

IBM MQ MFT examples of transferring a Message into File and a File into Message

<https://www.ibm.com/support/pages/node/6590511>

Date last updated: 2-Jun-2022

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+++ Objective

The objective of this tutorial is to provide concrete examples for using IBM MQ MFT to perform the following types of transfers:

- From a Message in a Queue in host-1, to a File in host-2
- From a File in host-1, to a Message in a Queue in host-2

These examples are a complement to the scenarios described in detail in the following tutorial:

<https://www.ibm.com/support/pages/node/6574791>

Installation, Configuration and First File Transfer of IBM MQ MFT Managed File Transfer 9.2 in Windows and Linux

++ Summary of commands

To transfer a message from: `-sq "Q1@QM92WIN1"`
Into destination file: `-df "message-from-windows-into-file-linux.txt"`

```
C:\temp\mft> fteCreateTransfer -rt -1 -sa AGENTWIN1 -sm QM92WIN1 -da AGENTLNX1 -dm QM92LNX1 -t text -de overwrite -df "message-from-windows-into-file-linux.txt" -sq "Q1@QM92WIN1" -w 60
```

To transfer a file from: `"C:\temp\mft\file-from-windows.txt"`
As a message in Queue: `-dq "Q1@QM92LNX1"`

```
C:\temp\mft> fteCreateTransfer -rt -1 -sa AGENTWIN1 -sm QM92WIN1 -da AGENTLNX1 -dm QM92LNX1 -t text -dq "Q1@QM92LNX1" "C:\temp\mft\file-from-windows.txt" -w 60
```

++ Customization is required for the Agents to enable these special transfer types

By default, the Agents are NOT enabled for these transfer types and you will get error:

BFGIO0197E: An attempt to read from a queue was rejected by the source agent. The agent must have enableQueueInputOutput=true set in the agent.properties file to support transferring from a queue.

To enable the feature, you will need to do the short procedure mentioned in:

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=files-configuring-agent-perform-message-file-transfers>

IBM MQ / 9.2

Configuring an agent to perform message-to-file transfers

For this example:

Windows AGENT:

C:\ProgramData\IBM\MQ\mqft\config\MFT92LNX\agents\AGENTWIN1\agent.properties

Add:

enableQueueInputOutput=true

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=messages-configuring-agent-perform-file-message-transfers>

IBM MQ / 9.2

Configuring an agent to perform file-to-message transfers

For this example:

Linux AGENT :

mqm@florenca1.fyre.ibm.com:

/var/mqm/mqft/config/MFT92LNX/agents/AGENTLNX1/agent.properties

Add:

