

IMQ09 - IBM MQ V9 for z/OS Wildfire Workshop



L22 – Queue Sharing Groups – Comparing Offload Options

Version V6.0

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Overview

Please note that Tech Tips (yellow or shaded boxes) are included throughout the exercise to provide suggestions regarding TSO commands, ISPF options or other information which may be useful.

- Information required to complete this exercise will be provided on a 'worksheet' prior to the start of this exercise. Refer to this worksheet for which user identity and password are to be used and for other values, for example:
 - ✓ Any time a reference is made to TEAMXX, teamxx, XX or xx appears in the instructions; please replace the XX or xx characters with your assigned user identifier number (01 – 20). Some of these occurrences of these strings with X's are case sensitive so be sure to not change the case of other characters.
 - ✓ There are four queue managers for use in this workshop. Each team is assigned a primary queue manager as follows:
 - QML1 - TEAM01, TEAM05, TEAM09, TEAM13, TEAM17
 - QML2 - TEAM02, TEAM06, TEAM10, TEAM14, TEAM18
 - QML3 - TEAM03, TEAM07, TEAM11, TEAM15, TEAM19
 - QML4 - TEAM04, TEAM08, TEAM12, TEAM16, TEAM20
 - ✓ As a reminder, when a value from your worksheet should be used, the values in the instructions will be in **red** rather than black.
 - ✓ ***Bold italicized*** text indicates values that need to be entered on a screen
 - ✓ *Italicized* text indicates values that are constants or names that appear on a screen.
 - ✓ **Bold** text indicates the name of buttons or keyboard keys that need to be pressed

Exercise Requirement

You will be using MQ Explorer to verify coupling facility structures and to define queues in this exercise. If your explorer session has been shut down, please restart it and connect to your primary queue manager. Also start a TSO session to the host where your primary queue manager is executing.

Part 1: Verifying the Coupling Facility Structures (CFSTRUCT)

In this part of the exercise you use MQ Explorer and MQ commands to review the coupling facility structures used in this exercise.

Part 2: Define the SMDS off-loadable queue

In this part of the exercise you will define the queue which uses SMDS for off-loading messages.

Part 3: Define the DB2 off-loadable queue

In this part you will define the queue which uses DB2 for off-loading messages.

Part 4: Test 1 – Nonpersistent message comparison

In this part of the test the off-loading of nonpersistent messages and then use the results to compare the differences in the use of SMDS versus DB2 when off-loading nonpersistent messages.

Part 5: Test 2 – Persistent message comparison

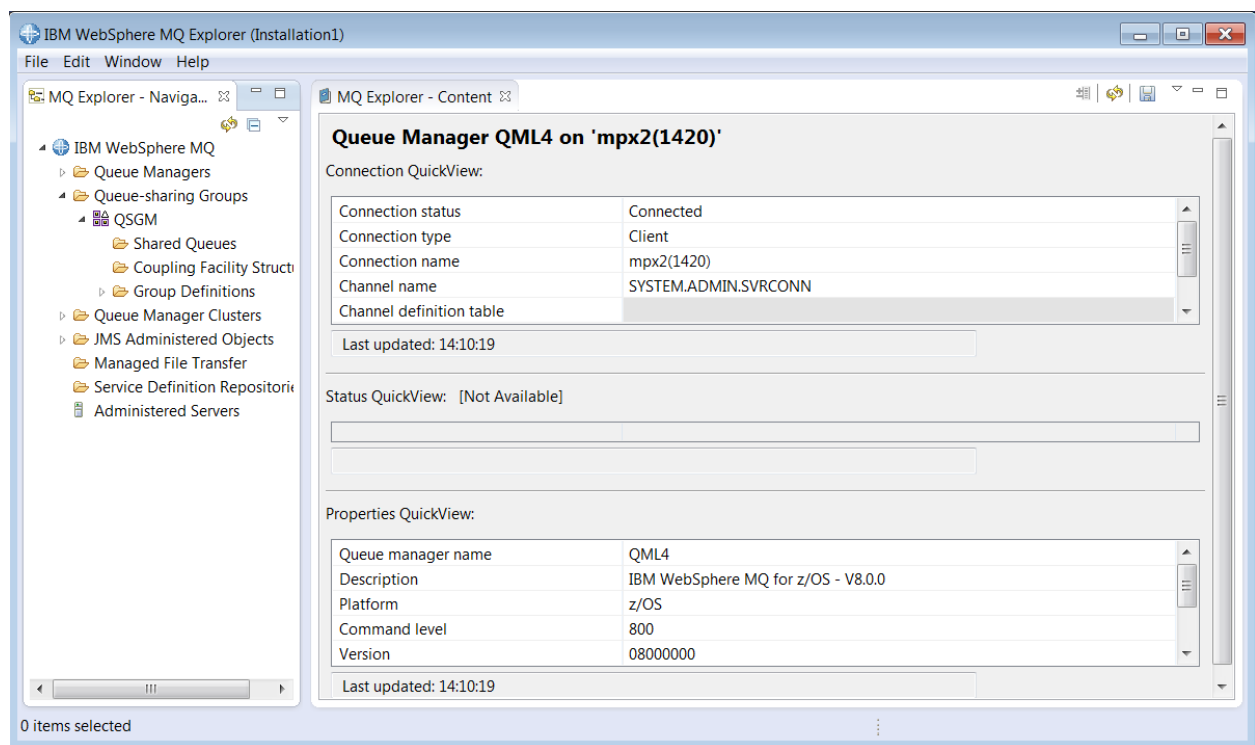
In this part of the exercise you will test the off-loading of persistent messages and then compare the differences in the use of SMDS versus DB2 when off-loading persistent messages.

Part 1: Verifying the Coupling Facility Structures (CFSTRUCT)

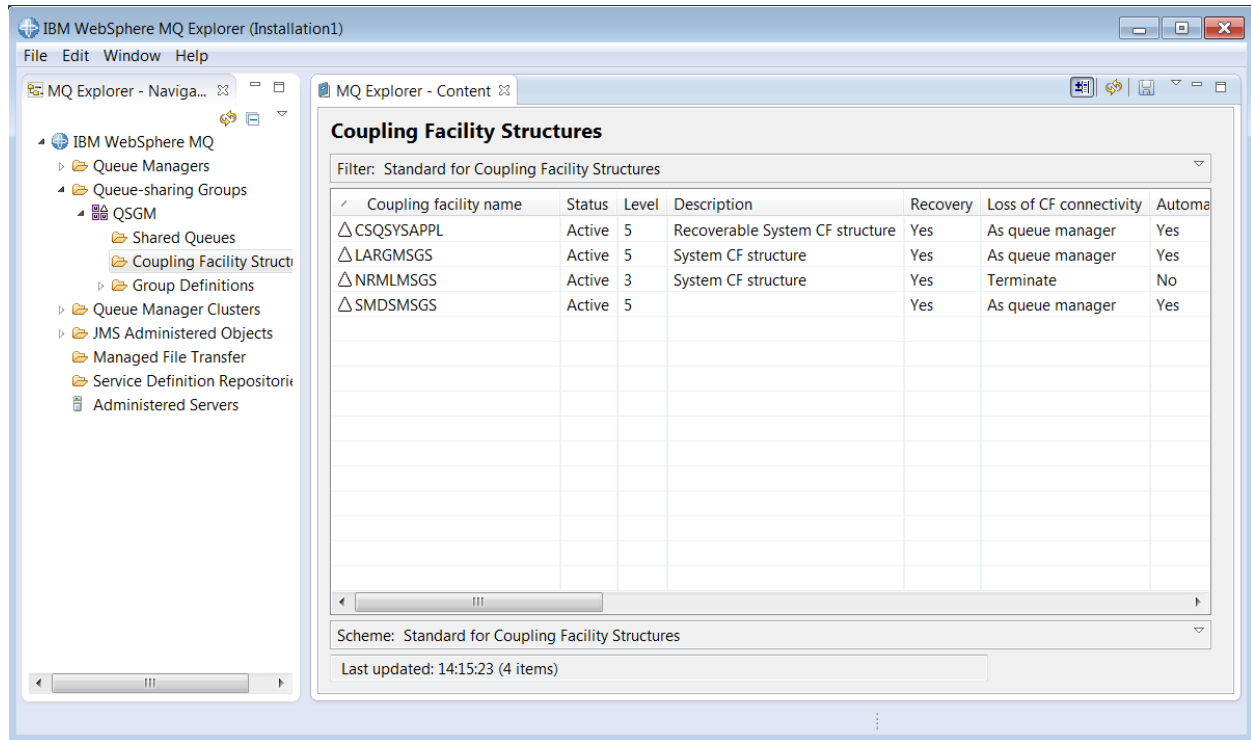
For this exercise you will define two shared queues on two coupling facility (CFSTRUCT) structures, one queue on the *SMDSMMSG* structure and the other queue on the *LARGMSG* structures. First we want to verify the offload characteristics of these structures.

