



IBM Software Group

IBM® WebSphere® Everyplace® Deployment V6 MQ Everyplace Overview



@business on demand.

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WebSphere MQ Messaging

- Assured message delivery
 - ▶ Level of assuredness may be lowered to improve performance
- Non-duplication of messages
- Application de-coupling
- No detailed communications programming knowledge required
- Requires administration
 - ▶ Network topology
 - ▶ Message routing
 - ▶ Message staging
 - ▶ Network protocol



WebSphere MQ Messaging family

- WebSphere MQ
 - ▶ Classic messaging product
 - ▶ Designed for scalability & performance
- WebSphere MQ Everyplace (WMQE)
 - ▶ Provides comparable function to WebSphere MQ
 - ▶ Emphasis on small footprint, economic protocols & fragile networks
- WebSphere MQ Telemetry Transport
 - ▶ Telemetry support as a publish/subscribe node
 - ▶ Requires broker
 - ▶ Minimal footprint and wire protocol
- WebSphere Business Integration Event Broker
 - ▶ Point-to-point & publish/subscribe broker function
- WebSphere Business Integration Message Broker
 - ▶ Broker transforms and manages message flows



WebSphere MQ Everywhere

MQ Everyplace

MQ Everyplace provides industry strength messaging optimized for the mobile environment with intermittent network connectivity.

MQ Everyplace provides the following features:

- Asynchronous & synchronous messaging
- Supports a wide range of devices with small, customizable footprint
- Authentication, encryption, non-repudiation and compression
- Automatic channel management
- Built-in comprehensive security features
- Object messaging (data & function)
- Once-only assured delivery
- MQe serves as a gateway to IBM's enterprise messaging offerings which include WebSphere MQ, WebSphere Business Integration Message Broker and WebSphere Business Integration Event Broker.



WebSphere MQ Everyplace - Basics

- Toolkit
- Java interface with JMS
 - ▶ Client
 - ▶ Server
 - ▶ Gateway
- C interface
 - ▶ Client
- Support Pacs
 - ▶ WebSphere MQ Everyplace Server Support
 - MQe_Service
 - MQe_Script
 - MQe_Explorer
 - MQe_MiniCertServer



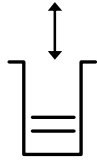
WebSphere MQ Everyplace – Queue Manager

- Provides the interface to WMQE
- Queue manager instance required in all cases
 - ▶ Queue Manager owns all other objects
 - ▶ WMQE Configuration information held in persistent storage – The Registry
 - ▶ Help provided to use initialization file to hold application configuration information
 - e.g. queue manager start up parameters
- Registry Information may be used by Java or C queue manager
- One queue manager per JVM or process
 - ▶ A double click may instantiate more than one queue manager from the same registry
 - ▶ WMQE checks within the JVM but does not check in the system
- Rules for modifying default behaviour



