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JMS

Java Messaging Service

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Messaging & JMS

- Messaging enables distributed communication that is loosely coupled
- The sender and the receiver do not have to be available at the same time in order to communicate
- The sender does not need to know anything about the receiver
- JMS is a Java API that allows applications to create, send, receive, and read messages

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Messaging Service

- Also known as JMS Providers
- ActiveMQ, WebsphereMQ, SonicMQ etc
- Integrated into App Server or independent. Basic to elaborate
- Centralised Messaging and Distributed Messaging
- Accessible via proprietary APIs as well as JMS

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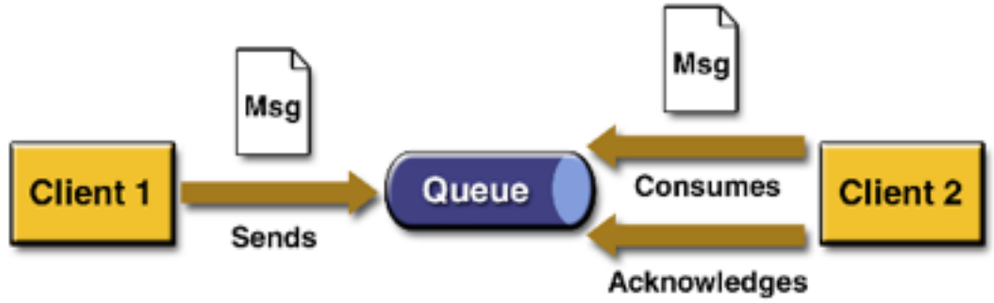
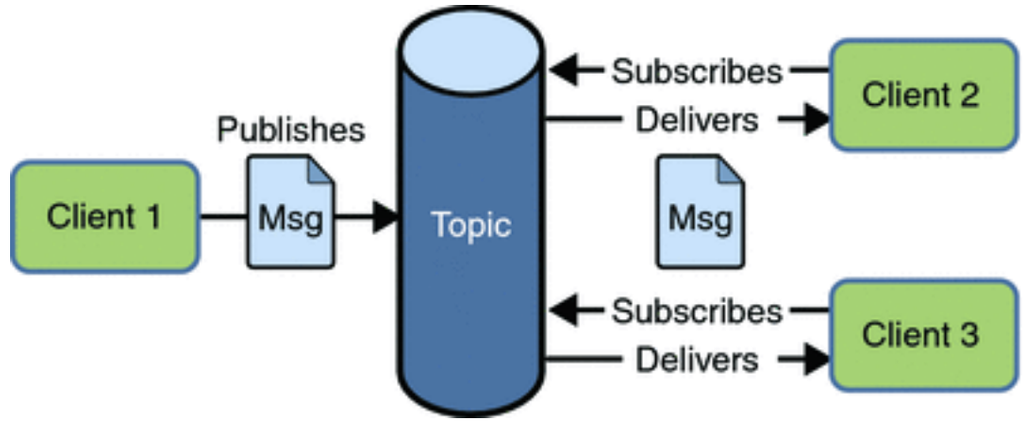
Terminology

