Discovering OMEGAMON

Volume 5

OMEGAMON XE for Messaging v730

Enhanced 3270 User Interface Lab Exercises

IBM

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Catalog Number

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Overview

Lab Prerequisites

This lab is designed for MQ system administrators to explore the newly designed OMEGAMON MQ e3270 user interface and verify how OMEGAMON can help monitor MQ performance. The e3270 UI introduction lab would help, though it is not mandatory if the user has general knowledge with TN3270 or TSO/ISPF on z/OS.

OMEGAMON XE for Messaging provides the ability to monitor WebSphere MQ subsystems and application performance, both on System z and the distributed systems environments. The enhanced 3270(e3270) user interface, included with OMEGAMON XE for Messaging v7.3, complements the Tivoli Enterprise Portal User Interface to monitor MQ systems and application performance. This series of hands-on exercises illustrate several of the features and functions available in this new e3270 interface specific to monitoring WebSphere MQ on z/OS.

Individual labs exercises will cover the following topics –

- Monitoring the health of WebSphere MQ environment
- Monitoring MQ resources from application and CICS-MQ transaction views
- Analyzing Queue statistics and taking actions to delete or forward messages
- Monitoring MQ Buffer Pools and Pageset utilization
- Monitoring Channel activities
- Monitoring Dead Letter Queue

Icons

The following symbols appear in this document at places where additional guidance is available.

Icon	Purpose	Explanation
	Important!	This symbol calls attention to a particular step or command. For example, it might alert you to type a command carefully because it is case sensitive.
	Information	This symbol indicates information that might not be necessary to complete a step, but is helpful or good to know.
	Trouble-shooting	This symbol indicates that you can fix a specific problem by completing the associated troubleshooting information.

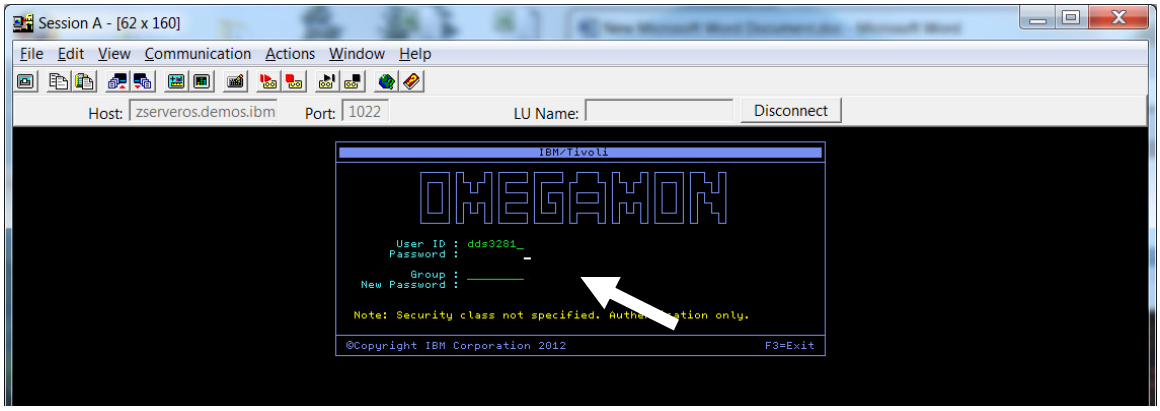
Getting Started

This section introduces the e3270 interface for OMEGAMON XE for Messaging. After you log on to the OMEGAMON VTAM Application ID, the first default 'start' panel ID is KOBSTART. KOBSTART is an overview panel for all installed OMEGAMON products. The Monitored MQ Subsystem workspace is included on KOBSTART and provides the starting point to drill down into OMEGAMON XE for Messaging detail displays.

Lab 1 illustrates several of the detailed displays available in OMEGAMON XE for Messaging.

