Transfer files using IBM MFT with “failTransferOnFirstFailure”

property

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**Summary:**
“failTransferOnFirstFailure”  is the new functionality to WebSphere MQ Managed File Transfer which allows agents to be configured to fail a managed transfer, as soon as a transfer item within that managed transfer fails.

**Description:**
“failTransferOnFirstFailure”   feature is introduced from IBM MQ v7.5.0.6 and MQ v8.0.0.4 and above. This feature defines that all subsequence file items within a transfer will be failed and not transferred should any preceding file item fail in its transfer if its value set to True.

When the functionality has been enabled, agents will start processing managed transfer requests as normal. However, as soon as a transfer item fails, then the managed transfer is marked as failed and no further transfer items will be processed.

By default this feature is disabled. To enable the feature the following property needs to be added to the relevant agents, both source and destination. To enable this new function, the user must set the following new property in the source agent's agent.properties file: The agent.properties file for an agent is located at MQ\_DATA\_PATH/mqft/config/coordination\_qmgr\_name/agents/agent\_name directory.

**failTransferOnFirstFailure** to the value "true". For example:

 **failTransferOnFirstFailure=true**
 the default value is "false".

In addition to the source agent having the "**failTransferOnFirstFailure**" agent property set to the value "true", setting this property on destination agent is optional for the managed file transfer.

After restarting (both agents), when the source or destination agent detects a file item failure (missing file, no disk space, etc) then file item will be reported as failed in the transfer progress log as before. If there are more file items in the same transfer they will be failed with a BFGTR0075\_TRANSFER\_ABORT. Once the transfer has completed the overall transfer result will be changed from Partial to Failed.

**Limitations:**
For this feature to function correctly all agents used in a transfer must have "**failTransferOnFirstFailure**"  supported MQ. If one of the agents is not having supported MQ, the following may be expected:

(a) If a file item fails on a non-enabled agent then it will behave as both are disabled.
(b) If destination is enabled and the file item fails at the destination end but the source agent  has not been enabled then the feature will behave as expected however the overall transfer result will be partial and not failed.

Different versions of MQ can be mixed (source with MQ 7506 and Destination with MQ 8004) but the limitation above still apply.

**How it works:**
The TranferProgress has a new boolean for each transfer which is true if the feature is enabled and a previous file item has failed, this flag indicates all subsequent file items must be failed (with BFGTR0075).

**Example**
Consider a managed transfer request which consists of 5 transfer items:

- file1.txt
- file2.txt
- file3.txt
- file4.txt
- file5.txt

When the "**failTransferOnFirstFailure**" has not been set to the value "true" on the source agent for the managed transfer, if transfer item3, fails to transfer (perhaps because the file file3.txt does not exist) then managed transfer continues and attempts to process transfer items 4 and 5 (i.e. file4.txt and file5.txt). The managed transfer is then marked as being "Partially Successful".

When this new functionality has been enabled, if file3.txt fails to transfer, then the managed transfer fails and the source agent does not attempt to process transfer items 4 and 5 (i.e. the source agent does not try to move file4.txt and file5.txt). The managed transfer is marked as "Failed" in the final transfer log publication for the managed transfer. The first two source files, file1.txt and file2.txt, that were successfully transferred.

**Steps for FTE setup:**
Install MQ 7506 or above or MQ 8004 or above on both, source and destination machines. Make sure you install full MQ with FTE.
Configure 2 machines, one is Linux machine (source machine) another machine is a windows machine (destination machine), you can use OS of your choice.

On source and destination machines create and start queue manager QM\_LINUX , QM\_WINDOWS

Define and start TCP listener  L1, L2 with port no. of your choice (here we are using port no. 1415, 1414).

Next step is to create FTE coordination Queue manager on source and destination, follow the same step on both the machines. (below setup is on Source machine)
1.    ./MQ\_inst\_dir/bin/fteSetupCoordination -coordinationQMgr QM\_LINUX
The above command creates a contains the MQSC definitions for your coordination queue manager. The file can be found here: '/var/mqm/mqft/config/QM\_LINUX/QM\_LINUX.mqsc'.
2.    Run QM\_LINUX.mqsc file against queue manager QM\_LINUX
runmqsc QM\_LINUX < /var/mqm/mqft/config/QM\_LINUX/QM\_LINUX.mqsc
3.     ./MQ\_inst\_dir/bin/fteSetupCommands -connectionQMgr QM\_LINUX
4.    Now create an FTE Agent
/MQ\_inst\_dir/bin/fteCreateAgent -agentName Agent\_Linux -agentQMgr QM\_LINUX
5.      Run above created AGENT\_LINUX\_create.mqsc file against QM\_LINUX
runmqsc QM\_LINUX < /var/mqm/mqft/config/QM\_LINUX/agents/AGENT\_LINUX/AGENT\_LINUX\_create.mqsc
6.    Start the FTE Agent Agent\_Linux
7.    Check the Agent status, on both the machines Agents should be in Ready or Active State.

**Scenarios to use “failTransferOnFirstFailure” Property**

Create 5 source files on primary agent (Source machine).

1. failTransferOnFirstFailure = false

Create a single blocking destination file in the destination directory which matches the name of the 3rd file - this will be used to prove that the 3rd file does not get transferred.

Created 5 files - file1.txt, file2.txt, file3.txt, file4.txt, file5.txt in machine 1 (source) eg: /home/filepath

Created file3.txt in machine2 (destination) eg: C:\FTE\filepath

Run a single transfer that transfers all five files.

fteCreateTransfer -sa Agent\_Linux -sm QM\_LINUX -da Agent\_Windows -dm QM\_WINDOWS -dd “C:\FTE\filepath”  /home/filepath/file\*.txt

Check that transfer completes with a status of partial success.

Check that files 1, 2, 4, and 5 have been transferred but file 3 has not been changed.

Stop the source agent.

2. Clear the destination directory and re-create the blocking file OR delete files 1 ,2, 4, and 5.

Clean up the machine2 (Destination Machine) , keep file3.txt as it is

Add the property "failTransferOnFirstFailure = true" in the agent.properties file on source agent.

Re-start the source agent.

Repeat the transfer of all 5 files.

fteCreateTransfer -sa Agent\_Linux -sm QM\_LINUX -da Agent\_Windows -dm QM\_WINDOWS -dd “C:\FTE\filepath”  /home/filepath/file\*.txt

Check that the transfer status is now failed.

Check that files 1 and 2 were transferred.

Check that file 3 is, again, unchanged

Check that files 4 and 5 did not got transferred. Because File3 was the blocking file.

Stop the source agent.

3. Clean up the destination directory (destination) - delete all files

on the source, Add the property "failTransferOnFirstFailure = true"

restart the agent

initiate the transfer (all 5 files)

fteCreateTransfer -sa Agent\_Linux -sm QM\_LINUX -da Agent\_Windows -dm QM\_WINDOWS -dd “C:\FTE\filepath”  /home/filepath/file\*.txt

file1 to 5 got transferred to machine2 -success

**Clean Up:**
To clean up FTE setup from machines use commands fteStopAgent and fteDeleteAgent to stop and delete FTE agent, afterwards end and delete the queue manager.

**Problems / Errors you may face:**

1. When you initiate the file transfer, you may get “Transfer has been initiated” but files were not got transferred to destination – You can stop and restart FTE agent and check the listener port is working fine. And make sure that both agents are in READY / ACTIVE state.
2. Make sure that Source and Destination Path is correct and available.
3. Space issue – make sure machine has space to transfer the files.