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## 1. Introduction

1.1. Project/Component Working Name:  
Generic JMS Resource Adapter Integration

1.2. Name(s) and e-mail address of Document Author(s)/Supplier:  
Ramesh Parthasarathy [rampsarathy@dev.java.net, rameshp@sun.com]

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## 2. Project Summary

2.1. Project Description:

To promote glassfish integration with other JMS providers, generic  
jms

resource adapter version 1.7 (<https://genericjmsra.dev.java.net>)  
will be

integrated with the application server. Through this integration  
developers will be able to take advantage of some feature  
enhancements

like reliable redelivery, load balancing for topic destinations in a  
cluster and monitoring.

2.2. Risks and Assumptions:

## 3. Problem Summary

3.1. Problem Area:

The current version of generic jms ra (1.5) that is bundled with  
glassfish

does not support the following

a. Transaction recovery when redelivery is enabled.  
b. Load balancing of messages from topic destinations to Message  
driven

bean endpoints in an application server cluster.

c. Monitoring the resource pool parameters.

3.2. Justification:

The above features are required in an enterprise system.

## 4. Technical Description:

4.1. Details:

4.1.1 Reliable message redelivery :

Redelivery is a feature in Generic JMS RA that can be used to  
resend

the message to an MDB ( or any listener implementation) if there  
was

an exception during the first send attempt. If the first invocation  
of the MDB's listener method throws an exception then the RA tries

to redeliver it N ( number of redelivery attempts configured using  
the activation config property RedeliveryAttempts in inbound endpoint)  
times at an interval ( configured using activation property  
RedeliveryInterval). If redelivery is unsuccessful even after the  
attempts are exhausted the RA tries to send the message to a Dead  
Message Destination ( a JMS destination configured in the  
activation config). In 1.5 that is bundled currently, redelivery was un-  
reliable because redelivered messages could not be recovered during  
transaction recovery.

#### 4.1.2 Load balancing topic destinations :

A message driven bean that is deployed on an application server  
cluster is deployed on all instances of the cluster. If the bean is  
listening to a JMS topic destination for messages then there are N  
( N is the number of instances in the cluster) separate subscribers  
for the same topic. This causes the same message being received and  
processed by all N instances in the cluster. This results in  
duplicay and also in-efficiency, which are some of the undesirable  
characteristics of reliable and highly available enterprise  
systems.

In 1.7, a message would be received and processed by one and only  
one instance of the application in a cluster.

#### 4.1.3 Monitoring :

It would be useful to add JMX monitoring to Generic JMS RA.  
Attributes related to the pool usage and configuration information will be  
exposed through JMX MBeans.

#### 4.2. Bug/RFE Number(s):

[https://genericjmsra.dev.java.net/issues/show\\_bug.cgi?id=24](https://genericjmsra.dev.java.net/issues/show_bug.cgi?id=24)

[https://genericjmsra.dev.java.net/issues/show\\_bug.cgi?id=27](https://genericjmsra.dev.java.net/issues/show_bug.cgi?id=27)

[https://genericjmsra.dev.java.net/issues/show\\_bug.cgi?id=26](https://genericjmsra.dev.java.net/issues/show_bug.cgi?id=26)

#### 4.3. In Scope:

#### 4.4. Out of Scope:

#### 4.5. Interfaces:

##### 4.5.1 Exported Interfaces

JMX interface : TBD

4.5.2 Imported interfaces

None

4.5.3 Other interfaces (Optional)

None

4.6. Doc Impact:

None

4.7. Admin/Config Impact:

None

4.8. HA Impact:

None

4.9. I18N/L10N Impact:

None

4.10. Packaging & Delivery:

None

4.11. Security Impact:

None

4.12. Compatibility Impact

None

4.13. Dependencies:

Testing:

SQE has to test the RA with SunMQ and WebSphere MQ. Testing involves creation of new test cases for features added as well as executing the current set of tests.

5. Reference Documents:

<https://genericjmsra.dev.java.net/docs/redelivery/redelivery.html>

6. Schedule:

6.1. Projected Availability:

Aligns with GlassFish V2/Sun Java System Application Server 9.1 schedule