Short cheat sheets for viewing error log files and editing ini files in IBM MQ in Linux (less, vi)

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Date last updated: 14-Apr-2024

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+++ Objective +++

The objective of this technote is to provide **short** "cheat sheets" for viewing (using the "less" command) and editing (using "vi") text files in IBM MQ in Linux / AIX.

When entering in a web search engine with a query like:
        cheat sheet for Linux vi
... usually the results list includes links for very comprehensive cheat-sheets with many commands which may be overwhelming to new users of Linux.

Because the target audience for this technote are novice users of Linux / AIX who have been asked to administer IBM MQ, the scope for this article is to provide the commands for basic tasks.

Why only showing commands for "vi" and "less"?
There are many text editors in Linux/AIX, but "vi" is one that is available in all systems. It might not be the most user-friendly but knowing some basic commands, you can get the job done.
The original command "more" was intended for view-only activities (no editing), but a relatively new command called "less" incorporated many enhancements to "more", such as going backwards. Using a pun in the Linux world ... "less" is "more" ...   ;-)

There is a variation of "vi" for view-only activities (no editing) and is "view". One shortcoming is that it tries to load the entire file in memory and in systems where the user is giving a small amount of memory or disk space, then the "view" command may likely fail to load the large file. The command "less" is very effective because it loads only small parts of the file, and this command can be used in such systems with little memory for end users.

The sections are:
- What the text files that are most commonly edited/viewed by novice MQ Administrators?
- Some helpful commands for looking at text files: vi, less, view, cat, tail, head
- Some shortcuts for navigating a file with the command "less"
- Some shortcuts for viewing/editing a file with the command "vi"

++ What the text files that are most commonly edited/viewed by novice MQ Administrators?

To display the top directory for these files do:
$. /opt/mqm/bin/setmqenv -n Installation1
$ echo $MQ_DATA_PATH
/var/mqm

+ Location of the configuration file "qm.ini" for a queue manager.

The error log files of the queue manager.

If the name of the queue manager is QMGRNAME then the location is:
$MQ_DATA_PATH/qmgrs/QMGRNAME/qm.ini

If the name of the queue manager is QMGR1, the full path of the configuration file is:
/var/mqm/qmgrs/QMGRNAME/qm.ini

+ Location of the FDC files and error logs

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

There are 2 kinds:

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.
.
This "general" location is the one where the FDC files are generated.

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

b) The error log files of the queue manager.

If the name of the queue manager is QMGRNAME then the location is:
$MQ_DATA_PATH/qmgrs/QMGRNAME/errors

Such as:
/var/mqm/qmgrs/QMGRNAME/errors

++ Some helpful commands for looking at text files: vi, less, view, cat, tail, head

TERMINAL COMMAND   EXPLANATION

vi filename.txt   **(Edit and/or view)**
                          Open a new or existing file called filename.txt for viewing and/or
                          editing.
                          If your terminal is properly configured, you can navigate
                          using the arrow keys of your keyboard.

less filename.txt   (View only)
                          Output contents of filename.txt; suitable for large files;
                          If your terminal is properly configured, you can navigate
                          using the arrow keys of your keyboard.

view filename.txt   (View only)
                          Display read-only filename.txt
                          If your terminal is properly configured, you can navigate
                          using the arrow keys of your keyboard.

cat filename.txt   (View only)
                          Output contents of filename.txt; suitable for small files

tail -50 filename.txt   (View only) Output contents of the last 50 lines

head -10 filename.txt   (View only) Output contents of the first 10 lines

SPECIAL USAGE:

Sometimes you want to monitor (in a continuous way) the bottom of a text file to see what
are the new lines that added to the end of the file. You could use:
tail -10 filename.txt
… and wait 10 seconds and the do again to see if there are newer lines:
tail -10 filename.txt
… but this is cumbersome.

You could use one of the following two options.
less +F filename.txt
tail -f filename.txt

HOWEVER, once you are finished with the monitoring, you need to INTERRUPT the
command by pressing these 2 keys at the same time:
Ctrl Z

++ Some shortcuts for navigating a file with the command "less"

Issue the following command:
        less filename.txt

This is a "view only" command which shows the contents of filename.txt.
It is suitable for large files.
If your terminal is properly configured, you can navigate using the arrow keys of your keyboard.

