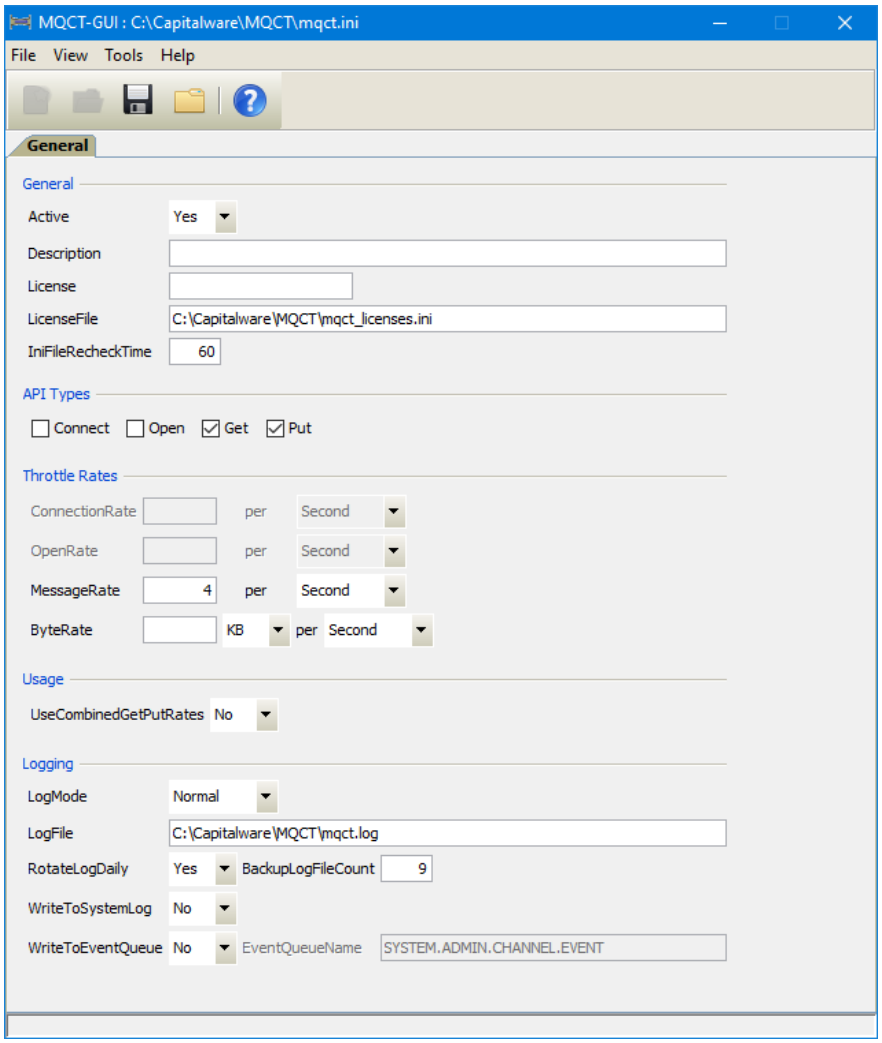
MQCT-GUI User Guide



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1 Introduction

1.1 Overview

MQCT-GUI application allows the user to create or update MQCT IniFiles. MQCT-GUI can run on any platform that supports Java v1.6 (or higher): Linux, Mac OS X and Windows Vista/7/8/8.1/10.

MQ Channel Throttler (MQCT) provides the ability to control/throttle the number of connection calls, open calls and/or messages (or bytes) that flow over a channel. MQCT operates with IBM MQ v7.0, v7.1, v7.5 v8.0, v9.0, v9.1 and v9.2 in Windows, Unix, IBM i (OS/400) and Linux environments. It operates with Sender, Receiver, Server, Requester, Cluster-Sender, Cluster-Receiver and Server Connection channels of the MQ queue managers.

MQCT is a simple drop-in solution that provides throttling for MQ queue managers. The throttling can be configured for queue manager to queue manager channels or for client application to queue manager channels.

- Queue manager to queue manager throttling means all messages (or bytes) flowing over a channel between 2 queue managers will be throttled.

- Client application to queue manager throttling means application-level connection calls, open calls and/or messages (or bytes) flowing between a MQ client application and queue manager will be throttled.

MQCT can be used to throttle the following MQ API calls: MQCONN, MQCONNX, MQOPEN, MQGET, MQPUT and MQPUT1.

The MQCT can be configured as a channel message exit or as a channel send/receive exit.

On AIX, HP-UX, Linux, Solaris and Windows, MQCT can be configured and used with a non-default installation of MQ in a multi-install MQ environment.

2 Installation

This chapter will describe the installation and configuration (optional) of MQCT-GUI. For Windows users, the installation of MQCT-GUI is very simple and straightforward. Other Operating Systems will need to unzip the downloaded software package.

2.1 Prerequisites

This section lists the required hardware and software components needed to run the MQCT-GUI application.

2.2 Software

The following third party software components must be installed in order to properly run MQCT-GUI:

- Java Runtime Environment (JRE) 1.6 (or higher) or Java 2 SDK, Standard Edition (J2SE) v1.6 (or higher)

2.3 Hardware / OS

MQCT-GUI is capable of running on the following hardware platforms that support Java v1.6 (or higher):

- Linux
- Mac OS X
- Windows Vista, 7, 8, 8.1 & 10

2.4 Setting Up and Running the Application

The following section provides instructions on installing and running the MQCT-GUI application.

2.4.1 For Windows Users:

- Run the install program called: **mqctgui-setup-withjre.exe**
- The installer should follow the standard Windows install procedures and provide default values for the users.
- When the install program has installed MQCT-GUI, there will be a newly created folder under **Start** -> All **Programs** called **MQCT-GUI**.
- To run **MQCT-GUI**, select the **MQCT-GUI** icon from within the **MQCT-GUI** folder.

2.4.2 For Linux and Max OS X (requires JRE/JDK):

- MQCT-GUI is provided as a zip file: **mqctgui.zip**
- To unzip the file, open a shell prompt and execute the following commands:

  unzip mqctgui.zip

- When the unzip command has finished, there should be a directory tree as follows:

  Capitalware/MQCT-GUI

- Change directory by typing the following:

  cd Capitalware/MQCT-GUI

- Before running MQCT-GUI for the first time, you need to add the execute attribute to the mqctgui.sh shell scripts. Type the following:

  chmod +x mqctgui.sh

- To run **MQCT-GUI** from the **Capitalware/MQCT-GUI** directory, then type the following:

  ./mqctgui.sh

3 Creating / Updating IniFiles

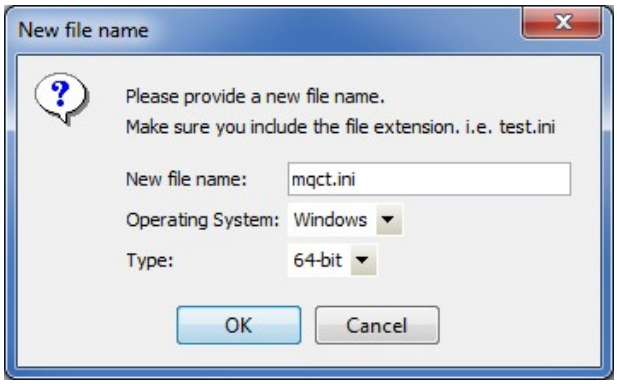
This chapter will describe the how to create and/or update IniFiles.