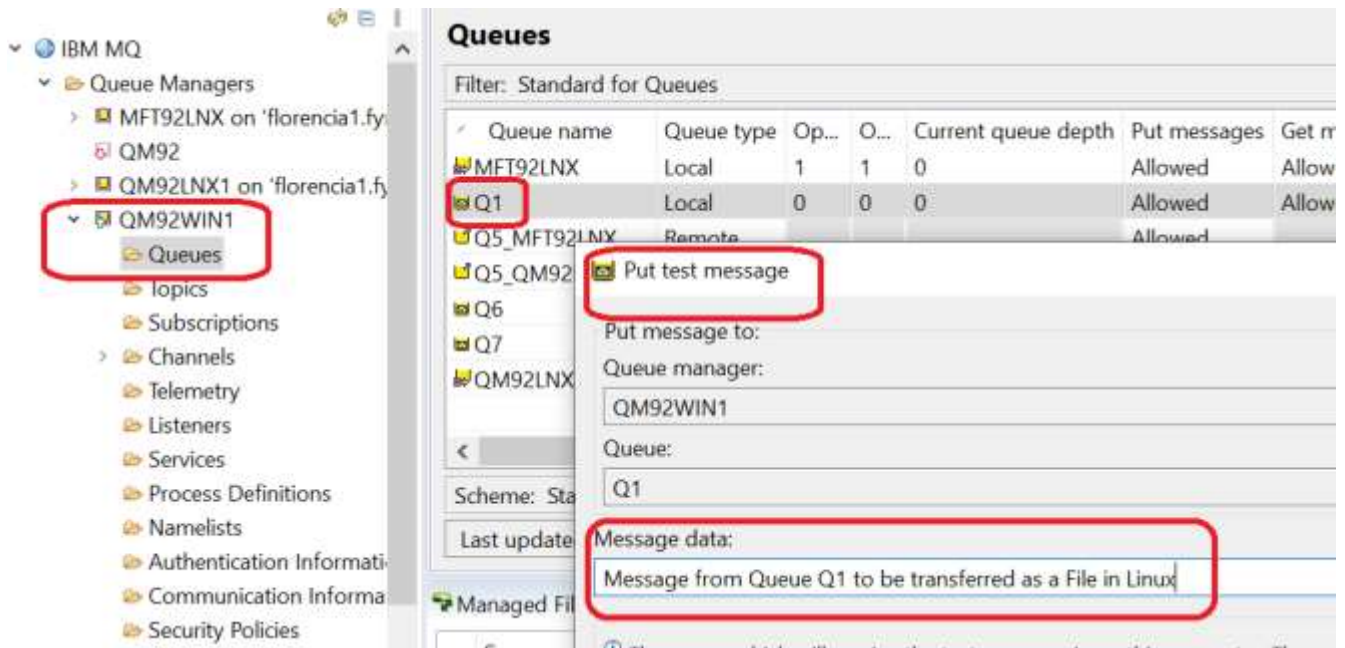
enableQueueInputOutput=true

enableClusterQueueInputOutput=true

+++ Scenario Message-to-File: Message in Queue in Windows to File in Linux

In the Windows host open the MQ Explorer.

Let's put a message into the Queue Q1 for the queue manager QM92WIN1:



The text (payload) of the message is:

Message from Queue Q1 to be transferred as a File in Linux

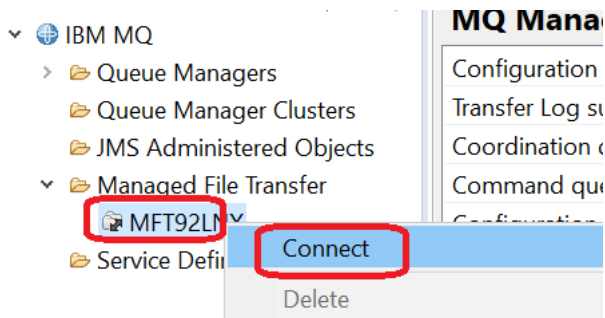
Notice that the Queue Q1 has 1 message (column "Current queue depth")

Queue name	Queue type	Op...	O...	Current queue depth
MFT92LNX	Local	1	1	0
Q1	Local	0	0	1
Q5_MFT92LNX	Remote			

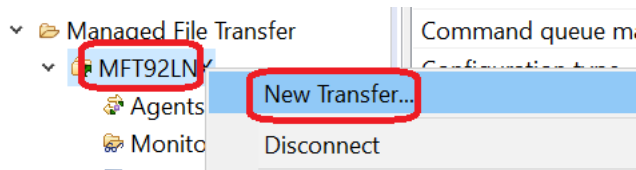
Let's proceed to initiate the transfer.

Scroll down to the section:
Managed File Transfer

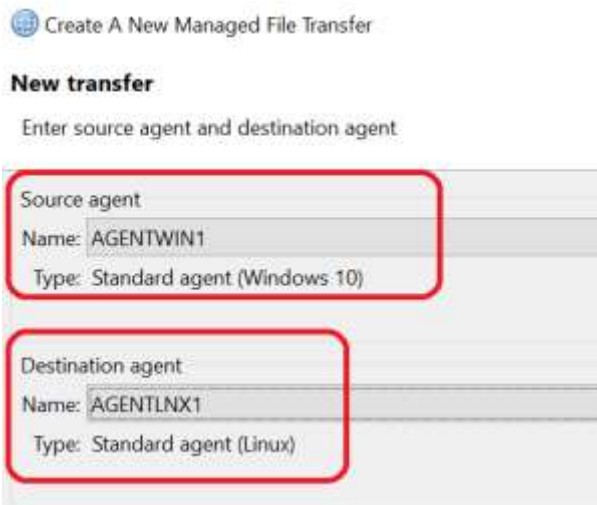
You need to "Connect" to the coordination queue manager to see the agents and perform file transfers.



Select the coordination queue manager and right click.
Select "New Transfer ..."