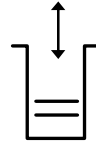
Prerequisite Check Fails

Local Queue Manager



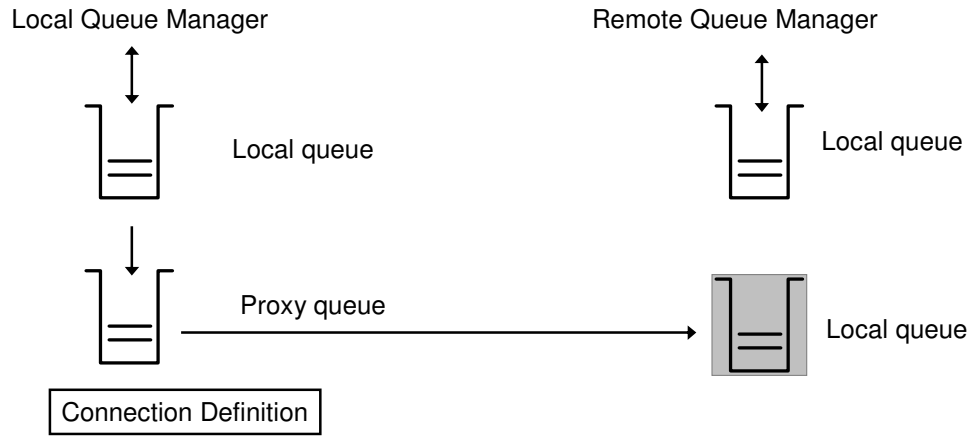
Local queue

Remote Queue Manager

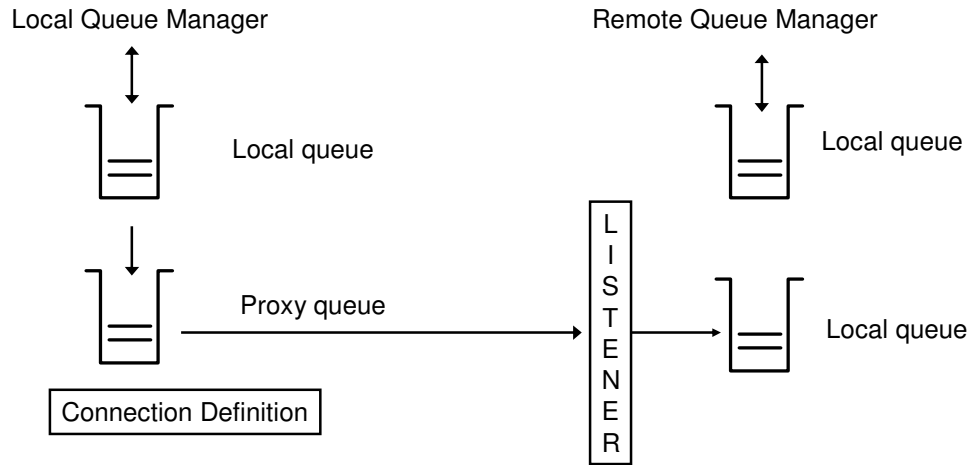


Local queue

Queue Manager Roles – Client



Queue Manager Roles – Server



Queue Manager Roles - Gateway

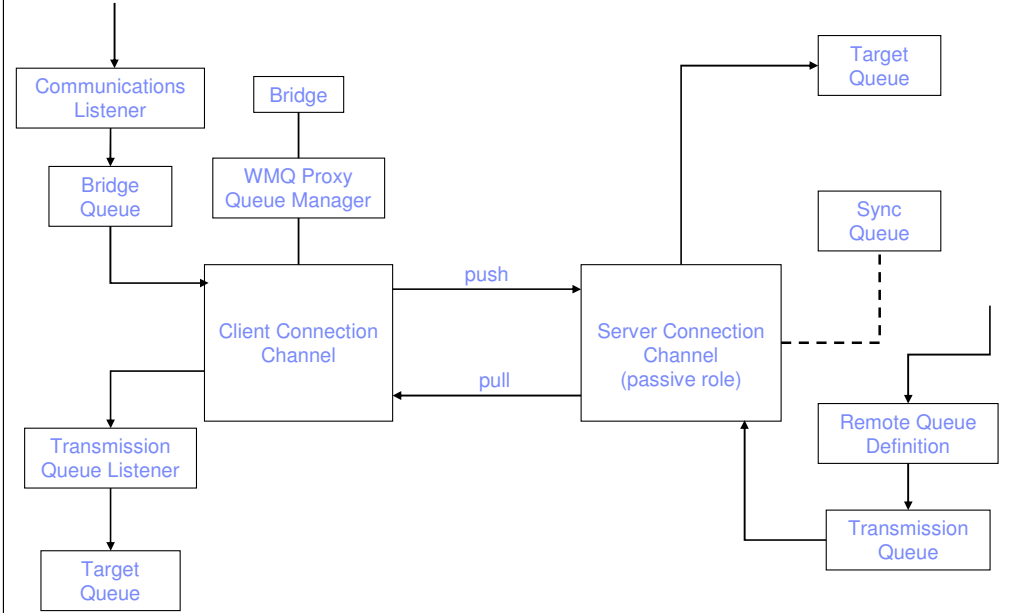
- Bridge classes available
 - ▶ Queue manager bridge enabled
- Default transformer located on the bridge
- WebSphere MQ queue manager proxy
- Client connection channel
- Bridge queue
 - ▶ Defines location of WebSphere MQ queue
 - ▶ May have user defined transformer
- Connection definition
 - ▶ Just the WMQ queue manager name
- Transmission queue listener
 - ▶ May have user defined transformer



