Introduction to the WebSphere MQ RPC Server and WebSphere MQ Listener

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Overview

The EntireX WebSphere MQ RPC Server allows standard RPC clients to send and receive asynchronous and synchronous messages to a WebSphere MQ queue manager. The EntireX WebSphere MQ Listener receives asynchronous and synchronous messages from a WebSphere MQ queue and calls a standard RPC server.

Both components use the WebSphere MQ base Java classes from IBM.

Both components can connect to a WebSphere MQ either as a WebSphere MQ client using TCP/IP (*client mode*) or in so-called *bindings mode* where it is connected directly to WebSphere MQ running on the same machine. Note that on z/OS, only bindings mode is supported. If the WebSphere MQ Listener wants to connect in client mode via TCP/IP to an MQ server on z/OS, the *client attachment feature* needs to be installed on the target queue manager.

The WebSphere MQ RPC Server runs as an RPC server and processes RPC client calls. An RPC client can send an asynchronous message (MQ `PUT` call) if it uses a program with `IN` parameters. An RPC client can receive an asynchronous message if it uses a program with `OUT` parameters (MQ `GET` call). The receiver must use the same parameters in a program as the sender, but with the direction `OUT` instead of `IN`. Processing of synchronous messages (request/reply scenario) is possible if the program uses a mixture of `IN` and `OUT` parameters. The images below illustrate message transport when sending and receiving messages. If the RPC client application uses conversational RPC, the MQ calls are issued transactionally (using the `SYNCPOINT` option), a `Backout Conversation` will send a backout to the queue manager, and a `Commit Conversation` will send a commit to the queue manager.

The WebSphere MQ RPC Server registers to one RPC service. On the MQ side it uses one input queue and one output queue.

