IMQ09 - IBM MQ V9 for z/OS Wildfire Workshop

L11 – z/OS Queue Manager Customization

Version V6.0

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WSC Wildfire Team
IBM z Systems

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Lab Objectives

The objective of this lab is to familiarize users with the steps needed to customize the JCL to build a z/OS queue manager. Users will set up a customization REXX EXEC and run it against the standard JCL.

General Exercise Information and Guidelines

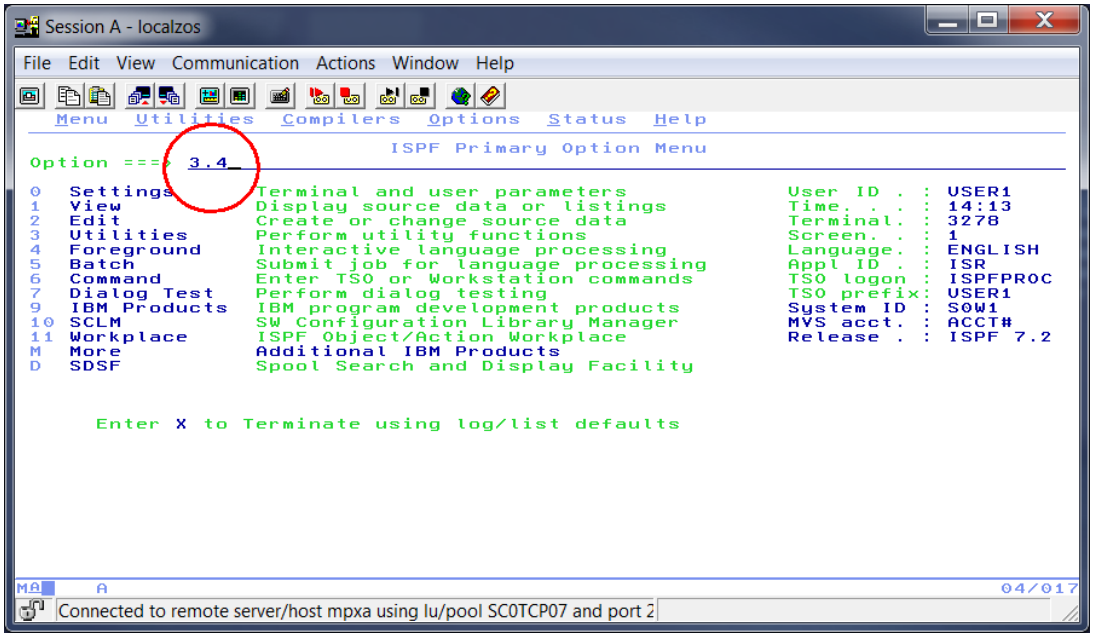
- ✓ This exercise should be executed on the local zos system using TSO user identity USER1.
- ✓ The TSO password for this exercise will be provided by the lab instructor.
- ✓ This exercise uses data set *USER1.QMGR.JCL.*
- ✓ Text in **bold** and highlighted in **yellow** in this document should be available for copying and pasting in a file named *MQ Exercises Cut Paste* file on the desktop.

Part 1 - Queue Manager Customization

In this step you will customize the jobs that define and initialize the boot strap data sets, logs, and page data sets that are required by a new queue manager. Also key queue names and the TCP/IP port will be customized in the initialization inputs members to reflect the queue manager name and the assigned TCP/IP port information

____1. Log on to TSO using user USER1 and the password you have been assigned using the *PComm-3270* icon on the desktop.