Extending the WebSphere MQ Network – WMQ

- Java classes
 - ▶ Shipped as part of WebSphere MQ
- Java server connections
 - ▶ For use by the client connection in WMQE
- Sync queue
 - ▶ One for each server connection
- Transmission queue
 - ▶ Does not hold connection information
- Remote queue definitions
 - ▶ May be remote queue manager definitions
- Local queues





WebSphere MQ Everyplace – Message Compatibility

- WMQE default transformer
 - ▶ Serializes message to byte array
 - ▶ WMQE messages
 - MQMD marked as WMQE serialized message
 - Will pass through a WMQ network
 - May be read by WMQ application using WMQE classes
 - ▶ WMQEMQ messages
 - May be read by WMQ application
- WMQE JMS transformer
 - ▶ WMQE JMS messages understood by WMQ
 - ▶ WMQ JMS messages understood by WMQE
- User defined transformer
 - ▶ User defined



WebSphere MQ Everyplace - Queues

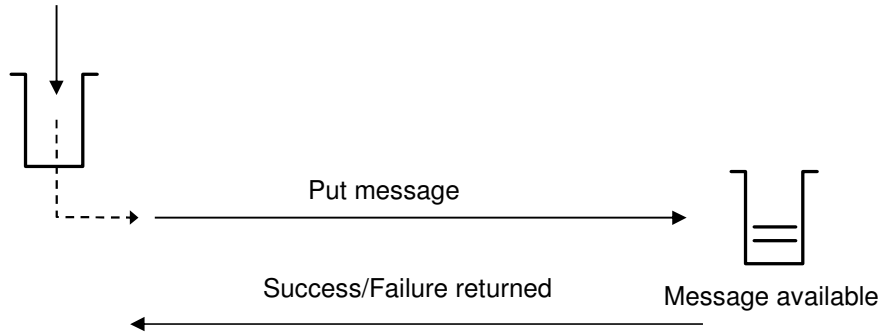


WebSphere MQ Everyplace – Proxy Queues

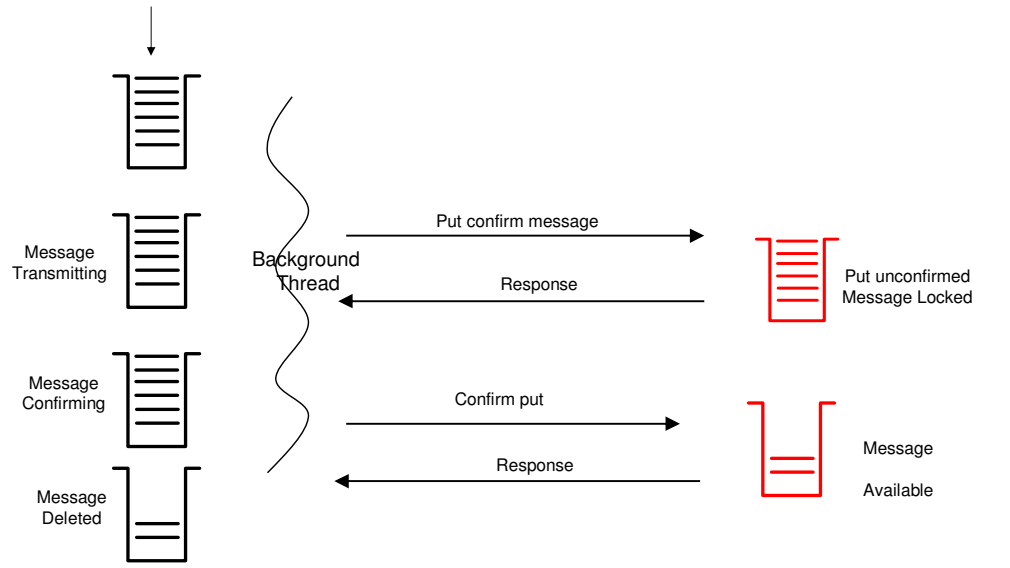
- Synchronous and asynchronous
 - ▶ Synchronous proxy queue
 - ▶ Asynchronous proxy queue



