

Exploring our new queue-sharing group

Audience level: knowledge of MQ or z/OS

Skillset: z/OS Systems Programming, MQ Administration

Background:

In this lab, you will go through the process of exploring a queue sharing group's configuration. Queue sharing groups are the gold-standard of high availability for IBM MQ. Queue sharing groups enable for all queue managers in a queue sharing group to access one another's messages. This is made possible by connections to a DB2 data-sharing group and to the coupling facility, a hardware/software device unique to z/OS.

Overview of exercise:

In this lab, you will see how a MQ admin setting up a new queue-sharing group would:

- 1.) Modify the CFRM policy to include the MQ CF structures
- 2.) Customize the necessary SCSQPROC members
- 3.) Run the necessary configuration JCL to set up DB2 prerequisites
- 4.) Update your CSQZPRM's for each queue manager in your QSG
- 5.) APF authorize any necessary data sets

SCSQPROCs sample members necessary for queue sharing group configuration:

CSQ4CFRM	Template for CFRM policy modifications
CSQ4XCSG	Create the storage group
CSQ4XCDB	Create the DB2 database used by IBM MQ
CSQ4XCTS	Create the table spaces used by IBM MQ
СЅQ4ХСТВ	Create the tables and indices used by IBM MQ

CSQ45BPL	Bind the DB2 plans used by IBM MQ using DB2 TSO batch interface
CSQ45AQS	Add a QSG record into the DB2 admin table CSQ.ADMIN_B_QSG
CSQ45AQM	Add a queue manager record into the DB2 admin table CSQ.ADMIN_B_QSG

- 1.) Navigate to within the SCSQPROC members. From the ISPF menu, enter =3.4 in the command line.
- 2.) Specify you would like to view 'ZQS1.SCSQPROC' and hit enter
- 3.) Place a 'b' for browse to the left of data set ZQS1.SCSQPROC.
- 4.) Once inside the list of ZQS1.SCSQPROC's members, use the command 'I csq4cfrm' to bring the member we are looking for to the top.
- 5.) Place a 'b' for browse to the left of CSQ4CFRM and hit enter
- 6.) Once inside, you will see that we specified 4 CF structures. CSQSYSAPPL and CSQ_ADMIN will be standard in any environment, but we also have 2 structures here called TEST1 and TEST2. These will be where the data from shared queues is stored.
- 7.) Back out of CSQ4CFRM using the command F3.
- 8.) Enter the command 'I CSQ4XCSG' to view the next relevant member
- 9.) Place a 'b' for browse to the left of CSQ4XCSG and hit enter
- 10.) Once inside this member, you can see we are creating the relevant DB2 storage group for our queue sharing group. We do this by specifying the environment's DB2 variables.
- 11.) Here we have specified that we are creating a new storage group called MQSTGG.

- 12.) Make note of the variables and back out of the member using F3
- 13.) Curious where we found those variables? Hit F3 until you return to the ISPF main menu
- 14.) Once you are at the ISPF main menu, enter the command 'SDSF' into the command line and hit enter.
- 15.) A new menu will pop up. Enter 'DA' on the command line here and press enter.
- 16.)DA will show us the active subsystems running on our z/OS image. We want to find the active DB2 database running. To do that, enter the command 'prefix db*'
- 17.) Put a 's' for select next to the DB2 database and hit enter.
- 18.) Now you are seeing the configuration information for the DB2 instance. Use the command 'f group attach' to find the words group attach in the configuration
- 19.) You will see D3AG next to the group attach name. You should remember that variable from the CSQ4XCSG configuration.

- 20.) If you explore the configuration information more using the F7 and F8 buttons for up and down, you will notice that we are using DB2 version 13.
- 21.)Once we have learned about our DB2 installation, you can F3 back to the main menu and proceed to return to the SCSQPROC.
- 22.) Next we will look at CSQ4CDB. This job creates the DB2 database the QSG will use.

CREATE DATABASE "MQDB"

STOGROUP MQSTGG

BUFFERPOOL BP32K

INDEXBP BP4

CCSID EBCDIC;

23.) Notice the variables that need to be specified here.

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Replace DB2V13

with the high level qualifier of the DB2 target library data sets.

Replace D3AG

with the DB2 subsystem ID or batch group attach name through which access is gained to the DB2 data-sharing group.

Replace DB2V13

with the version number of DB2 you are currently using, for example 51 = DB2 for OS/390 V5.1

Replace MQDB

with the name of the DB2 database used for the WebSphere MQ tables.
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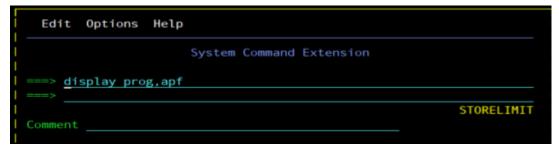


- 24.) F3 out and next browse CSQ4XCTS by finding the member in the list and placing a 'b' next to the member and hitting enter.
- 25.) Repeat the process of browsing members:
 - a. CSQ4XCTB to create DB2 table and their associated indexes
 - b. CSQ4GEX to view grant permissions
 - c. CSQ45AQM to define the queue managers to the DB2 data sharing group tables
 - d. CSQ45AQS to add the queue-sharing group record into the DB2 administration table CSQ.ADMIN B QSG
- 26.) Now, we will utilize the ZPRM member we used when defining our original standalone queue manager. Once in the CSQ4ZPRM member, use the command 'f QSGDATA' and hit enter
- 27.) The QSGDATA variable ties the individual queue manager, in this case ZQS1, to the queue sharing group.
 - a. QSGA is QSG name
 - b. DB3AG is the Db2 data sharing group
 - c. D3AG is the DB2 connection name
 - d. 4 is the number of server tasks used for accessing DB2
 - e. 4 is the number of tasks used for accessing the BLOBS
- 28.) Now, from the =3.4 main menu option, navigate to ZQS1.USERAUTH. We created this data set to fulfill one of the parameters of CSQZPRM necessary for queue-sharing

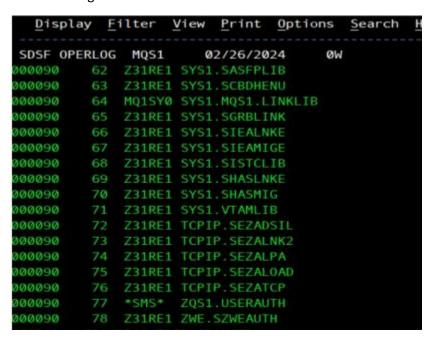
- 29.) What does ZQS1.USERAUTH do? It is the data set of the authorized load library in which to store your system parameter module (CSQ4ZPRM). You'll notice that CSQ4ZPRM is a member of ZQS1.USERAUTH
- 30.)In order for the dependent libraries (for example, ZQS1.USERAUTH) of all of these jobs to be recognized, they must be what is called APF-authorized
- 31.) Now we can see which libraries are APF-authorized by navigating back to SDSF, from the main ISPF menu.
- 32.) Enter SDSF on the command line from the main menu
- 33.) Once in the SDSF menu, enter a slash in the command line like so



34.) From here, enter the command



- 35.)Hit enter. You will see a preview of the list of APF-authorized libraries pop up. Hit enter again
- 36.) From the SDSF menu, enter LOG. You will now see the full list of APF-authorized libraries. If you cannot see the full list on the right side of your screen, use the keys F10 and F11 to navigate horizontally on the screen
- 37.) Notice we have had to APF-authorize ZQS1. USERAUTH for the queue-sharing group configuration



After viewing all those steps, you now know what the process is like for creating a queue-sharing ground on z/OS!	ир