

IBM MQ Error Log, FFST and Dump Locations

<https://www.ibm.com/support/pages/node/707677>

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IBM MQ Support

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+++ Objective +++

As it runs, IBM MQ logs error messages, creates FFSTs (also known as FDC files), and generates other diagnostic output files such as IBM i job logs, Windows minidumps and z/OS dumps.

In addition, the IBM MQ Administrator can also generate data such as FFSTs, z/OS dumps, and IBM MQ line trace CDF files.

This document explains where those files can be found on different platforms.

There is a separate section for:

- Clarification of the term "log file": text error log file? binary recovery/transaction log file?
- Linux and AIX
- Windows
- IBM i
- IBM z/OS
- HPe NonStop Server
- MQ Classes for JMS
- MQ Explorer
- MQ Web Server, Web Console, REST API

+++ Clarification of the term "log file": text error log file? binary recovery/transaction log file?

Note:

In the text below, the environment variable MQ_DATA_PATH that is

- already set in Windows or
- it is set by the MQ utility "setmqenv"

Sometimes, new MQ users say that they are looking for the log files to find out error messages, but go to the wrong directory and find binary log files that are not human readable.

The purpose of this section is to offer a clarification.

The term "log file" could be a bit ambiguous because there are 2 different things that many users call "log file".

To add to the confusion, the same names, such as AMQERR01.LOG, is used for both. Thus, just by looking at the file name of AMQERR01.LOG without any context from which directory this file was found, it is not possible to determine if it is a "general" error log file or if it is one that is specific to a queue manager.

1) The "error log files" which are TEXT (human readable) files and which contain informational, warnings, and errors.

There are 2 kinds:

1.a) The "general" error log, which is used to indicate a generation of an FDC file and it is used by MQ client applications.

The "general" IBM MQ error logs are named AMQERR01.LOG, AMQERR02.LOG, and AMQERR03.LOG.

The file AMQERR01.LOG contains the most recent messages.

+ Windows:

To display the location:

```
C:\> set MQ_DATA_PATH
MQ_DATA_PATH=C:\ProgramData\IBM\MQ
```

The location for the FDC files and the general/client error can be specified as:

```
%MQ_DATA_PATH%\errors
```

+ Linux:

To display the location:

```
$ . /opt/mqm/bin/setmqenv -n Installation1
```

```
$ echo $MQ_DATA_PATH  
/var/mqm
```

The location for the FDC files and the general/client error can be specified as:
\$MQ_DATA_PATH/errors

Note: This location is "hard coded" and there are no mechanisms to override it.

1.b) The error log files of the queue manager.

If the name of the queue manager is QMGRNAME then the location is:

+ Windows:

```
%MQ_DATA_PATH%\qmgrs\QMGRNAME\errors
```

Such as:

```
C:\ProgramData\IBM\MQ\qmgrs\QMGRNAME\errors
```

+ Linux:

```
$MQ_DATA_PATH/qmgrs/QMGRNAME/errors
```

Such as:

```
/var/mqm/qmgrs/QMGRNAME/errors
```

Notes:

-- This location is mentioned in the DataPath in the stanza for the queue manager in the master index file for the queue managers: /var/mqm/mqs.ini

-- If the DataPath is not explicitly indicated, then it is formed as following, using the example for Linux:

```
/var/mqm + ./qmgrs + ./QMGRNAME + ./errors
```

2) The "recovery log files" (also known as the "transaction log files") are BINARY files that are NOT human readable and they are used by the MQ component called "logger" to internally keep track of persistent messages, transactions and units of work.

+ Windows:

```
cd C:\ProgramData\IBM\MQ\log\QMGRNAME
dir
09/12/2023 08:58 AM <DIR> active
11/04/2023 12:08 PM 5,244 amqhlctl.lfh
```

```
cd active
dir
01/26/2024 09:55 AM 16,785,408 S0000000.LOG
07/22/2022 08:08 AM 16,785,408 S0000001.LOG
07/22/2022 08:08 AM 16,785,408 S0000002.LOG
```