Synchronous Proxy Queue



Asynchronous Proxy Queue

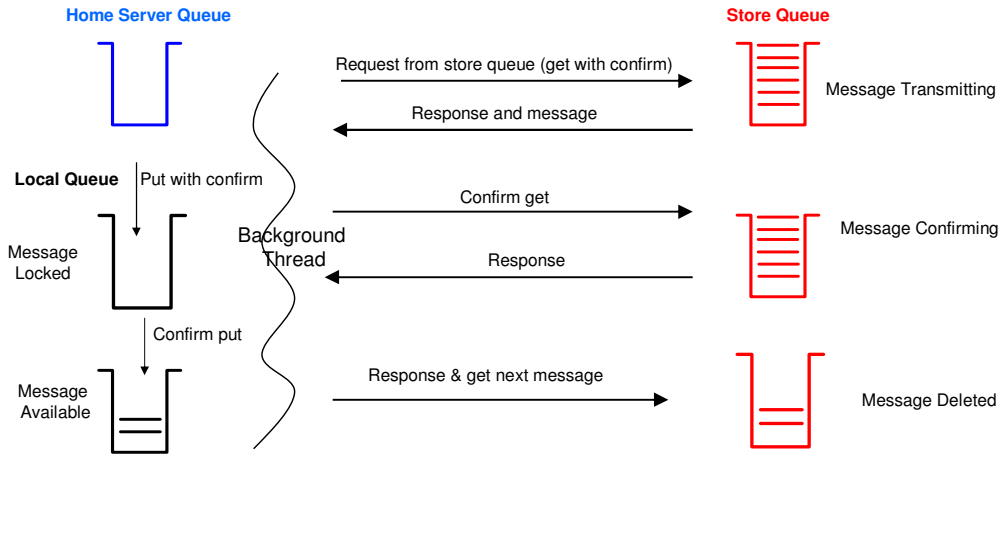


WebSphere MQ Everyplace – Pull Messages

- Pull messages across the network
 - ▶ Store queue
 - Server
 - Can hold messages for multiple clients
 - ▶ Home server queue
 - Configured for server queue manager
 - No persistent storage



Home Server Queue & Store Queue

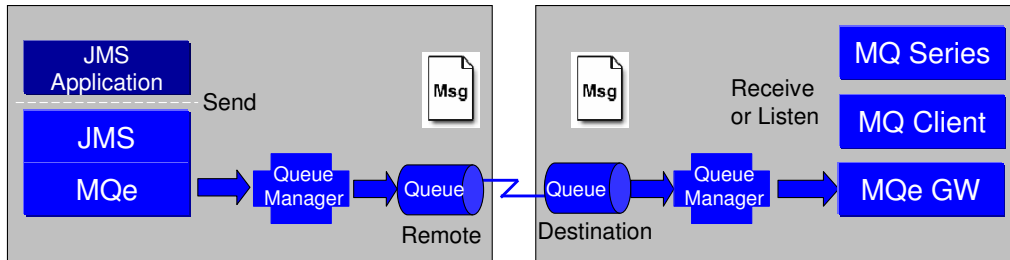


Queue Decision

- Synchronous Queue
 - ▶ No data written to local persistent storage
 - ▶ Immediate return of success/failure
 - ▶ Assuredness may be achieved via application
 - ▶ Network failure
 - Message may be lost
- Asynchronous Queue
 - ▶ UID fields used by WMQE for assuredness
 - ▶ Writes data to disk before sending
 - ▶ Network failure
 - Background thread will try later
 - Message not lost
- Home Server Queue / Store Queue
 - ▶ Messages held for clients
 - ▶ Client decides when to pull
 - Background thread
 - ▶ Heavy usage of network
 - Multiple flows
 - Addition information to determine which flow



