

MQ Channel Connection Inspector Overview

Roger Lacroix
roger.lacroix@capitalware.com
<https://www.capitalware.com>

Background and Problem Statement

- Does your company want to know what client applications are connecting to a queue manager?
- Does your company want to know which queue managers are interconnecting to each other?
- Does your company want to know what remote (external) queue managers are connecting to your queue manager?
- Does your company require tracking of connections to a queue manager that complies with PCI and/or GDPR security requirements?
- Finally, do you know who is connecting to your queue manager? And how often?

Why? Why not use MQ Auditor?

- Customers wanted something like MQ Auditor but just on a few channels.
- Asked to have minimal effect/resource usage on the queue manager.
- Wanted it to also support z/OS queue managers.

MQ Channel Connection Inspector Overview

- MQ Channel Connection Inspector (MQCCI) is a **new** solution that allows a company to track and/or audit what information a client application or remote queue manager is exchanging with the local queue manager when a connection is made
- MQCCI is a *channel security exit* that operates with IBM MQ v7.0, v7.1, v7.5, v8.0, v9.0 & v9.1 in Windows, Unix, IBM i and Linux environments.
- MQCCI for z/OS (z/MQCCI) is available. z/MQCCI is a *channel security exit* that operates with IBM MQ v7.0, v7.1, v8.0, v9.0 & v9.1 on z/OS.

MQ Channel Connection Inspector Overview

- It is designed to provide the user with all of the information of the MQCD & MQCXP structures in "human readable" format.
- MQCCI is designed to output 1 line per API call (1 long line). The output information is written to plain text CSV (Comma Separate Value) files. The user can choose to have the output information written to a local or remote queue rather than to a file.

MQ Channel Connection Inspector Overview

- A channel security exit is ONLY invoked/called by the queue manager's MCA (Message Channel Agent) for MQCONN/X and MQDISC API calls (so it is **very** light-weight).
- A channel security exit is never invoked/called for MQOPEN, MQCLOSE, MQGET, MQPUT/1, etc...

MQCCI Audit Files

- The output (audit) information is written to plain text CSV (Comma Separate Value) files.
- The user can choose to have the output information written to a local or remote queue rather than to a CSV file.

MQCCI Invocation

- MQCCI can/will be invoked by the MCA (Message Channel Agent) with the following 'ExitReason' values:
 - ♦ MQXR_INIT
 - ♦ *MQXR_INIT_SEC*
 - ♦ MQXR_SEC_MSG
 - ♦ *MQXR_SEC_PARMS*
 - ♦ MQXR_TERM
- MQCCI will output the 'CONN' audit record when the ExitReason has either MQXR_INIT_SEC (QMgr connection) or MQXR_SEC_PARMS (client connection) value
- MQCCI will output the 'DISC' audit record (optional) when the ExitReason has the value MQXR_TERM

MQCCI Invocation from Client Application

- The reason MQCCI outputs the 'CONN' audit record for the ExitReason of MQXR_SEC_PARMS rather than MQXR_INIT or MQXR_INIT_SEC is because of the channel's 'Sharing Conversion' (SHARECNV).
- When the channel's 'Sharing Conversion' is greater than 1 then the MCA only invokes the security with ExitReason of MQXR_SEC_PARMS for other connections after the 1st connection!!!

MQCCI Audit File – Client Connection

2018/09/14 18:07:02.155508, **CONN**, QMgrName=MQWT1, ChName=TEST.EXIT.CCI, CD_MaxMsgLength=4194304, CD_PutAuthority=MQPA_DEFAULT, CD_MCAUserIdentifier=roger, CD_ConnectionName=10.10.10.10, CD_RemoteUserIdentifier=roger, CD_SSLCipherSpec=, CD_SSLClientAuth=MQSCA_REQUIRED, CD_CertificateLabel=, CXP_PartnerName=roger, CXP_SSLCertUserid=, CXP_SecurityParms_AuthenticationType=MQCSP_AUTH_USER_ID_AND_PWD, CXP_SecurityParms_Userid=bob, CXP_SharingConversations=TRUE, CXP_MCAUserSource=MQUSRC_MAP, CXP_RemoteProduct=MQJB, CXP_RemoteVersion=0800,