The following video provides a good demo of "less".
Skip the first 8 minutes (which explain the "more" command)
The explanation of "less" begins at time: 8:01 minutes

https://www.youtube.com/watch?v=g6ayxDdre3k
Linux Explained | LESS is better than MORE
KeepItTechie

+ Basic usage

Opening a file:
$ less myfile.txt

The screen will change to show the contents of the text file document.

To close the file you need to type the following 1 character:
q

COMMAND	EXPLANATION
Down arrow, enter, e, j	Moves forward by one line
Up arrow, y, k	Moves backward by one line
Space bar, Page Down	Moves forward by one page
Page Up, b	Moves backward by one page
Right arrow	Scrolls the view to the right
q	quit
-N	show line numbers
<	go to the beginning of the file
>	go to the end of the file
/ string	Search forward for a string
? string	Search backward for a string
n or N	Next/previous appearance of the search term

++ Some shortcuts for viewing/editing a file with the command "vi"

Issue the following command:
   vi filename.txt

Some comprehensive cheat sheets in the web are:

https://www.stationx.net/vi-cheat-sheet/

https://www.atmos.albany.edu/daes/atmclasses/atm350/vi_cheat_sheet.pdf

https://www.youtube.com/watch?v=-_DvfdgR-LA
Basics of VI editor in under 8 minutes | Vi editor Tutorial | Linux Tutorial for Beginners
LabIT

+ Recommendation to create a configuration file with useful settings for vi:

Location: $HOME
Name: .exrc
Example: /home/rivera/.exrc
Contents: 2 lines:
```
set showmode showmatch nowrapscan ic
syntax off
```

Where:
- set showmode" - shows the current mode: If you're in command mode, like you are when you first enter vi, you won't see anything different. But as soon as you enter insert mode, the words "INSERT MODE" are displayed in the lower-left corner on your screen.
- set showmatch - highlights matching parentheses
- set nowrapscan - This stops the search at the end of the file (the default is to wrap around the beginning).
- set ic - ignore case during a search (that is, case insensitive search)
- syntax off - to turn off the color highlighting, which sometimes renders the text difficult to read when using certain backgrounds.

+ Basic usage

Opening a file:
$ vi myfile.txt

The screen will change to show the contents of the text file document.
If the document does not exist yet, or if the document is empty, then the screen will be almost all blank.

Once you are in "vi", ...

To close the file without saving its contents (in case that you have made accidentally a mistake and you do not want to save the text), you need to type the following 3 characters:
:q!
To close the file but you want to save the text:
:x

Editing a file:
To edit a file, first open with vi and then type the single letter to enter the INSERT mode.
This will allow you to make any changes that you want.
i

When finished, press the following key.
This will take you OUT of INSERT mode.
Esc

+ The following is a short concise cheat sheet:

COMMAND   EXPLANATION

:w   Save file, but do not exit yet
:x   Save and exit.
:q   Exit if no changes have been made.
:q!   Exit and undo any changes made.
:set nu   Display line numbers.

On some distributions, such as macOS, and in the RHEL VMs in Fyre, you may use the arrow keys to move the cursor left-, right-, up-, and downwards in the default Command mode.

DIRECTION   EXPLANATION
COMMAND
h   Move cursor leftwards by one character
j   Move cursor downwards by one line
k   Move cursor upwards by one line
l   Move cursor rightwards by one character
^   Move cursor to the beginning of the current line
$ Move cursor to the final character in the current line
:1   Move cursor to 1st character in the **1st line**
:$ Move cursor to 1st character in the **last line**

SEARCH
/   Anything you type after this symbol becomes a pattern you want
            to find forwards/downwards in the file.
?   Anything you type after this symbol becomes a pattern you want
            to find backwards/upwards in the file.
n   Find the next occurrence of the pattern typed after /

INSERT
Insert mode is where you edit the text contents of a file. Once in Insert Mode, the word "INSERT" will appear along the bottom edge of the terminal.
COMMAND TO ENTER INSERT MODE   EXPLANATION
i   Inserts text before the current cursor location
o   Creates a new line for text entry below the cursor location
A   Inserts text at the end of the current line (Appends)

When you've finished modifying the text, use the following command to stop inadvertently editing your file:

COMMAND TO EXIT EXPLANATION
<Escape/ESC>   Exit Insert mode

MISCELLANEOUS
COMMAND   EXPLANATION
dd   Delete the line the cursor is on
u   Undo previous action; repeat as often as is necessary

+++ end +++