3.1 New IniFile

This section will describe how to create a new MQCT IniFile. The IniFile can be for a local or remote MQCT implementation.

From the main menu of MQCT-GUI, select **File** then **New File**

The following is the New IniFile panel:



Fill in the following information:

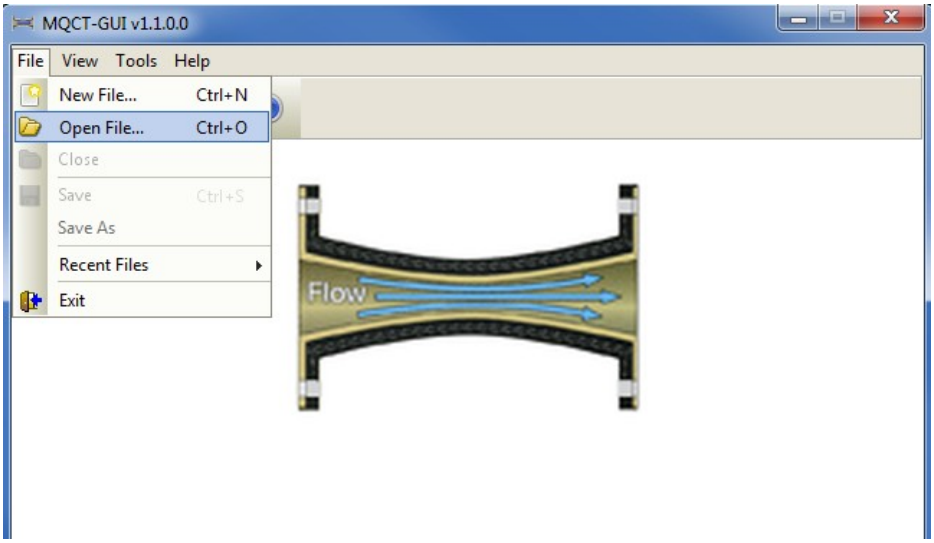
- Input a file name including the file extension of '.ini'
- Select the Operating System
- Choose between a 32-bit or 64-bit environment

Finally, click the **Ok** button to create and open the new MQCT IniFile.

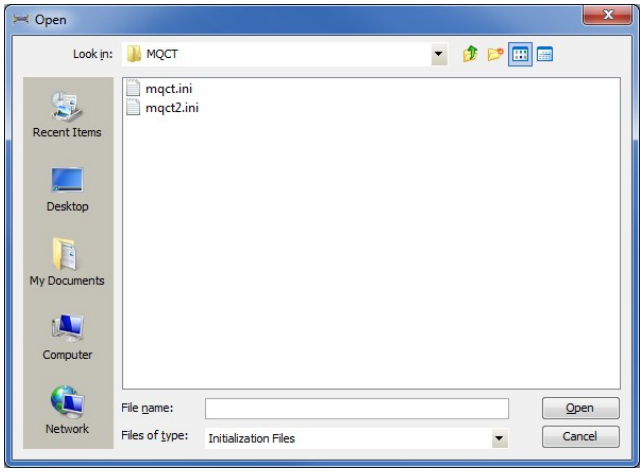
3.2 Open an IniFile

This section will describe how to open a MQCT IniFile to be viewed or edited. The IniFile can be for a local or remote MQCT implementation.

From the main menu of MQCT-GUI, select **File** then **Open File**



The following is the **Open** dialog box:

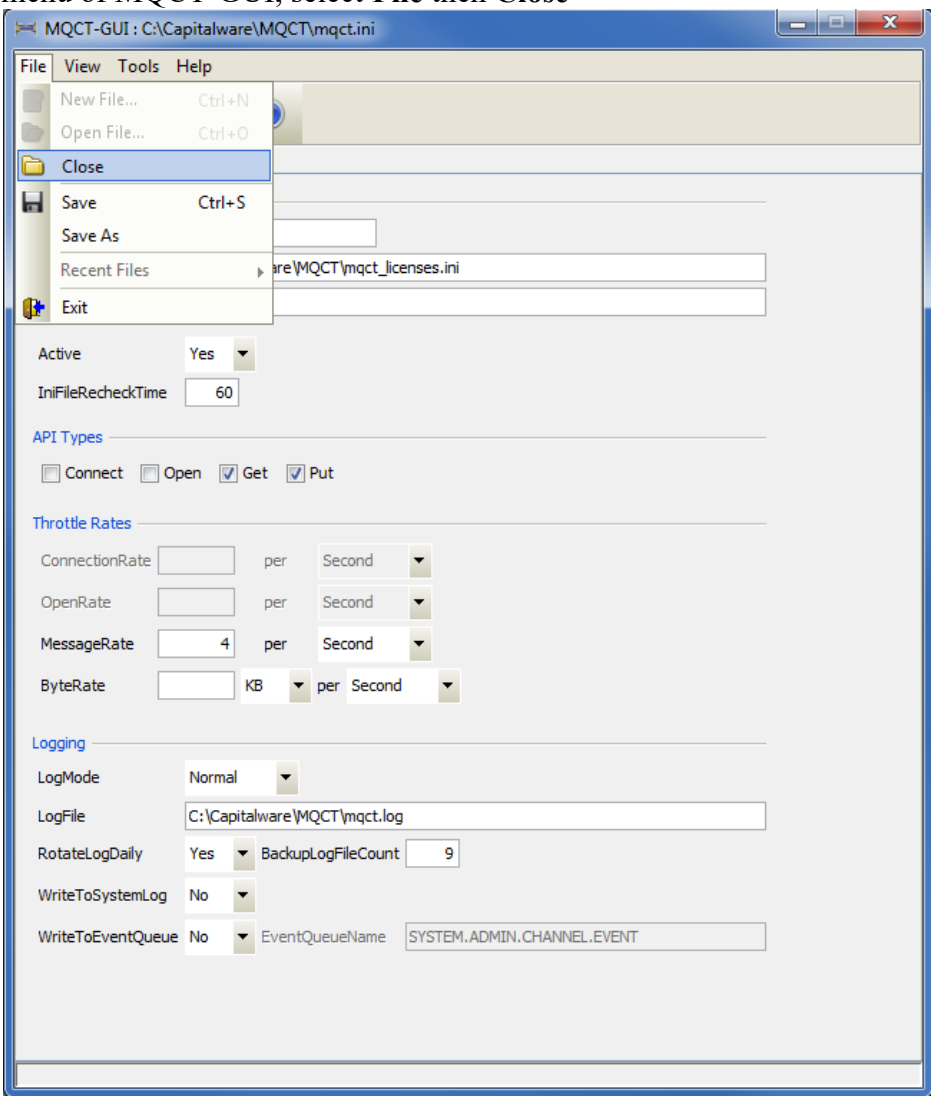


Select the IniFile that you wish to view / edit and then press the **Open** button.

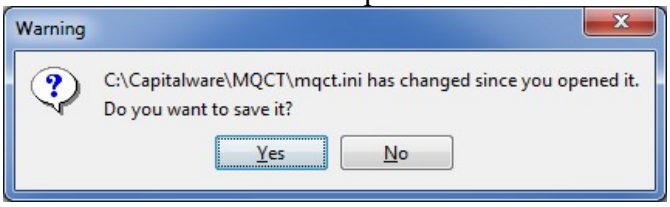
3.3 Close an IniFile

This section will describe how to close a MQCT IniFile.

