

Oracle® WebLogic Integration

TIBCO Rendezvous Event Generator User Guide

10g Release 3 (10.3)

November 2008

Copyright © 2007, 2008, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this software or related documentation is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle USA, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

This software is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications which may create a risk of personal injury. If you use this software in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure the safe use of this software. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software in dangerous applications.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

This software and documentation may provide access to or information on content, products and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.

Contents

1. TIBCO Rendezvous Event Generator

Overview: TIBCO RV Event Generator	1-2
Clusters	1-2
Prerequisites to Using the TIBCO RV Event Generator.	1-3
Creating and Using the TIBCO RV Event Generator.	1-3
Retrieving Messages	1-5
TIBCO RV Event Generator Header	1-6

Index

TIBCO Rendezvous Event Generator

TIBCO® Rendezvous™ (a product from TIBCO: <http://www.tibco.com>) enables exchange of data across applications running on distributed platforms. TIBCO Rendezvous (TIBCO RV) Event Generator is one of the Oracle WebLogic Integration event generators that you can create from the Oracle WebLogic Integration Administration Console. The TIBCO RV event generator listens for messages on a subject and raises events to the message broker on receiving the desired message.

Disclaimer

Use of the TIBCO RV control and event generator with Oracle WebLogic Integration in no manner confers or grants the right to use TIBCO Rendezvous including "dynamic libraries". In order to use such TIBCO products, the user of the TIBCO RV control and event generator must obtain a valid license from TIBCO. For more information about the licensed copy of Rendezvous, see <http://www.tibco.com>.

Topics Included in This Section

Overview: TIBCO RV Event Generator

Describes the function of the TIBCO RV event generator within Oracle WebLogic Integration.

Creating and Using the TIBCO RV Event Generator

Describes how to create an event generator and to use it for receiving messages.

Overview: TIBCO RV Event Generator

The TIBCO RV event generator enables Oracle WebLogic Integration generate events to message broker channels. The messages are received in most formats supported by Rendezvous, converted to binary and then published to the Oracle WebLogic Integration message broker.

Using TIBCO RV event generator, you can receive messages over the base Rendezvous and certified messaging (CM) transports. Certified messages can be received in either single or distributed queues, with support for clustering in the distributed queues processing. Receipt of each message can be acknowledged by implicit or explicit confirmation.

To learn more, see [Event Generators](#) in *Using the Oracle WebLogic Integration Administration Console*.

Clusters

TIBCO RV event generators can be deployed on a cluster with load balancing, high availability and failover features. They use distributed queues to support these clustering features. All event generators are automatically deployed on all managed servers from the Oracle WebLogic Integration Administration Console.

TIBCO RV event generators on a cluster subscribe to a subject with a single RV daemon machine, a distributed queue option and a distinct CM name entered at the time of event generator creation. Distributed queues work with the concept of scheduler and workers. One of the queues will act as a scheduler and others as workers. A scheduler distributes the messages to workers on a round robin basis, making sure the message is received by one and only one worker. This is also referred to as the “once and only once delivery”.

Load balancing

The scheduler node sends messages to the worker nodes on a round robin basis. This is done by checking for pending tasks at individual workers end. Depending on the which worker is relatively free, the scheduler will assign the task. This is termed as load balancing.

High Availability

This implies that at any given instance, a worker and a scheduler node is always available. If a worker node goes down with a managed server, another worker will be available. If a scheduler node goes down with a managed server, a worker will take over the role of the scheduler node.

Failover

This indicates that even if a worker node goes down before acknowledging receipt of message, the scheduler node will re-assign the task to the next available worker node.

Prerequisites to Using the TIBCO RV Event Generator

Before adding the TIBCO RV Event Generator to Oracle WebLogic Integration, perform the following:

After installation of TIBCO, ensure the following before starting the server.

1. Install and configure TibcoRV on your machine. Ensure that the installation directory should be in server PATH.
2. The jar file tibjrv.jar must be there in CLASSPATH,

For Solaris:

```
export LD_LIBRARY_PATH = $HOME/local/jars/tibjrv.jar
```

For Windows:

```
EXT_PRE_CLASSPATH=D:\Installs\TIBCO\TIBRV\lib\tibrvj.jar;%EXT_PRE_CLASSPATH%
```

3. TIBCO installation bin and lib folder should be there in PATH and LD_LIBRARY_PATH respectively.

```
export LD_LIBRARY_PATH=/opt/tibco/tibrv/lib:$LD_LIBRARY_PATH
```

```
export PATH=/opt/tibco/tibrv/bin:$PATH
```

After successful deployment, you will be able to create event generators from the Oracle WebLogic Integration console.

Creating and Using the TIBCO RV Event Generator

Perform the following steps to create a TIBCO RV event generator.