Verify the Offload characteristics of the two CFSTRUCT using MQ Explorer

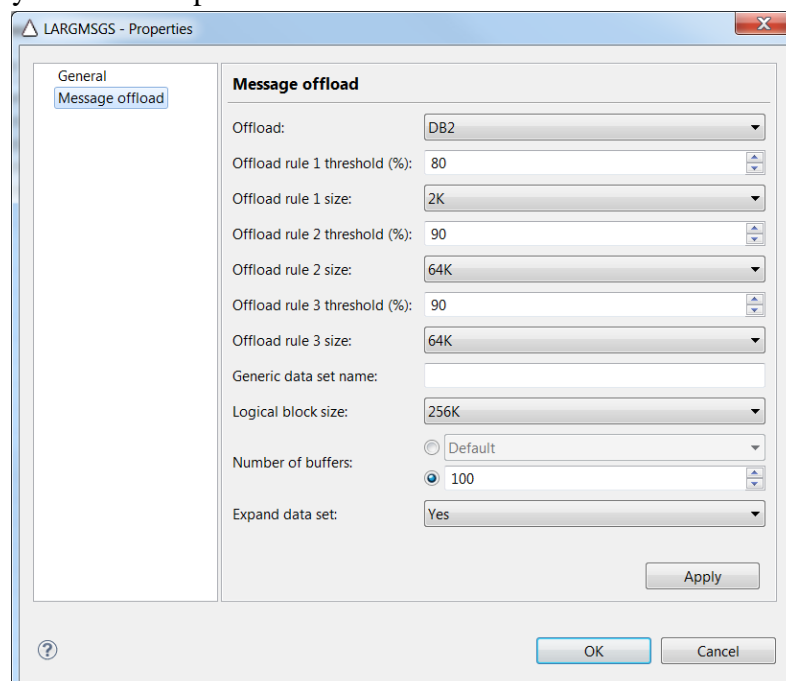
- ___1. Connect to with at least one queue manager in your Queue Sharing Group
- ___2. Expand the *Queue-sharing Groups* folder
- ___3. Expand the *QSGM* folder. The navigation pane should look something like below:



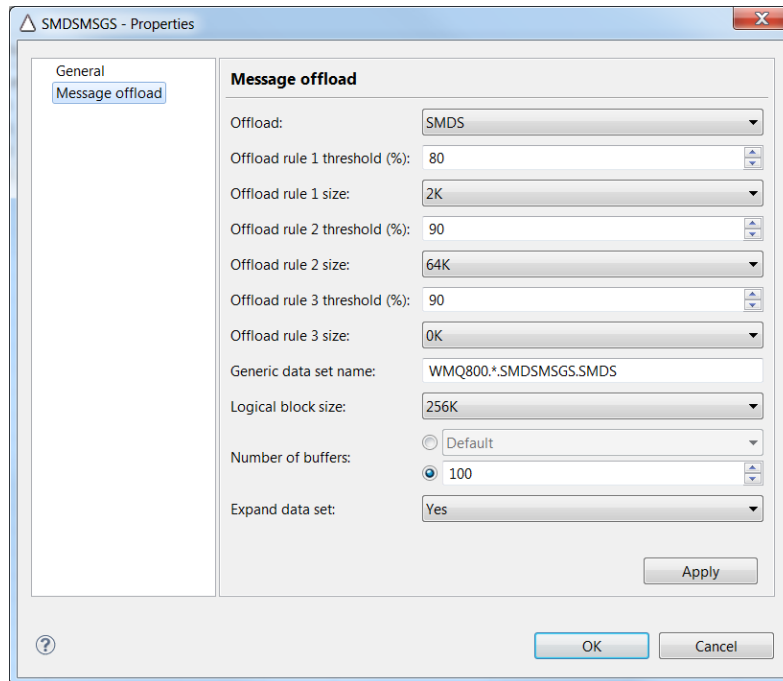
4. Click on the *Coupling Facility Structures*, the *Content* pane (on the right) should show the coupling facility structures that have been defined for this QSG. It should look as shown below.



5. The *LARGMSGSGS* structure should be at CF Level 5. Select and right mouse button click the *LARGMSGSGS* structure and select *Properties* and then the *Message offload* tab. The *Offload* should be set to *DB2* and the *Offload rule 1 size* should be set to *2K*. If this is not the case, please notify the workshop leaders.



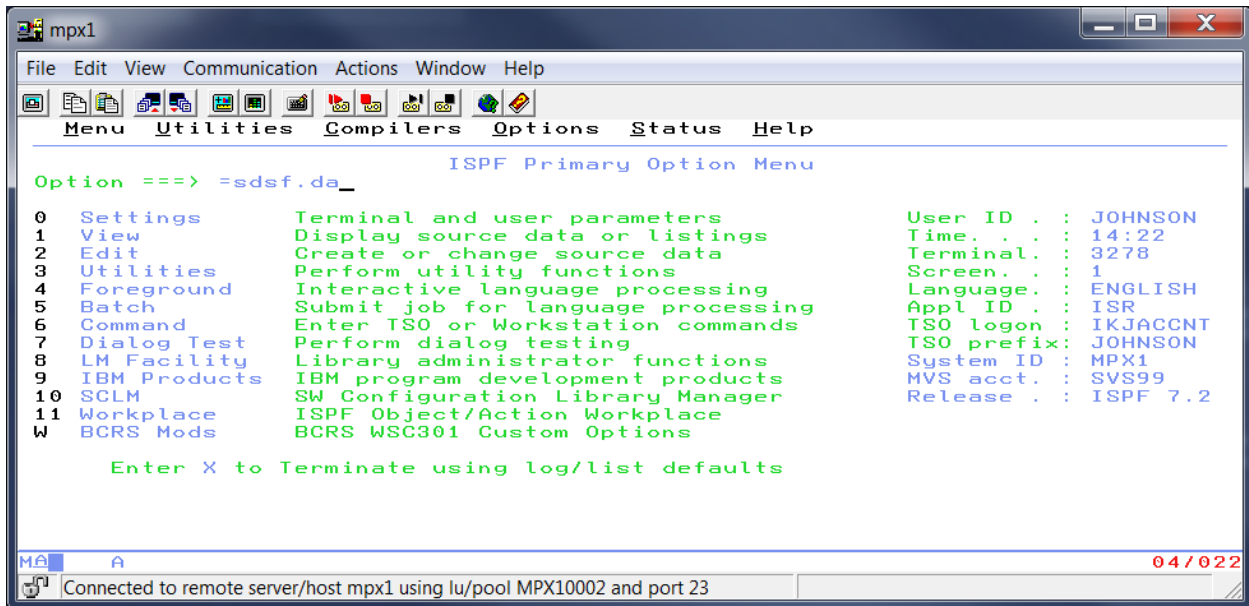
- ___6. The *SMDSMSG*S structure should be at CF level 5. Select and right mouse button click the *SMDSMSG*S structure and select *Properties* and then the *Message offload* tab. The *Offload* should be set to *SMDS* and the *Offload rule 1 size* should be set to *2K*. If this is not the case, please notify the workshop leaders.



Verify the Offload characteristics of the two CFSTRUCT using commands

CF structures can also be verified using MQ commands:

1. In a TSO session on the host of your primary queue manager, navigate to the SDSF *Display Active* panel, by entering `=sdsf.da` at the command prompt and pressing the **Enter** key.



