 🔶 V 🗘 🖂 4	KI.			Displa	rying Rows 1 - 6 of
	Transaction ID	Start Time (UTC)	End Time (UTC)	 Protocol 	Source Name		Status	TX History	Message	DEPO
1	45a945d2-b0a6-4f1c-acc5-01270d13c9de	2012/02/09 22:35:19.737Z	2012/02/09 22:35:19.753Z	☆↓ Sort Ascending	order_fail_2.x	mi	A	View	View	NJ Dept
2	557c9834-5772-4db7-b777-11f187d55b4e	2012/02/09 22:34:59.473Z		Z Sort Descending	order_succes	s_active.xml	G	View	View	NY Dept
3	68740858-7db6-47a5-8d42-2ecf450b884b	2012/02/09 22:33:34.170Z	2012/02/09 22:33:34.203Z	TR Column b	100 Normal 10	1	1	View	View	NY Dept
E 4	9dd89b84-5a7d-4655-9f7e-9350873a30bd	2012/02/09 22:33:32.317Z	2012/02/09 22:33:34.170Z	County .	V Transaction ID	xml	1	View	View	NY Dept
5	632dcc41-7bce-4471-b890-a43a8ae886e2	2012/02/09 22:33:32 283Z	2012/02/09 22:50:54.463Z	FLE	Start Time (UTC)		۵/	View	View	NJ_Depo
6	c742c609-a14f-432b-bedc-63940ad47d1e	2012/02/09 22:33:32.113Z	2012/02/09 22:33:32 283Z	FLE	Pend time (UIC)	mi	٠.	View	View	NJ Dept
					Duration (ms)					
					Protocol					
					Source wame					
					Para brait Count					
					TV Materia					
					Mercane					
					Pressaye					
				(TR. DEPO	•				
					A 08-0					

The user-defined column is also added into a filter category so you can search for values in the user-defined field, as shown in the following image.

iWay Busin	ess Activity Monitor		
Activity Manag	ement Administration Correlate	on Hanagement	
Transaction Ac	tivity Channel Activity EDE Activity	Partner Activity	
Way Business Activity Monitor Activity Hanagement Administration Correlation Hanagement Transaction Activity Ouvrid Activity EDI Activity Partner Activity Transaction D Choose Protocol Start Time 20120209 21 35 NL_Depo IN_Depo Start Time 20120209 21 35 IN_Depo It = Page 1 of 1 Pl @ Bearch Reset Add to Resubmit Queue Wew Resubmit Queue(0) Group By It ransaction D Start Time (UTC) End Time (UTC) End Time (UTC) End Time (UTC) It e32dcod1-7bce-4471-6090-e43a0ee006e2 2012/02/09 22:33:32:2032 2012/02/09 22:50:54:463 Transaction Activity Channel Activity EDI Activity Partner Activity Transaction ID Choose Protocol Source Name S NJ Depo NJ Depo Source Name S			
NJ_Depo			
14.4 Page 1	of 1 🗁 H 😂 🔤 🏙 Search 🚦	Reset Add to Resubmit Queue	• View Resubmit Queue(0) Group By
Transaction	on 10	Start Time (UTC)	End Time (UTC)
1 632dco41	-7bce-4471-b090-a43a8ae8886e2	2012/02/09 22:33:32:283	2 2012/02/09 22:50:54.4632
Transaction Activ	tity Channel Activit	ty EDI Activity	Partner Activ
Transaction ID	Choose Pro	tocol 🗸 Source	Name
NJ_Depo	1		

Correlation Management Tab

The following sections describe Correlation Management in iWay Business Activity Monitor, and its requirements.

Correlation Management

Correlation Management enables the tracking of long-running transactions across multiple channels or servers. These transactions are correlated as standalone transactions or as part of a correlation set for batch processing. Transactions are correlated using the user-defined correlation ID as single message processing can produce multiple sub-transactions with different Transactions IDs that need to be correlated together.

Set Correlation plays an important role during batch processing, where each transaction is correlated to a specific batch correlation set. The transaction correlation state can be updated at any point of the process. This allows transactions to be processed by multiple channels, where each channel can update the transaction state of a single transaction providing a unified view through the entire processing cycle.

Transaction overall state is denoted as open or closed, indicating the final transaction state. Transaction Details provide the transaction correlation history from the initial Open state to various Functional, Business, or Customized transaction updates. This is a key feature enabling the user to track the transaction through all correlation steps and identify actions performed by any given channel on a transaction.

The Correlation Management tab, shown in the following image, enables the user to see the overall state of the transaction. It provides important information, such as Correlation ID, which is used throughout the transaction life cycle, as well as the overall state of the transaction and the Last Event which occurred for the given transaction.

iWAY Business Activity Monitor 🔅							
iWay Business Activity Monitor							
Activity Management Administration Correlation Mana	gement						
Choose State 💌 Choose Last Event 💌 Search By Time	🗙 Date From 🖪 Hr Min Date To 🖪	Hr Min					
Correl Set Correlation ID							
🚺 4 Page 2 of 2 🕨 🔰 🥭 🏙 Search 🆙 Rese	t Group By No Grouping					Displaying Rows 2	26 - 32 of 32
Correlation ID	Last Updated TX ID	Last Updated Time 👻	Expiration Time	TX Details	State	Last Event	Is Set?
_114593	W.Process_Transaction_MQ.1.20101210024156789.4	2010/12/10 02:42:10.616Z	2010/12/10 03:41:56.000Z	View	Close	FORCE CLOSE	N
5341	W.change_source.Channel.1.20101210024153226.0	2010/12/10 02:41:53.429Z	2010/12/10 03:41:53.000Z	View	Open	ANTICIPATING	N
batch134725_4	W.Process_Transaction_MQ.1.20101209165148840.3	2010/12/09 16:51:49.324Z	2010/12/09 17:51:48.000Z	View	Open	OTHER	N
batch134725	W.Process_Transaction_MQ.1.20101209165148840.3	2010/12/09 16:51:49.184Z	2010/12/09 17:51:44.000Z	View	Open	CSET CHILD	Y
betch134725_3	W.Process_Transaction_MQ.1.20101209165148011.2	2010/12/09 16:51:48.699Z	2010/12/09 17:51:48.000Z	View	Close	FORCE CLOSE	N
batch134725_2	W.Process_Transaction_MQ.1.20101209165147417.1	2010/12/09 16:51:47.839Z	2010/12/09 17:51:47.000Z	View	Close	FORCE CLOSE	N
batch134725_1	W.Process_Transaction_MQ.1.20101209165145589.0	2010/12/09 16:51:46.042Z	2010/12/09 17:51:45.000Z	View	Close	FORCE CLOSE	N

The user can view additional information for the transaction by accessing TX Details (Transaction Details) which provides a detailed view into the transaction history. For example, the following image shows the correlation set being open for the batch transaction followed by linking of the four child transactions.

