Finding the number of running channels in an IBM MQ queue manager

https://www.ibm.com/support/pages/node/408395

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+++ Question +++

You want to determine the number of channels that are running for your IBM MQ queue manager.

You want to monitor your queue manager to try to avoid the following message, which indicates that the maximum number of channels has been reached.
   AMQ9513E: Maximum number of channels reached.

+++ Answer +++

+ Linux

In Linux systems, you can enter the following compound commands.
Ensure to replace CHLNAME and QMGR with the proper values for your system:

a) To query for all channels:
```
echo "DISPLAY CHSTATUS(*)" | runmqsc QMGR | grep 'AMQ8417' | wc -l
```

b) To query for a specific channel, such as CHLNAME:
```
echo "DISPLAY CHSTATUS(CHLNAME)" | runmqsc QMGR | grep 'AMQ8417' | wc -l
```

Notes:
1) The parameter for "wc" (word count) is -l (lowercase letter L)
2) Why counting the instances of AMQ8417?
Because it is shown for every channel. Thus, if there are 10 channels, then there are 10 such message ids.
.
DISPLAY CHSTATUS(*) ALL
AMQ8417I: Display Channel Status details.
   CHANNEL(X)   CHLTYPE(SVRCONN)
…
AMQ8417I: Display Channel Status details.
   CHANNEL(Y)   CHLTYPE(SVRCONN)

+ Windows

For Windows, there are no "grep" and no "wc" commands, but "find" can be used instead to find and count:

```
echo DISPLAY CHSTATUS(*) | runmqsc QMGR | find /c "AMQ8417"
```

Notes about the Windows "find" command:

- The command requires the string to be searched to be specified between double quotes, otherwise you will get an error: FIND: Parameter format not correct

- The flag /c counts the number of lines in which the string appears. Similar to the UNIX command: wc -l

+ IBMi

From the command line, type:

```
QSH (to access the shell environment)
```

```
echo "DISPLAY CHSTATUS(*)" | /qsys.lib/qmqm.lib/runmqsc.pgm QMGR | grep 'AMQ8417' | wc -l
```

NOTE: This returns the value of the number of active channel connections

+++ Miscellaneous notes on MaxChannels

On Distributed platforms the default value for MaxChannels is 100.

A system that is busy serving connections from the network might need a higher number than the default setting. Determine the value that is correct for your environment, ideally by observing the behavior of your system during testing.

On Distributed platforms, MaxChannels is an attribute in the qm.ini file.
The value for MaxChannels must be in the range 1 through 65535, with a default value of 100.

Example on how to change the maximum channels for a queue manager from the default 100 to 300:

Step 1: Modify the qm.ini of the queue manager:
CHANNELS:
   MaxChannels=300

Step 2: Stop and restart the queue manager for the change in the qm.ini to take effect.

+++ Related articles

a) Finding the runtime value of MaxChannels

https://www.ibm.com/support/pages/node/872924
How to find out the value of MaxChannels that the queue manager is actually using at runtime (from an FDC)
From an FDC, such as one generated by amqrmppa
Search for the section:
   Channel Status Table Header
See the value for MaxChannels that the queue manager is actually using (in this test is 100):

```
Channel Status Table Header
{
  Version              4
  AllocatedCount       1
  MaxChannels          100 <== This is the entry that shows the MaxChannels !!
  MaxActiveChannels    100
```

b) For UNIX: One possible way to apply this information is to create a cron job that issues the mentioned command and if the number of running channels is getting closer to the MaxChannels, then an MQ Administrator might be notified. The following technote could be used as a reference for creating a cron job:

The following technote could be used as a reference for creating a cron job:
https://www.ibm.com/support/pages/node/87035
Cron job for clearing all messages from a queue in an MQ queue manager

c) The following tutorial has a lot of information regarding channels and connections:
https://www.ibm.com/support/pages/node/616249
How to identify MQ client connections and stop them

+++ end +++