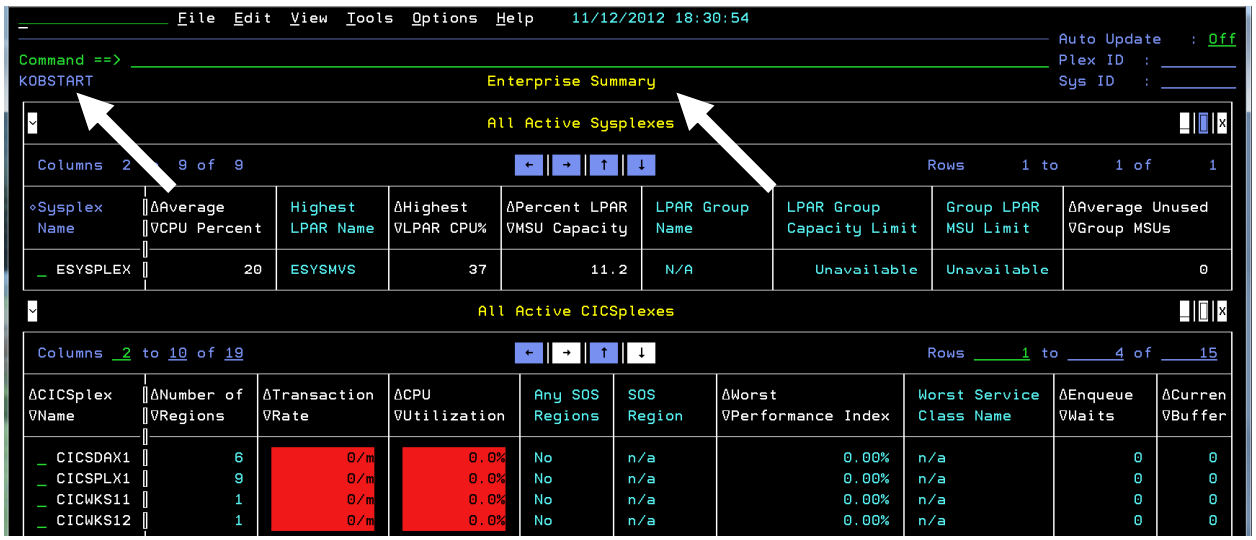
Security Information!

Prior to starting these exercises, please see the instructor for user ID/password and logon instructions.

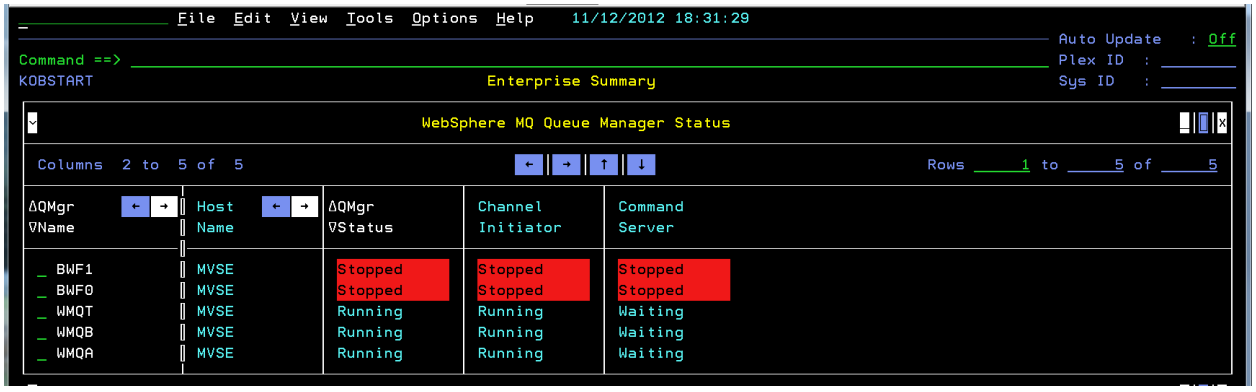


a) Enter your userid ; DILxxS, and password (obtained from the Lab Instructor).