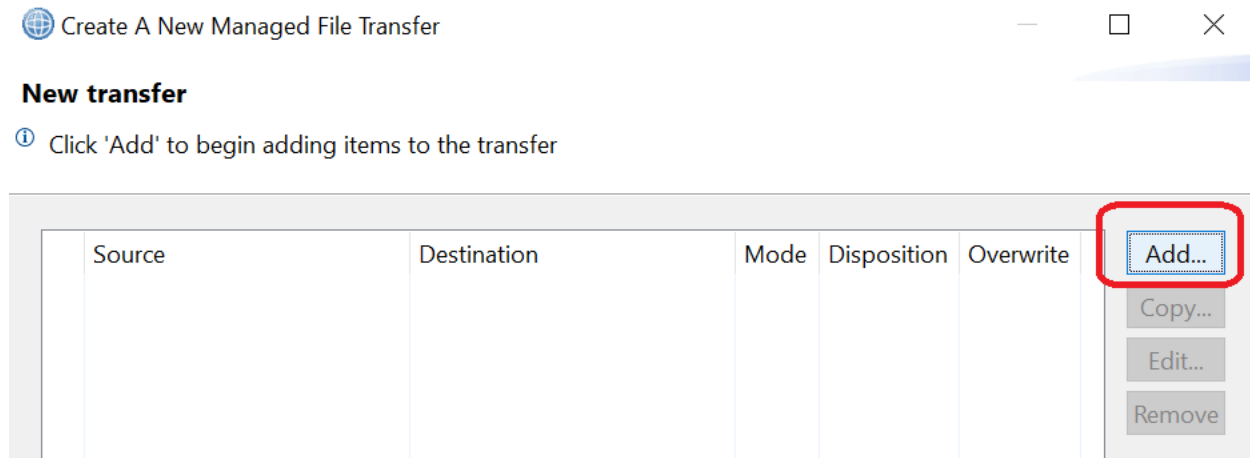


Select the "Source agent" (AGENTWIN1) and the "Destination agent" (AGENTLNX1).



Click Next.

Click on "Add" to select the file to be transferred:

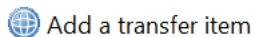


You will see a rather wide dialog.
In order to better show the 2 sides of the dialog, one side will be illustrated in this technote at a time.

Showing left side (source) of the panel "Add a transfer item"

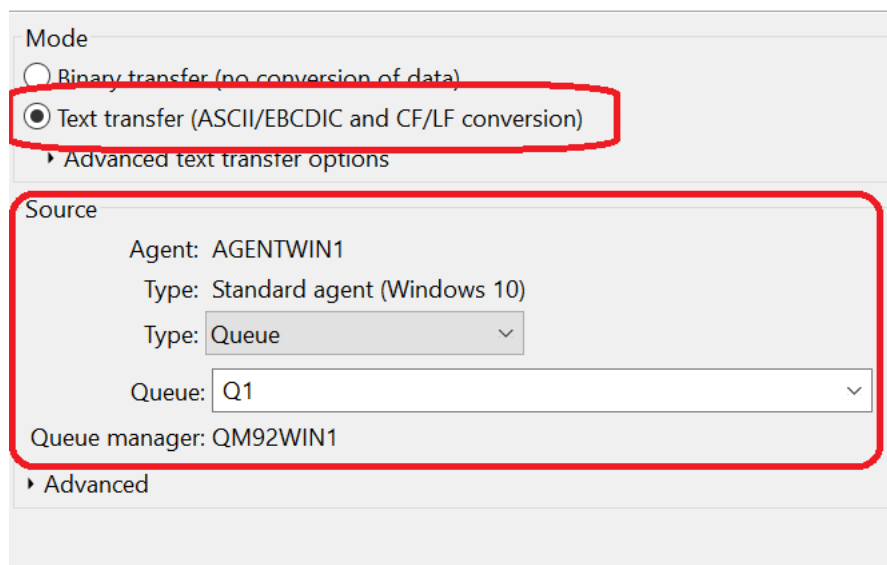
Notice that the source shows:

Type: Queue
Queue: Q1



Add a transfer item

Specify the mode, source, and destination attributes for this item



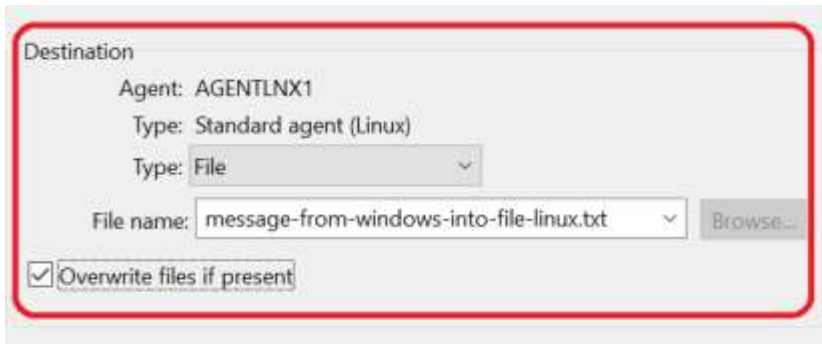
Showing right side (destination):

Notice that the destination shows:

Type: File

File name: message-from-windows-into-file-linux.txt

It is relative to the \$HOME of the MQ userid "mqm" which started the Agent in Linux, thus, the full path name is: /home/mqm/message-from-windows-into-file-linux.txt



Click Next.

