MQcast.exe and MQcatch.exe Version 1.0(00)

Multicast File Copy Utilities for

Message Queuing (MSMQ)

Windows XP Professional Resource Kit

Contents

Introduction

MQcast.exe and MQcatch.exe are utilities that can be used to efficiently distribute files from a single server to multiple clients over a LAN or a WAN with high reliability. MQcast.exe runs on the file server, and MQcatch.exe runs on each client.

MQcast.exe and MQcatch.exe have the following major features:

- Files are copied from a single server to multiple clients, or listeners, using reliable IP multicasting through the Pragmatic General Multicast (PGM) driver, which is installed and configured as part of the Core subcomponent during every installation of Message Queuing 3.0.

- The transmission bandwidth does not depend on the number of listeners.

- Files are copied using Message Queuing (MSMQ), so the programs continue to copy files even if there are network problems and connectivity interruptions.

- The file data are transmitted in express messages, which are stored only in RAM, but listeners use meta data transmitted along a second channel to ensure that they receive all the file data transmitted.

- Files and folder trees can be copied.

- Files can be copied from/to computers operating in workgroup mode (without access to Active Directory) or in domain mode (with access to Directory Service).

The following requirements must be satisfied before running MQcast.exe and MQcatch.exe:

- Windows XP Professional must be installed with Message Queuing 3.0 on the transmitter and the listeners.

- The non-MSMQ routers operating in the network must be multicast-enabled.

MQcast.exe transmits files in the form of MSMQ messages in cycles along two channels. The file data are transmitted along one channel, and meta data are transmitted periodically along the other channel. Each message can be as large as 1 MByte.

A client, or listener, can start receiving messages at any point, or at any message, along a cycle and continue receiving messages until the cycle is completed. The client then waits for the next cycle to receive any messages that were not received. When all the messages have been received, the client disconnects itself from the process. The meta data, which are transmitted periodically as a message in a separate channel, consist of a list of all the messages with the following relevant information: a message ID (MsgID), the corresponding file name, the size of the message (CRC), and the position of the message within the file (MsgNum).

The server must build the table of meta data before starting to transmit. The construction of such a table for 600 MByte takes about 1 min. After this initial delay, the server transmits the files continuously without disturbing the clients owing to the characteristics of the PGM driver.

Each client, or listener, creates two queues and waits for the meta data. No error is raised if the client begins to attempt to receive messages before the server starts transmitting. The client can receive messages

from the queue only after the meta data have been received. There is a completion port on the queue for the meta data, which are received asynchronously.

Running MQcast and MQcatch

Before running this version of MQcast or MQcatch, you must install Message Queuing 3.0 on the applicable computers. MQcast.exe must be copied to the computer from which you want to transmit files, and MQcatch.exe must be copied to each computer that you want to receive the transmitted files.

Command Reference

MQcast has the following command-line syntax:
MQcast *source_file_path\file* /multicast:*IP_address* [/S] [/V]

Where

Parameter or switch	Meaning
source_file_path	Specifies the path to the file(s) to be copied on the file server. There is no default path.
file	Specifies the file(s) to be copied. Wild cards can be used. Required.
/multicast:*IP_address*	Specifies the IP multicast address. Required.
/S	Copies all subfolders, except subfolders, and the applicable files in all subfolders.
/V	Displays file-by-file progress as the files are transmitted in each cycle.

MQcatch has the following command-line syntax:
MQcatch *destination_folder* /multicast:*IP_address*
Where

Parameter or switch	Meaning
destination_folder	Specifies the folder into which the files will be copied on the client. There is no default folder.
/multicast:*IP_address*	Specifies the IP multicast address. Required.

Pressing CNTRL-C on a client stops everything, purges, and unbinds the queues, but leaves the files already copied in the folder.

Example

The following command line is an example of how you can transmit all the files in a folder called MyFolder on a file server with MQcast.exe installed to the IP multicast address 234.1.1.1 for copying by listeners running MQcatch.exe.
MQcast.exe c:\MyFolder*.* /multicast:234.1.1.1 /s
The following command line is an example of how you can receive all the transmitted files in a local folder on a client with MQcatch.exe installed.
MQcatch.exe Local Folder /multicast:234.1.1.1
The ports are hard-coded: port 1 – file data, port 2 – meta data.

Feedback

For questions or feedback concerning this utility, please contact rkinput@microsoft.com.