MQ Message Replication Overview
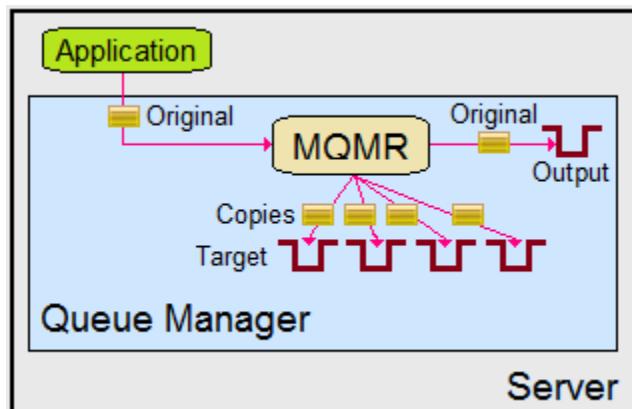
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1 Introduction

1.1 Overview

MQ Message Replication (MQMR) will clone messages being written (via MQPUT or MQPUT1 API calls) to an application's output queue and MQMR will write the exact same messages to 'n' target queues ('n' can be up to 100). When MQMR replicates a message both the message data and the message's MQMD structure will be cloned. This means that the fields of the MQMD structure (i.e. PutTime, MessageId, CorrelId, UserId, etc..) will be exactly the same as the original message's MQMD structure.

The MQAdmin can configure MQMR to perform message replication on any number of queues. The application messages put to each queue can be replicated and put to (up to) 100 target queues.

MQMR can clone messages being written to any MQ queue type. i.e. local, alias, remote and/or cluster queues (including transmission queues).

Existing applications do not need to be modified or updated nor is it necessary to set up Publish/ Subscribe to use MQMR. MQMR is deployed and configured at the queue manager level; hence, no application changes are required.

MQMR is an MQ API Exit that operates with IBM MQ v7.1, v7.5, v8.0, v9.0, v9.1 and v9.2 in Windows, Unix, IBM i (OS/400) and Linux platforms.

On AIX, HP-UX, Linux, Solaris and Windows, MQMR can be configured and used with a non-default installation of MQ in a multi-install MQ environment.

Note: Raspberry Pi is a Linux ARM 32-bit OS (Operating System). Hence, simply follow the Linux 32-bit instructions for installing and using the solution on a Raspberry Pi.

New in MQMR v2.0.0, added 2 auxiliary programs:
  - ➢ *MQ Queue To SQLite DB* (MQ2SDB) program will offload MQ messages to an SQLite database. See the *MQ2SDB Operation* manual for more information.
  - ➢ *SQLite DB To MQ Queue* (SDB2MQ) program will load SQLite database rows into messages in an MQ queue. See the *SDB2MQ Operation* manual for more information.

1.2 Executive Summary

MQMR is an MQ API Exit. The MQ API Exit is available in 3 forms:

- ➢ Windows DLL
- ➢ Shared library for AIX, HP-UX, Linux, and Solaris.
- ➢ IBM i exit module

The major features of MQMR are as follows:

- ➢ All message data & MQMD fields written to the application's output queue will be cloned to a target queue(s)
- ➢ No application changes required
- ➢ Standard MQ feature, GET-with-Convert, is supported
- ➢ Provides high-level logging capability for message cloning

1.3 Context Diagram (Logical View)
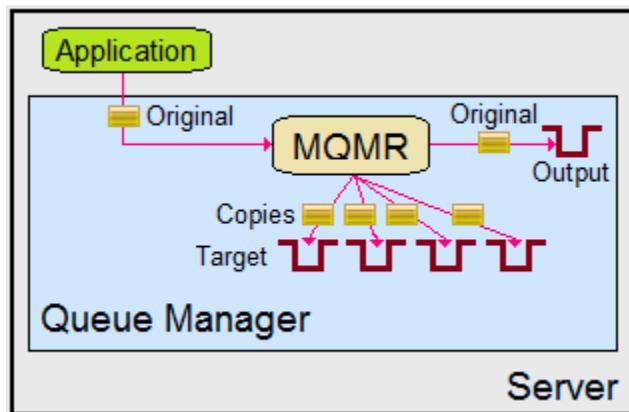
1.4 Prerequisites

This section provides the minimum supported software levels. These prerequisites apply to server-side installations of MQ Message Replication.

1.4.1 Operating System

MQ Message Replication can be installed on any of the following supported servers:

1.4.1.1 IBM AIX
➢ IBM AIX 6L version 6.1 or higher

1.4.1.2 HP-UX IA64
➢ HP-UX v11.23 or higher

1.4.1.3 IBM i (OS/400)
➢ IBM i V6R1 or higher

1.4.1.4 Linux x86
➢ Red Hat Enterprise Linux v5, v6, v7, v8
➢ SUSE Linux Enterprise Server v11, v12, v15

1.4.1.5 Linux x86_64 (64-bit)
➢ Red Hat Enterprise Linux v5, v6, v7, v8
➢ SUSE Linux Enterprise Server v11, v12, v15

1.4.1.6 Linux on POWER
➢ Red Hat Enterprise Linux v5, v6, v7, v8
➢ SUSE Linux Enterprise Server v11, v12, v15

1.4.1.7 Linux on zSeries (64-bit)
➢ Red Hat Enterprise Linux v5, v6, v7, v8
➢ SUSE Linux Enterprise Server v11, v12, v15

1.4.1.8 Raspberry Pi (Linux ARM 32-bit)
➢ Raspberry Pi OS v9 or higher

1.4.1.9 Sun Solaris
➢ Solaris SPARC v10 or higher
➢ Solaris x86_64 v10 or higher

1.4.1.10   Windows
➢ Windows 2008, 2012 or 2016 Server (32-bit & 64-bit)
➢ Windows 7, 8, 8.1 or 10 (32-bit & 64-bit)

1.4.2 IBM MQ

➢ IBM MQ v7.1, v7.5, v8.0, v9.0, v9.1 and v9.2 (32-bit and 64-bit)

Operating System	MQ v7.1, v7.5, v8.0, v9.0, v9.1 and v9.2
AIX v6.1 or higher	32-bit & 64-bit
HP-UX IA64 v11.23 or higher	32-bit & 64-bit
IBM i (OS/400)	64-bit
Linux x86	32-bit
Linux x86_64	32-bit & 64-bit
Linux on POWER	32-bit & 64-bit
Linux on zSeries	32-bit & 64-bit
Raspberry Pi ARM	32-bit
Solaris SPARC v10 & v11	32-bit & 64-bit
Solaris x86_64 v10 & v11	32-bit & 64-bit
Windows 2008, 2012, 2016, 7, 8, 8.1 & 10	32-bit & 64-bit

1.4.3 Windows 32-bit

The following is the software prerequisite for Windows 32-bit:

• Microsoft Visual C++ 2010 Redistributable Package (x86)
  https://www.microsoft.com/en-ca/download/details.aspx?id=5555

1.4.4 Windows 64-bit

The following is the software prerequisite for Windows 64-bit:

• Microsoft Visual C++ 2010 Redistributable Package (x64)
  https://www.microsoft.com/en-ca/download/details.aspx?id=14632