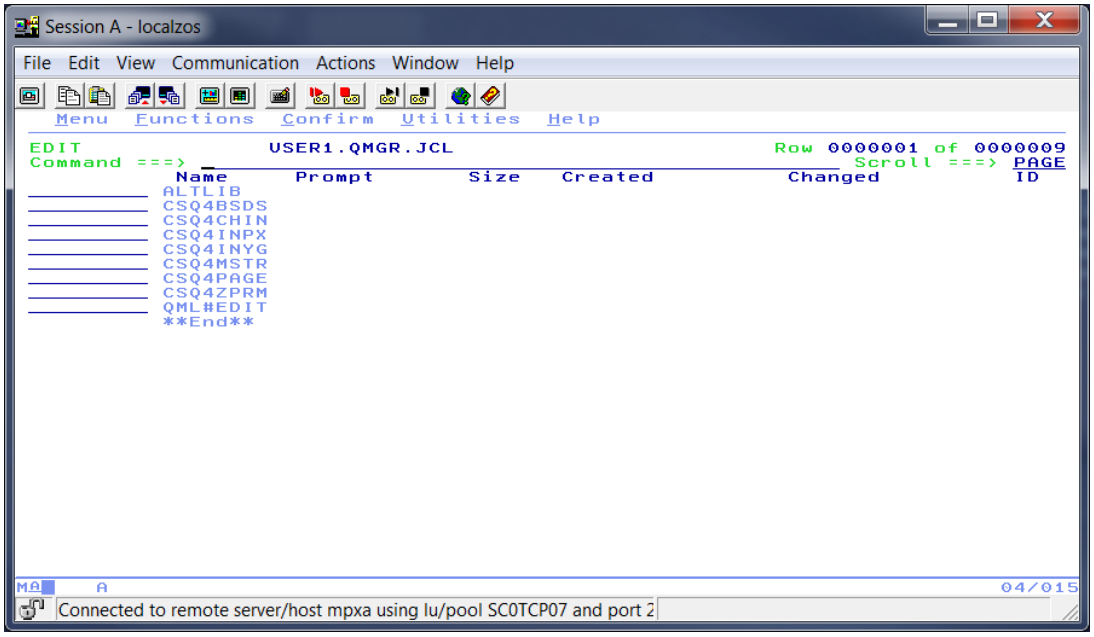
____2. On the *ISPF Primary Option Menu* screen, enter ***3.4*** after the *Option* prompt and press the **Enter** key.



Tech-Tip: The copyright message can be dismissed by pressing the **Enter** key. In this and subsequent labs the instructions refer to the IBM 3270 Keyboard names or labels. So, if the instructions say press the enter key this means that the IBM 3270 Keyboard Enter key should be pressed. For this 3270 emulator, the IBM 3270 Keyboard Enter key is mapped to the right Ctrl key. This was done so the 3270 new line key could be mapped to the key labeled *Enter*.

____3. On the *Data Set List Utility* screen enter ***USER1.QMGR*** in the *Dsname level* field. Press the **Enter** key to continue.

____4. Edit the data set *USER1.QMGR.JCL* PDS by placing an ***E*** in the *Command* field beside the data set name. Press the **Enter** key to continue. The partitioned data set member list will be displayed as shown below.



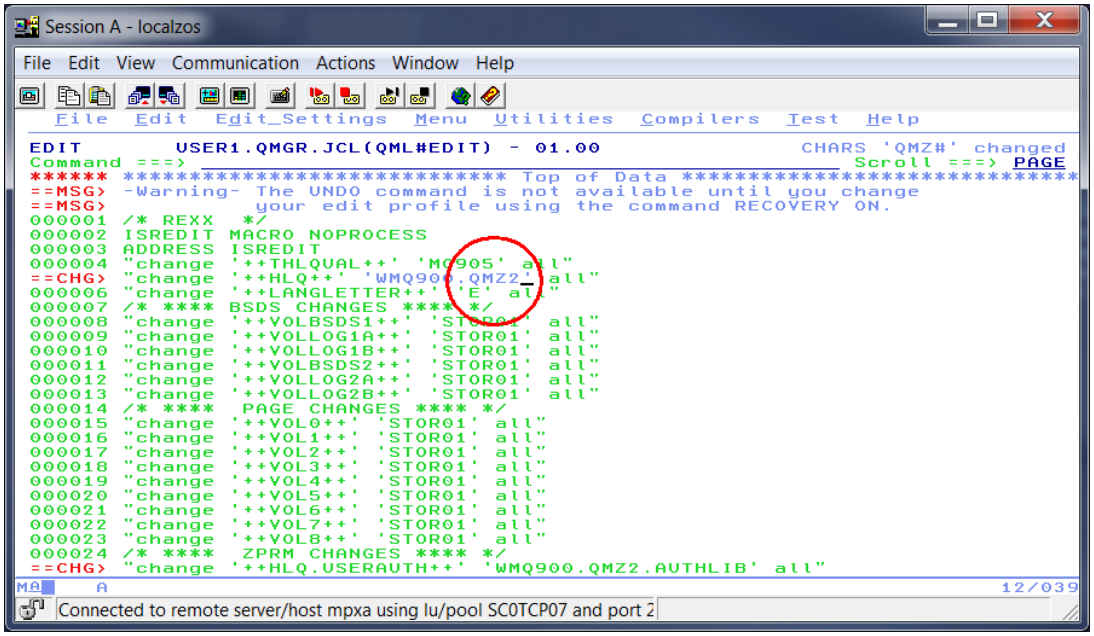
> **Tech-Tip:** The warning message about the UNDO command can be addressed by entering the *RECOVERY ON* command at the command prompt and pressing **Enter**. This will enable the saving of a recovery copy of a member in case a change needs to be reversed or in other recovery situations.