Correlation History for Corre	lation ID = batch13	34725		×
Time	State	Transaction ID	Comment	
2010/12/09 16:51:44.120Z	ANTICIPATING	W.Batch_Transaction_MQ.1.20101209165143713.0	Opening Correlation Set	
2010/12/09 16:51:45.745Z	CSET_CHILD	W.Process_Transaction_MQ.1.20101209165145589.0	Child Interaction Added To Correlation Set	
2010/12/09 16:51:47.496Z	CSET_CHILD	W.Process Transaction MQ.1.20101209165147417.1	Child Interaction Added To Correlation Set	
2010/12/09 16:51:48.261Z	CSET_CHILD	W.Process_Transaction_MQ.1.20101209165148011.2	Child Interaction Added To Correlation Set	
2010/12/09 16:51:49.184Z	CSET_CHILD	W.Process_Transaction_MQ.1.20101209165148840.3	Child Interaction Added To Correlation Set	

When looking at a singular transaction from the correlation management view, the user can see various updates to the transaction state. For example, the following image shows the transaction in the Open state since the routing country cannot be found for the transaction.

Search By Time	Date From	m 💾 Hr Min Date Io 💾 Hr Min		
Correlation History for Corre	lation ID = batch13	34725_4		X
Time	State	Transaction ID	Comment	
2010/12/09 16:51:48.871Z	ANTICIPATING	W.Process_Transaction_MQ.1.20101209165148840.3	Opening Transaction Correlation	
2010/12/09 16:51:49.324Z	OTHER	W.Process_Transaction_MQ.1.20101209165148840.3	Error: Country Not Found - Unable To Process	

The user can drill down even further to investigate the error by clicking the associated transaction ID to see the details. The error is marked with a red flag, indicating in the transaction history where the country for the transaction cannot be set, as shown in the following image.

ransactio	n History or Correlation ID = batch134725_4			
Protocol	Event Message	Status	Time Stamp	TX Context
MQ	Startentry	4	2010/12/09 16:51:48.840Z	View
	Parse Begins	E	2010/12/09 16:51:48.840Z	View
	Parse Ends	E 7	2010/12/09 16:51:48.840Z	View
	Pflow Performing Start From Subflowstart On Edge Success, Type Start	6]	2010/12/09 16:51:48.840Z	View
	Pflow Performing Set Partner And Source Information From Start On Edge \$Complete, Type Agent	E	2010/12/09 16:51:48.855Z	View
	Pflow Performing Check For Warnings From Set Partner And Source Information On Edge \$Complete, Type Test	E	2010/12/09 16:51:48.855Z	View
	Pflow Performing Junction1_2 From Check For Warnings On Edge False, Type Junction	_	2010/12/09 16:51:48.855Z	View
	Pflow Performing Open Correlation Id From Junction1 On Edge \$Complete, Type Agent	E	2010/12/09 16:51:48.855Z	View
	Pflow Performing Route Based On Country From Open Correlation Id On Edge \$Complete, Type Switch	4	2010/12/09 16:51:49.309Z	View
	Pflow Performing Update Correlation With Error From Route Based On Country On Edge \$Other, Type Agent	_	2010/12/09 16:51:49.309Z	View
	Pflow Performing Iwfail - No Country From Update Correlation With Error On Edge \$Complete, Type Agent	9	2010/12/09 16:51:49.402Z	View
	No Valid Country Found	4	2010/12/09 16:51:49.418Z	View
MQ	Emitentry	4	2010/12/09 16:51:49.434Z	View
	Success	4	2010/12/09 16:51:49.434Z	View

Application Requirements

To monitor correlation activity in iWay Business Activity Monitor, the application has to incorporate the use of correlation agents to manage the state of the transactions. Unlike the automated activity monitoring available in Activity Management of iWay Business Activity Monitor, Correlation Monitoring requires a set of correlation agents to be used as part of the application. For more information on Agents, see the *TIBCO iWay*[®] Service Manager Component Reference Guide and the *TIBCO iWay*[®] Service Manager Functional Language Reference Guide.

The following agents need to be used in supplication to achieve the proper correlation process:

- □ **XDAddCorrelEntryAgent.** Enables you to add a correlation entry for the transaction either as a stand-alone correlation ID, a correlation set, or a correlation ID as part of the correlation set. This is the initiation state of the correlation.
- **XDUpdateCorrelEntryAgent.** Enables you to update any given correlation transaction (stand-alone or a correlation set) with any state change such as Business Ack and Close, as well as the customized comment for the correlation update.

The following is a sample flow of processing a batched transaction with correlation:

G Receive a batch of transactions.
- Create and open the correlation set for the received batch of transactions.
- □ Iterate through each transaction using an iterator.
- □ For each successful iteration, create and open a correlation ID for subtransaction within the correlation set. For example, CorrelSetName_TransactionCount (myset_1, myset_2, ...).
- Output the singular transactions to a staging area for another channel to pick up and process, such as a queuing system.
- Second channel picks up singular transactions and processes them. If the process is successful, it will close the correlation ID associated with that transaction. If the processing fails, it will update the correlation ID for the given transaction with an associated error message and leave it in Open state.

iWay Business Activity Monitor Driver Recovery

iWay Business Activity Monitor records information into a database during execution of the application. When properly configured, applications and configurations can share this database. The system relies upon the ability to properly insert records into the database with no errors. Most applications using iWay Business Activity Monitor depend on the iWay Business Activity Monitor driver being able to update its database. The server allows the application to determine the action to be taken in the event of failure.

The iWay Business Activity Monitor driver is designed to impose the least possible performance penalty on the application. The driver database update is asynchronous to the application itself. There is no mechanism for the application to check the status of the driver. For this reason, the driver and server must be in control of the recovery.

When the asynchronous updater detects a loss of connection to the database (SQL State 08xxx) it will attempt to reconnect based on the value specified for the retryCount parameter. It will wait between attempts based on the value specified for the retryInterval parameter. If a reconnect cannot be accomplished, the asynchronous updater shifts to recovery mode and reports the error to the driver itself. When all updaters have reported this condition, the driver begins recovery action.