From the main menu of MQCT-GUI, select **File** then **Close**



If the user has altered the IniFile then the user will be presented with the following dialog box:



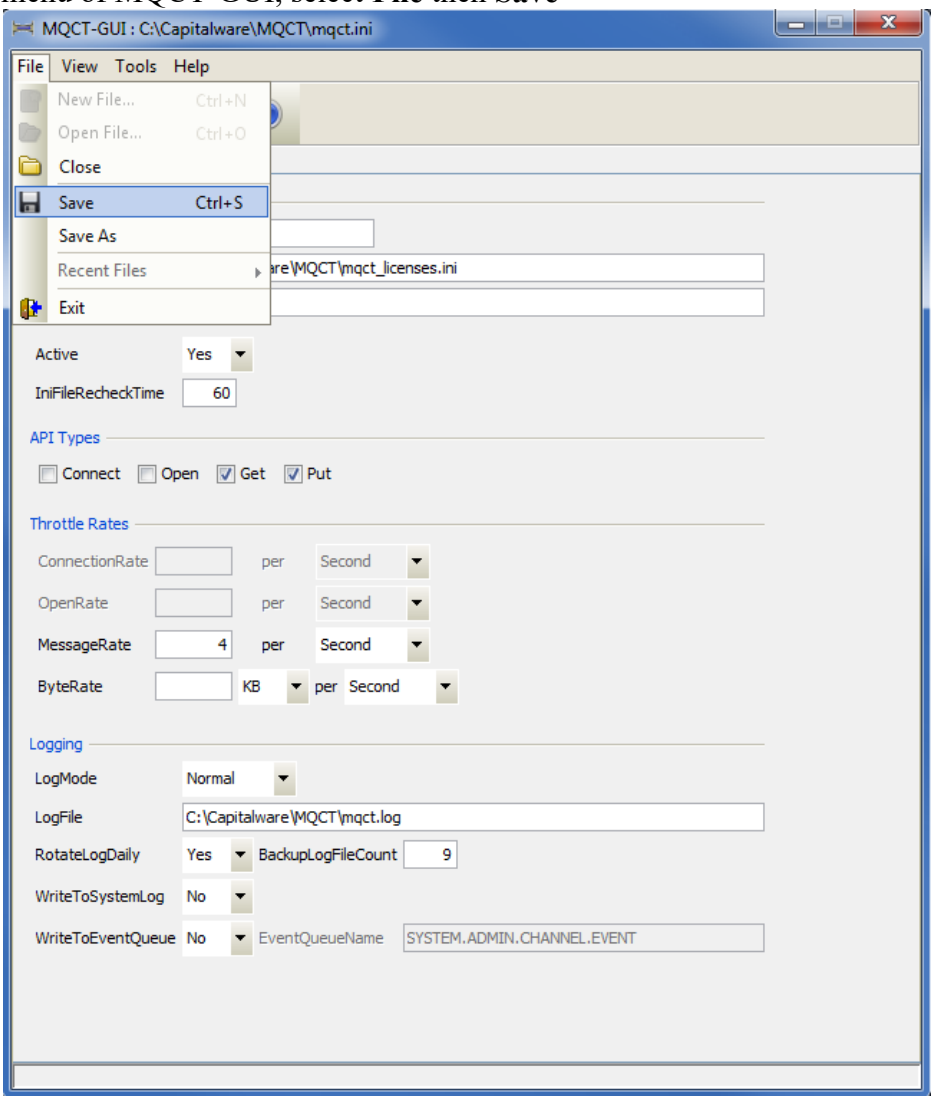
Select **Yes** to save the changes otherwise select **No**.

The MQCT-GUI program will make a backup of the original file in the same directory and call it: ***{inifilename}.backup***

3.4 Save IniFile

This section will describe how to save an open MQCT IniFile.

From the main menu of MQCT-GUI, select **File** then **Save**



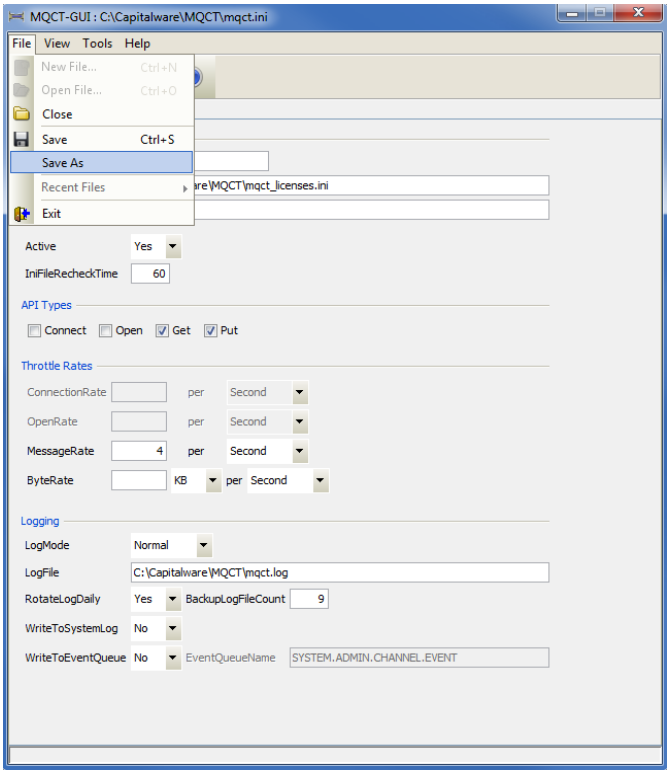
The parameter information will be saved to the IniFile.

The MQCT-GUI program will make a backup of the original file in the same directory and call it: ***{inifilename}.backup***

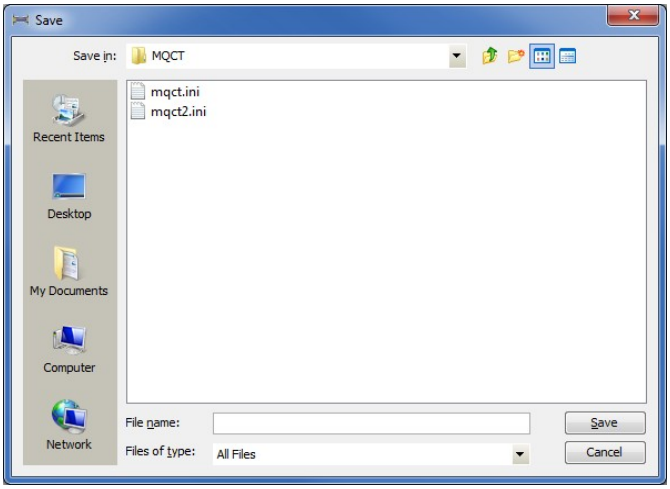
3.5 Save As IniFile

This section will describe how to save an open MQCT IniFile.

From the main menu of MQCT-GUI, select **File** then **Save As**



Select or Input the IniFile name that you wish use then press the **Save** button.