The WebSphere MQ Listener runs as a listener on an MQ queue and processes MQ messages. It receives an MQ message and sends the message to an RPC server. A synchronous scenario is possible if the MQ message is a request message that specifies a reply queue. In this case the result returned by the RPC server is sent back as an MQ message to the reply queue.
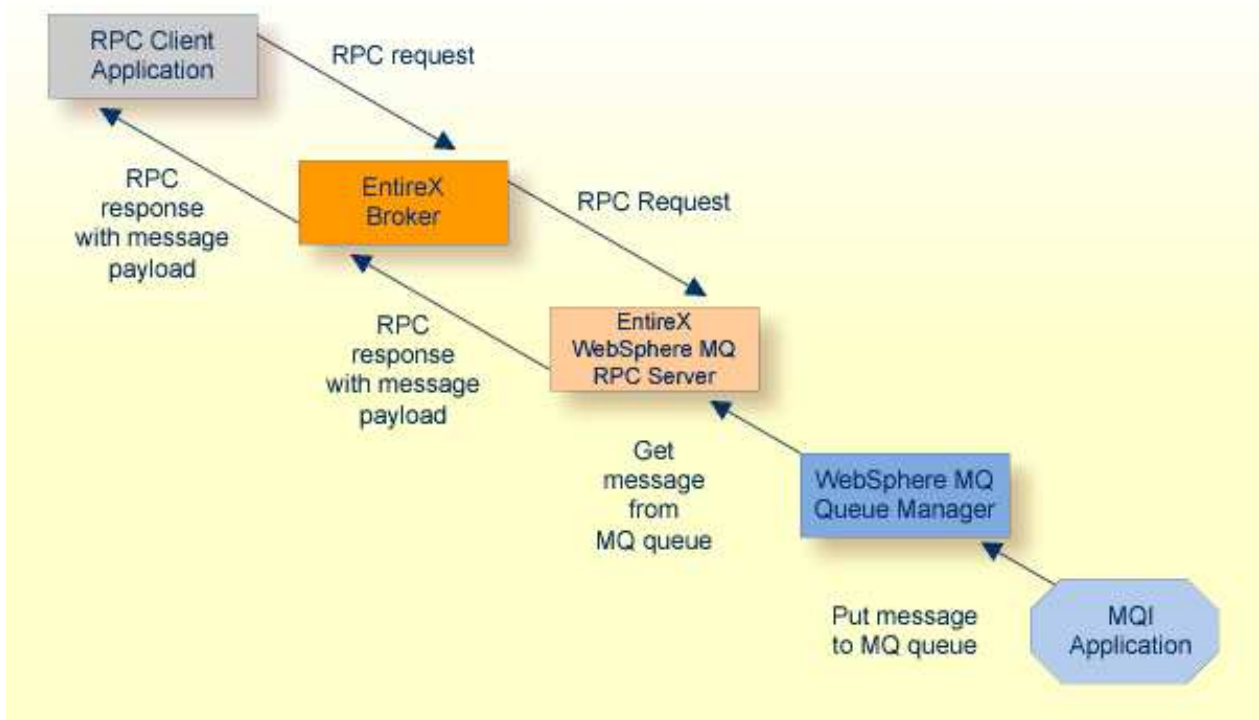
Sending a Message to a WebSphere MQ Queue
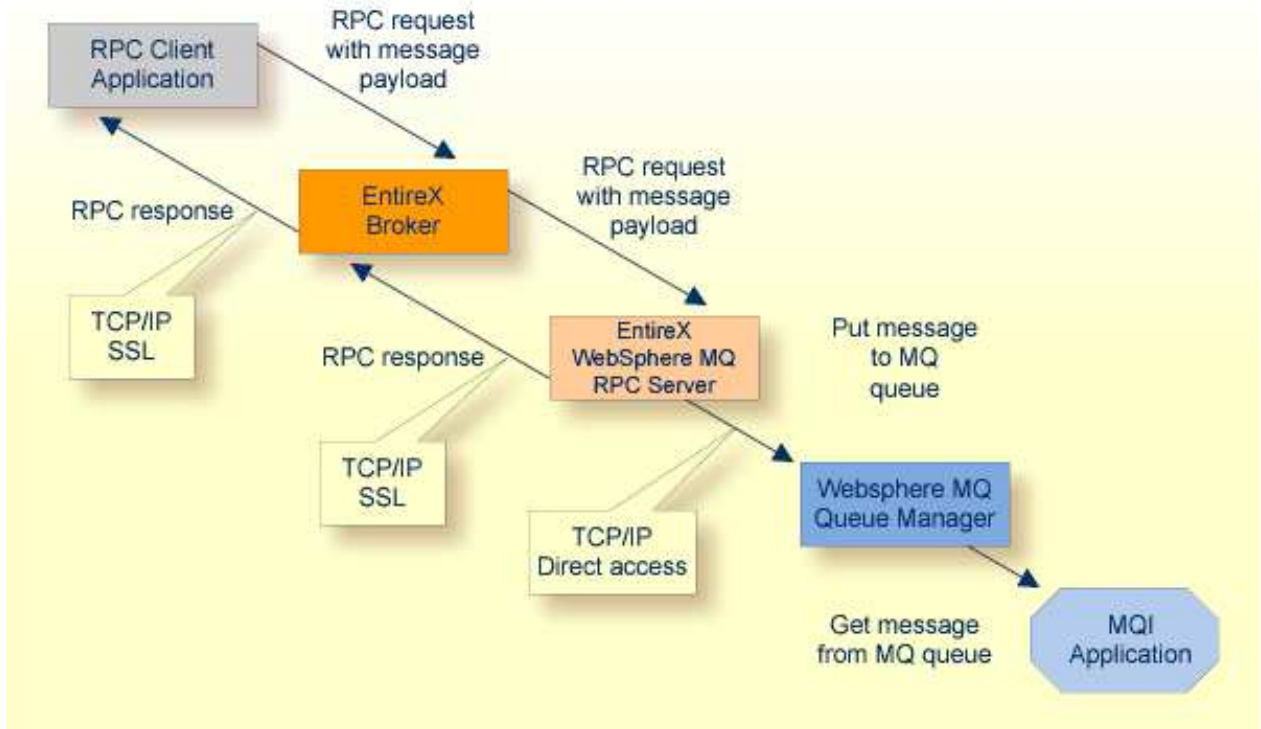
Note:
All messages sent to a WebSphere MQ RPC Server instance via a specific RPC service are put on the same MQ output queue.