The driver will attempt to run a process flow as configured in the Loss Connection Flow Name parameter of the driver configuration. You must create and publish this process flow to the system area of the configuration.

The process flow can take actions, such as notifying the user of the problem (for example, by sending an email). The post message (XDControlAgent) service might be used to stop accepting messages on other channels, effectively pausing the application. The process flow should end on one of three End nodes, with specific names. This is the standard method by which a subflow reports its status back to a calling process flow. The designated action takes effect following the return from the process flow. For an application that does not depend upon iWay Business Activity Monitor (for example, using it only for statistical and analysis purposes), Force or Finish can allow the application to continue without such statistics.

End Name	Queue Action	Driver Action
Force	Stop accepting and delete all in queue.	Shutdown
Persist (default)	Serialize any pending entries to a file to be retried on startup.	Shutdown
Continue	Continue accepting entries.	Continue the operation. The driver continues in recovery mode.
Offline	Continue accepting entries and store them in the file system.	Continue the operation. The driver continues in recovery mode.

If a serialized queue exists, the driver will deserialize the entries during startup. This will cause the serialized entries to be written to the iWay Business Activity Monitor log.

The xalog start *<drivername>* command can be used to restart the driver when the database condition is corrected. This command can be scheduled, such as in a run script, as needed.

Important: In order to fully recover from a lost RDBMS connection, it is necessary to add a validation query to the JDBC provider configuration. For MS SQL Server, Select 1 is fine. This adds a small performance cost, but makes it possible for the pool to replace bad connections with good connections.

The XDXalogControlAgent is not appropriate for use in this process flow. Use the Continue return to retry the lost connection. An appropriate use of the XDXalogControlAgent service might be to run in a scheduled situation. For example, the lost connection process flow might alert a DBA to problems and then schedule a recovery process flow to test the database connection and restart the driver or reschedule. It would then return Persist, which instructs the server to continue caching events to disk.

Procedure: How to Modify the iWay Business Activity Monitor Driver Recovery Properties

The iWay Business Activity Monitor driver recovery properties are an advanced IT operation and require direct driver configuration.

To modify the iWay Business Activity Monitor driver recovery properties:

1. In the iSM Administration Console, click *Activity Facility* in the left pane, as shown in the following image.

Facilities

Activity Facility
Correlation Facility

The Activity Facility pane opens.

2. Select BAMSenderDriver.

The Activity Facility pane opens for the preconfigured BAMSenderDriver, which lists the configuration parameters for the driver, as shown in the following image.

Facilities	Connection Management		
Activity Facility Correlation Facility	Retry Count *	Number of times a worker thread should attempt to reconnect to the database if connection is lost. After this number of attempts, the shutdown process flow will execute, if one is supplied, or the driver will terminate or continue in offline mode, as configured.	
	Retry Interval *	Time the worker thread should wait between attempts to reconnect, in milliseconds.	
	Lost Connection Behavior *	What should happen if workers cannot reconnect to the database after the maximum number of retries? Choose "Force" to stop the logger and abandon any log entries waiting in the queue. "Persist" will stop the logger and serialize the queue of log entries so they can be processed when the logger restarts. "Offline" means that the logger will continue to run in offline mode. Log entries will be persisted to the file system as they arrive and the logger will attempt to connect to the database at intervals. When the database becomes available, the persisted log entries will be sent to the database.	
	Lost Connection Flow Name	Name of a system process flow to execute when all workers have lost connection to the database and exhausted retries. The name of the end node at which the flow terminates should be "Force", "Persist", or "Offline", as described above. In addition, the flow can end with "Continue", which indicates that connection to the database has been restored and the workers should recomect and resume processing. If a flow name is supplied, the flow exists, and the flow ends with a supported end node name, the logger will use the end node value to determine how to proceed. Otherwise, the logger will proceed as specified by the Lost Connection Behavior parameter.	

3. Modify values for the required parameters in the Connection Management section, which are listed and described in the following table.

Parameter	Description	
Retry Count	Number of attempts to reconnect to the underlying iWay Business Activity Monitor database.	
Retry Interval	Wait interval between reconnect attempts.	
Lost Connection Behavior	 Select one of the following values from the drop-down list: Force. Terminate any logging activity and abandon any entries in flight. Persist. Terminate any logging activity and serialize any entries in flight. 	
	log the activity to a file store for later processing when the connection is recovered to the database.	
Lost Connection Flow Name	Process flow to execute upon connectivity loss and failure to reestablish a connection. The process flow must terminate with End node that corresponds to the action, (for example, Force, Persist, or Offline) or an additional option (Continue) to continue denoting that the connection has been restored. The process flow takes priority over the preconfigured Lost Connection Behavior parameter.	

4. Click *Update* when you have finished modifying the parameters for the preconfigured BAMSenderDriver.

Understanding Recovery Mode

When an updater thread shifts to recovery mode, it returns the message that it was processing to the database to the work queue. It then sets itself to write all messages to the local database rather then to the RDBMS. It then resumes accepting messages.

Depending on the settings and the return from the process flow, the driver starts an analysis thread. This thread periodically pools the RDBMS, awaiting its availability. When the RDBMS becomes available, the recovery thread sets the updater threads to resume standard mode. In this mode, the updaters accept messages from the queue and send them to the RDBMS. The recovery thread then begins reading, in order, the persisted messages written to the local disk. Each message is added to the work queue, so that an updater thread will send it to the RDBMS. The persisted messages are deleted as they are added to the queue.

If the system is terminated, on the next startup, the persisted messages will be loaded from disk to the work queue, so that normal operations can continue.

Using iWay Business Activity Monitor Commands

iWay Business Activity Monitor commands provide you with assistance when performing iWay Business Activity Monitor operations. The commands also support subcommands to specify specific actions, as listed and described in the following table.

Action	Description
archive	Given a specific date and time, this action copies all records for transactions that were completed before the given time to a specified set of tables. When successful, these transactions are removed from the active database.
сору	Given a time period or a transaction ID, this action copies all completed transactions identified to a named set of tables.
refresh	Clears the internal support tables.
list	Lists the contents of the database.
info	Displays database configuration information.

iWay Business Activity Monitor commands operate on iWay Business Activity Monitor databases. However, once the generated tables are populated, normal database operations can be used to copy, delete, or manipulate the tables as required. iWay Business Activity Monitor commands are not required in these instances.

iWay Business Activity Monitor commands have one or more operands in common, which are listed and described in the following table.