2018/09/14 18:07:02.161509, **DISC**, QMgrName=MQWT1, ChName=TEST.EXIT.CCI, CD_MaxMsgLength=4194304, CD_PutAuthority=MQPA_DEFAULT, CD_MCAUserIdentifier=roger, CD_ConnectionName=10.10.10.10, CD_RemoteUserIdentifier=roger, CD_SSLCipherSpec=, CD_SSLClientAuth=MQSCA_REQUIRED, CD_CertificateLabel=, CXP_PartnerName=roger, CXP_SSLCertUserid=, CXP_SharingConversations=TRUE, CXP_MCAUserSource=MQUSRC_CHANNEL, CXP_RemoteProduct=MQJB, CXP_RemoteVersion=0800,

MQCCI Audit File - QMgr-to-QMgr

2018/09/14 18:46:16.828188, **CONN**, **QMgrName=MQWT1**, **ChName=MQWT2.TO.MQWT1**, CD_MaxMsgLength=4194304, CD_PutAuthority=MQPA_DEFAULT, **CD_MCAUserIdentifier=tester**, **CD_ConnectionName=10.10.10.20**, CD_RemoteUserIdentifier=, CD_SSLLCipherSpec=, CD_SSLLClientAuth=MQSCA_REQUIRED, CD_CertificateLabel=, **CXP_PartnerName=MQWT2**, CXP_SSLLCertUserid=, CXP_SharingConversations=FALSE, CXP_MCAUserSource=MQUSRC_CHANNEL, **CXP_RemoteProduct=MQMM**, **CXP_RemoteVersion=0800**,

2018/09/14 18:46:41.265586, **DISC**, **QMgrName=MQWT1**, **ChName=MQWT2.TO.MQWT1**, CD_MaxMsgLength=4194304, CD_PutAuthority=MQPA_DEFAULT, CD_MCAUserIdentifier=tester, CD_ConnectionName=10.10.10.20, CD_RemoteUserIdentifier=, CD_SSLLCipherSpec=, CD_SSLLClientAuth=MQSCA_REQUIRED, CD_CertificateLabel=, CXP_PartnerName=MQWT2, CXP_SSLLCertUserid=, CXP_SharingConversations=FALSE, CXP_MCAUserSource=MQUSRC_CHANNEL, CXP_RemoteProduct=MQMM, CXP_RemoteVersion=0800,

MQCCI Audit File

[illegible]