Transfer summary

A summary of the items and attributes of this transfer



Source	Destination	Mode	Disposition	Overwrite
Q1@QM92WIN1	message-from-windows-into-file-linux.txt	Text	n/a	Overwrite

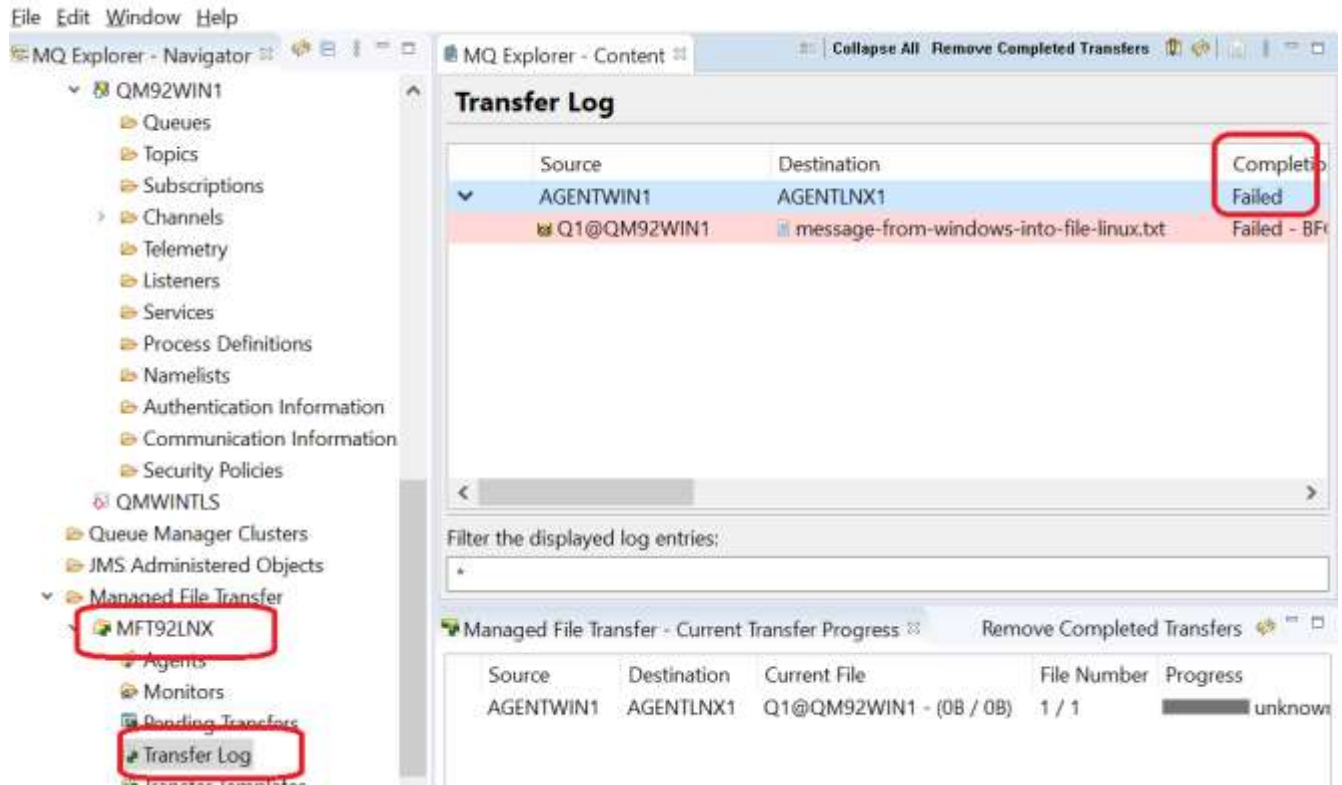
Notice that the line command is shown below.

The attribute "-sq" indicates the Queue!

```
fteCreateTransfer -rt -1 -sa AGENTWIN1 -sm QM92WIN1 -da AGENTLNX1 -dm QM92LNX1 -t text -de overwrite -df "message-from-windows-into-file-linux.txt" -sq "Q1@QM92WIN1"
```

Click Finish.

The transfer failed:



Notice the reason for the failure:

<supplement>BFGIO0198E: An attempt to read from a queue was rejected by the source agent. The agent must have enableQueueInputOutput=true set in the agent.properties file to support transferring from a queue.</supplement>

The online manual has 2 important sections with the steps for enabling these additional transfer types.

+ Message-to-File:

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=files-configuring-agent-perform-message-file-transfers>

IBM MQ / 9.2

Configuring an agent to perform message-to-file transfers

By default agents cannot perform message to file, or file to message, transfers.