+ Linux:

```
$ cd /var/mqm/log/QMGRNAME
$ ls -l
drwxrws--- 2 mqm mqm 66 Jan 15 15:04 active
-rw-rw---- 1 mqm mqm 6268 Feb 1 12:29 amqhlctl.lfh
```

```
$ cd active
$ ls -l
-rw-rw---- 1 mqm mqm 16785408 Feb 1 12:29 S0000000.LOG
-rw-rw---- 1 mqm mqm 16785408 Jan 15 15:04 S0000001.LOG
-rw-rw---- 1 mqm mqm 16785408 Jan 15 15:04 S0000002.LOG
```

Notes:

These "recovery transaction" files do NOT contain ERROR messages!
The location of this directory for a particular queue manager is NOT mentioned in mqs.ini. Instead, it is mentioned in the LogPath attribute in the qm.ini for the queue manager. For example: for the queue manager named FR1 the qm.ini is located at:
/var/mqm/qmgrs/FR1/qm.ini

Inside the qm.ini, there is a stanza called "Log:" and it has

```
Log:
LogPrimaryFiles=3
LogSecondaryFiles=2
LogPath=/var/mqm/log/FR1/
```

+++ Linux and AIX

Note - The same principles apply to:
HP-UX (MQ 9.0 was the last version.release)
Solaris (MQ 9.1 was the last version.release)

IBM MQ maintains a set of error logs and writes FFSTs (FDC files) and other diagnostic files to the directory:

```
/var/mqm/errors
```

The following MQ environment variable set by "setmqenv" indicates the top directory for the MQ data:

```
echo $MQ_DATA_PATH
```

The value is: MQ_DATA_PATH=/var/mq

Thus, the location for the FDC files can be specified as:

```
$MQ_DATA_PATH/errors
```

IBM MQ error logs are named AMQERR01.LOG, AMQERR02.LOG, and AMQERR03.LOG, with AMQERR01.LOG containing the most recent messages.

The messages roll over into AMQERR02.LOG and AMQERR03.LOG files when AMQERR01.LOG reaches a threshold size.

MQ FFST files are named AMQnnnnn.mm.FDC, where nnnnn is the id of the process reporting the error and mm is a sequence number, normally 0.

+ Queue Managers:

The error logs for the queue manager have the same name and behavior, but are located in the corresponding directory of the queue manager (the token QMGRNAME is a placeholder for the true name)

The default location is:

```
/var/mqm/qmgrs/QMGRNAME/errors
```

If you are not using the default location, you will need to look at the Master Index of the queue managers (var/mqm/mqs.ini) to find out the directory of the data for the queue manager.

+ For more information see:

<https://www.ibm.com/docs/en/ibm-mq/9.3?topic=ffst-mq-aix-linux>

IBM MQ / 9.3

FFST: IBM MQ for AIX or Linux

+++ Windows

IBM MQ diagnostic dumps are written to the errors subdirectory of the IBM MQ data directory, which was selected when IBM MQ was first installed on the system as the default location for queue managers.

`C:\ProgramData\IBM\MQ\errors`

Note that when using Windows File Explorer the following directory is hidden by default:

`C:\ProgramData`

You can change directories to this location at the command prompt, or enter `%PROGRAMDATA%` in the Windows File Explorer location bar to browse it, or configure the Windows Explorer to show hidden files and directories.

The following MQ environment variable set by "setmqenv" indicates the top directory for the MQ data:

```
C:\> set MQ_DATA_PATH
MQ_DATA_PATH=C:\ProgramData\IBM\MQ
```

Thus, the location for the FDC files can be specified as:

`%MQ_DATA_PATH%\errors`

IBM MQ error logs are named `AMQERR01.LOG`, `AMQERR02.LOG`, and `AMQERR03.LOG`, with `AMQERR01.LOG` containing the most recent messages.

The messages roll over into `AMQERR02.LOG` and `AMQERR03.LOG` files when `AMQERR01.LOG` reaches a threshold size.

MQ FFST files are named `AMQnnnnn.mm.FDC`, where `nnnnn` is the id of the process reporting the error and `mm` is a sequence number, normally 0.