The first screen you see is the Enterprise Summary screen (KOBSTART)



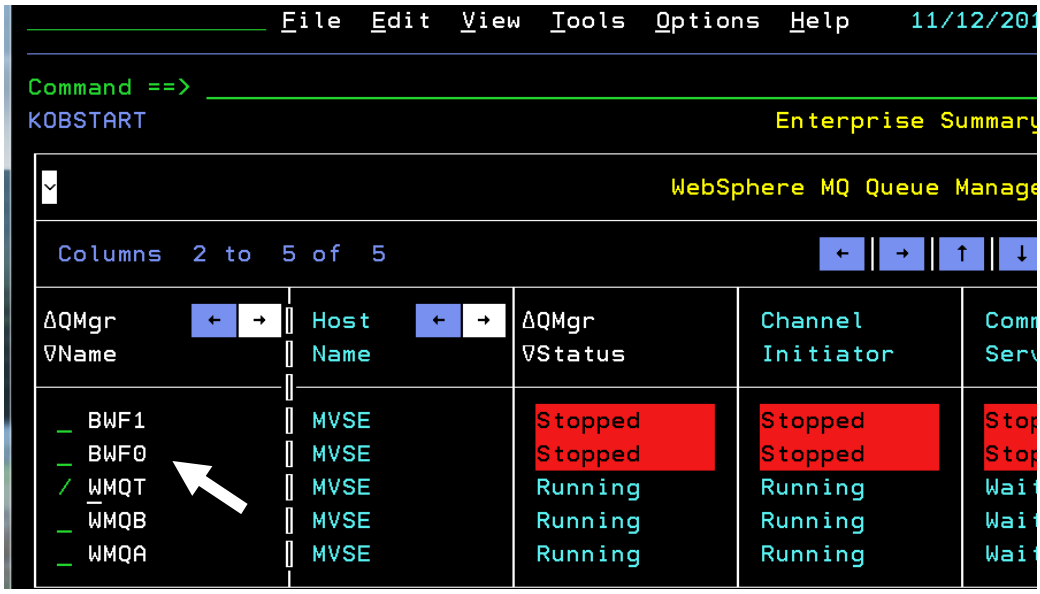
You can get to the MQ screens by **pressing PF8** to scroll up until you see the WebSphere MQ Queue Manager Status screen.



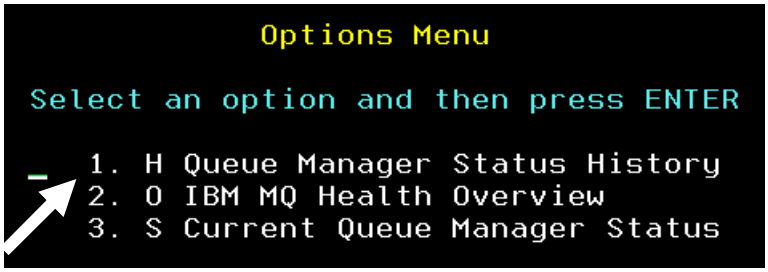
You are now looking at the WebSphere MQ portion of the KOBSTART panel.