____5. Select member ***QML#EDIT***. ***QML#EDIT*** is a REXX exec. This exec will be invoked as a command and will change the variables in the JCL, etc. that will be subsequently used to customize a queue manager. It is not part of the base product, but something we use to make creating queue managers relatively quickly and hopefully reducing typos.

> **Tech-Tip:** Any warning message about CAPS OFF command can be dismissed by entering command RESET on the command line.

> **Tech-Tip:** Any warning message about STATS ON can be ignored.

____6. Change all occurrences of string ***QMZ#*** to ***QMZ2*** (e.g. ***C QMZ# QMZ2 ALL***) as shown below.

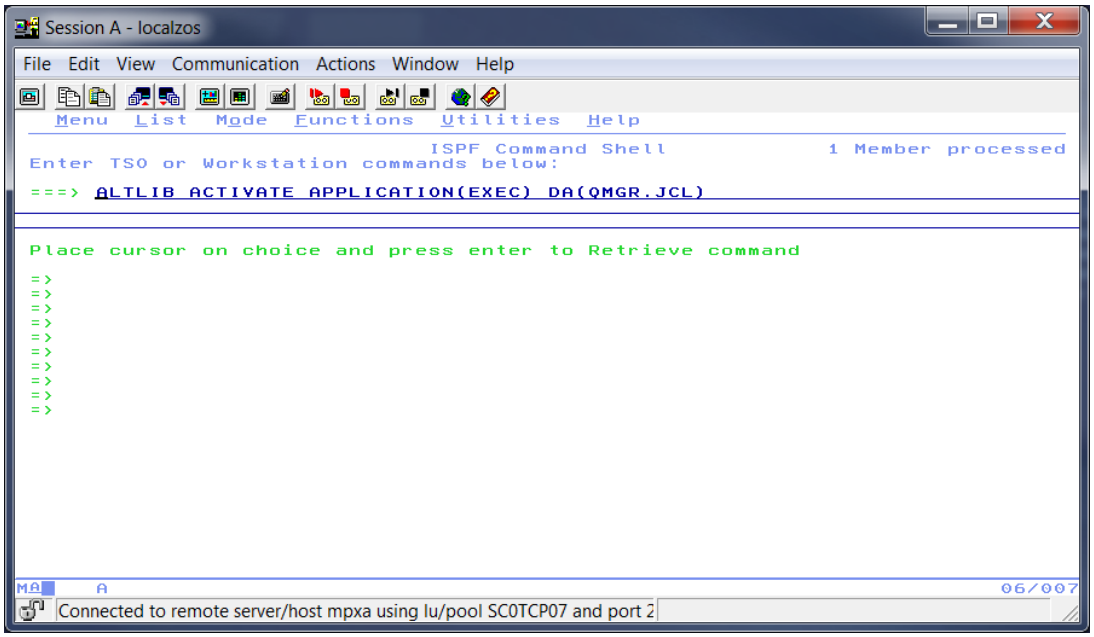


____7. Save and exit the member by using the **F3** key.

____8. The next task is to activate or add this data set to the execution environment so the REXX exec *QML#EDIT* can be used as an edit command to make global changes to the other members.

____9. Navigate to the ISPF Command Shell panel by entering ***=6*** in the command line and pressing the **Enter** key.

____10. Enter the TSO command ***ALTLIB ACTIVATE APPLICATION(EXEC) DA(QMGR.JCL)*** in the command area, see below. This command temporarily adds the data set USER1.QMGR.JCL to the search sequence when invoking a REXX exec or TSO CLIST.