- Point to Point with queues

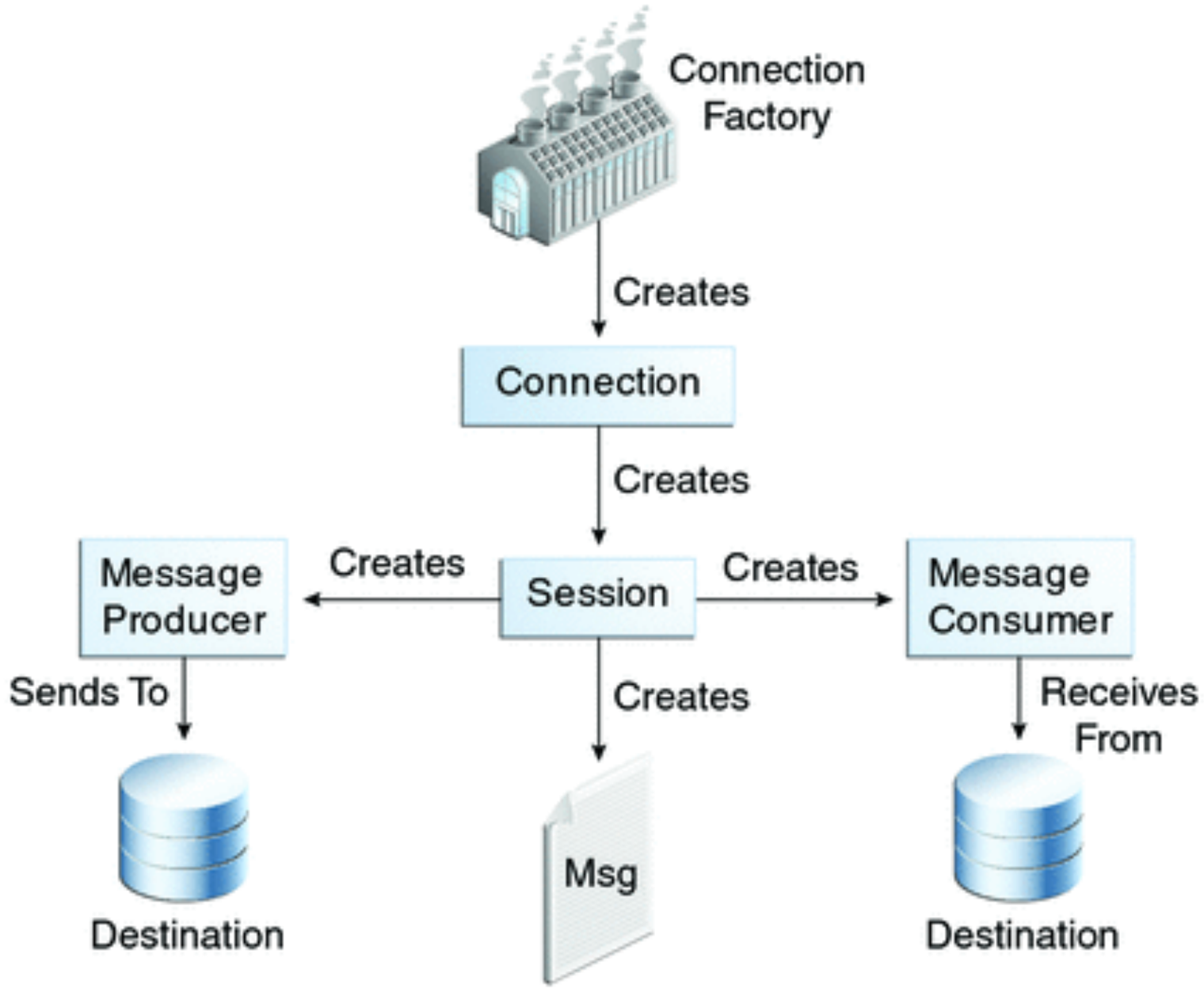


- Publish Subscribe with topics
  - Durable and non durable subscription



- Persistent and non persistent messaging
- Synchronous and Asynchronous reception

JMS Programming Model



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Transactions In JMS

- JMS is a transactional resource. Supports JTA transactions

- However JMS transactions are only limited to delivery of the message and does not include the receiver of the message.

- Sessions hold message in cache till transactions commit. So we have transactional and non-transactional sessions.