Operand	Description	Example
<tid></tid>	Single transaction ID, enclosed in quotation marks (").	"80f98d02-2c94-46fc-9a59-7254 1f05f548"
<pattern></pattern>	Distinguishing name of a set of iWay Business Activity Monitor tables. The command will create tables of this pattern if they do not exist in the iWay Business Activity Monitor database.	july You might use the _fmtdate() function to generate names, such as the name of a month.
<timespec></timespec>	Date and time using the YYYY/MM/ DDtHH:MM format. The default time is 00:00 if not specified. Abbreviations are available, as described in this section.	2012/6/25t03:15 2012/4/15

iWay Functional Language (iFL) can be used to assist in generating a <timespec>. For example, to specify a date four days in the past, specify the _fmtdate() function as follows:

"_fmtdate('yyyy/MM/dd\\'t\\'hh:mm',_imul(_isub(_now(u),_imul(86400,4)),
1000))"

This function subtracts from the current moment the number of seconds in a day, times the number of days, times the milliseconds in a second.

The enclosing double quotation marks (") tell the command processor that this is a single operand. The inner escapes pass a single escape-surrounded pattern character as a constant. To work from midnight of seven days ago, the <timespec> operand might be:

"_fmtdate('yyyy/MM/dd,_imul(_isub(_now(u),_imul(86400,7)),1000))"

Use of iFL to generate a <timespec> is useful for scheduled operations. For example, you might set up a schedule to run the command on a weekly basis, archiving information from the prior week.

As a convenience, abbreviations have been created for common specifications. Abbreviations must be spelled out in full.

Abbreviation	Purpose
1week	One week ago, midnight
1month	One month ago, midnight

The <pattern> is also evaluated for iFL. This helps create appropriately named archive databases in a recurring schedule. Users are cautioned that the pattern is used to name the generated databases, and must meet any naming restrictions imposed by the database.

iWay Business Activity Monitor Archive Command

The iWay Business Activity Monitor Archive command archives the identified transactions to a named set of tables. This reduces the size of the active tables and improves performance. The command does not copy partial transactions. That is, if a transaction was in execution prior to the -before specification but continued to execute after that time, it will not be archived. Only completed transactions are archived.

Usage:

bam archive <pattern> -before <timespec> [-timeout <seconds>]

The specified information is archived to the tables identified by the pattern.

Note: As only one date applies to the archive command, either -before or -after can be used.

Example:

```
Enter command:>bam archive july -before 2013/08/01
Archived 3267
```

All completed transactions will be archived until August 1, 2012.

iWay Business Activity Monitor Copy Command

The iWay Business Activity Monitor Copy command duplicates the information but does not purge it from the source data tables. This is useful if you need to save specific information for other purposes. The command does not copy partial transactions. That is, if a transaction was in execution prior to the -before specification but continued to execute after that time, it will not be archived. Only completed transactions are archived.

Usage:

```
bam copy <pattern> [-tid <tid> | -after <timespec> [-before <timespec>]] [-
timeout <seconds>]
```

The transaction information for the specified transaction ID, or the transactions within the time period, are copied. The default -before <timespec> is the current time. The iWay Business Activity Monitor Copy command will swap the before and after <timespec> if necessary to determine the appropriate time period.

Example:

```
Enter command:>Bam copy saved -tid 06c811fa-ba93-4e9b-9975-97b1cb3b84c8
Saved 1
```

iWay Business Activity Monitor Info Command

The iWay Business Activity Monitor Info command provides information about the specified database that is displayed. You can use the * pattern for the current database. This command is provided for troubleshooting purposes, if required. The contents and format of the returned information is not guaranteed to be consistent between releases.

Usage:

bam info [<pattern>]

Example:

```
Enter command:>bam info *
DataSource |UniqueTIDs |TotalTransRecs|StartTime |
EndTime |Duration
BAM_ACTIVITY |38 |563 |2012-01-18 15:43:26.393|
2012-01-27 15:43:29.253|9d 00:00:02.860
```

iWay Business Activity Monitor List Command

The iWay Business Activity Monitor List command returns information contained in the specified database. You can use the * pattern for the current database if you want to use filtering parameters. This command is provided for troubleshooting purposes, if required. The contents and format of the returned information is not guaranteed to be consistent between releases.

Usage:

```
bam info [<pattern> | *] [-tid <tid> | -after <timespec> [-before
<timespec>]] [-timeout <seconds>]
```

Example:

```
Enter command:>bam list * -after 12/1/1 -prov sql2k8
DataSource | TID
StartTime
                       EndTime
                                              Duration
TranSteps
BAM_ACTIVITY |06c811fa-ba93-4e9b-9975-97blcb3b84c8 |2012-01-20
15:43:06.19 | 2012-01-27 15:43:06.453 | 7d 00:00:00.263
                                                              14
BAM_ACTIVITY
             072cbbea-9791-4a17-a775-75a73de907f8 2012-01-23
15:43:07.627 2012-01-27 15:43:07.69 4d 00:00:00.630
                                                              14
BAM_ACTIVITY |153c8188-b5f1-4860-9698-3f72881ae6c5 |2012-01-26
15:43:07.47 |2012-01-27 15:43:07.533 |1d 00:00:00.630
                                                              14
```

Note: This example shows three BAM_ACTIVITY lines, each of which is its own line in the actual system.

iWay Business Activity Monitor Refresh Command

The iWay Business Activity Monitor Refresh command clears internal reporting tables but does not modify the database itself. Therefore, no pattern or other operands are required and will be ignored. This command also clears stale computations and may improve performance.



Structure of the iWay Business Activity Monitor Database

This section describes the functionality and structure of the following tables that are used by the iWay Business Activity Monitor database.

In this chapter:

- BAM_ACTIVITY Table
- BAM_ACTIVITY_CONTEXT Table
- BAM_ACTIVITY_EXTENDED Table

BAM_ACTIVITY Table

The BAM_ACTIVITY table contains one record for each entry that is recorded by the iWay Business Activity Monitor activity log driver.

Field	Datatype	Description
RecordKey	char(32)	Primary key for this table and foreign key for RecordKey in BAM_ACTIVITY_EXTENDED and BAM_ACTIVITY_CONTEXT tables. This value is a GUID, with no intrinsic meaning except to uniquely identify an activity record.
Tstamp	Datetime	Time at which this activity record was logged, with precision down to the millisecond if the system supports it.

