



JDBC XA Resources

8.0 XADataSource

An `XADataSource` object creates `XAConnection` objects, connections derived from `PooledConnection` that can be used for distributed transactions. An application that uses distributed transactions will need to be run using a JDBC driver that supports the `XADataSource` and `XAConnection` interfaces.

The Connection objects created by PooledConnection objects and XAConnection objects are handles for the underlying physical connections they represent. In order to include distributed transactions, an application needs to get a Connection object that was produced by an XAConnection object. However, the application itself does not have to do anything other than call the method `DataSource.getConnection`.

An XDataSource object represents a database, and it will produce XAConnection objects that are physical connections to the DBMS server for that database. In the context of the JDBC API and distributed transactions, the DBMS server is known as a resource manager (RM).

8.1 Application Code in Distributed Transactions

A distributed transaction has very little effect on application code because all of the transaction management is done by the distributed transaction infrastructure. This infrastructure includes an application server, a transaction manager, and a JDBC driver.

The only impact on code is that an application cannot call the methods `Connection.commit` and `Connection.rollback` because they would interfere with the infrastructure's management of the distributed transaction. Connection object produced by an `XAConnection` object has its auto-commit mode disabled by default.

8.2 XACConnection

An `XAConnection` object is a `PooledConnection` object that can be used in a distributed transaction. It represents a physical database connection and is used by a middle-tier server to create a `Connection` object that can be returned to an application. Being an interface that extends `PooledConnection`, `XAConnection` inherits all of the `PooledConnection` methods, and it adds one method of its own: `getXAResource`. The `XAResource` object returned by this method is what makes it possible for the `XAConnection` to participate in distributed transactions.