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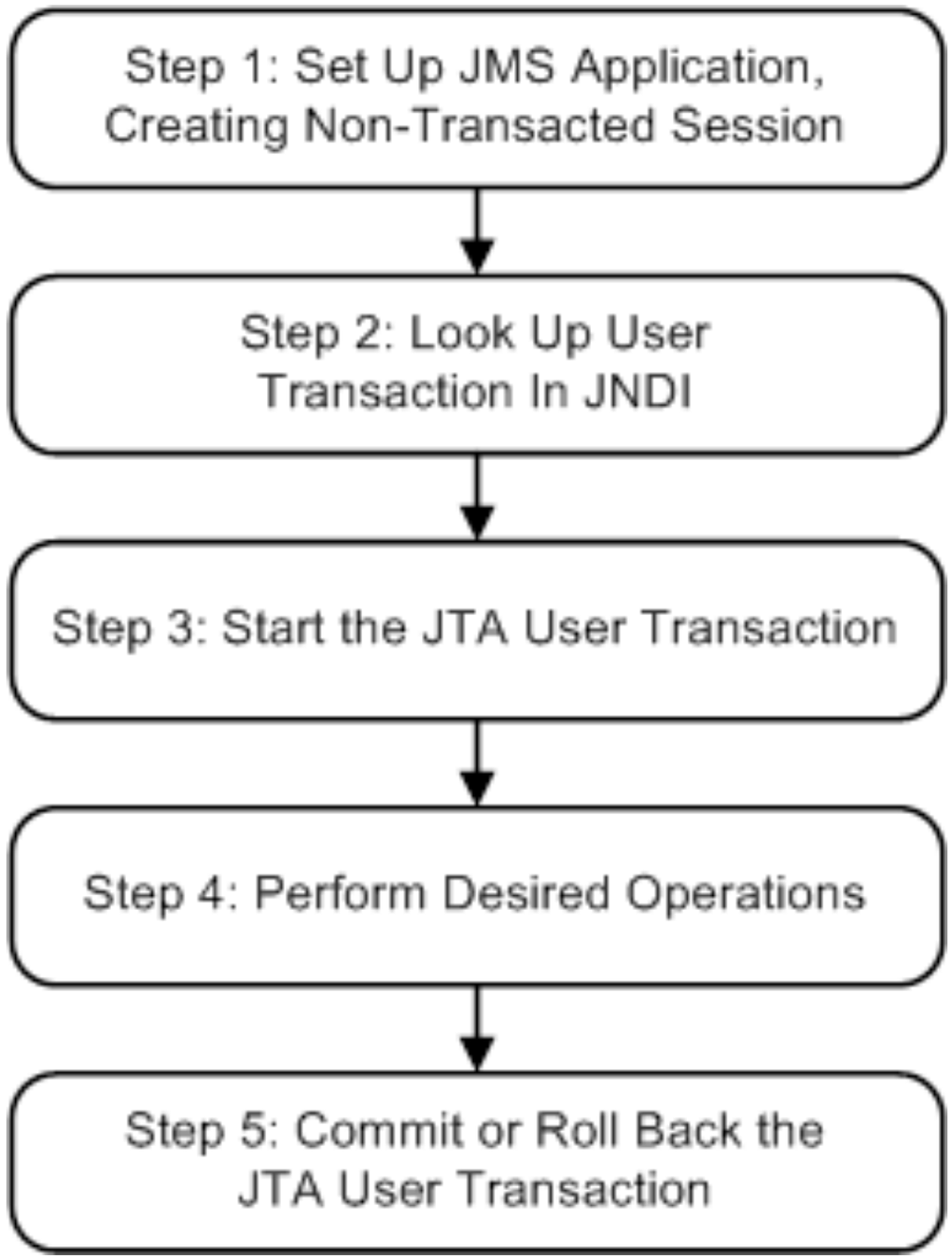
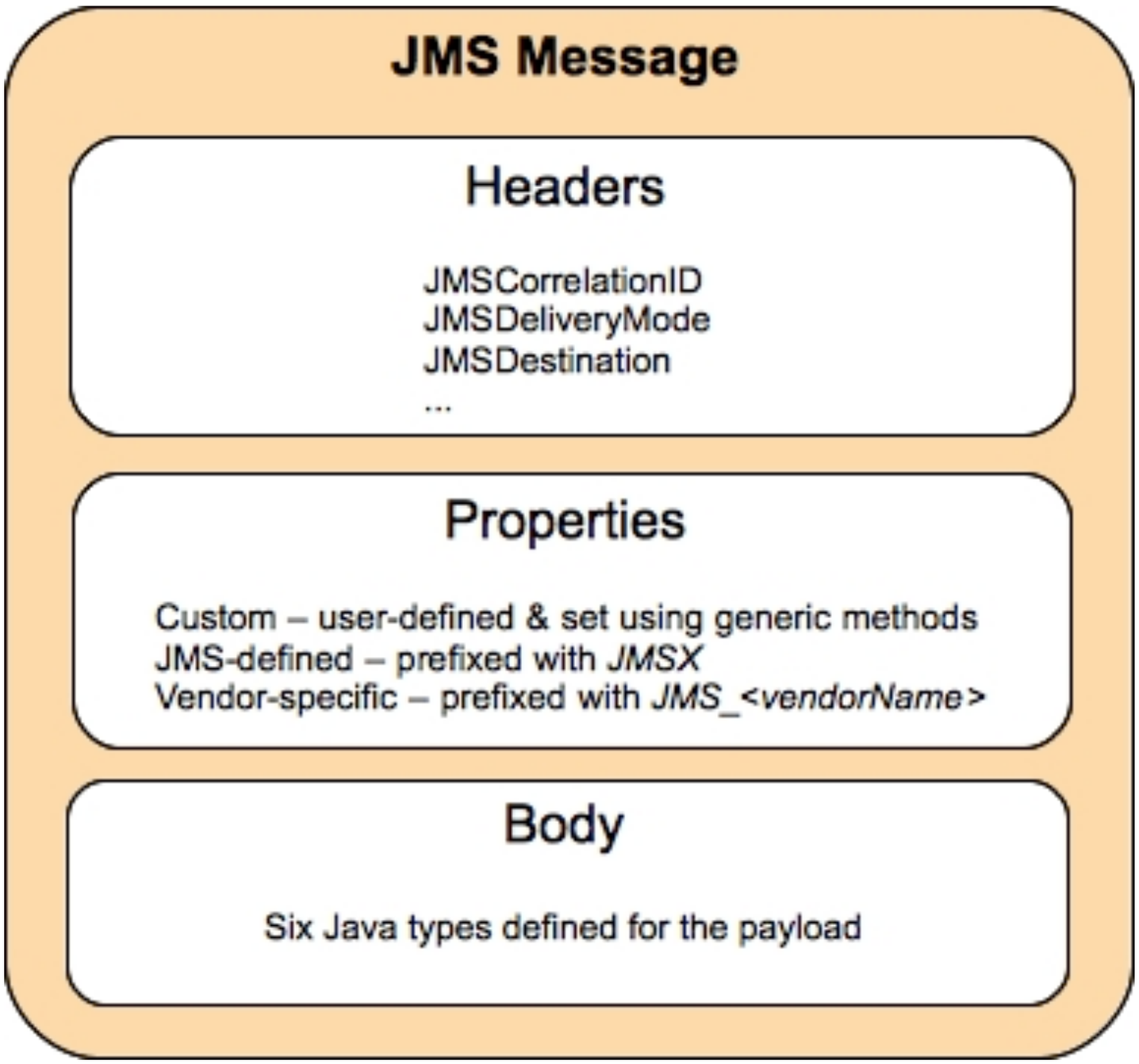
Making JMS Participate in JTA



Composition Of JMS Message



Properties can be used in message selectors on the receivers

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JMS Messages

Message Type	Body Contains
TextMessage	A java.lang.String object (for example, the contents of an XML file).
MapMessage	A set of name-value pairs, with names as String objects and values as primitive types in the Java programming language. The entries can be accessed sequentially by enumerator or randomly by name. The order of the entries is undefined.
BytesMessage	A stream of uninterpreted bytes. This message type is for literally encoding a body to match an existing message format.
StreamMessage	A stream of primitive values in the Java programming language, filled and read sequentially.
ObjectMessage	A Serializable object in the Java programming language.
Message	Nothing. Composed of header fields and properties only. This message type is useful when a message body is not required.

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Acknowledgement Modes

- Session.AUTO_ACKNOWLEDGE: The session automatically acknowledges a client's receipt of a message either when the client has successfully returned from a call to receive or when the MessageListener it has called to process the message returns successfully.

- Session.CLIENT_ACKNOWLEDGE: A client acknowledges a message by calling the message's acknowledge method.

- Session.DUPS_OK_ACKNOWLEDGE: This option instructs the session to lazily acknowledge the delivery of messages.