2. To display the queue manager tasks that are running, enter the command *prefix QML** and press the **Enter** key. The running queue managers and channel initiation tasks should be displayed. On MPX1 the list will look something like what is shown below.

JOBNAME	StepName	ProcStep	JobID	Owner	C	Pos	DP	Real	Paging	SIO
QML1MSTR	QML1MSTR	PROCSTEP	STC32626	MQUSER	NS	FE	136T	0.00	0.00	0.00
QML3MSTR	QML3MSTR	PROCSTEP	STC32559	MQUSER	NS	FE	133T	0.00	0.00	0.00
QML3CHIN	QML3CHIN	PROCSTEP	STC32560	MQUSER	NS	F6	4296	0.00	0.00	0.00
QML1CHIN	QML1CHIN	PROCSTEP	STC32627	MQUSER	NS	FE	4088	0.00	0.00	0.00

3. Put a question mark(?) beside one of the MSTR address spaces to expand the output list into its output components and select *JESMSG LG* DD name output.

DDNAME	StepName	ProcStep	DSID	Owner	C	Dest	Rec-Cnt	Page
JESMSG LG	JES2		2	MQUSER	S		1,436	
JESJCL	JES2		3	MQUSER	S		102	
JESYSMSG	JES2		4	MQUSER	S		2	
CSQOUT1	QML1MSTR		101	MQUSER	S		229	
CSQOUT2	QML1MSTR		102	MQUSER	S		16,499	
CSQOUTT	QML1MSTR		103	MQUSER	S		356	

4. Navigate to the bottom of the log by entering **M** on the command line and pressing the **F8** (page forward) key.

The end of the log may look something like what is shown:

```

SDSF OUTPUT DISPLAY QML3MSTR STC32559 DSID 2 LINE 1,684 COLUMNS 02-81
COMMAND INPUT ==>
963
09.26.01 STC32559 CSQY220I QML3 CSQSCTL Queue manager storage usage: 362
362 local storage: used 597MB, free 1135MB: above bar: used 1GB,
362 >10GB
10.26.01 STC32559 CSQY220I QML3 CSQSCTL Queue manager storage usage: 419
419 local storage: used 597MB, free 1135MB: above bar: used 1GB,
419 >10GB
11.26.01 STC32559 CSQY220I QML3 CSQSCTL Queue manager storage usage: 462
462 local storage: used 597MB, free 1135MB: above bar: used 1GB,
462 >10GB
12.26.01 STC32559 CSQY220I QML3 CSQSCTL Queue manager storage usage: 500
500 local storage: used 597MB, free 1135MB: above bar: used 1GB,
500 >10GB
13.26.01 STC32559 CSQY220I QML3 CSQSCTL Queue manager storage usage: 536
536 local storage: used 597MB, free 1135MB: above bar: used 1GB,
536 >10GB
14.26.01 STC32559 CSQY220I QML3 CSQSCTL Queue manager storage usage: 607
607 local storage: used 597MB, free 1135MB: above bar: used 1GB,
607 >10GB
***** BOTTOM OF DATA *****
MA A 04/021
Connected to remote server/host mpx1 using lu/pool MPX10002 and port 23

```

5. Enter the MVS MQ command *DISPLAY CFSTRUCT()* command as shown below, using the command prefix (cpf) of the primary queue manager for your user identity..

/qml1 display cfstruct(largmsgs)

Tech-Tip: On these systems the command prefix for all queue managers is the queue manager name.

6. The command should return a positive response.

```

SDSF OUTPUT DISPLAY QML1MSTR STC32626 DSID 2 LINE COMMAND ISSUED
COMMAND INPUT ==>
RESPONSE=MPX1
RESPONSE=CRITERIA
611 DESCR(System CF structure)
611 CFLEVEL(5)
611 RECOVER(YES)
611 OFFLOAD(DB2)
611 OFFLD1TH(80)
611 OFFLD1SZ(2K)
611 OFFLD2TH(90)
611 OFFLD2SZ(64K)
611 OFFLD3TH(90)
611 OFFLD3SZ(64K)
611 DSGROUP()
611 DSBLOCK(256K)
611 DSBUFFS(100)
611 DSEXPAAND(YES)
611 RECAUTO(YES)
611 CFCONLOS(ASQMR)
611 ALTDAT(2016-04-21)
611 ALTTIME(09.16.27)
MA A 04/021
Connected to remote server/host mpx1 using lu/pool MPX10002 and port 23

```

- ___7. Page forward to the end of the log (F8), and you should see the characteristics of the *LARGMSG* structure.

```

mpv1
File Edit View Communication Actions Window Help
Display Filter View Print Options Search Help
SDSF OUTPUT DISPLAY QML1MSTR STC32626 DSID 2 LINE 1,665 COLUMNS 02- 81
COMMAND INPUT ==> SCROLL ==> PAGE
615 CFLEVEL(5)
615 RECOVER(YES)
615 OFFLOAD(DB2)
615 OFFLD1TH(80)
615 OFFLD1SZ(2K)
615 OFFLD2TH(90)
615 OFFLD2SZ(64K)
615 OFFLD3TH(90)
615 OFFLD3SZ(64K)
615 DSGROUP()
615 DSBLOCK(256K)
615 DSBUFFS(100)
615 DSEXPAND(YES)
615 RECAUTO(YES)
615 CFCONLOS(ASOMGR)
615 ALTDAT(2016-04-21)
615 ALTTIME(09.16.27)
615 END CFSTRUCT DETAILS
14.28.53 STC32626 CSQ9022I QML1 CSQMDRTC ' DISPLAY CFSTRUCT ' NORMAL COMPLETION
***** BOTTOM OF DATA *****
MA A 04/021
Connected to remote server/host mpv1 using lu/pool MPX10002 and port 23

```

- ___8. Verify that the off-load size for rule 1 (*OFFFLDISZ*) is set to 2K.