1. Enter the following URL in your html browser:

```
http://localhost:port/wliconsole
```

Replace **port** with the specific port id, for example 7001.

2. In the Oracle WebLogic Integration Administration Console home page, click **Event Generators** to display the Event Generators home page.

- Click **TIBCO RV** option in the left frame and select **Create New** option that appears below it, to create an event generator.
- In the **Generator Name** field, enter a unique name for the new event generator and click **Submit**.
- In the next frame, click **Define a New Channel Rule** to display a form (see [Figure 1-1](#))

Figure 1-1 .Creating TIBCO RV Event Generator: Channel Rule Definition

Event Generators		Welcome, weblogic		Connected to : wli1_domain		Home WLS Console LOGOUT Help ASBBA	
File		Create New					
View All		Channel					
Create New							
Email		Channel Name		/WorldEvent (rawData)		The Channel Name	
View All		Description				Description of the channel.	
Create New		Publish As		N		Select a user to impersonate.	
JMS		TRANSPORT DETAILS					
View All		TIBRV Service Name				TIBRV service that this transport uses for communication	
Create New		TIBRV Network Name				TIBRV Network Name	
Timer		TIBRV Daemon Name				TIBRV Daemon Name	
View All		Subject Name of the Message				Subject Name of the Message	
Create New		Certified Message Name				Enter a CM name for Certified Messaging/ Distributed Queue	
TibcoRV		Use Default Event Queue		<input type="checkbox"/>		Use Default Event Queue	
View All		Use Certified Messaging		<input type="checkbox"/>		Select if u required Certified Messaging	
Create New		EVENT QUEUE DETAILS					
RDBMS		Name				Event Queue Name	
View All		Priority		0		Each queue has a single priority value, which controls its dispatch precedence within queue groups. Higher values dispatch before lower values; queues with equal priority values dispatch in round-robin fashion.	
Create New		Limit Policy		DISCARD_NONE		Each queue has a policy for discarding events when a new event would cause the queue to exceed its maxEvents limit.	
MQ Series		Max Events		0		Number of events that a queue can hold, 0 means unlimited	
View All		Discard Amount		0		When the queue exceeds its maximum event limit, discard a block of events. This property specifies the number of events to discard. When discardAmount is zero, the policy must be TiberQueue.DISCARD_NONE.	
Create New		DISPATCH POLICY					
HTTP		Dispatch Type		DISPATCH		Select the dispatch Type	
View All		Dispatch Timeout		0		Enter the dispatch Timeout, if u have chosen TIMED_DISPATCH as the Dispatch Type	
Create New		CERTIFIED MESSAGING DETAILS					
System Configuration		Retain Unacknowledged Messages		<input type="checkbox"/>		Indicates whether to Retain unacknowledged messages sent to this persistent correspondent	
Process Instance Monitoring		Ledger Name				A Valid File Name, if Null then a process Ledger is used	
Process Configuration		Sync Ledger Synchronously		<input type="checkbox"/>		Indicates how the Changes are written(synchronous/asynchronous). Default is Asynchronous.	
Message Broker		Confirm Message Explicitly		<input type="checkbox"/>		Indicates whether the listener should explicitly confirm messages after publishing to Message broker. By default rvd confirms the messages.	
Event Generators		DISTRIBUTED QUEUE DETAILS					
Trading Partner Management		Use Distributed Queues		<input type="checkbox"/>		Select only for clustered Environment	
XVII. Cache		Worker Tasks		0		Task capacity is the maximum number of tasks that a worker can accept. When the number of accepted tasks reaches this maximum, the worker cannot accept additional tasks until it completes one or more of them.	
		Submit		Reset		Cancel	

- Enter the desired information in the fields; a brief description of each is displayed adjacent to the field. Refer TIBCO Rendezvous documentation for information on Rendezvous transport, event queues and certified messaging parameters.

Note: Select **Use Distributed Queues** option for the event generator to work on a cluster. Doing this would also make it mandatory to specify a CM name.

7. Click **Submit** to effect creation of the channel rule and the event generator.

Note: While creating an event generator, if incorrect Rendezvous related values are entered (like network, daemon and so on), the event generator is created but, a runtime exception error will be displayed.

These Rendezvous properties are not verified at the form submission stage. These values are used only when the application attempts to connect to the specified Rendezvous daemon; hence, the runtime error.

On successful creation of an event generator, a `WLI_TIBRV_event-gen.jar` file is created in the Oracle WebLogic server domain folder. Here, **event-gen** is the unique name of the event generator as specified in step 4 above. This file connects to the Rendezvous daemon, as specified in the Channel Rule Definition form, and creates a listener on the subject.

Note: Always create a single rule definition for each unique event generator. Whenever an event generator is created with multiple channel rule definitions, only the first channel rule definition is recorded and used.