Scenario #1 Monitoring MQ Health Overview

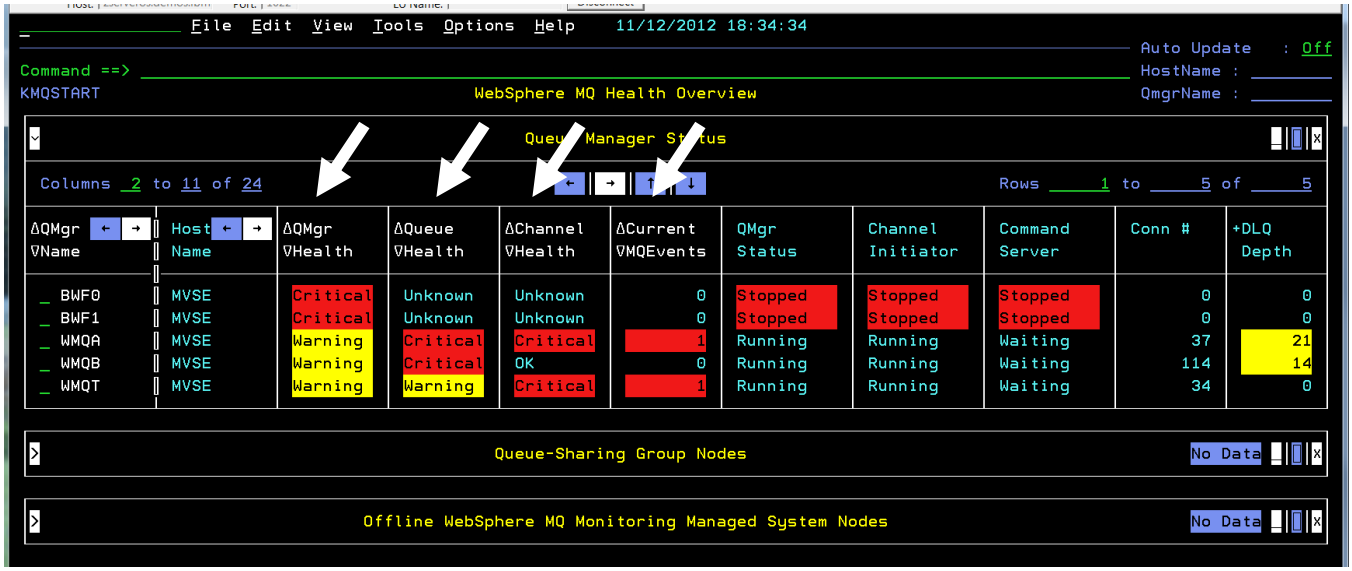
In this lab you will learn how to determine the health of your MQ environment



a) Place a / beside WMQT and **Press Enter** you will get the following pop-up menu.



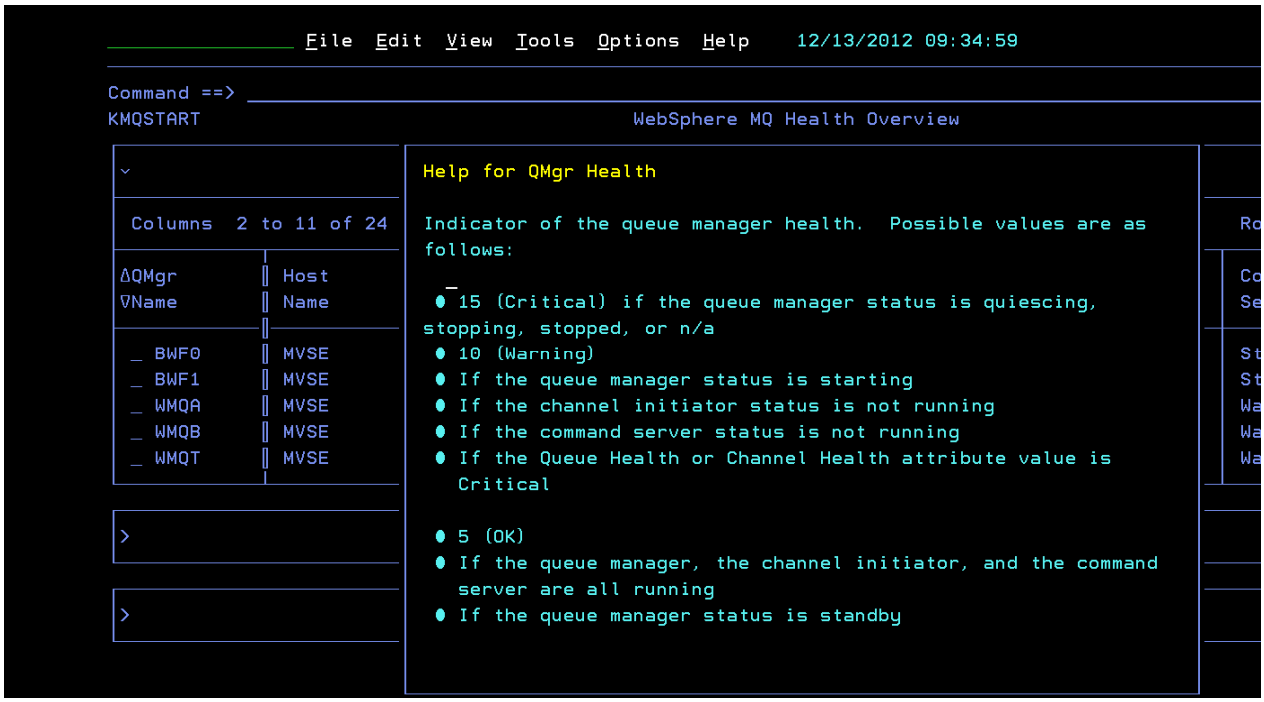
b) Enter **O** for WebSphere MQ Health Overview and **Press Enter**.