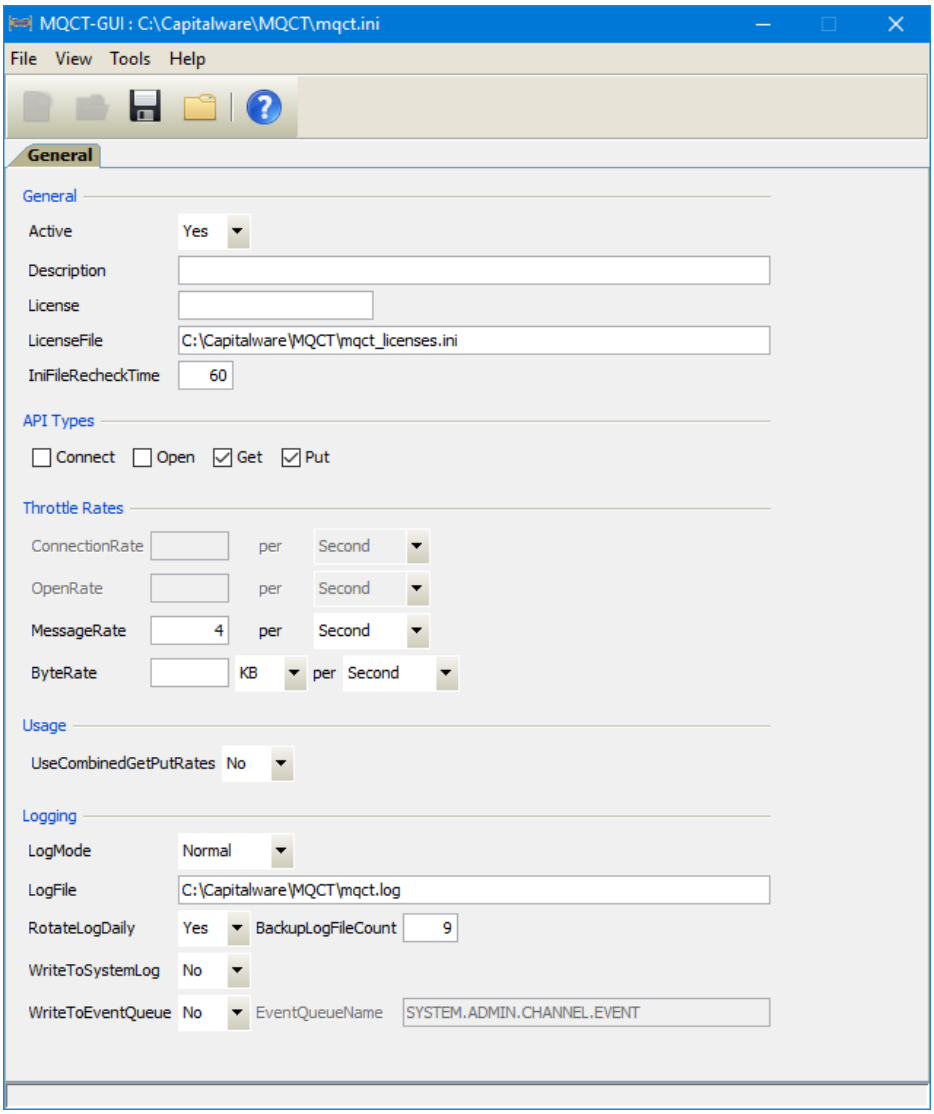


4 Tabs

This chapter will describe the various parameters on each tab.

4.1 General Tab

This section will describe various parameters on the General tab of a MQCT IniFile.
The following is a General Tab with default values:



The IniFile keywords and their values on the General Tab are discussed below.

4.1.1 General

This section describes the general keywords and their values.

➢ **Active** controls enabling or disabling MQCT.

➢ **Description** parameter is optional and is not used by MQCT. It can be used to provide a brief description / purpose of the IniFile.

➢ **License key** is provided by Capitalware Inc. The license is for a particular queue manager. Your license will look something like: 1000-AAAA-BBBBBBBB (Note: This is a sample license only and will NOT work).

➢ **LicenseFile** specifies the location of License file that contains all of the customer's license keys. The following are the default values for LicenseFile:

- For Windows: **C:\Capitalware\MQCT\mqct_licenses.ini**
- For IBM MQ 32-bit on Unix & Linux: **/var/mqm/exits/mqct_licenses.ini**
- For IBM MQ 64-bit on Unix and Linux: **/var/mqm/exits64/mqct_licenses.ini**
- For IBM i: **/QIBM/UserData/mqm/mqct/mqct_licenses.ini**

➢ **IniFileRecheckTime** specifies the amount, in seconds, before the IniFile is checked whether it has changed or not. The default value is 60.

4.1.2 API Types

This section describes the keywords related to functionality.

➢ **APIType** specifies the throttling to be against MQCONN, MQCONNX, MQOPEN, MQGET, MQPUT and/or MQPUT1. The default value is 'Get and Put'.

- **Connect** means that MQCT will throttle for MQCONN and MQCONNX calls
- **Open** means that MQCT will throttle for MQOPEN call
- **Get** means that MQCT will throttle for MQGET call
- **Put** means that MQCT will only throttle for MQPUT and MQPUT1 calls

4.1.3 Throttle Rates

This section describes the keywords for the global encryption / decryption settings.

- **ConnectionRate** specifies the maximum number of connection calls to be allowed over the channel in a given period of time. i.e. 25/s

- **OpenRate** specifies the maximum number of open calls to be allowed over the channel in a given period of time. i.e. 30/s

- **ByteRate** specifies the maximum number of bytes to be allowed over the channel in a given period of time. i.e. 100KB/m Note: Only used if APIType is set to Put and/or Get.

- **MessageRate** specifies the maximum number of messages to be allowed over the channel in a given period of time. i.e. 55/s Note: Only used if APIType is set to Put and/or Get.

Note: If ByteRate is used then MessageRate is ignored.

4.1.4 Usage

This section describes the keywords related to usage.

- **UseCombinedGetPutRates** specifies whether or not the throttles should be based on the combined total of gets and puts. UseCombinedGetPutRates supports 2 values [Y / N]. The default value is Y.

4.1.5 Logging

This section describes the keywords related to logging and their values.

➢ **LogMode** specifies what type of logging the user wishes to have. LogMode supports 4 values: Quiet, Normal, Verbose and Debug. The default value is Normal.

➢ **LogFile** specifies the location of the log file. The default is as follows:

- For Windows: C:\Capitalware\MQCT\mqct.log
- For IBM MQ 32-bit on Unix and Linux: /var/mqm/exits/mqct.log
- For IBM MQ 64-bit on Unix and Linux: /var/mqm/exits64/mqct.log
- For IBM I: /QIBM/UserData/mqm/mqct/mqct.log

➢ **RotateLogDaily** specifies whether or not MQCT when auto-rotate the log files. The default value is Yes.

➢ **BackupLogFileCount** specifies the number of backup log files to be kept / retained. The default value is 9.

➢ **WriteToSystemLog** specifies for each connection attempt that a log entry be written to the system log.

- For Windows this would be the **Event Log**
- For Unix and Linux this would be the **syslog**.

➢ **WriteToEventQueue** specifies for each failed connection attempt that a log entry be written to the specified event queue.

➢ **EventQueueName** specifies the name of the queue that the event message will be written to. The default is as follows: 'SYSTEM.ADMIN.CHANNEL.EVENT'.

5 Other Tools

This chapter will describes how the other tools included with MQCT-GUI.