___9. Repeat the display command for the *SMDSMSG* structure. The results should look as shown.

```

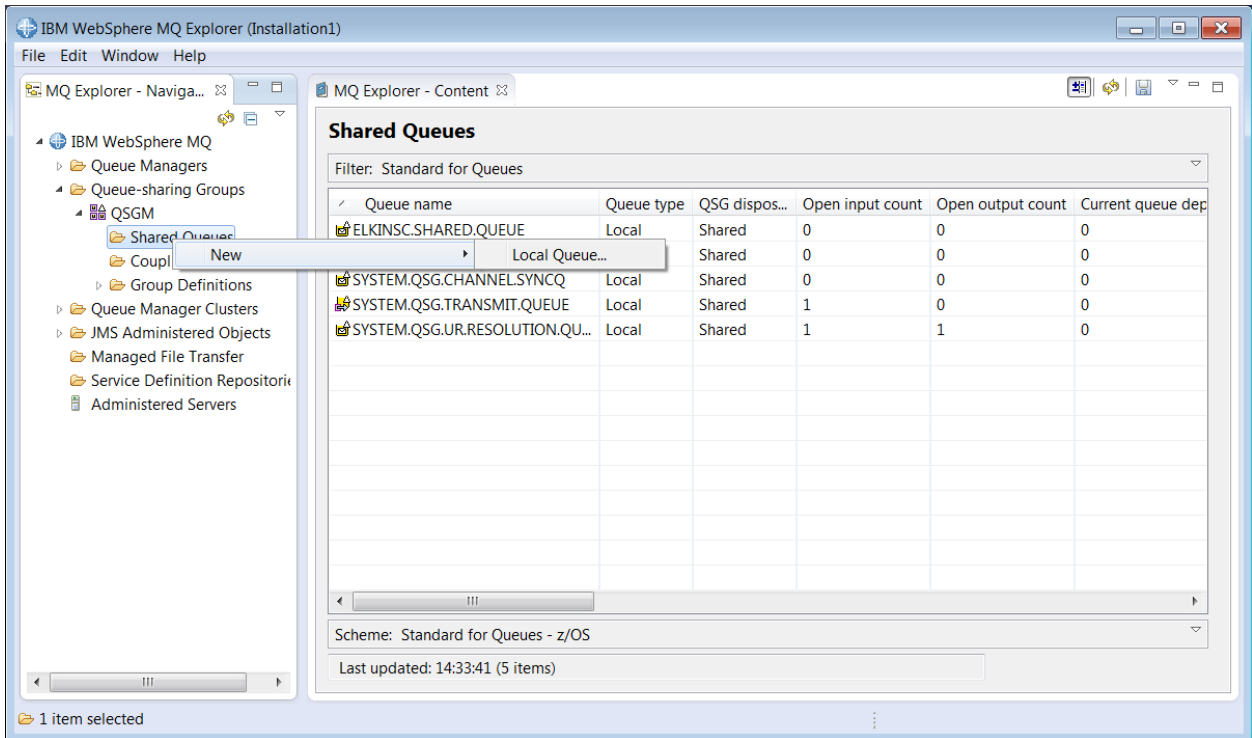
mpx1
File Edit View Communication Actions Window Help
Display Filter View Print Options Search Help
SDSF OUTPUT DISPLAY QML1MSTR STC32626 DSID 2 LINE 1,688 COLUMNS 02- 81
COMMAND INPUT ==> SCROLL ==> PAGE
619 CFLEVEL(5)
619 RECOVER(YES)
619 OFFLOAD(SMDS)
619 OFFFLD1TH(80)
619 OFFFLD1SZ(2K)
619 OFFFLD2TH(90)
619 OFFFLD2SZ(64K)
619 OFFFLD3TH(90)
619 OFFFLD3SZ(0K)
619 DSGROUP(WMQ800.*.SMDSMSG.SMDS)
619 DSBLOCK(256K)
619 DSBUFFS(100)
619 DSEXPAND(YES)
619 RECAUTO(YES)
619 CFCONLOS(ASQMGR)
619 ALTDAT(2016-04-28)
619 ALTTIME(14.56.23)
619 END CFSTRUCT DETAILS
14.30.33 STC32626 CSQ9022I QML1 CSQMDRTR ' DISPLAY CFSTRUCT ' NORMAL COMPLETION
***** BOTTOM OF DATA *****
MA A 04/021
Connected to remote server/host mpx1 using lu/pool MPX10002 and port 23

```

___10. Verify that the off-load size for rule 1 (*OFFFLDISZ*) is set to 2K.

Part 2 - Define the SMDS off-loadable queue

1. Using the MQ Explorer, right click on the *Shared queues* folder; select *New* -> and then click *Local queue* as shown below.



- ____2. Enter the queue name as *TEAMXX.SMDS.QUEUE*. Click **Next** to continue.

New Local Queue

Create a Local Queue

Enter the details of the object you wish to create

Name:

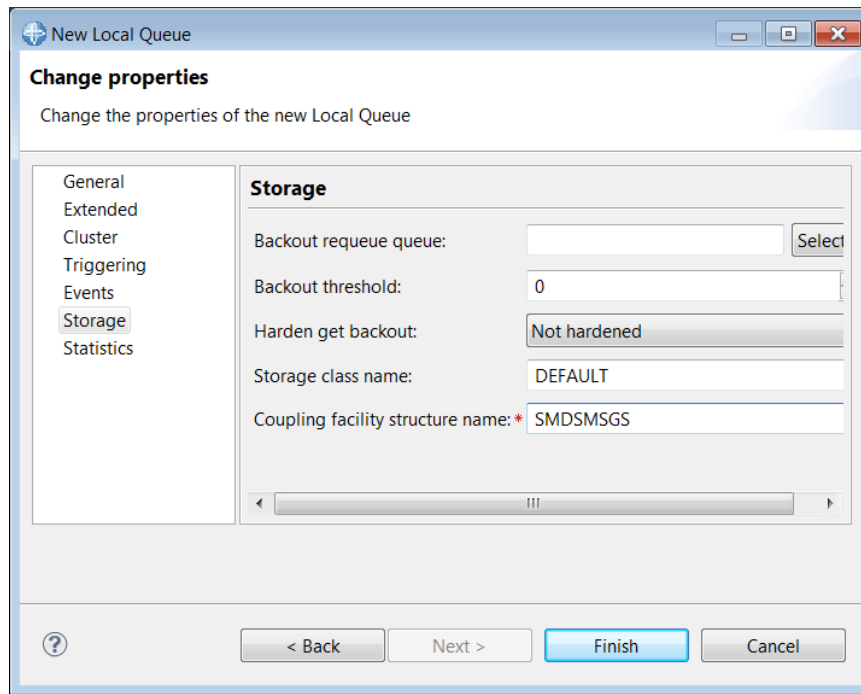
TEAMXX.SMDS.QUEUE

Select an existing object from which to copy the attributes for the new object.

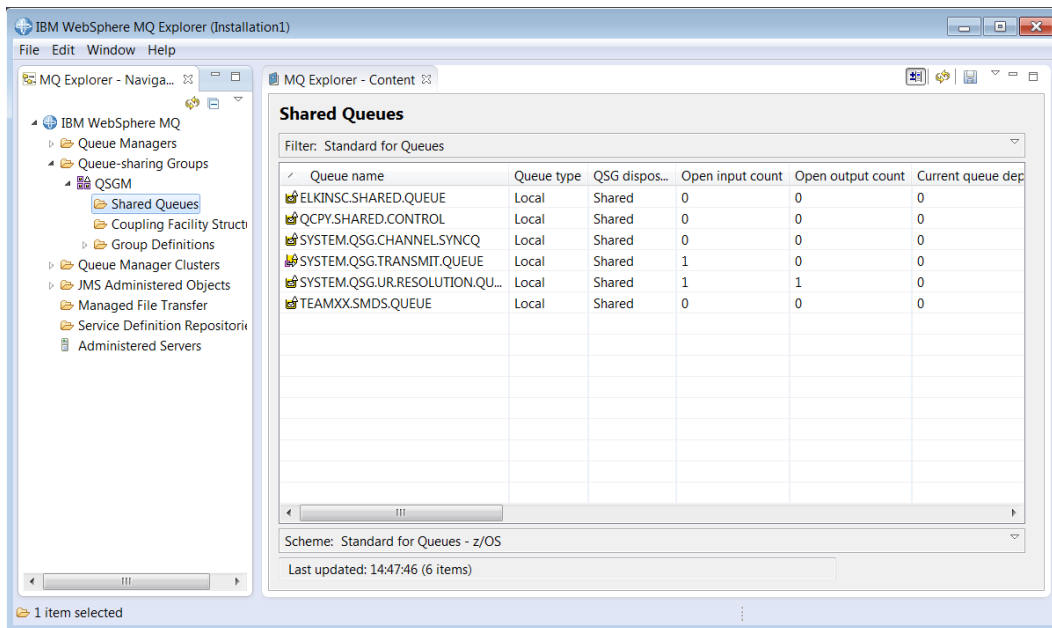
SYSTEM.DEFAULT.LOCAL.QUEUE Select...

? < Back Next > Finish Cancel

3. On the *Change Properties* pane, enter **SMDSMSGs** in the *Coupling facility structure name* area. Then press the **Finish** key to continue.