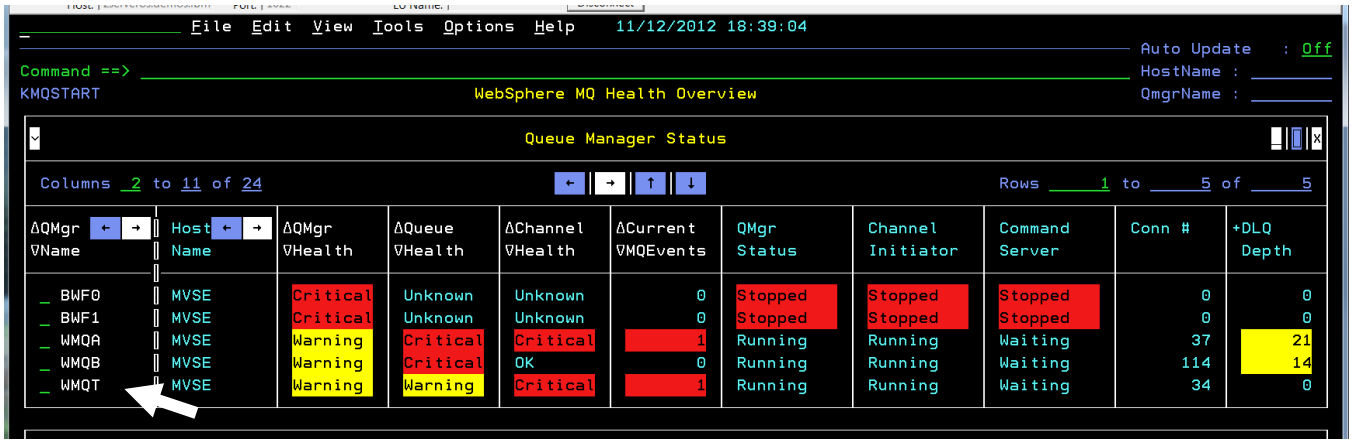
This is the WebSphere MQ Health Overview screen (KMQSTART). Notice that various alerts are indicated by highlighted fields.

c) **Place the cursor** on any column heading then **Press PF1.** This will display field sensitive help and column threshold criteria where applicable.

Here we see the QMgr Health criteria.