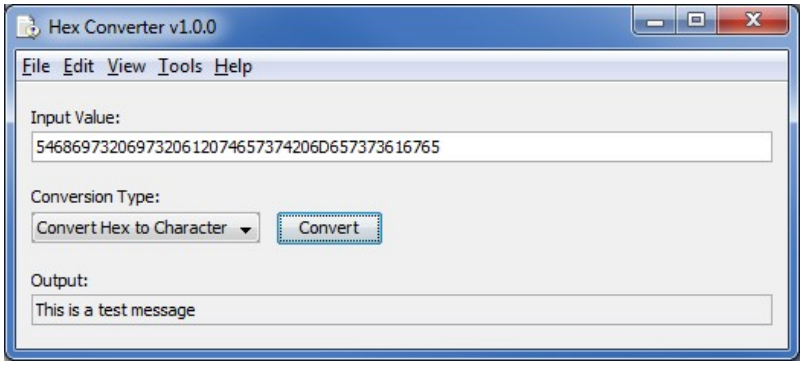
5.1 Hex Converter

This section will describe how to invoke and use the Hex Converter tool. Hex Converter tool can convert a hexadecimal number to its corresponding string representation and vice versa. i.e. 0x'3132333041424344' to '1230ABCD'.

For the Other Tools, you can have unlimited number of them running (up to what your box can support). Also, while any of the Other Tools are running, the user can still use MQCT-GUI.

From the main panel of MQCT-GUI, select **Tools**, then **Hex Converter**.

This is the main panel of the Hex Converter.



- The user first selects the Conversion type: "Hex to Character" or "Character to Hex"
- Input the value hex or character value into the "Input Value" field
- Click the Convert button to convert the data

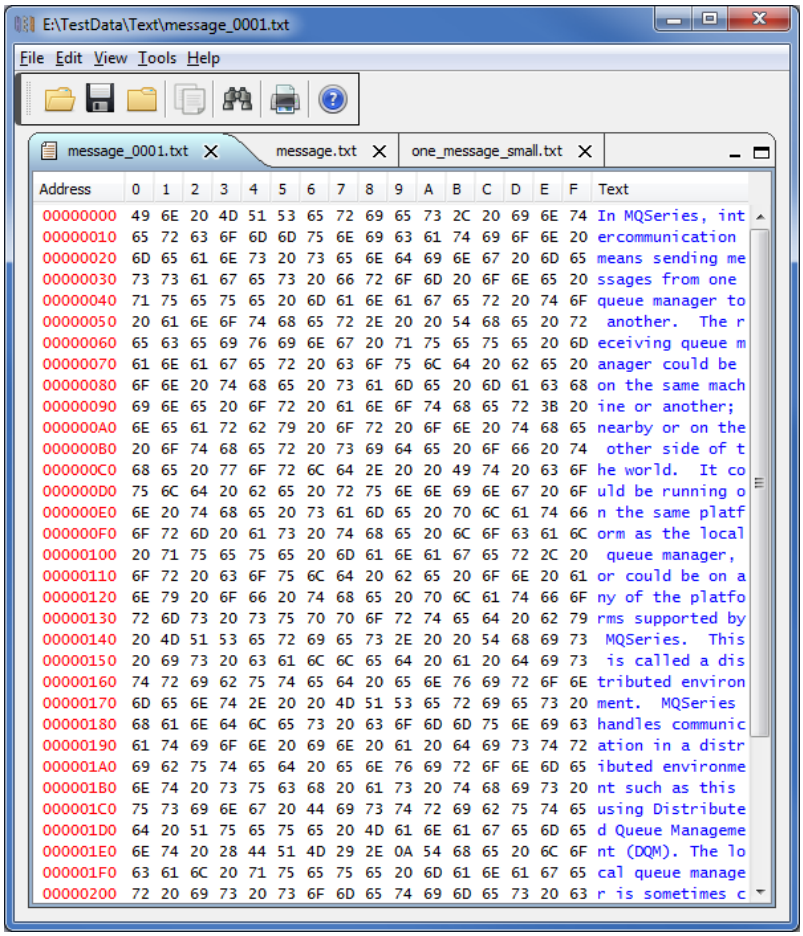
5.2 Hex Editor

This section will describe how to invoke and use the Hex Editor tool. The Hex Editor is a simple multipurpose hex editor. The Hex Editor supports multi-file editing.

For the Other Tools, you can have unlimited number of them running (up to what your box can support). Also, while any of the Other Tools are running, the user can still use MQCT-GUI.

From the main panel of MQCT-GUI, select **Tools**, then **Hex Editor**.

This is the main panel of the Hex Editor and it has 3 open files.



Supported features:

- Open / editing of multiple files
- Recent File List
- Copy, Find and Find Next
- Save, Save As and Print

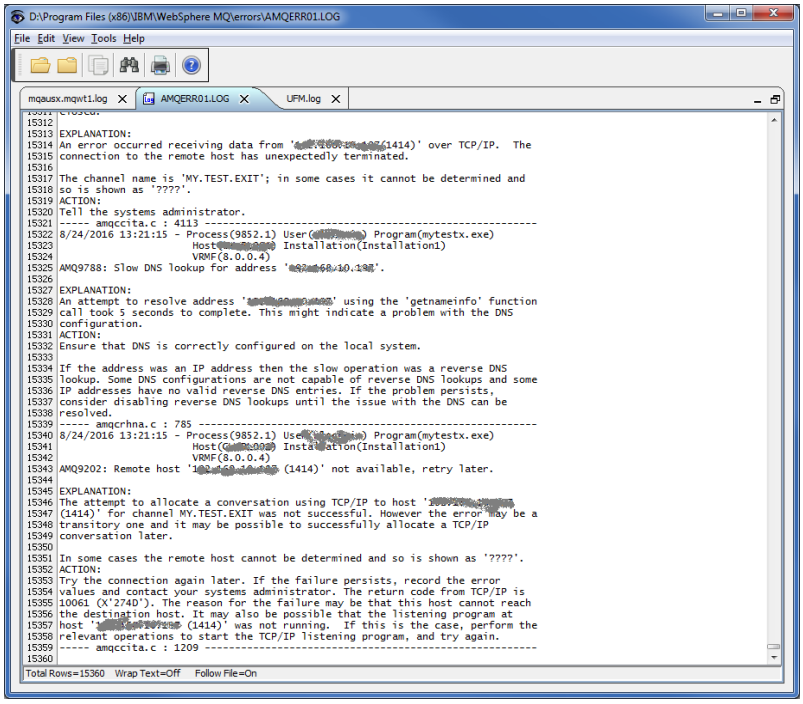
5.3 Tail File

This section will describe how to invoke and use the Tail File tool. The Tail File is a simple multipurpose file monitoring viewer. The Tail File supports monitoring of multiple files at the same time.

For the Other Tools, you can have unlimited number of them running (up to what your box can support). Also, while any of the Other Tools are running, the user can still use MQCT-GUI.

From the main panel of MQCT-GUI, select **Tools**, then **Tail File**.

This is the main panel of the Tail File and it has 3 open files.