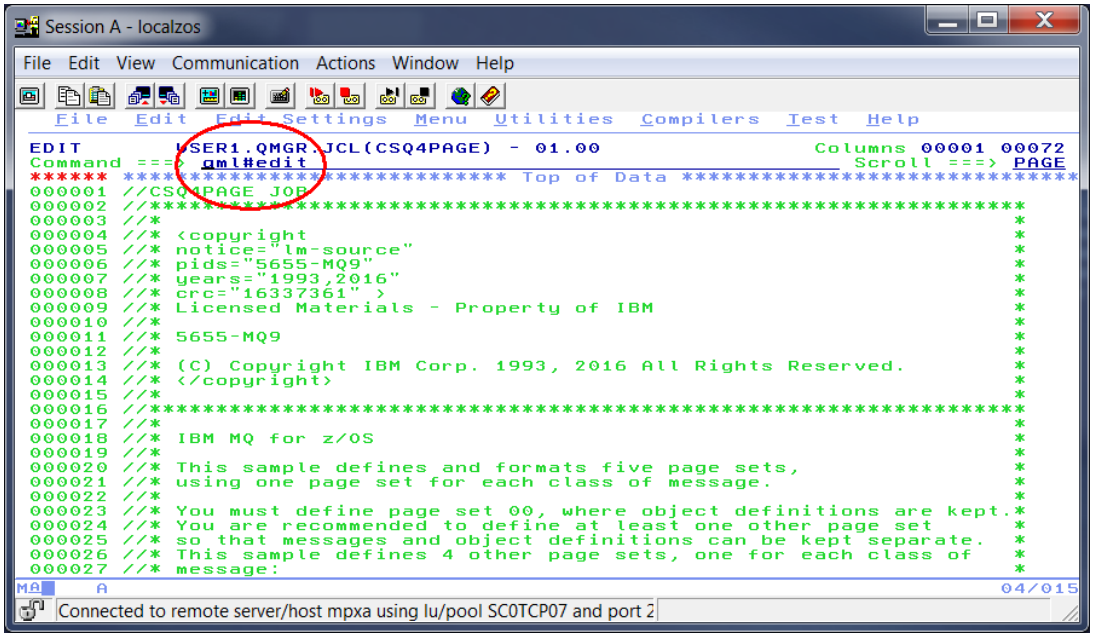
____11. Press the **Enter** key to activate the library. There will be no message indicating whether this was successful.

> **Tech-Tip:** Please note that this activation is temporary and only for the currently active ISPF session. If you exit ISPF, the activation will no longer be available or you are using a split screen, it will not be valid for the other ISPF session.

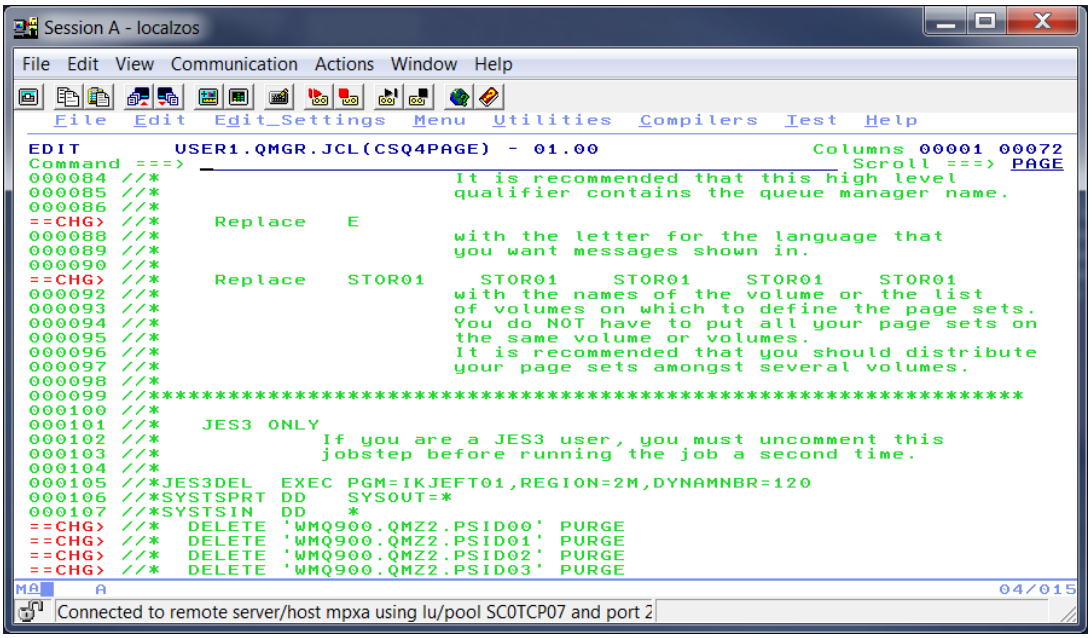
____12. Return to the JCL PDS by entering ***=3.4*** in the command line and pressing **Enter**. You should see the USER1.QMGR in the *Dsname level* field. If you do not, enter it. Press the **Enter** key to get the list of MVS data sets where USER1.QMGR is the high-level qualifier.

