
**Adding a queue manager to a queue-sharing group**

Audience level: knowledge of MQ or z/OS

Skillset: z/OS Systems Programming, MQ Administration

## Background:

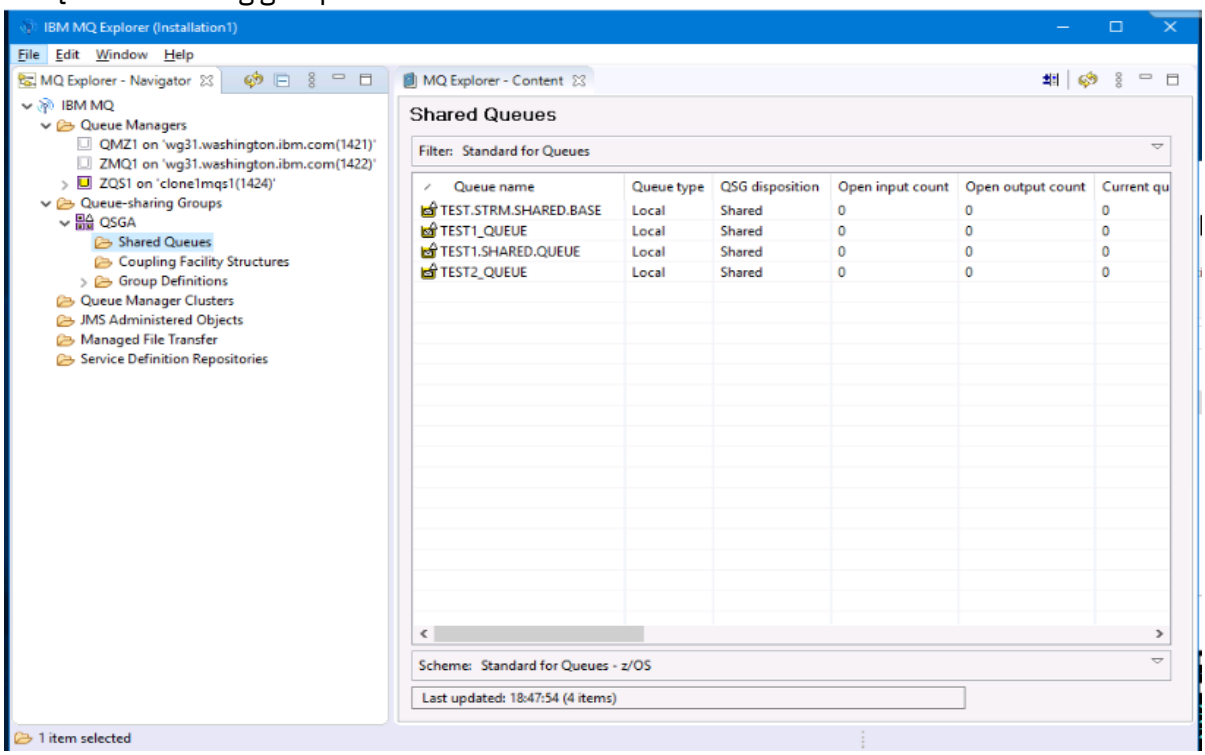
In this lab, you will go through the process of adding a standalone queue manager on z/OS to a queue sharing group. This exercise assumes that the z/OS environment has a QSG called QSGA set up with two active queue managers, ZQS1 and ZQS2. We will add standalone queue manager ZQS3 to the queue sharing group.

Overview of exercise:

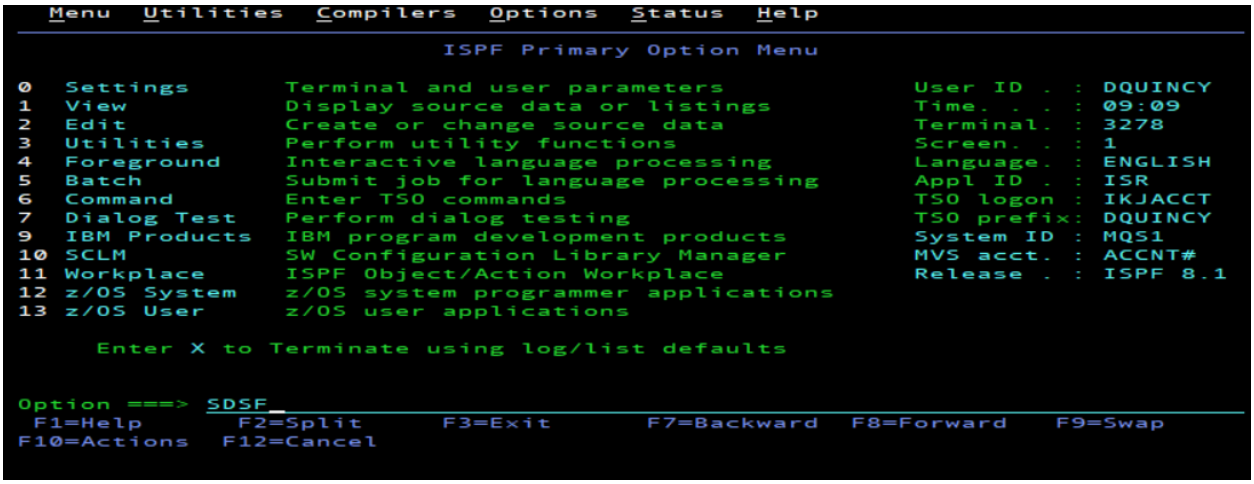
1. Modify and run CSQ45AQM
2. Modify ZQS3MSTR to include USERAUTH
3. Modify ZQS3ZPRM to include USERAUTH

## Steps of exercise:

1. Before getting started, verify that the above MQ configuration is in place by viewing MQ Explore. You should see connections to ZQS1, ZQS2, and you should see a QSGA Queue-sharing group visible.



2. First, make sure your queue manager that you are trying to add to the queue-sharing group is not online, you can turn your queue manager off via SDSF. Navigate to SDSF




3. Enter a '/'


4. From the command line, you will use the lines:

- ZQS3 STOP CHINIT
- ZQS3 STOP QMGR

```
Edit  Options  Help
                        System Command Extension

===> ZQS3 STOP CHINIT
===>
                                                              STORELIMIT
Comment

Group                  Show *                  (F4 for list)
                                                       More:      +
=>  display prog,apf
=>  display smf
=>  zqs3 start listener TRPTYPE(TCP) Port(2425)
=>  zqs3 start listener TRPTYPE(TCP) Port(1425)
=>  ZQS3 START CHINIT
=>  ZQS3 START QMGR
=>  zqs3 stop qmgr
=>  ZQS3 STOP CHINIT

 F1=Help        F3=Cancel      F4=Prompt      F5=FullScr     F6=Details
 F7=Up          F8=Down       F10=Save       F11=Clear      F12=Cancel
```

5. Now from TSO, navigate to the ZQS3.SCSQPROC library using the 3.4 menu option.

```
 Menu  RefList  RefMode  Utilities  Help
                        Data Set List Utility
                                                       More:      +
   blank Display data set list              P Print data set list
       V Display VTOC information          PV Print VTOC information

Enter one or both of the parameters below:
   Dsname Level . . . ZQS3.SCSQPROC
   Volume serial  . .

Data set list options
   Initial View                  Enter "/" to select option
   1  1. Volume                  /  Confirm Data Set Delete
      2. Space                   /  Confirm Member Delete
      3. Attrib                  /  Include Additional Qualifiers
      4. Total                   /  Display Catalog Name
                                 _  Display Total Tracks
                                 _  Prefix Dsname Level

Option ===>
 F1=Help      F2=Split     F3=Exit      F7=Backward  F8=Forward   F9=Swap
F10=Actions  F12=Cancel
  *DSLIST
```