Explicit Confirmation

Explicit confirmation directs the listener to explicitly confirm delivery of message after publishing to the message broker. To employ the explicit confirmation feature, select the **Confirm Message** option while defining the rules for an event generator.

If **explicit confirmation** is selected in the OAM console, the TIBCO RV event generator will confirm the message only on successful completion of the subscribed JPDs.

Notes: Process.java files need to have a synchronous subscription to confirm explicitly.

If any of the subscribed `Process.java` files throw an exception error, the TIBCO RV event generator will not confirm the message.

Retrieving Messages

Once the event generator has been created, it will start publishing messages on the subscribed subject to the Oracle WebLogic Integration message broker channel. Applications subscribed to that channel will receive the messages in raw data format. To retrieve the content of the message, insert a perform node with the following code:

```
TibrvMsg RecvdMsg = new TibrvMsg(receivedData.byteValue());
```

Where **receivedData** is of type `com.bea.data.RawData` and contains the message published by the TIBCO RV event generator.

In addition, you need to edit the following annotation in the JPD file:

```
@com.bea.wli.control.broker.MessageBroker.StaticSubscription(channelName =  
"/TimeOut/CMrequest/TibcoRawDataChannel",messageBody = "{x0}",  
/
```

to read as follows:

```
@com.bea.wli.control.broker.MessageBroker.StaticSubscription(channelName =  
"/TimeOut/CMrequest/TibcoRawDataChannel",messageBody = "{x0}",  
messageMetaData = "{x1}")
```

Important: The parameter used in the annotation also needs to be added to the method definition. For an example, refer to [Retrieving Information From a TIBCO RV Event Generator Header](#).

TIBCO RV Event Generator Header

This section provides the schema of a TIBCO RV event generator header and an example code to retrieve information from the header.

Schema of a TIBCO RV Event Generator Header

```
<?xml version="1.0"?>  
<xs:schema targetNamespace="http://www.bea.com/wli/control/TibHeaders"  
xmlns:xs="http://www.w3.org/2001/XMLSchema"  
xmlns="http://www.bea.com/wli/control/TibHeaders"  
elementFormDefault="qualified">  
  <xs:element name="TibHeaders">  
    <xs:complexType>  
      <xs:sequence>  
        <xs:element name="ReplySubject" type="xs:string" minOccurs="0"  
maxOccurs="1"/>  
        <xs:element name="SendSubject" type="xs:string" minOccurs="0"  
maxOccurs="1"/>  
        <xs:element name="TibrvTransport" type="Transport"  
minOccurs="0" maxOccurs="1"/>  
      </xs:sequence>  
    </xs:complexType>  
  </xs:element>  
  <xs:complexType name="Transport">  
    <xs:sequence>  
      <xs:element name="Service" type="xs:string" minOccurs="0"
```

```

maxOccurs="1"/>
        <xs:element name="Network" type="xs:string" minOccurs="0"
maxOccurs="1"/>
        <xs:element name="Daemon" type="xs:string" minOccurs="0"
maxOccurs="1"/>
        </xs:sequence>
    </xs:complexType>
</xs:schema>

```

Retrieving Information From a TIBCO RV Event Generator Header

Following is a code example for retrieving `replySubject` from the TIBCO RV event generator header.

```

@com.bea.wli.control.broker.MessageBroker.StaticSubscription(channelName
="/Soak/reply/TibcoDataChannel"messageBody = "{x0}", messageMetaData =
"{x1}")

public void subscription(com.bea.data.RawData x0, com.bea.xml.XmlObject x1)
{
    // #START: CODE GENERATED - PROTECTED SECTION - you can safely add code
    above this comment in this method. #//
    // input transform
    // parameter assignment
    this.receivedBytes = x0;
    this.Header = x1;
    // #END : CODE GENERATED - PROTECTED SECTION - you can safely add code
    below this comment in this method. #//
    TibHeaders
    tibHeader=TibHeadersDocument.Factory.newInstance().addNewTibHeaders();
    tibHeader.set(this.Header);
    String replySubject=tibHeader.getReplySubject();
}

```


Index

S

Schema

- TIBCO RV event generator header 1-6

Settings

- TIBCO RV event generator
 - new 1-4
 - new channel rule 1-4

T

TIBCO RV

- event generator
 - available scheduler node 1-2
 - available worker node 1-2
 - balancing load 1-2
 - certified messaging 1-2
 - create new 1-4
 - define a new channel rule 1-4
 - deploying on a cluster 1-2
 - explicit confirmation 1-5
 - failover 1-3
 - header schema 1-6
 - high availability 1-2
 - introduction 1-2
 - retrieving messages using perform node 1-5
 - scheduler node balancing load 1-2
 - scheduler node failure scenario 1-3
 - scheduler node in a cluster 1-2
 - using distributed queues 1-4
 - worker node balancing load 1-2
 - worker node failure scenario 1-3

worker node in a cluster 1-2