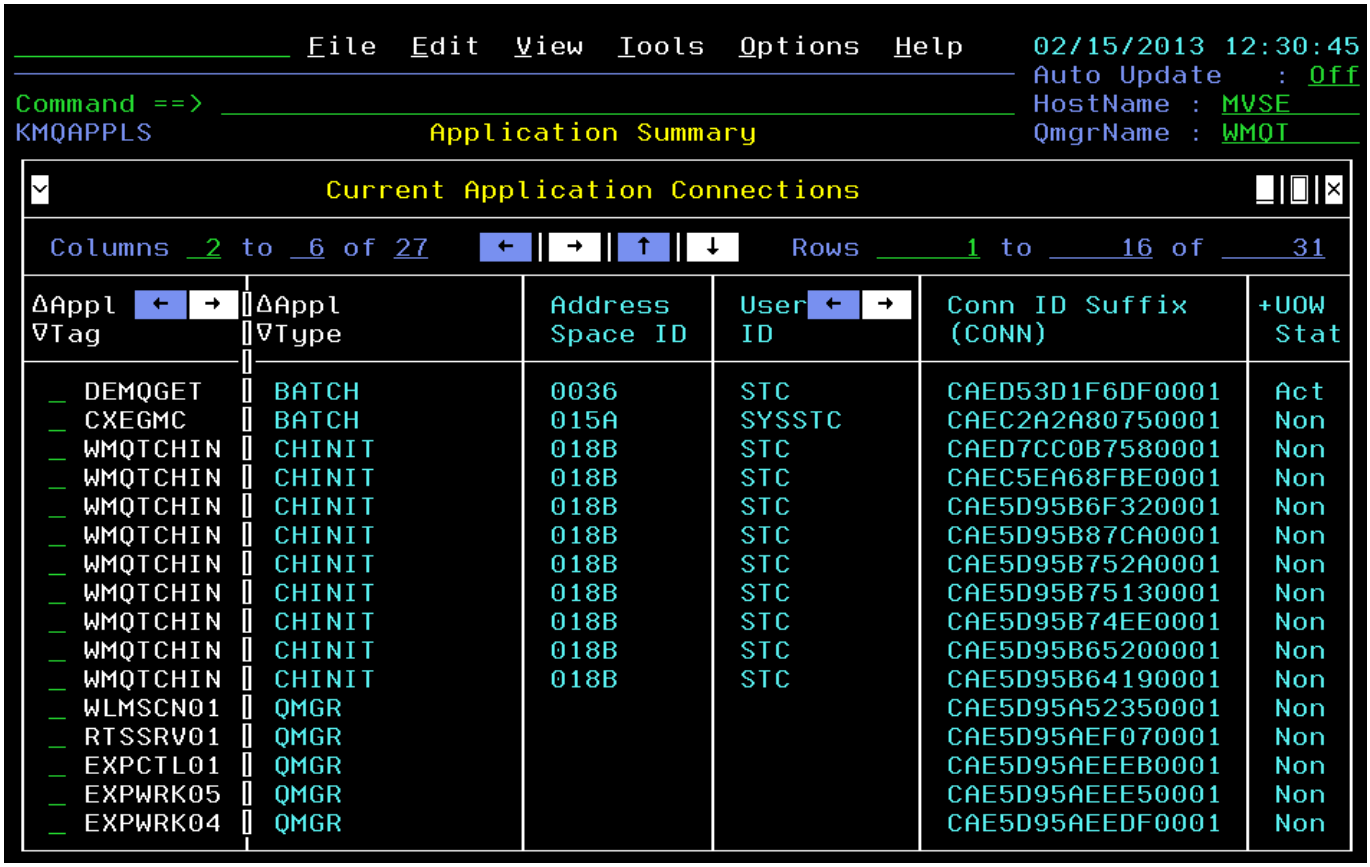
d) **Press F3** to make the popup disappear.



e) Place a / beside WMQT. You will get the following pop-up menu.

Note that you can select an item from the menu by using the number or the letter associated with that item. From this popup you may navigate to any of several different displays.

f) For example **enter A** for Application Summary and **Press Enter**.



You are now looking at the Application Summary display (KMQAPPLS).

This demonstrates how you can navigate from the MQ Health Overview panel easily to many different detailed displays.