____13. Select the USER1.QMGR.JCL PDS for edit by putting an ***E*** in the line command area beside the data set name and press the **Enter** key.

____14. Select member *CSQ4PAGE* member and press the **Enter** key. Enter the command ***QML#EDIT*** in the command line field and then press the **Enter** key to execute this REXX Exec.



____15. You will see many changes made, each line that was altered will be noted with a red ==CHG> in the sequence number on the edit panel as shown below.



____16. Submit this job for execution. This job will define and initialized the page set data sets required for a new queue manager.

____17. Next select member *CSQ4BSD*S and use the ***QML#EDIT*** command to make changes to this job. Submit this job for execution after making the changes. This job will define and initialized the new queue manager's boot strap and log data sets.

The changes will be done to queue manager's JCL procedures and customization input members. These are not jobs that need to be submitted for execution.

____18. Edit member *CSQ4CHIN* and use the ***QML#EDIT*** command to customize the JCL procedure for the queue manager's channel initiator started task.

____19. Edit member *CSQ4MSTR* and use the ***QML#EDIT*** command to customize the JCL procedure for the queue manager's started task.

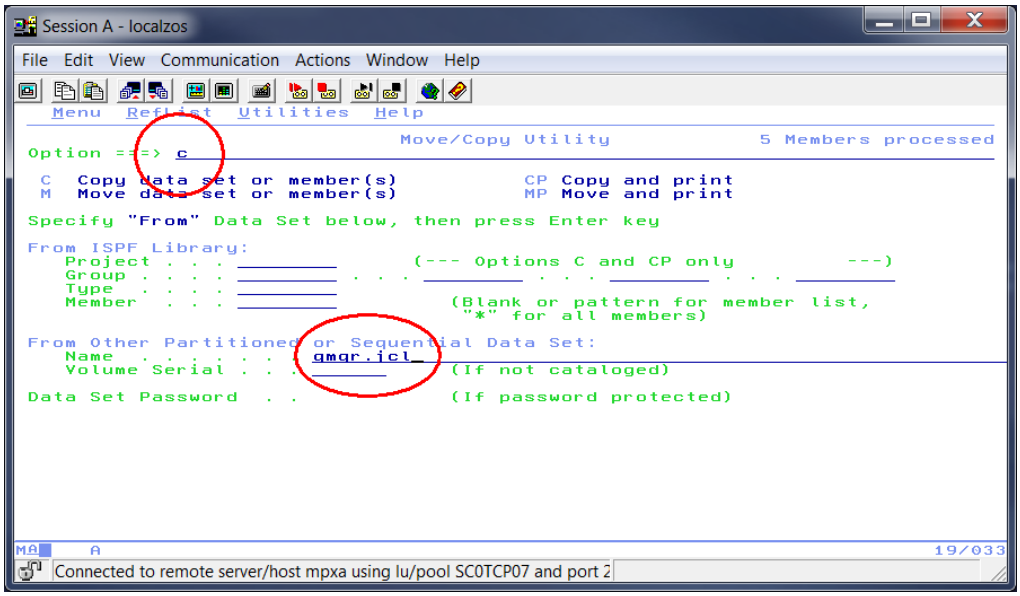
____20. Edit member *CSQ4INPX* and use the ***QML#EDIT*** command to customize the START LISTENER command to use TCPIP port 1418.

____21. Edit member *CSQ4INYG* and use the ***QML#EDIT*** command to customize transmission queue names with the queue manager name.