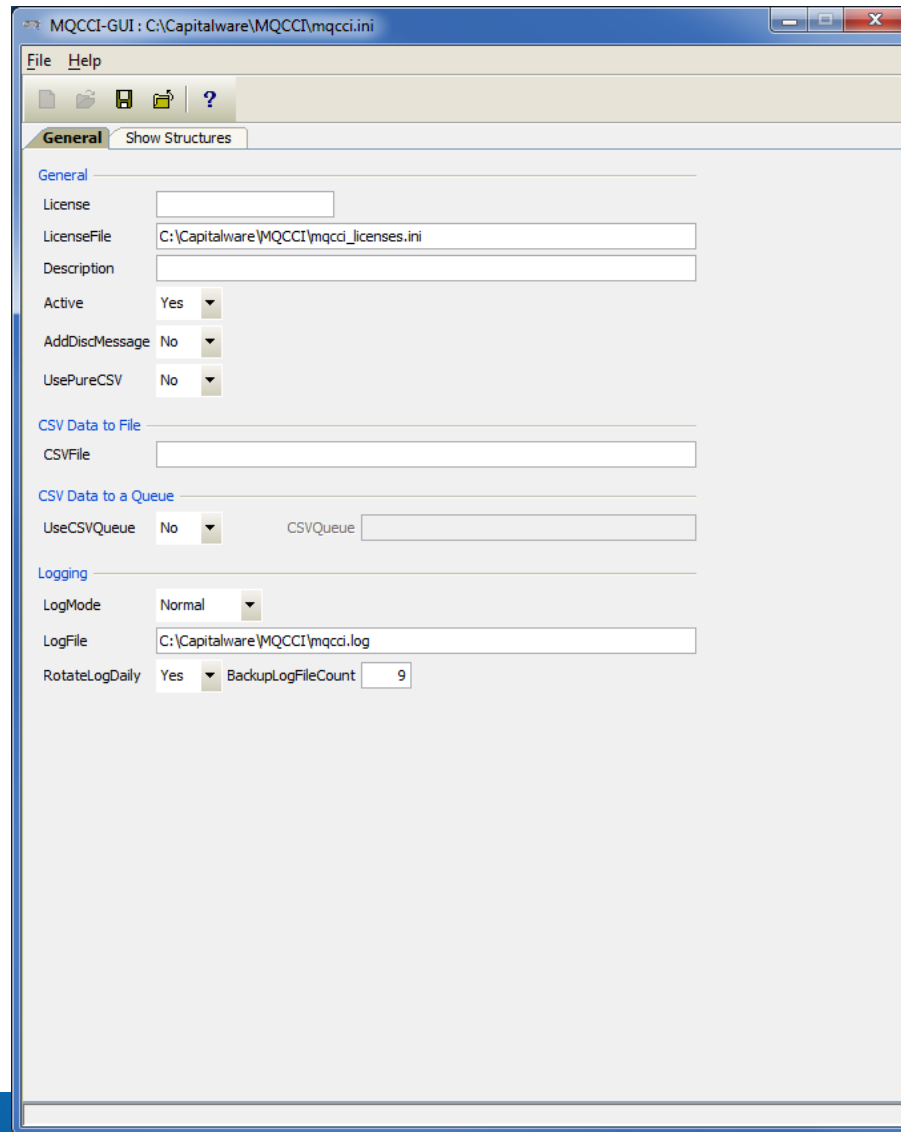
MQCCI Audit File

[illegible]

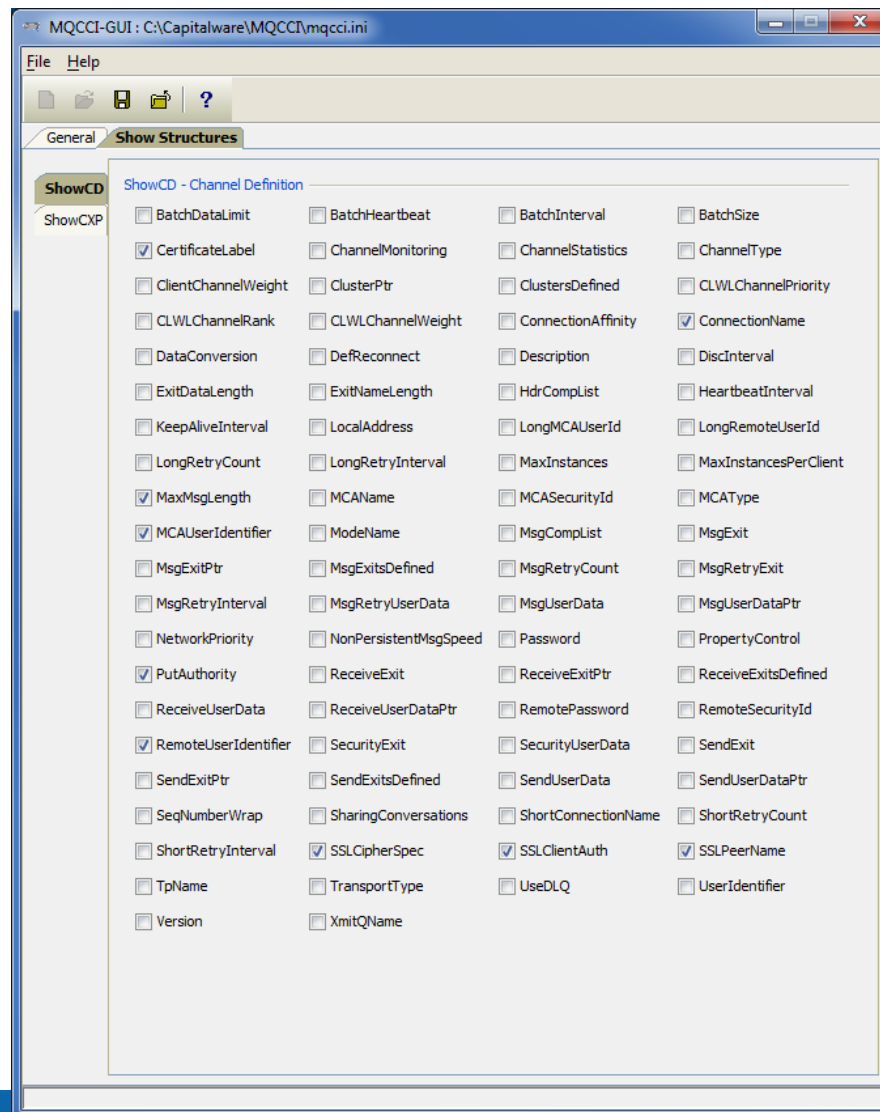
MQCCI IniFiles

- MQCCI uses an initialization files (IniFile) to configure how the channel security exit is called.
- The user can have 1 IniFile per queue manager or per channel or some combination of both.
- MQCCI has a large number of values for ShowCD & ShowCXP keywords that can be used. Hence, it is best to use the MQCCI-GUI to update the values for keywords.