To enable this function you must set the agent property `enableQueueInOut` to true.

About this task

If you attempt to perform a message to file transfer from a source agent that does not have the `enableQueueInOut` property set to true, the transfer fails. The transfer log message that is published to the coordination queue manager contains the following message:

BFGIO0197E: An attempt to read from a queue was rejected by the source agent. The agent must have `enableQueueInOut=true` set in the `agent.properties` file to support transferring from a queue.

Procedure:

To enable the agent to write to and read from queues perform the following steps:

1: Stop the **source agent** using the `fteStopAgent` command.

Windows: AGENTWIN1

```
C:\ProgramData\IBM\MQ> fteStopAgent AGENTWIN1
```

```
BFGCL0468I: Issuing stop request to agent 'AGENTWIN1'. The command will wait for the agent to stop. The agent will stop only when all current transfers have completed.
```

```
BFGCL0553I: The agent has processed the stop request and will end when all current transfers have completed.
```

2: Edit the `agent.properties` file to include the line:

```
enableQueueInOut=true
```

The `agent.properties` file is located in the directory:

Unix:

```
$MQ_DATA_PATH/mqft/config/coordination_queue_manager/agents/source_agent_name
```

Windows:

```
%MQ_DATA_PATH%\mqft\config\coordination_queue_manager\agents\source_agent_name
```

For this example:

```
C:\ProgramData\IBM\MQ\mqft\config\MFT92LNX\agents\AGENTWIN1
```


After adding the attribute, the full contents of this file is:

```
#  
#Thu Apr 21 09:26:13 PDT 2022  
agentQMgr=QM92WIN1  
agentQMgrPort=1420  
agentDesc=  
agentQMgrHost=tolteca1.fyre.ibm.com  
agentQMgrChannel=SYSTEM.ADMIN.SVRCONN  
agentName=AGENTWIN1  
enableQueueInputOutput=true
```

3: Start the source agent using the fteStartAgent command.

```
C:\ProgramData\IBM\MQ\mqft> fteStartAgent AGENTWIN1  
BFGCL0030I: The request to start agent 'AGENTWIN1' on this machine has been submitted.  
BFGCL0031I: Agent log files located at:  
C:\ProgramData\IBM\MQ\mqft\logs\MFT92LNX\agents\AGENTWIN1\logs
```

+ File-to-Message:

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=messages-configuring-agent-perform-file-message-transfers>

IBM MQ / 9.2

Configuring an agent to perform file-to-message transfers

By default agents cannot perform file-to-message or message-to-file transfers. To enable this function you must set the agent property `enableQueueInOut` to true. To enable writing to IBM® MQ clustered queues, you must also set the agent property `enableClusterQueueInOut` to true.

About this task

If you attempt to perform a file-to-message transfer to a destination agent that does not have the `enableQueueInOut` property set to true, the transfer fails. The transfer log message that is published to the coordination queue manager contains the following message:

BFGIO0197E: An attempt to write to a queue was rejected by the destination agent. The agent must have `enableQueueInOut=true` set in the `agent.properties` file to support transferring to a queue.

Procedure:

To enable the agent to write to and read from queues perform the following steps:

1: Stop the **destination agent** using the **`fteStopAgent`** command.

Linux: AGENTLNX1

```
mqm@florencia1.fyre.ibm.com: /home/mqm
```

```
$ fteStopAgent AGENTLNX1
```

```
BFGCL0468I: Issuing stop request to agent 'AGENTLNX1'. The command will wait for the agent to stop. The agent will stop only when all current transfers have completed.
```

```
BFGCL0553I: The agent has processed the stop request and will end when all current transfers have completed.
```

2: Edit the `agent.properties` file to include the line:

```
enableQueueInOut=true
```

3: Optional: Edit the `agent.properties` file to include the line:

```
enableClusterQueueInOut=true
```

The `agent.properties` file is located in the directory:

Unix:

```
$MQ_DATA_PATH/mqft/config/coordination_queue_manager/agents/destination_agent_name
```

Windows:

```
%MQ_DATA_PATH%\mqft\config\coordination_queue_manager\agents\destination_agent_name
```

For this example:

```
mqm@florenacia1.fyre.ibm.com: /var/mqm/mqft/config/MFT92LNX/agents/AGENTLNX1
$ vi agent.properties
```

After adding the attributes, the full contents of this file is:

```
#
#Thu Apr 21 09:09:24 PDT 2022
agentQMgr=QM92LNX1
agentQMgrPort=1432
agentDesc=
agentQMgrHost=florenacia1.fyre.ibm.com
agentQMgrChannel=SYSTEM.ADMIN.SVRCONN
agentName=AGENTLNX1
enableQueueInputOutput=true
enableClusterQueueInputOutput=true
```

4: Start the destination agent using the `fteStartAgent` command.

```
mqm@florenacia1.fyre.ibm.com: /home/mqm
$ fteStartAgent AGENTLNX1
BFGCL0030I: The request to start agent 'AGENTLNX1' on this machine has been submitted.
BFGCL0031I: Agent log files located at:
/var/mqm/mqft/logs/MFT92LNX/agents/AGENTLNX1/logs
```

+ Let's try again.