Field	Datatype	Description
RecordType	Int	Type of activity record, using the following codes:
		100 (Enqueue). Receipt of message on an iWay internal queue.
		101 (Start). Start of processing for a message.
		191 (End). End of processing for a message.
		181 (Emit). Message is emitted from a channel. This may indicate a message leaving the iWay application or a message being transferred between iSM channels.
		131 (Internal Event). Indicates the beginning or end of a certain event while processing the message. The RecordType for these entries is actually 131 plus an action code, the meaning of which can vary depending on the event type, but is typically 0, indicating the beginning of a certain processing stage. 1 indicates the successful completion of a stage. 2 indicates a failure of that state. For more information about other action codes, see the subtype field.
		151 (Message). Indicates a BIZERROR message generated while processing the message.

Field	Datatype	Description
TID	Char(48)	Transaction ID that identifies all activity for this message while being processed by the iWay application. The transaction ID remains constant when the message is transferred between iSM channels.
		Note: An application can generate multiple messages from a single origin. All of these would share the same TID.
Recordkey101	Char(32)	RecordKey of the start or enqueue entry that recorded the beginning of processing of this message on this channel. For example, it can be used to correlate start and end entries.
Correlid	Char(32)	Not used.
Version	Char(16)	iSM version.
Status	Int	Final status for processing of this message on this channel for end entry records (recordtype = 191). A value of 1 indicates success. Any value greater than 1 indicates failure.

Field	Datatype	Description
Subtype	Int	Specific type of event for an event record. This can include, but is not limited to the following:
		□ iSM life cycle events
		Inbound decryption
		Preparse
		XML Parse
		Inbound review
		Inbound validation
		Inbound Transform
		Agent or Service
		Outbound Transform
		Outbound validation
		Outbound review
		Preemit
		Outbound encryption
		🗖 Emit

Field	Datatype	Description
Subtype (continued)	Int (continued)	Emit Events
		301. Records data that is being emitted from iSM.
		❑ 302. Records the response from the external system when data is emitted from iSM using a synchronous protocol.
		Security Events
		G01. Events relating to a certain general security operation.
		GO2. Events relating to digital signatures. This type of event can use the following action codes: 3 (Sign), 6 (Verify), and 2 (Fail).
		GO3. Events relating to encryption and decryption. This type of event can use the following action codes: 4 (Encrypt), 5 (Decrypt), and 2 (Fail).
Subtype (continued)	Int (continued)	User Events.
		1000. Users can generate event entries in the activity log. User-created event codes must be greater than 1000.

Field	Datatype	Description
Sequence	Int	In an iWay application in which a message is processed by multiple channels, the sequence indicates the order in which these channels received the message. This value is only stored with the start entry record (RecordType = 101).
		Note: The sequence represents a logical, rather than chronological, ordering of channels. For example, if the channel with sequence 1 emits two messages to an internal queue for further processing, the start entry records on the internal channel for both of these messages will have a sequence of 2.
ResubmitCount	Int	Number of times this message has been resubmitted.
ResubmitSourceKey	Char(32)	Record key of the activity record that indicates the point in processing from which this message was extracted for resubmission.
Encoding	Varchar(16)	Character encoding of this message.
Signature	Varchar(64)	Name of the channel where this activity occurred.
MAC	Varchar(80)	Not used.
ConfigName	Varchar(128)	iSM managed server or iWay Integration Application (iIA) on which this activity occurred.
HostName	Varchar(128)	Host name of the system where this activity occurred.
Address	Varchar(128)	Not used.
Partner_to	Varchar(128)	Value of the partner_to special register if set to true, by certain EDI components.
Partner_from	Varchar(128)	Value of the partner_from special register if set to true, by certain EDI components.

Field	Datatype	Description
Protocol	Varchar(150)	Protocol specific information. It is often the protocol name of the channel.

BAM_ACTIVITY_CONTEXT Table

The BAM_ACTIVITY_CONTEXT table can be used as a continuation of the BAM_ACTIVITY table, containing one record for each entry that is logged by the iWay Business Activity Monitor activity driver. The following table contains the message itself and its context, stored in large object type fields.

Field	Datatype	Description
RecordKey	Char(32)	Primary key for this table and foreign key for RecordKey in BAM_ACTIVITY_EXTENDED and BAM_ACTIVITY tables. This value is a GUID, solely used to uniquely identify an activity record.
Tstamp	Datetime	Time at which this activity record was logged, with precision down to the millisecond if the system supports it. This is identical to the tstamp value in the corresponding BAM_ACTIVITY record.
Msgkey	Char(32)	Not used.
Msgmac	Char(32)	Not used.
Msgtype	Varchar(32)	Not used.
Msg	BLOB	Message as it was at this point in processing.

Field	Datatype	Description
Context	BLOB	All special registers associated with the message at this point of processing. Each register is stored as type/name=value and registers are delimited by the 0x07 character. Note that registers important to the application can be stored in the BAM_ACTIVITY_EXTENDED table.

BAM_ACTIVITY_EXTENDED Table

The BAM_ACTIVITY_EXTENDED table contains context values that are important to the application. Several fields are automatically included, but the table can be extended with additional fields mentioned previously. The following table contains one record for each entry that is recorded by the iWay Business Activity Monitor activity log driver and can be used as a continuation of the BAM_ACTIVITY table.

Field	Datatype	Description
RecordKey	Char(32)	Primary key for this table and foreign key for RecordKey in BAM_ACTIVITY_CONTEXT and BAM_ACTIVITY tables. This value is a GUID, solely used to uniquely identify an activity record.
Tstamp	Datetime	Time at which this activity record was logged, with precision down to the millisecond if the system supports it. This is identical to the tstamp value in the corresponding BAM_ACTIVITY record.
BAM_tpm_partnername	Varchar(128)	Value of the bam_tpm_partnername special register, when available.
BAM_edi_ackstatus	Varchar(5)	Value of the edi_ackstatus register, when available.

Field	Datatype	Description
BAM_edi_transactionID	Varchar(128)	Value of the edi_transactionID register, when available.
BAM_edi_version	Varchar(128)	Value of the edi_version register, when available.
BAM_edi_type	Varchar(128)	Value of the edi_type register, when available.
Msgsize	Varchar(128)	Size of the message in bytes at this point in processing, when applicable.
Protocol	Varchar(128)	Protocol specific information. This is often the name of the protocol of the channel.
Extension	Varchar(128)	Value of the extension register, when available.
BAM_tpm_partnerid	int	Value of the bam_tpm_partnerid special register, when available.
BAM_tpm_countryname	Varchar(2)	Value of the BAM_TPM_COUNTRYNAME register, when available.
Text	Varchar(512)	Text of the BIZERROR message, for message entry records (recordtype = 151),



Configuring User Authentication for iWay Business Activity Monitor

This section describes how to configure authentication realms for iWay Business Activity Monitor.