+ Queue Managers:

The error logs for the queue manager have the same name and behavior, but are located in the corresponding directory of the queue manager (the token `QMGRNAME` is a placeholder for the true name)

`%MQ_DATA_PATH%\qmgrs\QMGRNAME\errors`

If you are not using the default location, you will need to look at the Master Index of the queue managers (`%MQ_DATA_PATH%\mqs.ini`) to find out the directory of the data for the queue manager.

+ For more information see:

<https://www.ibm.com/docs/en/ibm-mq/9.3?topic=ffst-mq-windows>

IBM MQ / 9.3

FFST: IBM MQ for Windows

+++ IBM i

IBM MQ diagnostic dumps are written to the directory:
/QIBM/UserData/mqm/errors

IBM MQ FFST files are named AMQnnnnn.mm.FDC, where nnnnn is the id of the process reporting the error and mm is a sequence number, normally 0.

IBM MQ also records the job log to this directory when a job generates an FFST. Job logs are named AMQnnnnn.mm.JOB, where nnnnn is the id of the job reporting the error and mm is a sequence number, normally 0.

+ For more information see:

<https://www.ibm.com/docs/en/ibm-mq/9.3?topic=ffst-mq-i>

IBM MQ / 9.3

FFST: IBM MQ for IBM i

+++ IBM z/OS

IBM MQ dumps are located in a system dump data set and can be identified by their title. The title for a dump requested by IBM MQ starts with the four-character subsystem name of the queue manager. For example:

```
Dump Title for a Queue Manager with a Subsystem Name of CSQ1
CSQ1,ABN=5C6-00E20016,U=SYSOPR ,C=MQ900.910.DMC -
CSQIALLC,M=CSQGFRCV,LOC=CSQSLD1 .CSQSVSTK+00000712
```

Comm dumps requested by the operator might not contain the queue manager name, depending on the comment the operator specifies in the dump command. Check for message IEA611I or IEA911E in the syslog to determine the dump data set name and also to see whether the dump is complete or partial. For example:

Syslog messages for dumps

```
IEA611I COMPLETE DUMP ON DUMP.MQT1MSTR.DMP00074
DUMPID=074 REQUESTED BY JOB (MQT1MSTR)
FOR ASID(005E)
```

```
IEA911E PARTIAL DUMP ON SYS1.MCEVS4.DMP00039
DUMPID=039 REQUESTED BY JOB (DMSGTODI)
FOR ASID(00D2)
```

+ For more information see:

<https://www.ibm.com/docs/en/ibm-mq/9.3?topic=problems-mq-zos-dumps>

IBM MQ / 9.3

IBM MQ for z/OS dumps

+++ HPe NonStop Server

MQ for HPe NonStop Server writes its diagnostic dumps to the subdirectory
var/mqm/errors
... of the queue manager subvolume.

In OSS, this subdirectory is accessible as \$MQNSKVARPATH/errors.

MQ FFST files are named AMQccppppp.mm.FDC, where cc is the number of the CPU in which the process reporting the error is running, ppppp is the process identification number (PIN) and mm is a sequence number, normally 0.

+ For more information see:

<https://www.ibm.com/docs/en/mq-for-hpe-nonstop/8.1.0?topic=problem-handling>
IBM MQ for HPE NonStop / 8.1.0
Problem handling

<https://www.ibm.com/docs/en/mq-for-hpe-nonstop/8.1.0?topic=manager-environment-variables-path>
IBM MQ for HPE NonStop / 8.1.0
Environment variables and PATH

+++ MQ Classes for JMS

Reference:

<https://www.ibm.com/docs/en/ibm-mq/9.3?topic=ffst-mq-classes-jms>

IBM MQ / 9.3

FFST: IBM MQ classes for JMS

When using the IBM MQ classes for JMS, FFST information is recorded in a file in a directory that is called FFDC, which by default is a subdirectory of the current working directory for the IBM MQ classes for JMS application that was running when the FFST was generated.