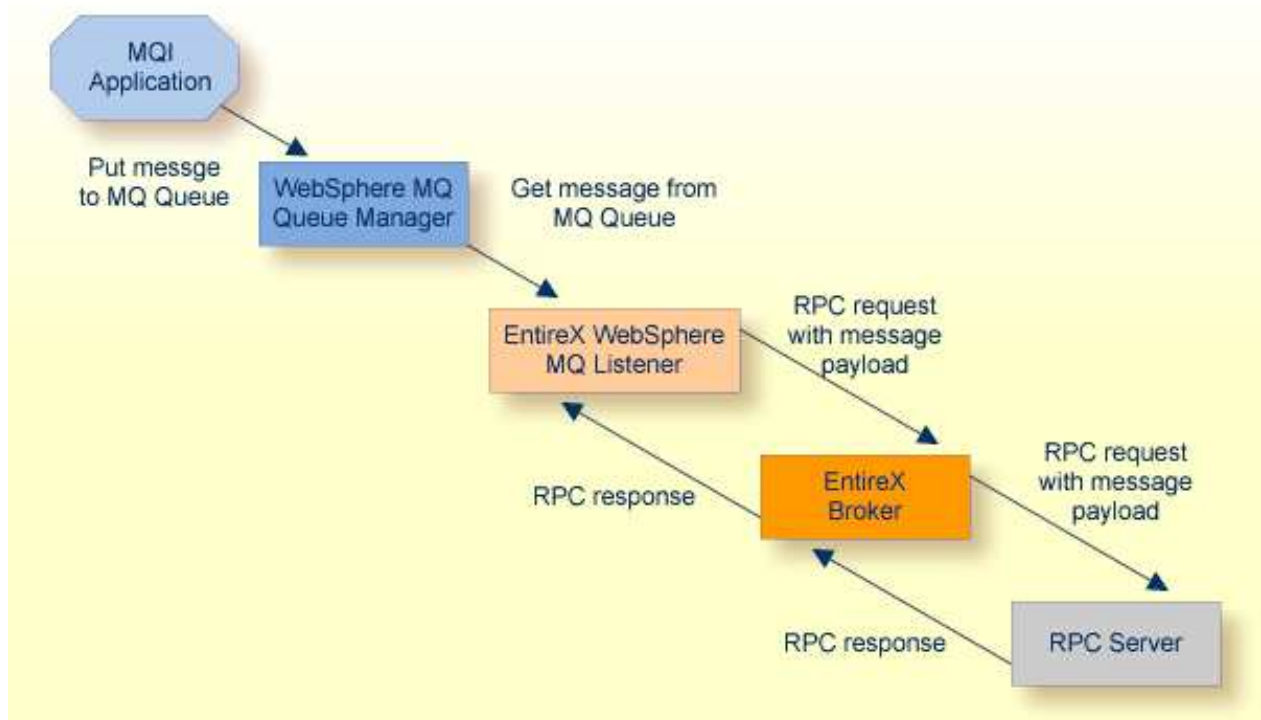
Receiving a Message from a WebSphere MQ Queue

Note:
All messages retrieved by the WebSphere MQ RPC Server from the MQ input queue are passed to the same RPC service. Messages are retrieved in the order they appear on the queue.

Receiving a Message from a WebSphere MQ Queue via WebSphere MQ Listener

Note:
All messages retrieved by the WebSphere MQ Listener from the MQ listen queue are passed to the same RPC service. Messages are retrieved in the order they appear on the queue.