In this chapter:

- User Authentication Overview
- Creating an LDAP Directory Provider
- Creating an LDAP Authentication Realm
- Mapping LDAP Roles to iWay Business Activity Monitor Roles
- Enabling iWay Business Activity Monitor Authentication Through an Authentication Realm

User Authentication Overview

iWay Business Activity Monitor is hosted on the non-blocking HTTP (nHTTP) listener. As a result, iWay Business Activity Monitor can take full advantage of authentication realms configured through iSM. Authentication realms enable remote user authentication against an external system such as Active Directory (AD) and Lightweight Directory Access Protocol (LDAP).

This section describes how to configure user authentication for iWay Business Activity Monitor using LDAP. The following steps are required in this configuration process:

1. Creating an LDAP Directory Provider to establish a link to the LDAP system.

For more information, see Creating an LDAP Directory Provider on page 94.

2. Creating an LDAP authentication realm to enable authentication against LDAP.

For more information, see Creating an LDAP Authentication Realm on page 97.

3. Mapping LDAP roles to iWay Business Activity Monitor roles.

For more information, see *Mapping LDAP Roles to iWay Business Activity Monitor Roles* on page 101.

 Enabling iWay Business Activity Monitor authentication through the authentication realm.
 For more information, see *Enabling iWay Business Activity Monitor Authentication Through an Authentication Realm* on page 102.

The following image shows a	sample user type	defined in an LDAP	system.
-----------------------------	------------------	--------------------	---------

File Edit View Eavorites Server Entry Schema Reports To	aols Window Help		
	_ <u>≈</u> i ⊡ • ⇔ ⇔ ⇔ ⊗ ⊗ ⊗ • 4 •0 ⊡		
icope Pane 👻 🖣 🗙	Name	Value	Type
B QUISA	objectClass	top	OID
	objectClass	person	OID
⊕ 00 =8EA	objectClass	organizationalPerson	OID
	objectClass	user	OID
- OU-DEVELOPMENT	• m	pgmtst4	Directory String
OU=COMPUTERS	description	Test ID for LDAP server for Ilya Samuylov	Directory String
E-2 CN=COR-IWAY-DEV-DBMS_QA	givenName	pgmtst4	Directory String
E-20 CN=domain mgm	distinguishedName	CN=pgmtst4,OU=USER5,OU=DEVELOPMENT,OU=IWAY,OU=COR,DC=ibi,DC=com	DN
CN=pgmgrp1 	instanceType	[Writable]	INTEGER
⊕-∰ CN=Prog	whenCreated	9/1/2004 2:30:22 PM	Generalized Time
CN=iwayqa	whenChanged	2/12/2014 11:25:27 AM	Generalized Time
€-2 CN=medport	displayName	pgmtst4	Directory String
tri≡pgm tst7 tri≡pgm tst8	uSNCreated	110364	Large integer (a.k.a. INTEGER8)
⊕-9 CN=pgmtst1	memberOf	CN=pgmgrp2,OU=GROUPS,OU=DEVELOPMENT,OU=IWAY,OU=COR,DC=ibi,DC=com	DN
E − 2 CN=pgmtst12	uSNChanged	110364	Large integer (a.k.a. INTEGER8)
⊕-9 CN=pgmtst2	name	pgmtst4	Directory String
CN=pgmtst3	 userAccountControl 	[NormalAccount]	INTEGER
E-2 CN=pgmtst5	badPwdCount	2	INTEGER
	codePage	0	INTEGER
CN=wrunadmin	countryCode	0	INTEGER

Creating an LDAP Directory Provider

This section describes how to create an LDAP Directory Provider using the iSM Administration Console. An LDAP Directory Provider enables you to establish a link to an existing LDAP system.

Procedure: How to Create an LDAP Directory Provider

1. Connect to the iSM Administration Console using the following URL:

http://localhost:9999

2. Log on to the console using valid iSM credentials (user name and password).

3. If it is not already selected, ensure Server is selected in the top pane of the console and then click *Directory Provider* in the Providers section on the left pane, as shown in the following image.

iWay Service Manager Server Registry Deployments Tools		
Properties General Properties	General Properties Listed below are the general	
Java Properties	General	
Settings	Name / Home	
General Settings	Version	
Console Settings	Build Date	
Java Settings	Configuration	
Register Settings	Name	
Trace Settings	Status	
Log Settings Path Settings	User Security Access	
	Environment	
Data Settings	OS / Hardware	
Backup Settings	Java Info	
Providers	Java Memory	
Data Provider	Classpath	
Services Provider		
Directory Provider	Language and Locale	
Security Provider	Locale / Timezone	

The Directory Provider pane opens, as shown in the following image.

Directory Provider Directories house inform Lightweight Directory Act Defined LDAP Provider Providers configured to 6	ation organized by keys and context. The most c zess Protocol. s nable the use of lightweight directory access proto	ommonly used directories are accessed through LDAP, the
Name	Description	Default
No directory provid	ers have been defined	

4. Click *New* to create a new Directory Provider for LDAP.

The Directory Providers: LDAP pane opens, as shown in the following image.