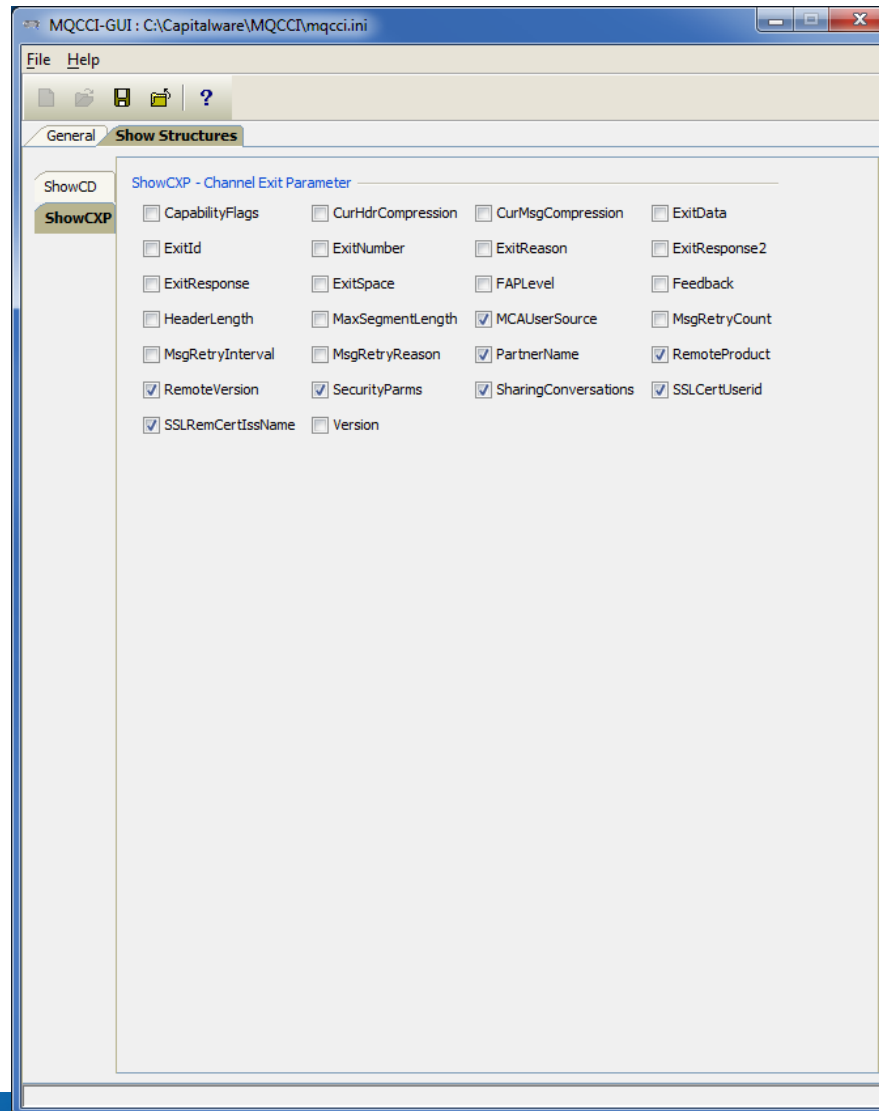
MQCCI-GUI



MQCCI-GUI



MQCCI-GUI



Pricing of MQCCI

- MQCCI is licensed on a 'per queue manager' basis.

Quantity		Price per Queue Manager* (USD)
1	9	\$299.00
10	49	\$275.00
50	99	\$249.00
100	249	\$225.00
250	Unlimited	\$199.00
** Enterprise License		\$55,000.00

- * Yearly maintenance is 15%.
- ** Unlimited number of queue managers in company locations worldwide.

Pricing of z/MQCCI

- z/MQCCI is licensed on a 'per queue manager' basis.

Quantity		Price per Queue Manager* (USD)
1	9	\$1495.00
10	19	\$1395.00
20	Unlimited	\$1295.00
** Enterprise License		\$55,000.00

- * Yearly maintenance is 15%.
- ** Unlimited number of queue managers in company locations worldwide.

Questions & Answers