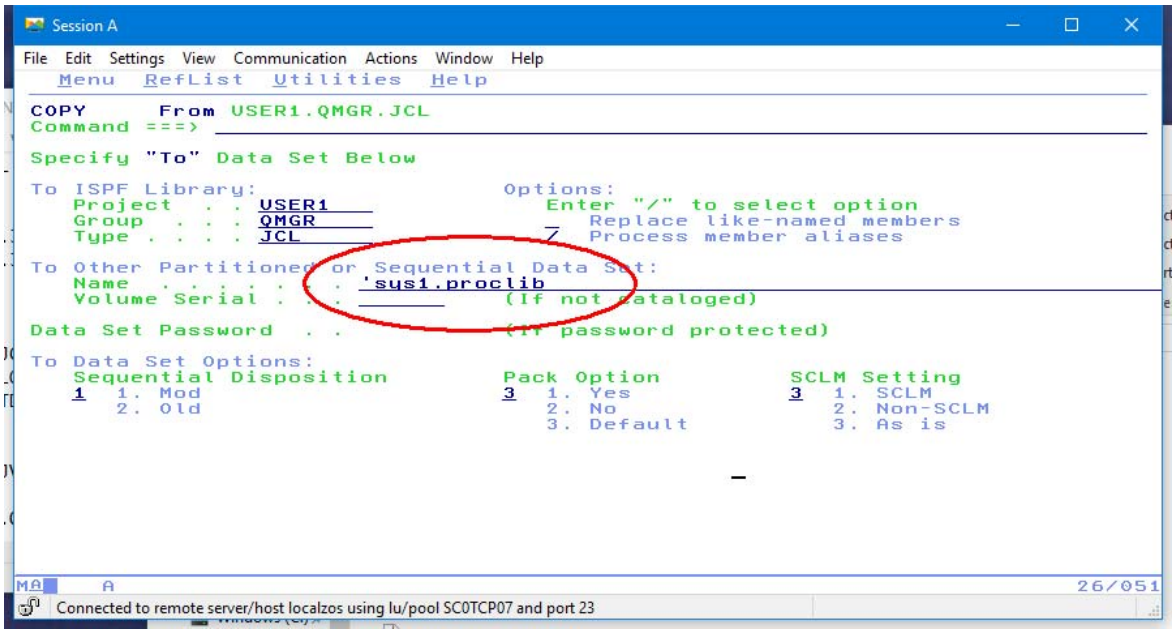
Part 2 - Starting the new queue manager

Before a new queue manager can be started the JCL procedures need to be copied to a system JCL procedure library and the new queue manager subsystem needs to be defined to MVS.

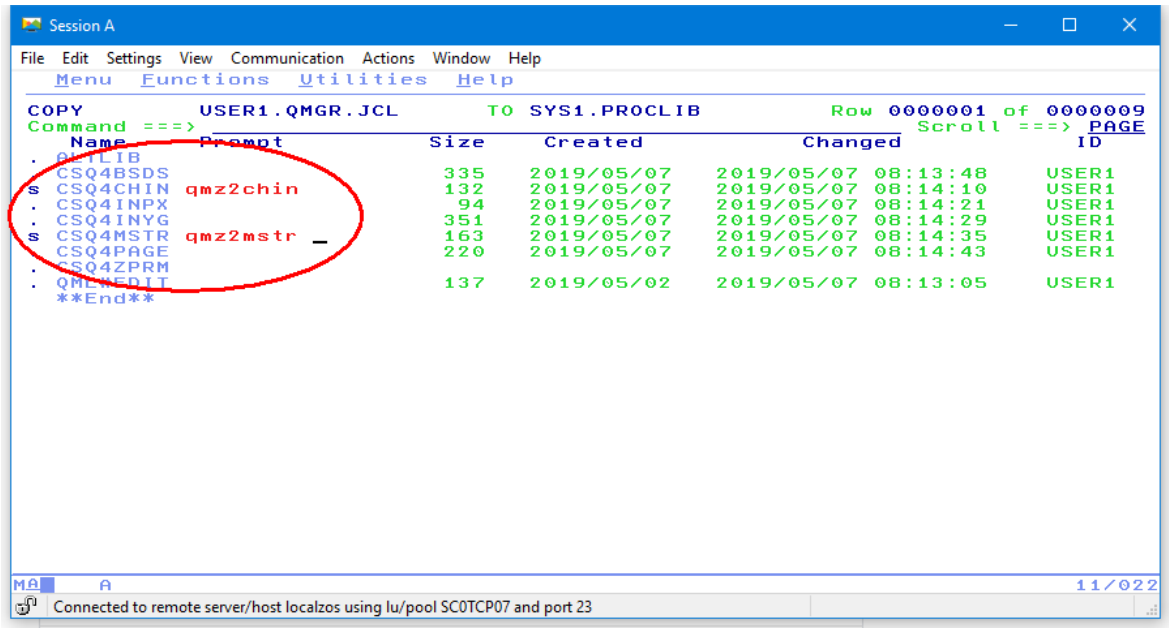
____1. Use ISPF command ***=3.3*** to go to the *Move/Copy Utility* panel. On this panel enter option **C** (*Copy data set or members(s)*) and data set name ***QMGR.JCL*** in the area beside *Name* under (see below). Press **Enter** to continue.