This time we will use the line command (from Windows) and let's specify that we want to know the outcome by adding the parameter "-w 60"

```
C:\> fteCreateTransfer -rt -1 -sa AGENTWIN1 -sm QM92WIN1 -da AGENTLNX1 -dm QM92LNX1
-t text -de overwrite -df "message-from-windows-into-file-linux.txt" -sq "Q1@QM92WIN1" -w
60
```

```
BFGCL0035I: Transfer request issued. The request ID is:
414d5120514d393257494e3120202020fd8f8b6202852140
```

```
BFGCL0142I: The file transfer request has been submitted. The command is waiting for
notification of the transfer's completion.
```

```
BFGCL0139I: The requested file transfer has successfully completed.
```

Notice that this transfer required to read the message from Queue Q1 and it is "destructive", which means that after a successful read, the message is deleted from the queue.

The "Current queue depth" went from 1 to 0.

Queue name	Queue type	Op...	O...	Current queue depth
MFT92LNX	Local	1	1	0
Q1	Local	0	0	0

Now let's take a look at the \$HOME of the user "mqm" in Linux:

```
mqm@florencia1.fyre.ibm.com: /home/mqm
```

```
$ ls -l *.txt
```

```
-rw-r--r-- 1 mqm mqm 49 May 10 14:52 file-from-windows-1.txt
-rw-rw-r-- 1 mqm mqm 89 Apr 22 06:10 file-from-windows-b.txt
-rw-rw-r-- 1 mqm mqm 89 Apr 25 08:43 file-from-windows.txt
-rw-rw-r-- 1 mqm mqm 89 Apr 22 06:12 file-windows-c.txt
-rw-r--r-- 1 mqm mqm 58 May 25 12:47 message-from-windows-into-file-linux.txt
```

Notice the contents of the file (it was the contents of the message in Q1):

```
$ cat message-from-windows-into-file-linux.txt
```

```
Message from Queue Q1 to be transferred as a File in Linux
```

+++ Scenario File-to-Message: File in Windows to Message in Queue in Linux

In Windows let's use the following file:

Directory: C:\temp\mft
File: file-from-windows.txt

The contents is:

```
C:\temp\mft> type file-from-windows.txt  
Line1: This is a text file  
Line2: For testing the file transfer from Windows to Linux.
```

Let's interact with the MQ Explorer to do the steps for transferring a File into a Queue. See the previous Scenario for the detailed steps on how to initiate the transfer. In this chapter, only the differences will be shown.

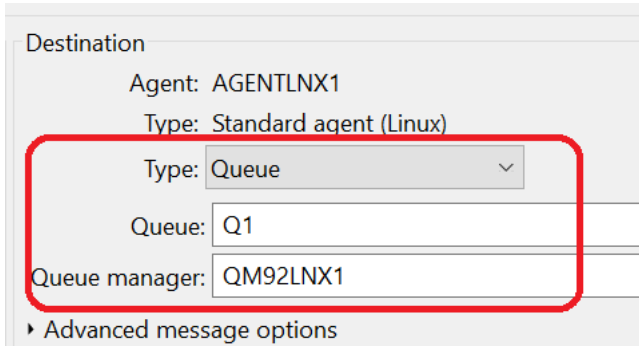
The left side (source) of the transfer indicates...

Type: File
File name: C:\temp\mft\file-from-windows.txt

The screenshot shows a configuration window for a file transfer. It is divided into two main sections: 'Mode' and 'Source'.
In the 'Mode' section, there are two radio buttons: 'Binary transfer (no conversion of data)' and 'Text transfer (ASCII/EBCDIC and CF/LF conversion)'. The 'Text transfer' option is selected. Below it is a link for 'Advanced text transfer options'.
In the 'Source' section, the 'Agent' is 'AGENTWIN1' and the 'Type' is 'Standard agent (Windows 10)'. A dropdown menu for 'Type' is set to 'File'. Below that, the 'File name' is 'C:\temp\mft\file-from-windows.txt', with a 'Browse...' button to its right. At the bottom, there is a checkbox labeled 'Remove source file if the transfer is successful' which is currently unchecked.