Supported features:

- Opening of multiple files
- Wrap Text and Recent File List
- Copy, Find, Find Next and Print

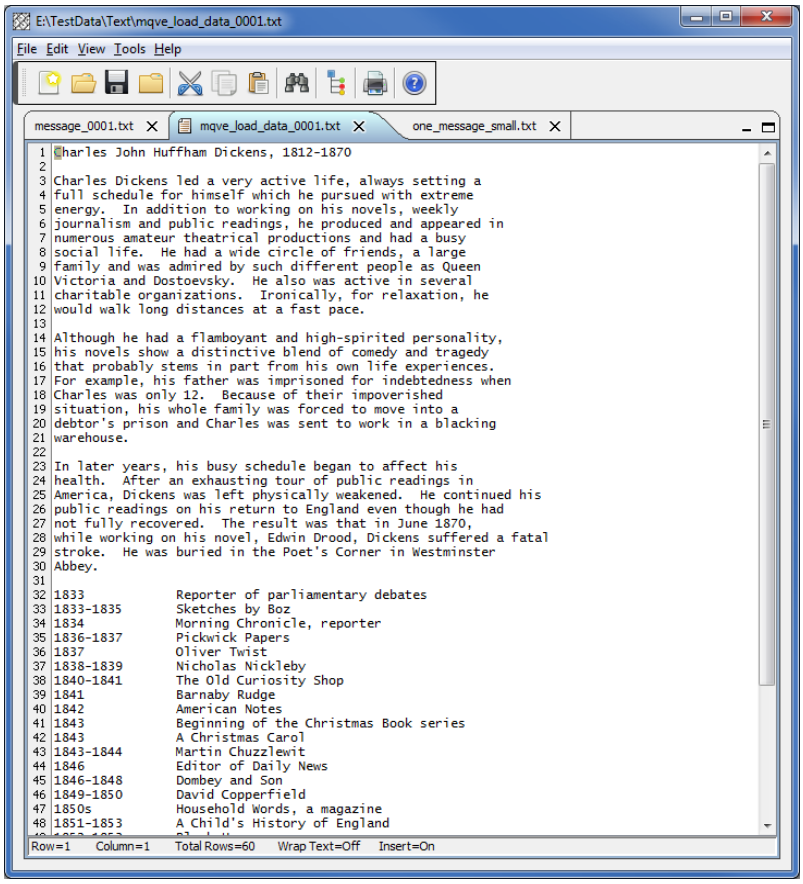
5.4 Text Editor

This section will describe how to invoke and use the Text Editor tool. The Text Editor is a simple multipurpose plain-text editor. The Text Editor supports multi-file editing.

For the Other Tools, you can have unlimited number of them running (up to what your box can support). Also, while any of the Other Tools are running, the user can still use MQCT-GUI.

From the main panel of MQCT-GUI, select **Tools**, then **Text Editor**.

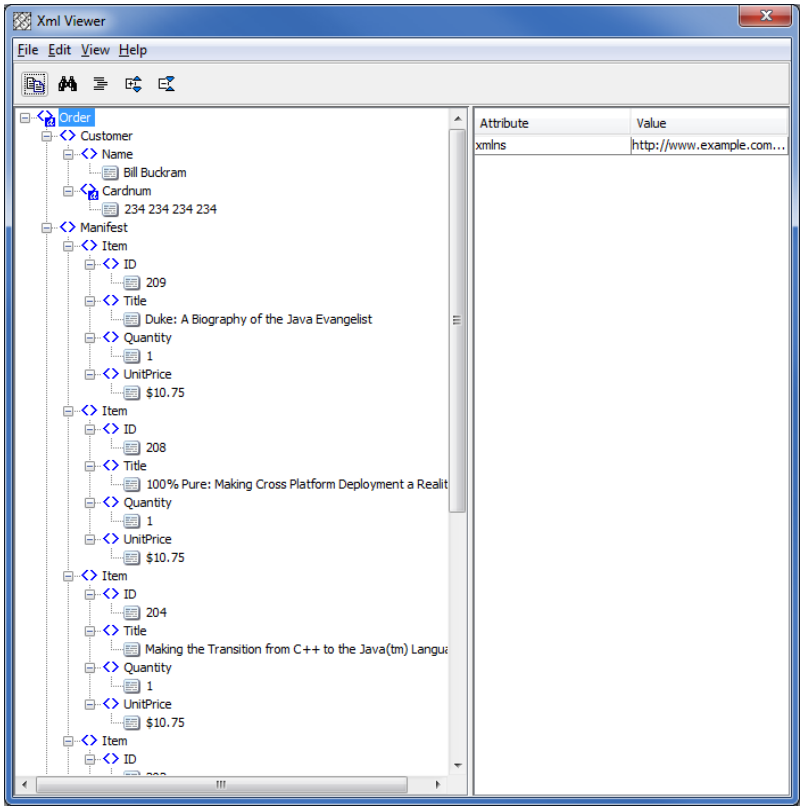
This is the main panel of the Text Editor and it has 3 open files.



Supported features:

- Open / editing of multiple files
- Builtin XML Viewer, Wrap Text
- Recent File List
- Cut, Copy, Paste, Find and Find Next
- Save, Save As and Print

The following shows the Text Editor's builtin XML Viewer.



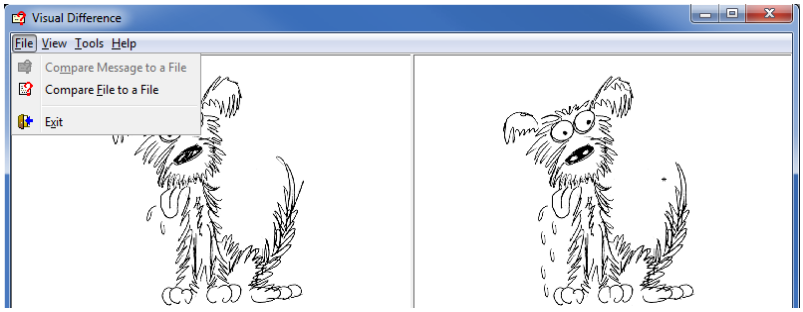
5.5 Visual Difference

This section will describe how to invoke and use the Visual Difference tool. The Visual Difference is a simple file to file comparison tool.

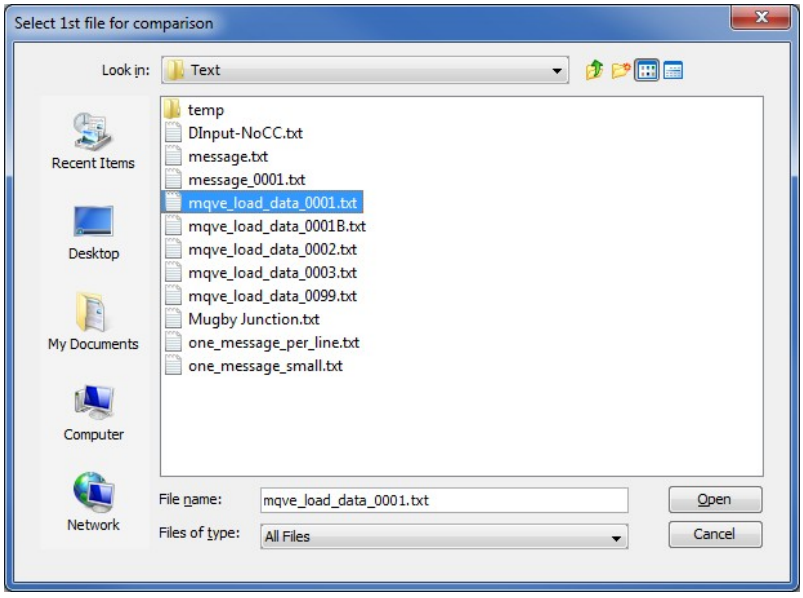
For the Other Tools, you can have unlimited number of them running (up to what your box can support). Also, while any of the Other Tools are running, the user can still use MQCT-GUI.

From the main panel of MQCT-GUI, select **Tools**, then **Visual Difference**.