Current directory

Subdirectory "FFDC"

FFST files

The FFST information is recorded whether you are using Jakarta Messaging 3.0 or JMS 2.0. If the property `com.ibm.msg.client.commonservices.trace.outputName` has been set in the IBM MQ classes for JMS configuration file, the FFDC directory is a subdirectory of the directory that the property points to. For more information, see The IBM MQ classes for JMS/Jakarta Messaging configuration file:

<https://www.ibm.com/docs/en/ibm-mq/9.3?topic=jms-mq-classes-jmsjakarta-messaging-configuration-file>

IBM MQ / 9.3

The IBM MQ classes for JMS/Jakarta Messaging configuration file

An FFST file contains one FFST record. Each FFST record contains information about an error that is normally severe, and possibly unrecoverable. These records typically indicate either a configuration problem with the system or an internal error within the IBM MQ classes for JMS .

FFST files are named JMSC nnnn.FDC, where nnnn starts at 1. If the full file name already exists, this value is incremented by one until a unique FFST file name is found.

An instance of an IBM MQ classes for JMS application writes FFST information to multiple FFST files. If multiple errors occur during a single execution of the application, each FFST record is written to a different FFST file.

+++ MQ Explorer

<https://www.ibm.com/docs/en/ibm-mq/9.3?topic=multiplatforms-collecting-information-mq-explorer-problems>

IBM MQ / 9.3

Collecting information for IBM MQ Explorer problems

"

If you need assistance from IBM® Support to resolve a problem with IBM MQ Explorer when administering a queue manager , you first need to collect troubleshooting information to send to IBM Support to help find a solution.

"

+ begin excerpt

Find the IBM MQ Explorer .log file.

When IBM MQ Explorer encounters an error, it might create a file called just .log with more information. Look for the .log file in the appropriate directory based on the IBM MQ Explorer installation type and the user who encountered the problem, and collect the .log file as well as all other files in the .metadata directory.

In the following examples, \$HOME and %USERPROFILE% are user-specific environment variables used to locate the files.

To find the .log file for the stand-alone IBM MQ Explorer:

[Linux]

```
sh> ls -al "$HOME"/IBM/*MQ/workspace/.metadata/.log
```

[Windows]

```
C:\> DIR "%USERPROFILE%\IBM*MQ\workspace\.metadata\.log"
```

+ end excerpt

Example in Windows:

```
C:\Users\Angel\IBM\WebSphereMQ\workspace\.metadata\.log
```

+++ MQ Web Server, Web Console, REST API

++ The 2 most important diagnostic files are:

console.log

messages.log

++ Where to find the files at the MQ server at the customer side

```
$ cd /var/mqm/web
```

Then go into

```
$ cd installations/Installation1/servers/mqweb
```

```
$ ls -l
```

```
-rw-rw-r-- 1 mqm mqm 858 Aug 28 2019 jvm.options
```

```
drwxrws--- 4 mqm mqm 128 May 8 08:02 logs
```

```
-rw-rw---- 1 mqm mqm 2871 May 8 08:02 mqwebuser.xml
```

```
drwxrwsr-x 3 mqm mqm 22 Mar 25 09:20 resources
```

```
-rw-r----- 1 mqm mqm 589 Aug 28 2019 server.xml
```

```
drwxrwsr-x 6 mqm mqm 176 May 8 08:02 workarea
```

```
$ cd logs
```

(Full directory: cd installations/Installation1/servers/mqweb/logs)

```
-rw-rw-r-- 1 mqm mqm 1678 May 8 08:09 console.log
```

```
drwxrwsr-x 2 mqm mqm 176 May 4 05:22 ffdc
```

```
-rw-rw-r-- 1 mqm mqm 15156 May 8 08:09 messages.log
```

```
drwxrwsr-x 2 mqm mqm 64 May 8 08:02 state
```

```
-rw-rw-r-- 1 mqm mqm 761 May 8 08:02 status.xml
```

```
$ cd ffdc
```

(Full directory: cd installations/Installation1/servers/mqweb/logs/ffdc)

```
-rw-rw-r-- 1 mqm mqm 622 Apr 8 11:24 exception_summary_20.04.08_10.27.59.0.log
```

```
-rw-rw-r-- 1 mqm mqm 16571 May 4 05:22 ffdc_20.05.04_05.22.49.0.lo
```

+ Main references

<https://www.ibm.com/support/pages/node/6208289>

MQ Web Server and Web Console: Technical and Troubleshooting Notes

<https://www.ibm.com/support/pages/node/6208422>

MQ REST API: Technical and Troubleshooting Notes

+++ end +++