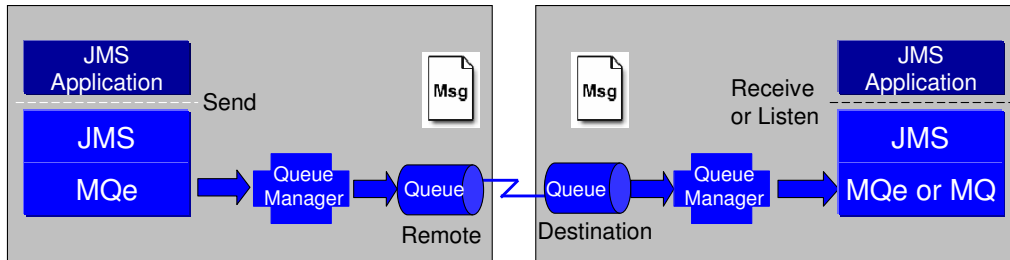
MQ integration Messaging End-to-End



- JMS with MQ Everyplace implements Point-to-Point (PTP) Messaging
- A Message Producer can send messages to a Message Consumer as shown
- If a network connection is not available, then messages can be queued locally for subsequent delivery when the connection becomes available



Seamless JMS integration Messaging End-to-End (with MQ or WBI)

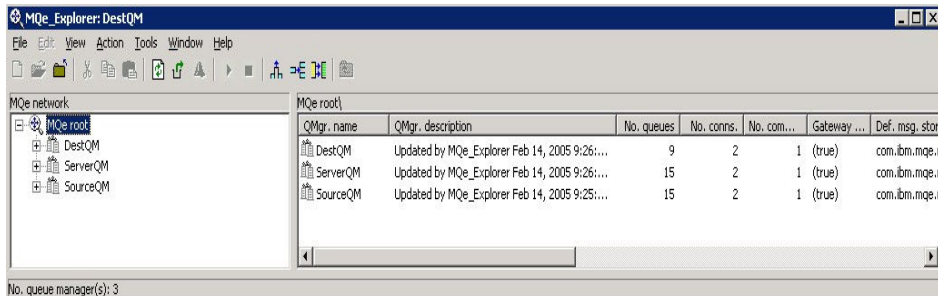


- JMS with MQ Everyplace implements Point-to-Point (PTP) Messaging
- A Message Producer can send messages to a Message Consumer as shown
- If a network connection is not available, then messages can be queued locally for subsequent delivery when the connection becomes available
- **Customers must either purchase WebSphere MQ or WebSphere BI Brokers to meet WAS messaging licensing guidelines**



MQe server-side Configuration

- The MQ Everyplace Server Support offering makes it easy for a user to create, configure, run and manage MQ Everyplace Gateway servers
- MQ Everyplace server queues can be configured via GUI thru the Server Support Pack
- MQ Everyplace server queues can be configured programmatically



MQ Everyplace Server Support Pac

- The MQ Everyplace Server Support Pac is a collection of MQe tools that are accessible from the Windows Start Menu. The documentation for each tool is also accessible from the Start Menu
- MQ Everyplace Explorer User Guide
 - ▶ Section 9 Trace - The trace window provides a means of debugging MQe applications (and MQe_Explorer and MQe).
- MQ Everyplace Service User Guide
- Section 9 Troubleshooting – lists common errors and solutions



MQ Everyplace Trouble Shooting

- Everyplace Deployment InfoCenter contains several sections on trouble shooting
 - ▶ Problem Determination
 - ▶ Common Problems
 - ▶ Tracing and Logging
 - ▶ MQ Everyplace Diagnostic tool



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