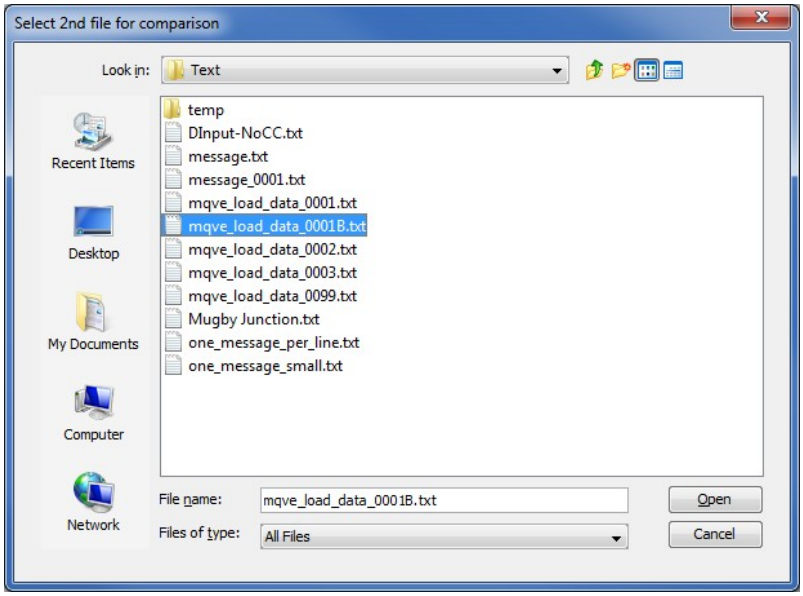
This is the main panel of the Visual Difference. To initiate the file comparison process, click File and then click Compare File to File



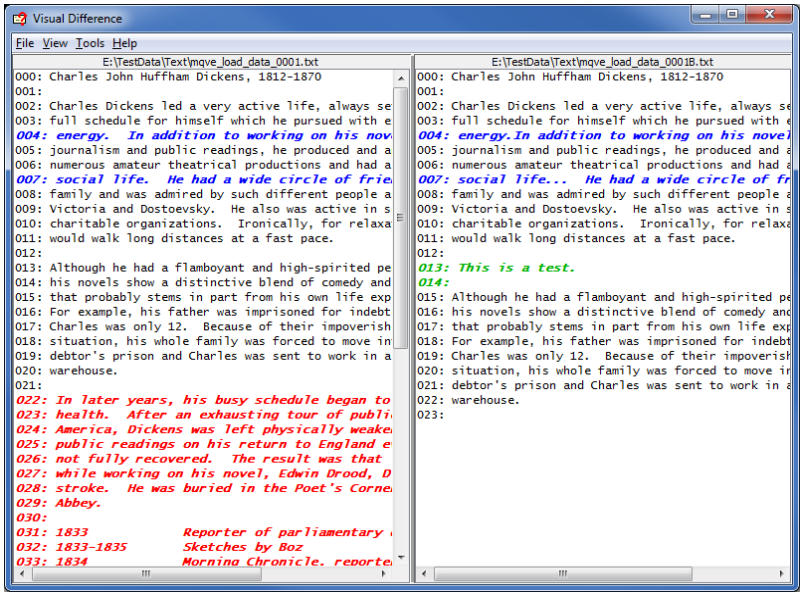
First the user needs to select the first file for the comparison.



Next, the user needs to select the second file for the comparison.



The following shows the difference between 2 files. Differences are highlighted: Green for inserts, Red for deletions and Blue for changes.



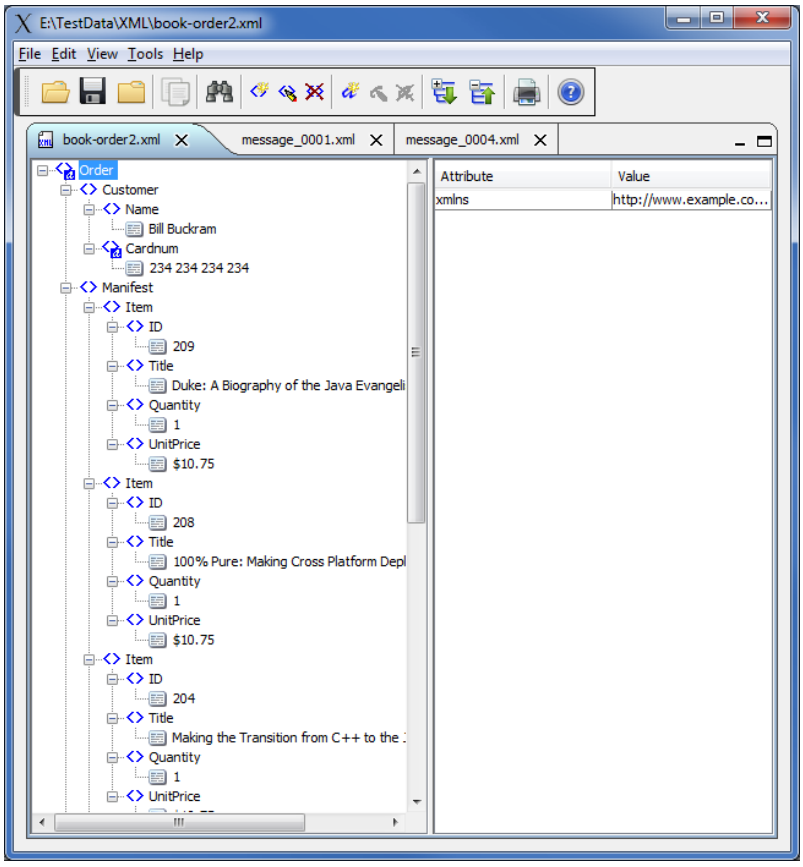
5.6 XML Editor

This section will describe how to invoke and use the XML Editor tool. The XML Editor is a simple multipurpose plain-text editor. The XML Editor supports multi-file editing.

For the Other Tools, you can have unlimited number of them running (up to what your box can support). Also, while any of the Other Tools are running, the user can still use MQCT-GUI.

From the main panel of MQCT-GUI, select **Tools**, then **XML Editor**.

This is the main panel of the XML Editor and it has 3 open files.



Supported features:

- Open / editing of multiple files
- Recent File List
- Copy, Find and Find Next
- Save, Save As and Print

6 Miscellaneous

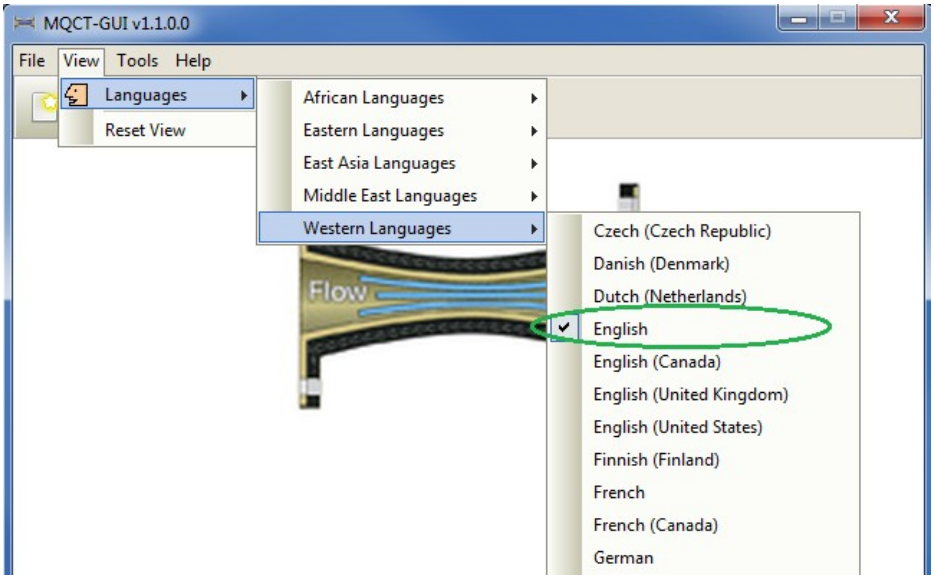
This chapter will describes how the miscellaneous features of MQCT-GUI.