The right side (destination) shows:

Type: Queue
Queue: Q1
Queue manager: QM92LNX1



Destination

Agent: AGENTLNX1
Type: Standard agent (Linux)

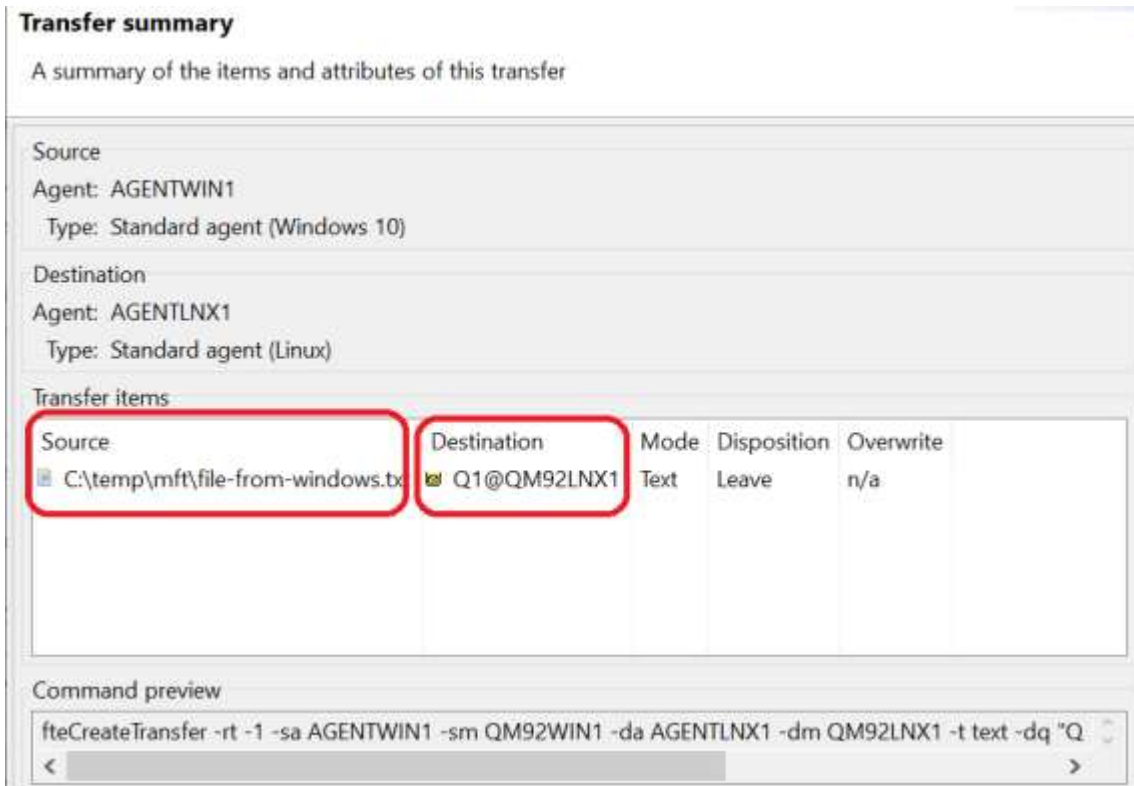
Type: Queue

Queue: Q1

Queue manager: QM92LNX1

Advanced message options

The transfer summary is:



Transfer summary

A summary of the items and attributes of this transfer

Source

Agent: AGENTWIN1
Type: Standard agent (Windows 10)

Destination

Agent: AGENTLNX1
Type: Standard agent (Linux)

Source	Destination	Mode	Disposition	Overwrite
C:\temp\mft\file-from-windows.txt	Q1@QM92LNX1	Text	Leave	n/a

Command preview

```
fteCreateTransfer -rt -1 -sa AGENTWIN1 -sm QM92WIN1 -da AGENTLNX1 -dm QM92LNX1 -t text -dq "Q1@QM92LNX1" "C:\temp\mft\file-from-windows.txt"
```

Notice the line command.
The attribute “-dq” indicates a destination queue.

```
fteCreateTransfer -rt -1 -sa AGENTWIN1 -sm QM92WIN1 -da AGENTLNX1 -dm QM92LNX1 -t text -dq "Q1@QM92LNX1" "C:\temp\mft\file-from-windows.txt"
```