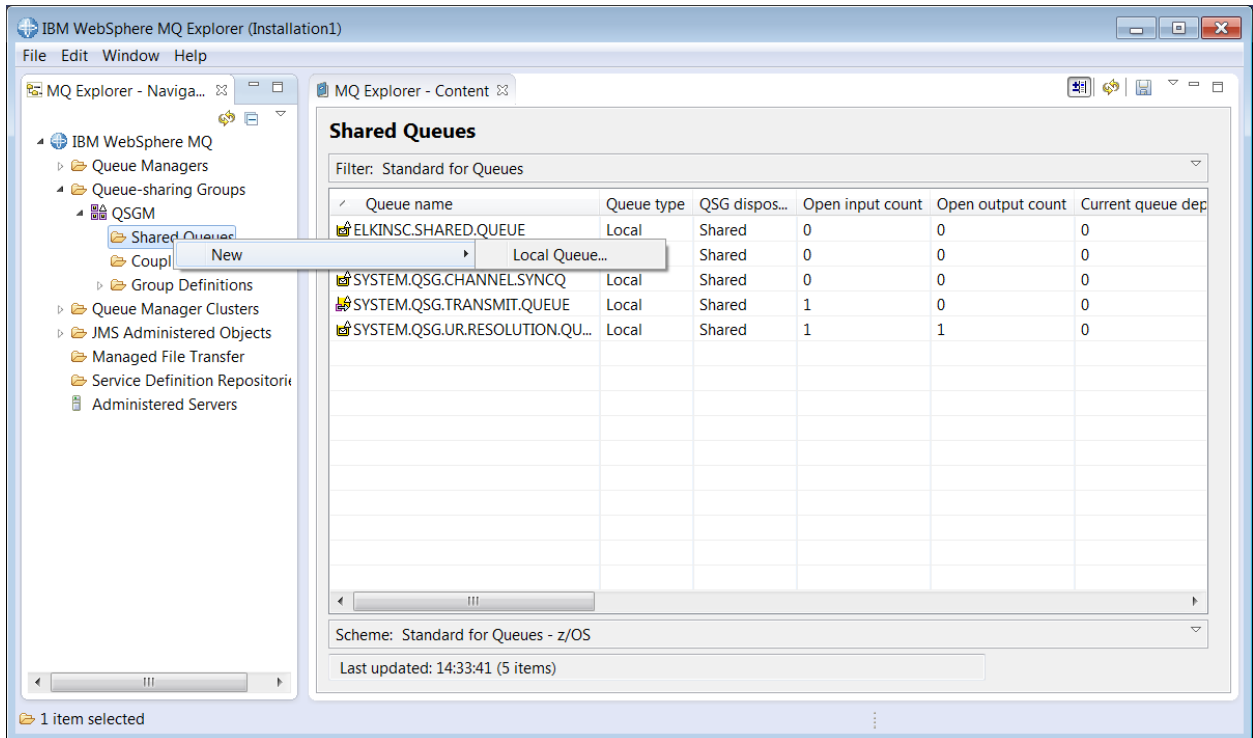


4. The new queue should show up in the queue list as shown.

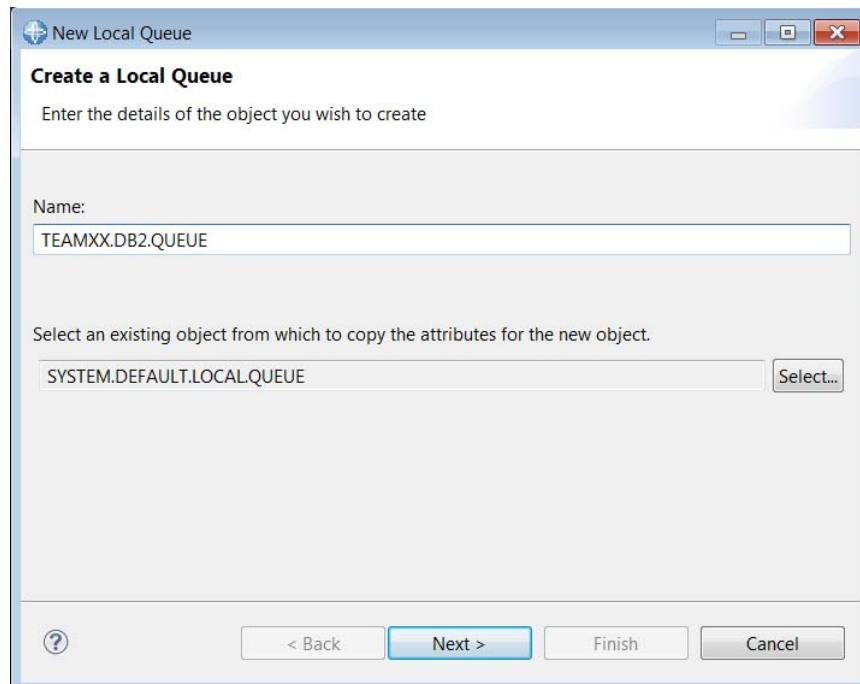


Part 3 - Define the DB2 off-loadable queue

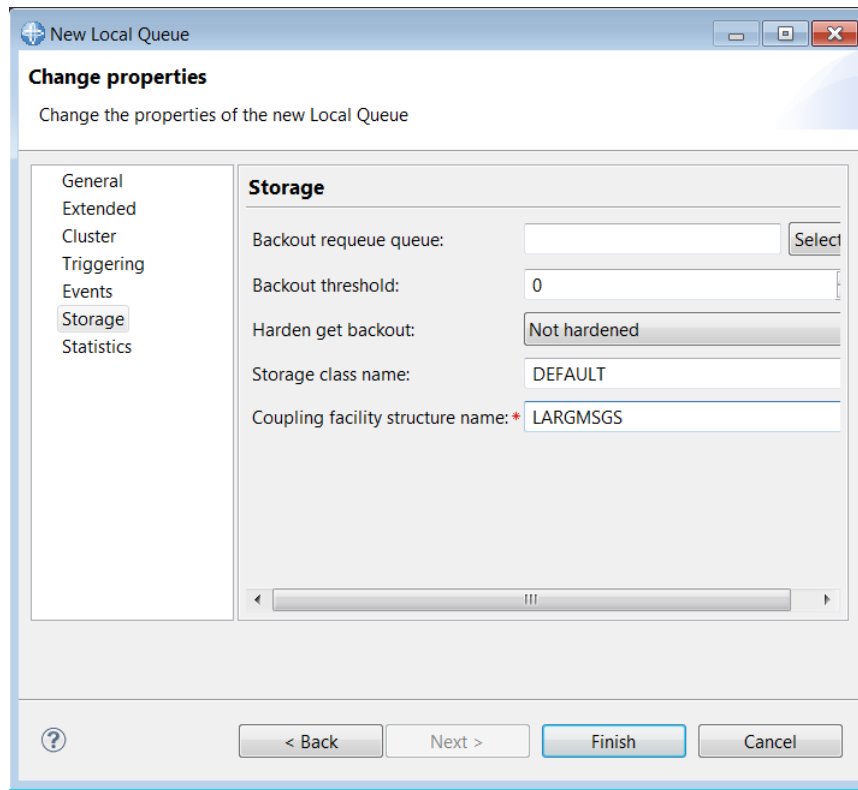
- ____1. Using the MQ Explorer, right click on the *Shared queues* folder; *New* -> and then click *Local Queue* as shown below:



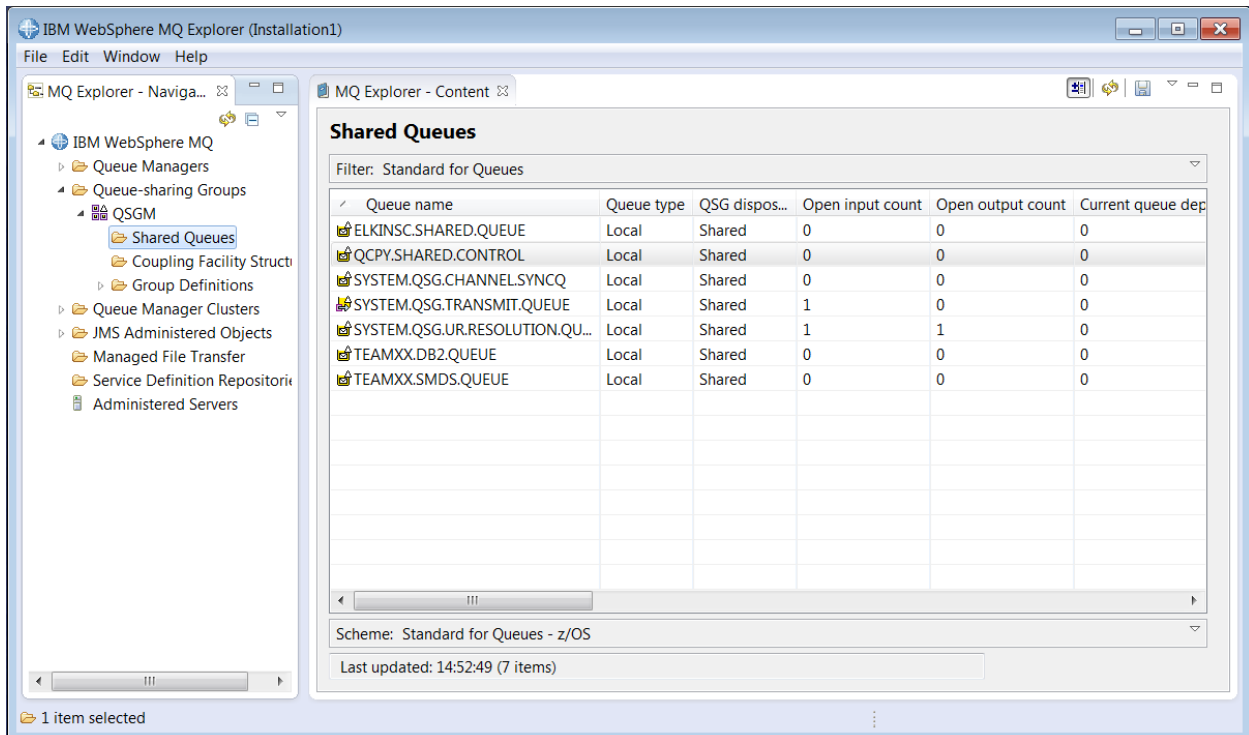
- ____2. Enter the queue name as **TEAMXX.DB2.QUEUE**. Press the **Next** key to continue.