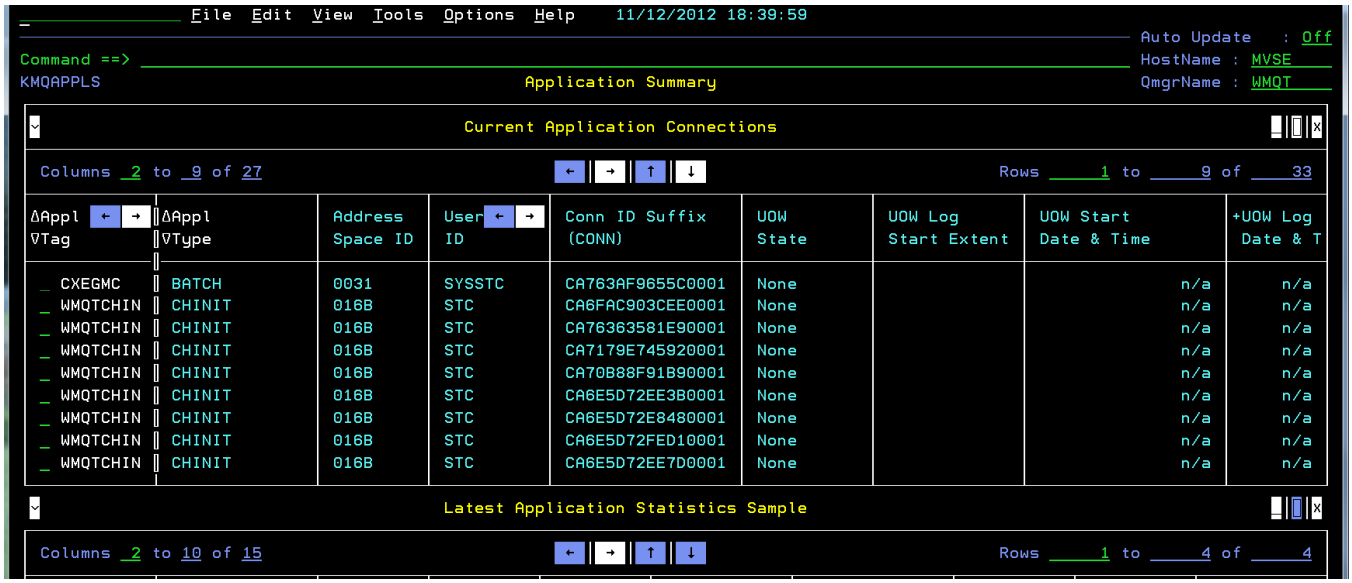
Please remain on this panel for Lab 2.

Scenario #2 Monitoring MQ Application Performance

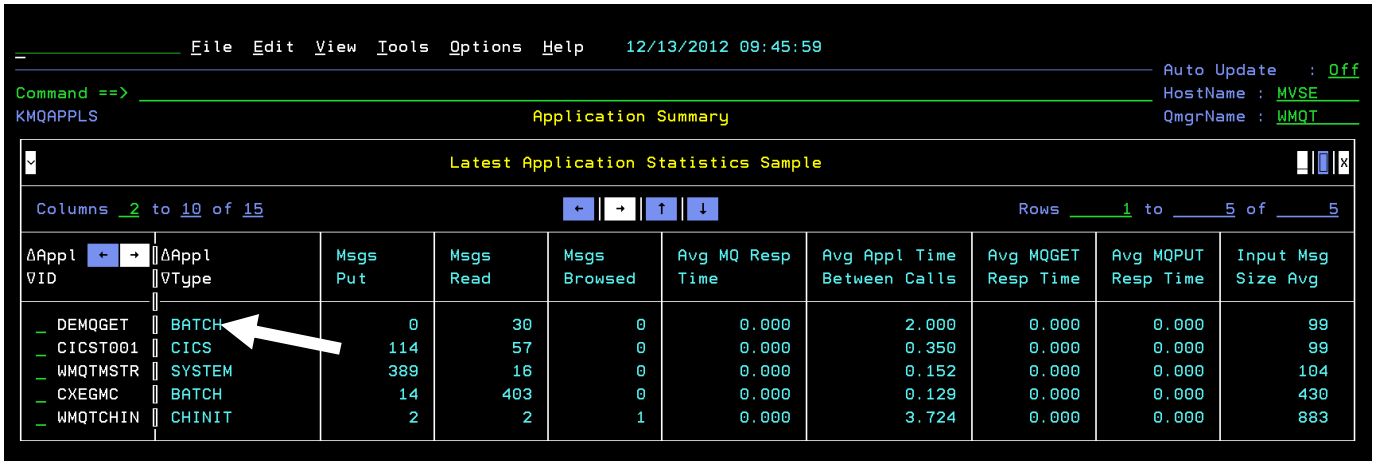
In this scenario we will look at data from applications that are using MQ. We will see a CICS region (CICST001), a batch job (DEMOGET), the OMEGAMON agent (CXEGMC), and the two MQ tasks (WMQTMSTR & WMQTCHIN).