of LDAP follows all security rules	for LDAP use and does not permit any changes to be made to the LDAP directory.		
LDAP Server Definition			
Name	ldap_prov		
Description	Enter a description of the use of this directory server.		
	LDAP provider for AD		
LDAP Initial Context Factory	Fully qualified class name of the LDAP Initial Context Factory, default is com.sun.jndi.ldap.LdapCtxFactory		
URL *	URL to reach LDAP directory. LDAP URL's are in the form Idap://host[:port] or Idaps://host[:port]. When used a a CertStore, consider adding the base DN to the URL, for example Idap://host[:port]/o=Company.c=US		
	ldap://ibidca:389/dc=ibi,dc=com		
Pool Size	A pool of connections to the LDAP server reduces contention but increases memory use. Way suggests a range of 2-10 for a normally loaded system.		
	2		
Authentication Mechanism	Specifies the authentication mechanism to use. Choose Not Specified to use JNDI's default. If the User ID and Password are absent, the default is none, otherwise the default is simple. When using an LDAPS URL, the default is always simple. You can also type a space separated list of mechanisms to try in order of preference.		
	Not Specified		
	Pick one		
Authentication Realm	For some SASL authentication mechanisms, this is the domain from which the user ID should be chosen. If you do not specify a realm, then any one of the realms offered by the server will be used.		
User ID	User ID registered for appropriate access to this LDAP directory.		
	ig10588@ibi.com		
Password	Password for access to the LDAP directory.		
SSL Context Provider	Way Security Provider for SSL Context. This parameter is required when using an Idaps: URL. When an SSL Context is given with an Idap: URL, this will upgrade the normal LDAP connection to one protected by TLS/SSL using the LDAP StartTLS extension.		
	Pick one or enter value		
Quality of Protection	Some SASL mechanisms support integrity and privacy protection of the communication channel after successful authentication. Choose Not Specified to rely on JNDI's default.		
	Not Specified		
	Pick one		

- 5. Provide values for the required parameters to configure a connection to your LDAP system.
- 6. Scroll down to the bottom of the page and click Add to add the LDAP Directory Provider.

Note: You can also click *Test* to verify that you successfully connected to your LDAP system, as shown in the following image.

Directory Providers: Lightweight directory a and other resources su iWay Service Manager use of LDAP follows all	LDAP iccess protocol or LDAP a software protocol that enables standard program accessibility to locate organizations, individuals, icc as files and devices in a network, whether on the public Internet or on a corporate intranet. Enabling LDAP for use with allows the value of configuration parameters to be retrieved directly from an LDAP-enabled directory. iWay Service Manager's security rules for LDAP use and does not permit any changes to be made to the LDAP directory.
Test Result	
Success	SUCCESS
PROBLEM	
Success	SUCCESS
LDAP Server Definit	lion
Name	ldap_prov
Description	Enter a description of the use of this directory server.
	LDAP provider for AD

Creating an LDAP Authentication Realm

This section describes how to create an LDAP authentication realm using the iSM Administration Console. An LDAP authentication realm enables authentication against LDAP.

Procedure: How to Create an LDAP Authentication Realm

1. Ensure that you are logged in to the iSM Administration Console.

2. If it is not already selected, ensure *Server* is selected in the top pane of the console and then click *Authentication Realms* in the Providers section on the left pane, as shown in the following image.

iWay Service Manager Server Registry Deployments Tools		
Properties General Properties	General Properties Listed below are the general	
Java Properties	General	
Settings	Name / Home	
General Settings	Version	
Console Settings	Build Date	
Java Settings	Configuration	
Register Settings	Name	
Trace Settings	Status	
Log Settings	User Security Access	
Path Settings	Environment	
Data Settings	OS / Hardware	
Backup Settings	Java Info	
Providers	Java Memony	
Data Provider	Classorth	
Services Provider	Classpath	
Directory Provider	Language and Locale	
Security Provider	Locale / Timezone	
XML Namespace Map Provider	Language	
Pooling Providers		
Authentication Realms	<u> </u>	

The Authentication Realms pane opens, as shown in the following image.

Authe A Real roles a	ntication Realms m is a database of us ssociated with each v	ernames and passwords that id valid user.	entify valid users of a channel (or set of channels), possibly including a list o
Defin Auth	ed Realms	- iWay supplies various types of	realms to manage user access to NHTTP and NAS2 channels.
	Name	Туре	Description
New	No realms have bee	en defined	

3. Click New to create a new LDAP authentication realm.

The Authentication Realm pane opens, as shown in the following image.

Realm Parameters	
Realm Type	Select the type of realm you want to create.
	propsrealm 🔻
	propsrealm
Name *	, consolerealm jaasrealm jdbcrealm
	Idaprealm
Description	Enter a description of the use of this realm.
	÷
Properties File *	Path to a properties file containing entries like username=password
	Browse

4. From the Realm Type drop-down list, select *Idaprealm*.

The Authentication Realm pane refreshes with your selection and provides configuration parameters that are specific to an LDAP authentication realm, as shown in the following image.

Realm Parameters		
Realm Type	Idaprealm	
Name	LDAP_Auth_Realm	
Description	Enter a description of the use of this realm.	
	LDAP Authentication Realm for BAM	
LDAP Provider *	Name of the Directory Provider describing the connection to the LDAP server.	
	ldap_prov	
	Pick one or enter value	
User Base Context	The base of the subtree containing users. Each user that can be authenticated must be represented by an individual entry that corresponds to an element in this DirContext. If not specified, the top level element in the directory context will be used.	
	OU=COR	
User Pattern	A pattern for the distinguished name (DN) of the user's directory entry. Use (0) to substitute the username. For example, (cn=(0)), LDAP OR syntax is also supported ((cn=(0))(cn=(0),oemyorg)). You can use this property instead of User Search Filter, Search User Subtree and User Base Context when the distinguished name contains the username and is otherwise the same for all users.	
Search User Subtree	The search scope. Set to true if you wish to search the entire subtree notice at the User Base Context entry. The default value of false requests a single-level search including only the top level.	
	true	
	Pick one V	
User Search Filter	The LDAP filter expression to use when searching for a user's directory entry, with {0} marking where the actual username should be inserted. Use this property (along with the Search User Subtree property) instead of User Pattern to search the directory for the user's entry.	
	userPrincipalName={0}	
User Password Attribute	Name of the attribute in the user's entry containing the user's password. If you specify this value, this realm will retrieve the corresponding attribute for comparison to the value specified by the user being authenticated. If you do not specify this value, this realm will attempt a simple bind to the directory using the DN of the user's entry and password specified by the user, with a successful bind being interpreted as an authenticated user.	
	sAMAccountName	
Role Base Context	The base directory entry for performing role searches. If not specified, the top level element in the directory context will be used.	
	OU=GROUPS, OU=DEVELOPMENT, OU=IWAY, OU=COR	
Search role Subtree	Set to true if you want to search the entire subtree of the element specified by the Role Base Context for role entries associated with the user. The default value of failse causes only the top level to be searched.	
	true	
	Pick one	
Role Search Filter	The LDAP filter expression used for performing role searches. Use (0) to substitute the distinguished name (DN) of the user, and/or (1) to substitute the username. If not specified a role search does not take place and roles are taken only from the attribute in the user's entry specified by the User Role Attribute.	
	member=(0)	
Role Attribute	The name of the attribute that contains role names in the directory entries found by a role search. In addition you can use the User Role Attribute property to specify the name of an attribute, in the user's entry, containing additional role names. If Role Attribute is not specified a role search does not take place, and roles are taken only from the user's entry.	
	cn	
User Role Attribute	The name of an attribute in the user's directory entry containing zero or more values for the names of roles assigned to this user. In addition you can use the Role Attribute property to specify the name of an attribute to be retrieved from individual role entries found by searching the directory. If User Role Attribute is not specified all the roles for a user derive from the role search.	
	objectClass	

- 5. Provide values for the required parameters to configure an LDAP authentication realm.
- 6. Scroll down to the bottom of the page and click *Add* to add the configured LDAP authentication realm.