6.1 Language

This section will describe how to switch MQCT-GUI's Language Text to another Language Text. MQCT-GUI has been designed to support Java's multi-language environment. Currently, MQCT-GUI has language support (menu items, buttons and titles) for the following 55 languages:

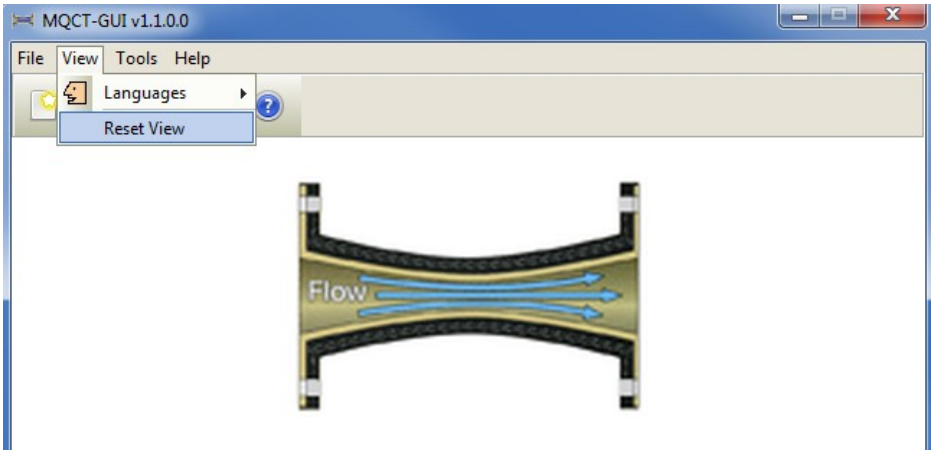
➢ Amharic (am)	➢ Hungarian (hu)	➢ Shona (sn)
➢ Arabic (ar)	➢ Igbo (ig)	➢ Sindhi (sd)
➢ Azerbaijani (az)	➢ Indonesian (in)	➢ Spanish (es)
➢ Bengali (bn)	➢ Italian (it)	➢ Sundanese (su)
➢ Cebuano (ceb)	➢ Japanese (ja)	➢ Swahili (sw)
➢ Chinese (China) (zh)	➢ Javanese jv)	➢ Swedish (sv)
➢ Chinese (Taiwan) (zh)	➢ Kannada (kn)	➢ Tamil (ta)
➢ Czech (cs)	➢ Korean (ko)	➢ Telugu (te)
➢ Danish (da)	➢ Malay (ms)	➢ Thai (th)
➢ Dutch (nl)	➢ Malayalam (ml)	➢ Turkish (tr)
➢ English (en)	➢ Marathi (mr)	➢ Ukrainian (uk)
➢ Finnish (fi)	➢ Norwegian (no)	➢ Urdu (ur)
➢ French (fr)	➢ Panjabi (pa)	➢ Uzbek (uz)
➢ German (de)	➢ Pashto (ps)	➢ Vietnamese (vi)
➢ Greek (el)	➢ Persian (fa)	➢ Xhosa (xh)
➢ Gujarati (gu)	➢ Polish (pl)	➢ Yoruba (yo)
➢ Hausa (ha)	➢ Portuguese (pt)	➢ Zulu (zu)
➢ Hebrew (iw)	➢ Romanian (ro)	
➢ Hindi (hi)	➢ Russian (ru)	

From the main panel of MQCT-GUI, select **View**, then **Language**.



6.2 Reset View

This section will describe how to reset the view of MQCT-GUI if the display is not correct.



The user can also reset the view from the command line by passing in the ***RG*** parameter.

6.2.1 Windows Command Line

On Windows, issue the following command to reset the view of MQCT-GUI:

mqctgui.exe RG

6.2.2 Linux and macOS Command Line

On Linux and macOS, issue the following command to reset the view of MQCT-GUI:

./mqctgui.sh RG

7 Appendix A – Frequently Asked Questions (FAQ)

Q. Can IniFiles be create on Windows for MQCT on Unix?
A. Yes. Once the IniFile has been saved, the user can copy or ftp (in ASCII mode) the file to the remote server.

8 Appendix B – MQCT-GUI Upgrade Procedures

To upgrade an existing installation of MQCT-GUI, please do the following in the appropriate section below.

8.1 Windows Upgrade

- Stop all instances of MQCT-GUI
- Backup any MQCT-GUI data files in the MQCT-GUI install directory
- Go to the Windows **Control Panel** and select **Program and Features**
- Select MQCT-GUI and then click the **Uninstall** button
- Run the install program called: **mqctgui-setup-withjre.exe**
- The installer follows the standard Windows install procedures and provides default values for the user.
- When the install program has completed execution, there will be a newly created folder under **Start** -> **All Programs** called **MQCT-GUI**.
- Restore the MQCT-GUI data files if necessary
- To run MQCT-GUI, select the MQCT-GUI icon from within the MQCT-GUI folder.

8.2 Linux or macOS Upgrade

- Stop all instances of MQCT-GUI
- Backup any MQCT-GUI data files in the MQCT-GUI install directory
- Remove the installation i.e. rm -Rf Capitalware/MQCT-GUI/
- Unzip the file, open a shell prompt and execute the following commands:

  unzip mqctgui.zip

- When the unzip command has finished, there should be a directory tree as follows:

  Capitalware/MQCT-GUI

- Change directory by typing the following:

  cd Capitalware/MQCT-GUI

- Before running MQCT-GUI for the first time, you need to add the execute attribute to the mqctgui.sh shell scripts. Type the following:

  chmod +x mqctgui.sh

- To run MQCT-GUI from the Capitalware/MQCT-GUI directory, then type the following:

  ./mqctgui.sh

9 Appendix C – Support

The support for MQCT-GUI can be found at the following location:

By email at:
support@capitalware.com

By regular mail at:

Capitalware Inc.
Attn: MQCT-GUI Support
Unit 11, 1673 Richmond Street, PMB524
London, Ontario N6G2N3
Canada

10 Appendix D – Summary of Changes

- MQCT-GUI v1.3.0
  - Added new keyword: UseCombinedGetPutRates - default value is 'Y'

- MQCT-GUI v1.2.0
  - Added the ‘Recent Files’ menu option under the File menu option.
  - Added images to buttons for more user-friendly display.
  - Added support for 55 languages for the menu options, buttons and titles (not IniFile keywords).
  - Added the ‘Reset View’ menu option under the View menu option.
  - Added 6 tools under the Tools menu option:
    - Compare File to a File
    - Hex Converter
    - Hex Editor
    - Tail File
    - Text Editor
    - XML Editor

- MQCT-GUI v1.1.0
  - Initial release.

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