6. From here, we will want to edit the CSQ45AQM member of the ZQS3.SCSQPROC data

```
 Menu  Options  View  Utilities  Compilers  Help
DSLIST - Data Sets Matching ZQS3.SCSQPROC                0 Members proc

Command - Enter "/" to select action                Message          V
------------------------------------------------------------------------
E_        ZQS3.SCSQPROC                             Edited           M
****************************** End of Data Set list ********************

Command ===>                                                  Scroll ===>
 F1=Help     F2=Split    F3=Exit     F5=Rfind    F7=Up       F8=Down     F9=Swa
F10=Left    F11=Right   F12=Cancel
  *DSLIST
```

set.

```
 Menu  Functions  Confirm  Utilities  Help
EDIT              ZQS3.SCSQPROC                        Row 0000098 of 0000115
          Name      Prompt        Size    Created          Changed           ID
__________ CSQ45AQM
__________ CSQ45AQS
__________ CSQ45BPK
__________ CSQ45BPL
__________ CSQ45DTB
__________ CSQ45GEX
__________ CSQ45MQS
__________ CSQ45RQM
__________ CSQ45RQS
__________ CSQ45STB
__________ CSQ45VER
__________ CSQ7IPCS
__________ IMQSGETR
__________ IMQSPUTR
__________ IMQWRLDR
__________ IMQ4B100
Command ===> l csq45aqm_____________________________________ Scroll ===> PAGE
 F1=Help     F2=Split    F3=Exit     F5=Rfind    F7=Up       F8=Down     F9=Swap
F10=Left    F11=Right   F12=Cancel
  *DSLIST
```

**7.** Use the command ‘l csq45apm’ to quickly locate the correct member

```
 Menu  Functions  Confirm  Utilities  Help
EDIT              ZQS3.SCSQPROC                        Row 0000098 of 0000115
          Name      Prompt        Size    Created          Changed           ID
___e_____ CSQ45AQM
__________ CSQ45AQS
__________ CSQ45BPK
__________ CSQ45BPL
__________ CSQ45DTB
__________ CSQ45GEX
__________ CSQ45MQS
__________ CSQ45RQM
__________ CSQ45RQS
__________ CSQ45STB
__________ CSQ45VER
__________ CSQ7IPCS
__________ IMQSGETR
__________ IMQSPUTR
__________ IMQWRLDR
__________ IMQ4B100
Command ===> l csq45aqm_____________________________________ Scroll ===> PAGE
 F1=Help     F2=Split    F3=Exit     F5=Rfind    F7=Up       F8=Down     F9=Swap
F10=Left    F11=Right   F12=Cancel
  *DSLIST
```

**8.** Specify that you want to edit the member with the ‘e’ option and hit enter.

9. Scroll down using your F8 key to look at what the JCL does here, adding our queue manager to the QSG configuration.

10. Change the variables to reflect the changes here

```
000074 //*
000075 //ADDQMGR  EXEC PGM=CSQ5PQSG,REGION=4M,
000076 // PARM='ADD QMGR,++QMGRNAME++,++QSGNAME++,++DSGNAME++,++DB2SSID++'
000077 //SYSPRINT DD SYSOUT=*
000078 //STEPLIB  DD DSN=++THLQUAL++.SCSQANL++LANGLETTER++,DISP=SHR
000079 //         DD DSN=++THLQUAL++.SCSQAUTH,DISP=SHR
000080 //         DD DSN=++DB2QUAL++.SDSNLOAD,DISP=SHR
```

```
//ADDQMGR   EXEC PGM=CSQ5PQSG,REGION=4M,
//  PARM='ADD QMGR,ZQS3,QSGA,DB3AG,D3A1'
//SYSPRINT  DD SYSOUT=*
//STEPLIB   DD DSN=MQ933CD.SCSQANLE,DISP=SHR
//          DD DSN=MQ933CD.SCSQAUTH,DISP=SHR
//          DD DSN=DB2V13.SDSNLOAD,DISP=SHR
//
```