Let's execute the command line and let's add the attribute: -w 60

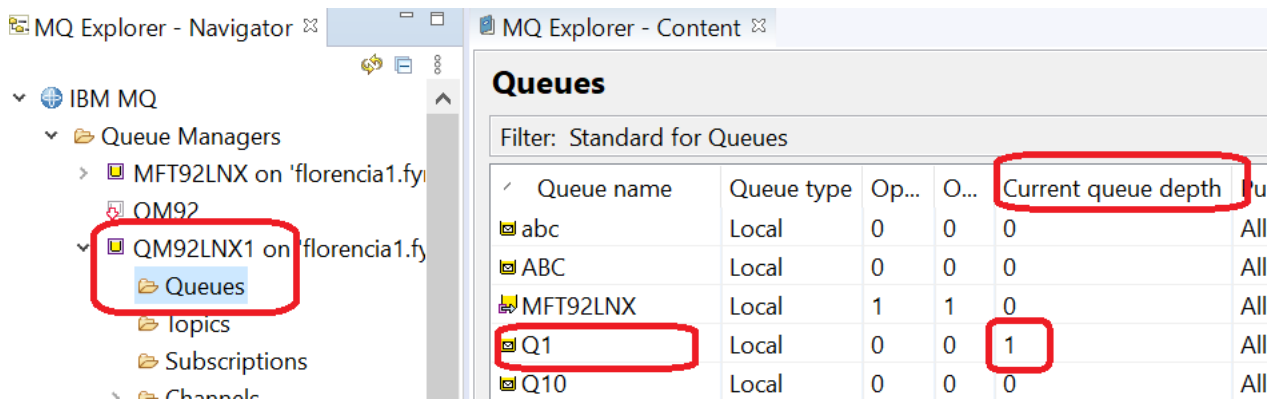
```
C:\temp\mft> fteCreateTransfer -rt -1 -sa AGENTWIN1 -sm QM92WIN1 -da AGENTLNX1 -dm QM92LNX1 -t text -dq "Q1@QM92LNX1" "C:\temp\mft\file-from-windows.txt" -w 60
```

BFGCL0035I: Transfer request issued. The request ID is:
414d5120514d393257494e3120202020fd8f8b6202c92140

BFGCL0142I: The file transfer request has been submitted. The command is waiting for notification of the transfer's completion.

BFGCL0139I: The requested file transfer has successfully completed.

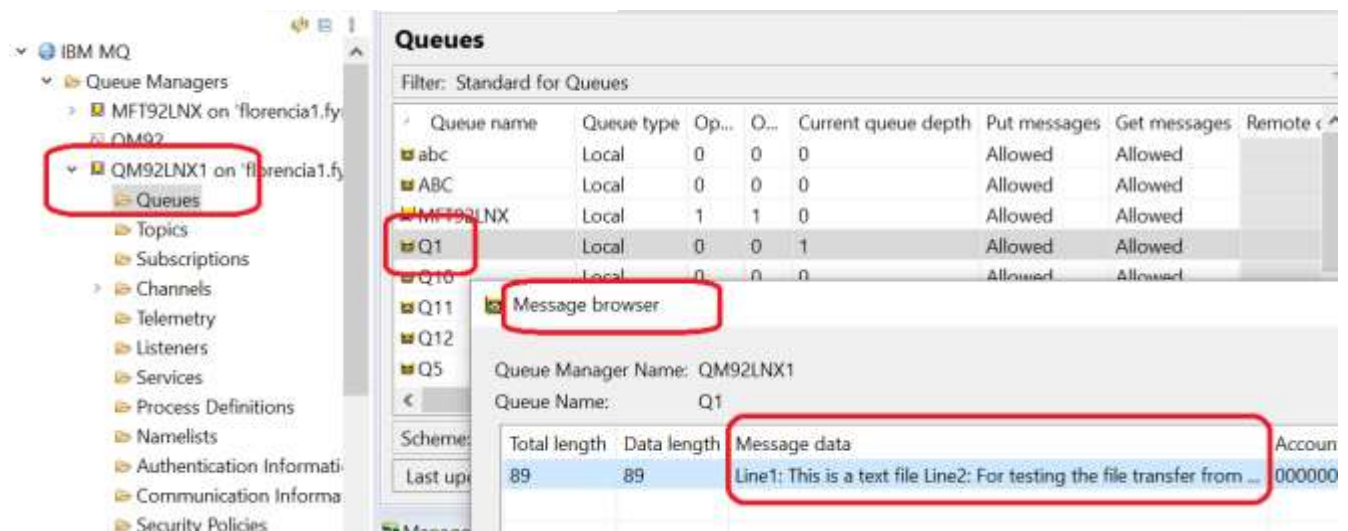
Let's take a look at the queue Q1 for the destination queue manager.
Notice that it has 1 message.



Let's browse the message.

Notice that the "Message data" has:

Line1: This is a text file Line2: For testing the file transfer from ...



+++ end