3. On the *Change Properties* pane, enter **LARGMSGS** in the *Coupling facility structure name* area. Press **Finish** to continue.



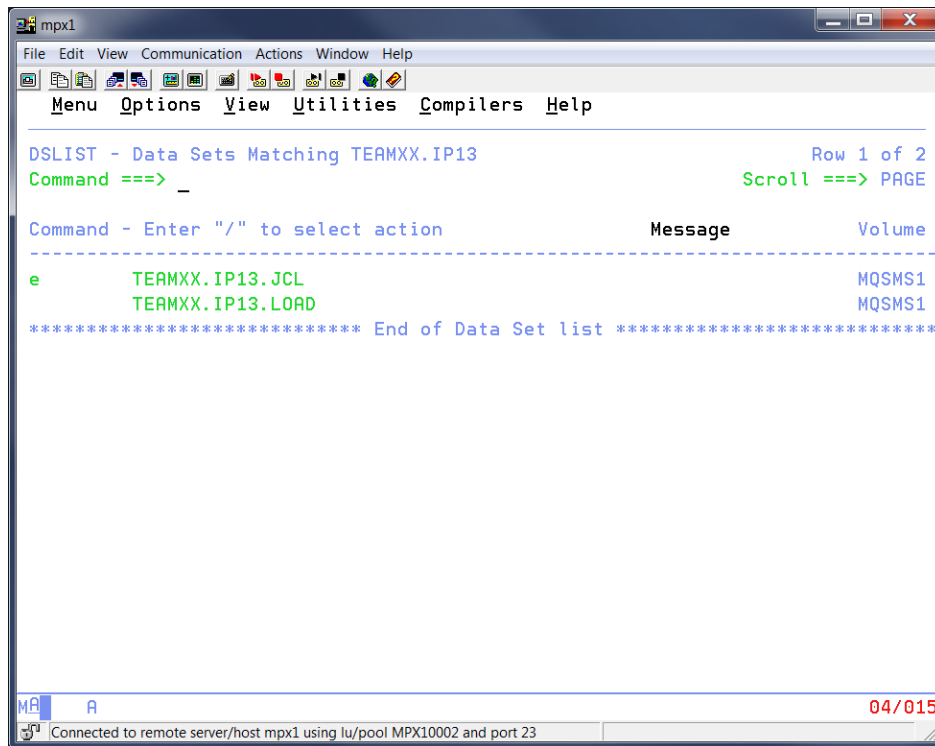
4. The new queue should show up in the queue list as shown.



Part 4 - Nonpersistent message comparison

Step 1 - Running the test for off-loading nonpersistent messages

- ___1. In a TSO session use ISPF option 3.4 to edit data set *TEAMXX.IP13.JCL*.

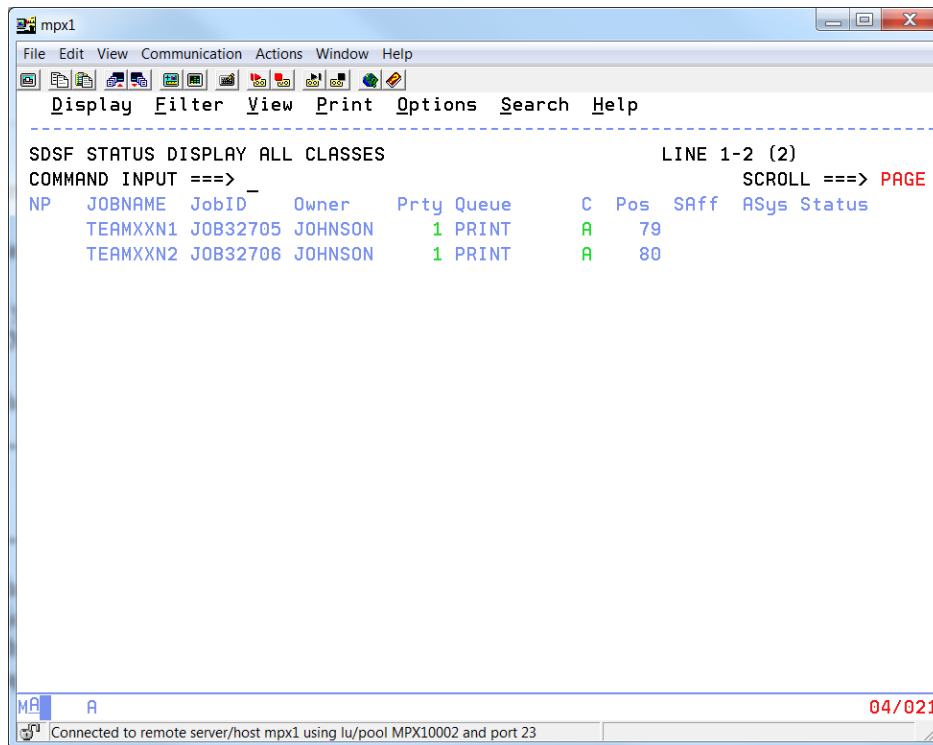


- ___2. If you review the IP13 sniff test documentation, you will see that we are bypassing several steps that are normally done for testing the message broker.
- ___3. Select member *SMDSCOMN* to set default values for the nonpersistent test. This JCL member contain two jobs, both do a simple in/out test against the SMDS and DB2 queues defined above.

Note that the number of messages is set to '10'; please do not alter this for the workshop, as we have a limited amount of storage in the structures. Also note that the message size is set to 4K via the '-s4096' parameter used. This is to ensure the message body will be offloaded to the storage facility defined for the structure.

- ___4. Do a global change to alter all occurrences of **XX** to your user identifier (from the worksheet). On the command line, enter command *c XX ?? all* where the ?? is your user identifier.
- ___5. Change the queue manager from QML1 to your primary queue manager. Enter the following command *c 'QML1' 'QML?' all* where ? is your primary queue manager number.

- ___6. Save the member and submit by entering the command ***SAVE;SUB***
- ___7. Navigate to the SMDS panels by entering the navigation command ***=sdsf.st***
- ___8. If you do not see the jobs for your ID, enter the following command ***prefix TEAMXX**** where ***XX*** is your user identity.
- ___9. The job list should look something like this:



The screenshot shows a window titled 'mpx1' with a menu bar (File, Edit, View, Communication, Actions, Window, Help) and a toolbar. Below the toolbar is a sub-menu bar (Display, Filter, View, Print, Options, Search, Help). The main display area shows the command 'SDSF STATUS DISPLAY ALL CLASSES' and 'LINE 1-2 (2)'. Below this is a table of jobs. The table has columns: NP, JOBNAME, JobID, Owner, Prty, Queue, C, Pos, SAff, ASys, and Status. The data rows are: TEAMXXN1, JOB32705, JOHNSON, 1, PRINT, A, 79, and TEAMXXN2, JOB32706, JOHNSON, 1, PRINT, A, 80. The status column is empty. The window also shows a status bar at the bottom with the text 'Connected to remote server/host mpx1 using lu/pool MPX10002 and port 23' and a date/time stamp '04/021'.