Note the name of the newly configured LDAP authentication realm (for example, LDAP_Auth_Realm), as this value will be used during the iWay Business Activity Monitor configuration.

Mapping LDAP Roles to iWay Business Activity Monitor Roles

This section describes how to map LDAP roles to iWay Business Activity Monitor roles using the iWay Business Activity Monitor console. As defined roles in an LDAP system are unlikely to match corresponding roles in iWay Business Activity Monitor, you must map the roles between the LDAP system and iWay Business Activity Monitor.

Procedure: How to Map LDAP Roles to iWay Business Activity Monitor Roles

1. Login to the iWay Business Activity Monitor console as an *administrator* while it is under standard authentication schema against the database.

The default URL for the iWay Business Activity Monitor Console is:

http://localhost:8087

2. Click the *Administration* tab, select the *Settings* tab, and then click the *Role Mapper* tab, as shown in the following image.



3. Click *Add Role Mapper* to add a new mapping between an LDAP system role and an iWay Business Activity Monitor role.

The Add New Role Mapper dialog box opens, as shown in the following image.

Add New Role Mapper	×
LDAP Role: *	pgmgrp2
BAM Role: *	✓ ● administrator
Sa	we Role Mapper

4. Specify an LDAP role in the LDAP Role field, which would be returned for those users requiring access to the iWay Business Activity Monitor console, and map it to the iWay Business Activity Monitor role by selecting it from the *BAM Role* drop-down list.

You can create multiple mappings between an LDAP and iWay Business Activity Monitor roles.

5. Click Save Role Mapper.

Enabling iWay Business Activity Monitor Authentication Through an Authentication Realm

This section describes how to enable iWay Business Activity Monitor authentication through an authentication realm using the iSM Administration Console.

Procedure: How to Enable iWay Business Activity Monitor Authentication Through an Authentication Realm

- 1. Ensure that you are logged in to the iSM Administration Console.
- 2. Click *Tools* in the top pane, and then under the Applications section in the left pane, select *Business Activity Monitor*, as shown in the following image.

iWay Service M Server Registry	Manager Deployments	Tools
Applications Business Activity Monitor	Log Viewer View trace lo Manager.	ogs. The trace log is used to record
Enterprise Index Trading Partner Manager	Log File:	Select log file to view

The Business Activity Monitor Properties Manager pane opens, as shown in the following image.

iWay Service Ma Server Registry D	anager eployments <u>Tools</u>	Management base 💿 🕢 🕢 7.0.5.3305 Restart Licenses About Logout		
Applications	Business Activity Monitor P Configuration and manageme	Properties Manager ant of Business Activity Monitor Properties.		
Monitor	Properties Manager			
Enterprise Index Trading Partner Manager	RAM in Antin	BAM Properties Correlation Properties		
Diagnostics	DAM IS ACTIVE			
Log Viewer		raise Pick one		
Imports/Exports	BAM Realm Provider	Authentication/Authorization realm for user validation		
Archive Manager		LDAP_Auth_Realm		
Deployment Manager	BAM Database Provider	JDBC Data Provider configured for the BAM database		
Info		BAMDBProvider		
Release Information	Want Events	Should event messages be included?		
Diagnostic Zip		false		
		Pick one		
	Worker Count *	Number of worker threads to process log entries in parallel		
		3		
	Batch Size	How many log entries should be accumulated before updating the database? Each log entry generates three inserts into the database. Enter 0 or 1 to treat a single entry as a transaction. For values greater than 1, inserts will be batched until the limit is reached. At this point, the three batches will be executed and the transaction will be committed. This can improve performance, but increases the amount of data that can be lost if the connection to the database fails.		
		0		
	Connection Management			
	Retry Count * Number of times a worker thread should attempt to reconnect to the database if connection is lost. After this number of attempts, the shutdown process flow will execute, if one is supplied, or the driver will terminate o continue in offline mode, as configured.			
		5		
	Retry Interval *	Time the worker thread should wait between attempts to reconnect, in milliseconds.		
		5000		
	Lost Connection Behavior *	What should happen if workers cannot reconnect to the database after the maximum number of retries? Choose "Force" to stop the logger and abandon any log entries waiting in the queue. "Persist" will stop the logger and serialize the queue of log entries so they can be processed when the logger restarts. "Offline" means that the logger will continue to run in offline mode. Log entries will be persisted to the file system as they arrive and the logger will attempt to connect to the database at intervals. When the database becomes available, the persisted log entries will be sent to the database.		
		Persist 🔹		

- 3. In the BAM Realm Provider field, type the name of the configured LDAP authentication realm (for example, LDAP_Auth_Realm) to be used for iWay Business Activity Monitor authentication.
- 4. Scroll down to the bottom of the page and click Save Changes.

•
•

A Configuration Completed message displays, as shown in the following image.

Business Activity Monitor Properties Manager Configuration and management of Business Activity Monitor Properties.	
SUCCESS	
SUCCESS	Configuration Completed; the Service Manager must be restarted for any changes to the Business Activity Monitor Properties to take effect.

- 5. Restart iSM.
- 6. Open a new browser window and access the iWay Business Activity Monitor console.

The default URL for the iWay Business Activity Monitor console is:

http://localhost:8087

When you are prompted for the user name and password, you can now use the credentials from the LDAP system.

BAM Login		
User Name:*	pgmtst4@ibi.com	
Password:*	•••••	
	Login	

You will be authenticated through the configured LDAP authentication realm and its role will be mapped to the iWay Business Activity Monitor role.

Note: The default user (admin/iway) and any other users in the local iWay Business Activity Monitor database repository of the user, will not have access to iWay Business Activity Monitor, unless authentication is switched back to the default setting, and *BAM Realm Provider* is set to an empty value under the Business Activity Monitor configuration section.

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