____2. On the next panel enter ***'SYS1.PROCLIB'*** in the area beside *Name* under *To Other Partitioned or Sequential Data Set* (see below). Be sure to include the quotes around SYS1.PROCLIB.



____3. The names of the JCL procedures for the queue manager master and channel initiator started tasks should be changed to reflect the queue manager's name, i.e. QMZ2MSTR and QMZ2CHIN respectively. The member names can be changed during the copy from the source data set to the system JCL procedure library by entering a member's new name in the *Prompt* column beside the source member. Select members *CSQ4CHIN* and *CSQ4MSTR* and enter their new names under the *Prompt* column as below. Press **Enter** to continue.



____4. Both members should be successfully copied to SYS1.PROCLIB.

____**5.** By default, security will be enabled for this queue manager. To turn security off go to ISPF option 6 (e.g. ***=6)*** and enter the RACF command below:

RDEFINE MQADMIN QMZ2.NO.SUBSYS.SECURITY

A queue manager checks for the existence of *queuemanagername*.NO.SUBSYS.RESOURCE at queue manager startup. If this resource exists, then no external security using RACF will be enabled.

____6. This resource is not active until the RACF instorage profiles are refreshed. Enter the RACF command below to refresh these profiles:

SETROPTS RACLIST(MQADMIN) REFRESH

____7. Next identify the queue manager to the MVS as a new sub system. This is done by entering a SETSSI MVS command using SDSF. Using ISPF command ***=D.LOG*** to go to the SDSF log panel and enter the MVS command below:

SETSSI ADD,S=QMZ2,I=CSQ3INI,P='CSQ3EXP,QMZ2,S'

Tech-Tip: The above command has registered QMZ2 as the command prefix string (CPF) string for this new queue manager. So any MVS commands that use this CPF will be directed to this queue manager.

____8. You should see the messages below in the system log
CSQ3111I QMZ2 CSQ3UR00 - EARLY PROCESSING PROGRAM IS V9.0.5 LEVEL 008-000
CSQ3110I QMZ2 CSQ3UR00 - SUBSYSTEM QMZ2 INITIALIZATION COMPLETE

Tech-Tip: To make the definition of the new subsystem available after the next IPL, the active subsystem definition member in SYS1.PARMLIB, e.g. IEFSSNxx, needs to be updated with the information shown below.

SUBSYS SUBNAME(QMZ2) /* MQ V9 SUBSYSTEM */
INITRTN(CSQ3INI) INITPARM('CSQ3EPX,QMZ2,M') this means that the IBM 3270

____9. Start the new queue manager with MVS command ***QMZ2 START QMGR***
____10. Use the SDSF log (***=D.LOG***) to monitor the startup of the QMZ2 queue manager. When the message below appears the queue manager is active.

CSQ9022I QMZ2 CSQYASCP 'START QMGR' NORMAL COMPLETION

____11. The channel initiator task now needs to be started, enter MVS command

QMZ2 START CHINIT

Monitor the messages in the console log until the message below appears.
CSQ9022I QMZ2 CSQXCRPS ' START CHINIT' NORMAL COMPLETION

____12. Use TSO command ***NETSTAT CONN (CLIENT QMZ*)*** to confirm the new CHINIT address space is listening port 1418.

```
EZZ2350I MVS TCP/IP NETSTAT CS V2R1       TCPIP Name: TCPIP           15:42:17
EZZ2585I User Id  Conn     Local Socket          Foreign Socket         State
EZZ2586I -------  ----     ------------          --------------         -----
EZZ2587I QMZ1CHIN 00000026 0.0.0.0..1421         0.0.0.0..0             Listen
EZZ2587I QMZ2CHIN 00000057 0.0.0.0..1422         0.0.0.0..0             Listen
EZZ2587I QMZ5CHIN 00000057 0.0.0.0..1425         0.0.0.0..0             Listen
```

____13. Finally use MQ Explorer on the Desktop to connect to this queue manager using hostname **wg31.washington.ibm.com** queue manager name **QMZ2** and port **1422**.

CONGRATULATIONS!!! You have completed the MQ customization lab exercise