NP	JOBNAME	JobID	Owner	Prty	Queue	C	Pos	SAff	ASys	Status
	TEAMXXN1	JOB32705	JOHNSON	1	PRINT	A	79			
	TEAMXXN2	JOB32706	JOHNSON	1	PRINT	A	80			

- ___10. The ***SYSPRINT*** output from the ***TEAMXXN1*** job is from the SMDS offload test, the output from the ***TEAMXXN2*** job is from the DB2 offload test. Please be aware that your results may vary from those shown here, but the variance should not be too significant (unless someone has submitted a large number of messages).

Step 2 – Review the nonpersistent test results

- ___1. Open the *SYSPRINT* files from the SMDS offload test, by putting a question mark beside the job name, then selecting the SYSPRINT file.

Display Filter View Print Options Search Help									

SDSF STATUS DISPLAY ALL CLASSES						LINE 1-2 (2)			
COMMAND INPUT ==>						SCROLL ==> PAGE			
NP	JOBNAME	JobID	Owner	Prty	Queue	C	Pos	SAff	ASys Status
	TEAMXXN1	JOB32705	JOHNSON	1	PRINT	A	79		
?	TEAMXXN2	JOB32706	JOHNSON	1	PRINT	A	80		
-									

Display Filter View Print Options Search Help									

SDSF JOB DATA SET DISPLAY - JOB TEAMXXN2 (JOB32706)						LINE 1-4 (4)			
COMMAND INPUT ==>						SCROLL ==> PAGE			
NP	DDNAME	StepName	ProcStep	DSID	Owner	C	Dest	Rec-Cnt	Page
	JESMSG LG	JES2		2	JOHNSON	S	LOCAL	20	
	JESJCL	JES2		3	JOHNSON	S	LOCAL	33	
	JESYSMSG	JES2		4	JOHNSON	S	LOCAL	61	
S	SYSPRINT			102	JOHNSON	S	LOCAL	46	
-									

- ___2. Split your screen (entering the **F2** key) and open the *SYSPRINT* for the DB2 offload results.

On the following pages, the results of our tests are shown. Your results may vary due to system usage, but the comparisons should be similar.

SMDS Test Output:

```

Compiled Sep 13 2006 11:23:57.
buffer:-qTEAMXX.SMDS.QUEUE          * REQUEST QUEUE
buffer:-rTEAMXX.SMDS.QUEUE          * REPLY QUEUE
buffer:-fileDD:MSGIN
buffer:-dJTEST4
parm: -mQML1 -n10 -x -s4096
Message file: DD:MSGIN
OEMPUTX about to MQCONN to QMgr QML1.
OEMPUTX about to MQOPEN request queue: TEAMXX.SMDS.QUEUE
OEMPUTX about to MQOPEN reply queue: TEAMXX.SMDS.QUEUE
CPU type 0000012817
Date Time 2011/12/12 16:09:06.
Description JTEST4.
Entering PUT/GET loops (MQGET_Wait=60 seconds)...
Preload the queue with 0 messages...
  Message size      : 4096
  Message persistence : NON-PERSISTENT
  Messages per loop  : 1
  Total messages     : 10
  Syncpoints         : NO-SYNCPOINT
  MQGET replies by   : Any message
Starting loop at 2011-12-12 16:09:06.994381
Workload manager data
      Samples %idle %unknown(MQ?) %using CPU %doing I/O %Wait
for CPU
  QML1CHIN.0068      1   100           0           0           0
0
  QML1MSTR.005A      1   100           0           0           0
0
-----
Total Transactions   : 10
Elapsed Time        :    0.014 seconds
Application CPU Time:    0.001 seconds (10.6%)
Transaction Rate    :  738.554 trans/sec
-----
Round trip per msg   :    1353 microseconds
Avg App CPU per msg  :    143 microseconds
-----
  Jobname.ASID  TCB(uS)  SRB(uS) Tot(uS) (%)
              /tran    /tran    /tran
-----
QML1MSTR.005A  00000132  00000037  00000169  12.5
QML1CHIN.0068  00000000  00000000  00000000   0.0
QML1BRK*       00000000  00000000  00000000   0.0
Total CPUmicrosecs/tran                169
-----
Ending loop at 2011-12-12 16:09:07.008686
OEMPUTX Normal Exit: End of program
Exiting at 2011-12-12 16:09:07.012683

```

DB2 Offload Results

```

Compiled Sep 13 2006 11:23:57.
buffer:-qTEAMXX.DB2.QUEUE          * REQUEST QUEUE
buffer:-rTEAMXX.DB2.QUEUE          * REPLY QUEUE
buffer:-fileDD:MSGIN
buffer:-dJTEST4
parm: -mQML1 -n10 -x -s4096
Message file: DD:MSGIN
OEMPUTX about to MQCONN to QMgr QML1.
OEMPUTX about to MQOPEN request queue: TEAMXX.DB2.QUEUE
OEMPUTX about to MQOPEN reply queue: TEAMXX.DB2.QUEUE
CPU type 0000012817
Date Time 2011/12/12 16:09:06.
Description JTEST4.
Entering PUT/GET loops (MQGET_Wait=60 seconds)...
Preload the queue with 0 messages...
  Message size      : 4096
  Message persistence : NON-PERSISTENT
  Messages per loop  : 1
  Total messages     : 10
  Syncpoints         : NO-SYNCPOINT
  MQGET replies by   : Any message
Starting loop at 2011-12-12 16:09:06.994825
Workload manager data
      Samples %idle %unknown(MQ?) %using CPU %doing I/O
%Wait for CPU
  QML1CHIN.0068      1   100           0           0           0
0
  QML1MSTR.005A      1   100           0           0           0
0
-----
Total Transactions   : 10
Elapsed Time        :    0.078 seconds
Application CPU Time:    0.002 seconds (2.5%)
Transaction Rate    : 128.833 trans/sec
-----
Round trip per msg   :    7762 microseconds
Avg App CPU per msg  :    192 microseconds
-----
  Jobname.ASID  TCB(uS)  SRB(uS) Tot(uS) (%)
               /tran   /tran   /tran
-----
QML1MSTR.005A  00000900  00000060  00000960 12.4
QML1CHIN.0068  00000000  00000000  00000000  0.0
QML1BRK*       00000000  00000000  00000000  0.0
Total CPUmicrosecs/tran                960
-----
Ending loop at 2011-12-12 16:09:07.073163
OEMPUTX Normal Exit: End of program
Exiting at 2011-12-12 16:09:07.075500

```

___3. Comparing the results:

- a. What was the transaction rate for the SMDS Offload in the sample test? _____
In your test? _____
- b. The DB2 Offload in the sample test?

In your test?

- c. What was the round trip rate for the SMDS offload in the sample test?

In your test?

- d. What was the round trip rate for the DB2 offload in the sample test?

In your test?

- e. What was the CPU Microseconds per transaction in the SMDS offload sample test?

In your test?

- f. What was the CPU Microseconds per transaction in the DB2 offload sample test?

In your test?

Part 5 – Persistent message comparison

Step 1 - Running the test for off-loading persistent messages

- ___1. Select member *SMDSCOMP* to set default values for the nonpersistent test. This JCL member contain two jobs, both do a simple in/out test against the SMDS and DB2 queues defined above.

Note that the number of messages is set to '10'; please do not alter this for the workshop, as we have a limited amount of storage in the structures. Also note that the message size is set to 4K via the '-s4096' parameter used. This is to ensure the message body will be offloaded to the storage facility defined for the structure.