11. Excellent! Now that you've made the necessary changes, submit the job.

```
Command ===> SUBMIT
```

12. Now, we have to modify CSQ4ZPRM, also in SCSQPROC. Here, we are changing line QSGDATA here to associate the queue manager back to the appropriate queue-sharing group.

```
EDIT       ZQS3.SCSQPROC(CSQ4ZPRM) - 01.02              Columns 00001 00072
000131                CMDUSER=CSQOPR,       DEFAULT USERID FOR COMMANDS
000132                EXCLMSG=(),           NO MESSAGES EXCLUDED
000133                EXITLIM=30,           EXIT TIMEOUT (SEC)
000134                EXITTCB=8,            NUMBER OF EXIT SERVER TCBS
000135                LOGLOAD=500000,       LOG RECORD CHECKPOINT NUMBER
000136                OTMACON=(,,DFSYDRU0,2147483647,CSQ),  OTMA PARAMETERS
000137                QINDXBLD=WAIT,        QUEUE INDEX BUILDING
000138                QMCCSID=0,            QMGR CCSID
000139                QSGDATA=(QSGA,DB3AG,D3AG,4,4),
000140                RESAUDIT=YES,         RESLEVEL AUDITING
000141                ROUTCDE=1,            DEFAULT WTO ROUTE CODE
000142                SMFACCT=NO,           GATHER SMF ACCOUNTING
000143                SMFSTAT=NO,           GATHER SMF STATS
000144                SPLCAP=NO,            MESSAGE ENCRYPTION NOT REQUIRED
000145                STATIME=30,           STATISTICS RECORD INTERVAL
000146                ACCTIME=-1,           ACCOUNTING RECORD INTERVAL
000147                TRACSTR=YES,          TRACING AUTO START
000148                TRACTBL=99,           GLOBAL TRACE TABLE SIZE X4K
```

13. Now we will make one more change here, we have an USERAUTH library that has been established for use by the other queue managers in the queue-sharing group. It is called ZQS1.USERAUTH. Our USERAUTH contains the zPRM that tells the queue manager it is part of a QSG.

    We already have run our CSQ4ZPRM though, so why do we need the zPRM contained in a USERAUTH data set? 2 reasons.

    1) If we did not use a separate USER library for the zPRM that includes the QSG changes any update to the base libraries will wipe out those changes
    2) We do not want a new queue manager to be an immediate part of the QSG before we have made the necessary changes to Db2 - it would attempt to bring up the new queue manager as part of the QSG and fail

Make the change below, if it has not yet been done.

```
EDIT       ZQS3.SCSQPROC(CSQ4ZPRM) - 01.01              Columns 00001 00072
000040 //*
000041 //*    Replace   ++HLQ.USERAUTH++
000042 //*                        with the data set name of the authorized
000043 //*                        load library in which to store your
000044 //*                        system parameter module.
000045 //*
000046 //*    Replace   QMGR
000047 //*                        with the name of your system parameter
000048 //*                        module.
000049 //*                        Note - do NOT use the default version
000050 //*                        name of CSQZPARM if you are using the
000051 //*                        IBM library SCSQAUTH to store your
000052 //*                        system parameter module.
000053 //*
000054 //*********************************************************************
000055 //*
000056 //*             Assemble step for CSQ6LOGP
000057 //*
Command ===> c '++HLQ.USERAUTH++' 'ZQS1.USERAUTH' ALL          Scroll ===> PAGE
```

14. Submit this job.
15. Lastly, we will change the ZQS3MSTR in SYS1.PROCLIB to make sure it reflects the correct USERAUTH library as well.

```
EDIT       SYS1.PROCLIB(ZQS3MSTR) - 01.05               Columns 00001 00072
000079 //*
000080 //*********************************************************************
000081 //* STEPLIB                                                           *
000082 //* Libraries that are in the LPA or link list can be omitted.        *
000083 //*********************************************************************
000084 //STEPLIB   DD DSN=MQ933CD.SCSQANLE,DISP=SHR
000085 //          DD DSN=ZQS1.USERAUTH,DISP=SHR
000086 //          DD DSN=MQ933CD.SCSQAUTH,DISP=SHR
000087 //          DD DSN=CEE.SCEERUN,DISP=SHR
000088 //          DD DSN=DB2V13.SDSNLOAD,DISP=SHR
000089 //*
```

16. Now, you should be all set to restart your queue manager!
17. Return to the SDSF command window and input the commands into the MVS command line:
    a. Start up our queue manager ZQS3 with the command ZQS3 START QMGR

b. Start up the channel initiator with the command ZQS3 START CHINIT
c. Start up the listener with the command ZQS3 start listener TRPTYPE(TCP) Port(1425)