- ___2. Do a global change to alter all occurrences of **XX** to your identity. On the command line, enter the command **C XX ?? ALL** where the ?? is your team identity number.
- ___3. Change the queue manager from QML1 to your primary queue manager by entering the command **C QML1 QML? ALL** where ? is your primary queue manager number.
- ___4. Save the member and submit by entering the command **SAVE;SUB**
- ___5. Navigate to the SMDS panels by entering the navigation command **=sdsf.st**
- ___6. If you do not see the jobs for your ID, enter the following command **prefix TEAMXX*** where **XX** is your team ID.
- ___7. The job list should look something like this:

Display	Filter	View	Print	Options	Search	Help
SDSF OUTPUT ALL CLASSES ALL FORMS				LINES 642	LINE 1-4 (4)	
COMMAND INPUT ==> _					SCROLL ==> PAGE	
NP	JOBNAME	JobID	Owner	Prty C Forms	Dest	Tot-Rec
	TEAMXXN1	JOB32705	JOHNSON	144 S STD	LOCAL	161
	TEAMXXN2	JOB32706	JOHNSON	144 S STD	LOCAL	160
	TEAMXXP1	JOB32707	JOHNSON	144 S STD	LOCAL	161
	TEAMXXP2	JOB32708	JOHNSON	144 S STD	LOCAL	160

- ___8. The *SYSPRINT* output from the *TEAMXXP1* job is from the SMDS offload test, the output from the *TEAMXXP2* job is from the DB2 offload test. Please be aware that your results may vary from those shown here, but the variance should not be too significant (unless someone has submitted a large number of messages).

Step 2 – Review the persistent test results

- ___1. Open the SYSPRINT files from the SMDS offload test, by putting a question mark beside the job name, then selecting the SYSPRINT file.

Display Filter View Print Options Search Help								
SDSF OUTPUT ALL CLASSES ALL FORMS				LINES 642		LINE 1-4 (4)		
COMMAND INPUT ==>				SCROLL ==> PAGE				
NP	JOBNAME	JobID	Owner	Prt	C	Forms	Dest	Tot-Rec
	TEAMXXN1	JOB32705	JOHNSON	144	S	STD	LOCAL	161
	TEAMXXN2	JOB32706	JOHNSON	144	S	STD	LOCAL	160
?	TEAMXXP1	JOB32707	JOHNSON	144	S	STD	LOCAL	161
-	TEAMXXP2	JOB32708	JOHNSON	144	S	STD	LOCAL	160

Display Filter View Print Options Search Help									
SDSF JOB DATA SET DISPLAY - JOB TEAMXXP1 (JOB32707)							LINE 1-4 (4)		
COMMAND INPUT ==>							SCROLL ==> PAGE		
NP	DDNAME	StepName	ProcStep	DSID	Owner	C	Dest	Rec-Cnt	Page
	JESMSG LG	JES2		2	JOHNSON	S	LOCAL	20	
	JESJCL	JES2		3	JOHNSON	S	LOCAL	34	
	JESYSMSG	JES2		4	JOHNSON	S	LOCAL	61	
S	SYSRINT			102	JOHNSON	S	LOCAL	46	

- ___2. Split your screen (entering the F2 key) and open the *SYSRINT* for the DB2 offload results.
- ___3. On the following pages, the results of our tests are shown. Your results may vary due to system usage, but the comparisons should be similar.

SMDS Test Result

```

1
Compiled Sep 13 2006 11:23:57.
buffer:-qTEAMXX.SMDS.QUEUE          * REQUEST QUEUE
buffer:-rTEAMXX.SMDS.QUEUE          * REPLY QUEUE
buffer:-fileDD:MSGIN
buffer:-dJTEST4
parm: -mQML1 -nl0 -x -p -s4096
Message file: DD:MSGIN
OEMPUTX about to MQCONN to QMgr QML1.
OEMPUTX about to MQOPEN request queue: TEAMXX.SMDS.QUEUE
OEMPUTX about to MQOPEN reply queue: TEAMXX.SMDS.QUEUE
CPU type 0000012817
Date Time 2011/12/12 16:48:33.
Description JTEST4.
Entering PUT/GET loops (MQGET_Wait=60 seconds)...
Preload the queue with 0 messages...
  Message size      : 4096
  Message persistence : PERSISTENT
  Messages per loop  : 1
  Total messages     : 10
  Syncpoints         : NO-SYNCPOINT
  MQGET replies by   : Any message
Starting loop at 2011-12-12 16:48:33.521404
Workload manager data
      Samples %idle %unknown(MQ?) %using CPU %doing I/O
%Wait for CPU
  QML1CHIN.0068      27   100           0           0           0
0
  QML1MSTR.005A      27   100           0           0           0
0
-----
Total Transactions   : 10
Elapsed Time        :    0.033 seconds
Application CPU Time:    0.002 seconds (4.7%)
Transaction Rate    :  301.905 trans/sec
-----
Round trip per msg   :    3312 microseconds
Avg App CPU per msg  :    155 microseconds
-----
  Jobname.ASID  TCB(uS)  SRB(uS)  Tot(uS) (%)
               /tran    /tran    /tran
-----
QML1MSTR.005A  00000034  00000089  00000124  3.8
QML1CHIN.0068  00000000  00000000  00000000  0.0
QML1BRK*       00000000  00000000  00000000  0.0
Total CPUmicrosecs/tran                124
-----
Ending loop at 2011-12-12 16:48:33.555247
OEMPUTX Normal Exit: End of program
Exiting at 2011-12-12 16:48:33.558693

```

DB2 Offload Test Result

```

1
Compiled Sep 13 2006 11:23:57.
buffer:-qTEAMXX.DB2.QUEUE          * REQUEST QUEUE
buffer:-rTEAMXX.DB2.QUEUE          * REPLY QUEUE
buffer:-fileDD:MSGIN
buffer:-dJTEST4
parm: -mQML1 -nl0 -x -p -s4096
Message file: DD:MSGIN
OEMPUTX about to MQCONN to QMgr QML1.
OEMPUTX about to MQOPEN request queue: TEAMXX.DB2.QUEUE
OEMPUTX about to MQOPEN reply queue: TEAMXX.DB2.QUEUE
CPU type 0000012817
Date Time 2011/12/12 16:48:33.
Description JTEST4.
Entering PUT/GET loops (MQGET_Wait=60 seconds)...
Preload the queue with 0 messages...
  Message size      : 4096
  Message persistence : PERSISTENT
  Messages per loop  : 1
  Total messages     : 10
  Syncpoints         : NO-SYNCPOINT
  MQGET replies by   : Any message
Starting loop at 2011-12-12 16:48:33.536356
Workload manager data
      Samples %idle %unknown(MQ?) %using CPU %doing I/O %Wait
for CPU
  QML1CHIN.0068      28   100           0           0           0
0
  QML1MSTR.005A      28   100           0           0           0
0
-----
Total Transactions   : 10
Elapsed Time        :    0.280 seconds
Application CPU Time:    0.002 seconds (0.6%)
Transaction Rate    :   35.776 trans/sec
-----
Round trip per msg   :   27951 microseconds
Avg App CPU per msg  :    156 microseconds
-----
  Jobname.ASID  TCB(uS)  SRB(uS)  Tot(uS) (%)
                /tran    /tran    /tran
-----
QML1MSTR.005A  00000878  00000131  00001010  3.6
QML1CHIN.0068  00000000  00000000  00000000  0.0
QML1BRK*       00000000  00000000  00000000  0.0
Total CPUmicrosecs/tran                1010
-----
Ending loop at 2011-12-12 16:48:33.816510
OEMPUTX Normal Exit: End of program
Exiting at 2011-12-12 16:48:33.819107

```

___4. Comparing the results:

- a. What was the transaction rate for the SMDS Offload in the sample test? _____
In your test? _____
- b. The DB2 Offload in the sample test?

In your test?

- c. What was the round trip rate for the SMDS offload in the sample test?

In your test?

- d. What was the round trip rate for the DB2 offload in the sample test?

In your test?

- e. What was the CPU Microseconds per transaction in the SMDS offload sample test?

In your test?

- f. What was the CPU Microseconds per transaction in the DB2 offload sample test?

In your test?