In this scenario we will look at the CICS transaction example, but since this is a live environment you are free to look at other workloads that may be running on the system.

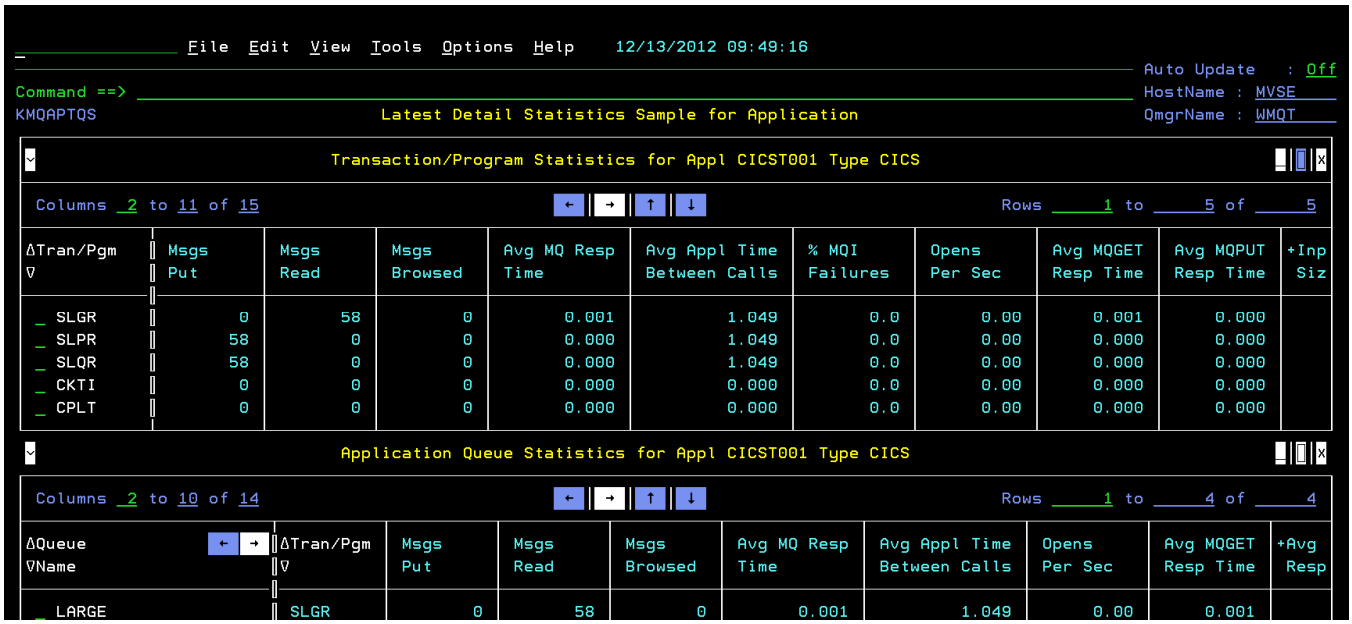
At the end of the prior scenario, you were on the KMQAPPLS display (as shown below).



This screen provides two views; Current Application Connections, and Latest Application Statistics Sample (depending on your screen resolution you may have to scroll down using PF8 to see the bottom half of the screen).



a) In the Latest Application Statistics Sample portion of KMQAPPLS **place the cursor** beside the application CICST001 and **Press Enter**.



In the top half of the screen you see the Transaction/Program Statistics for the CICST001 application. This data reflects all MQ activity done by a transaction, across all queues which the transaction accessed.

Notice the three transactions that are running; SLGR, SLPR & SLQR:

SLPR is putting messages to the queue

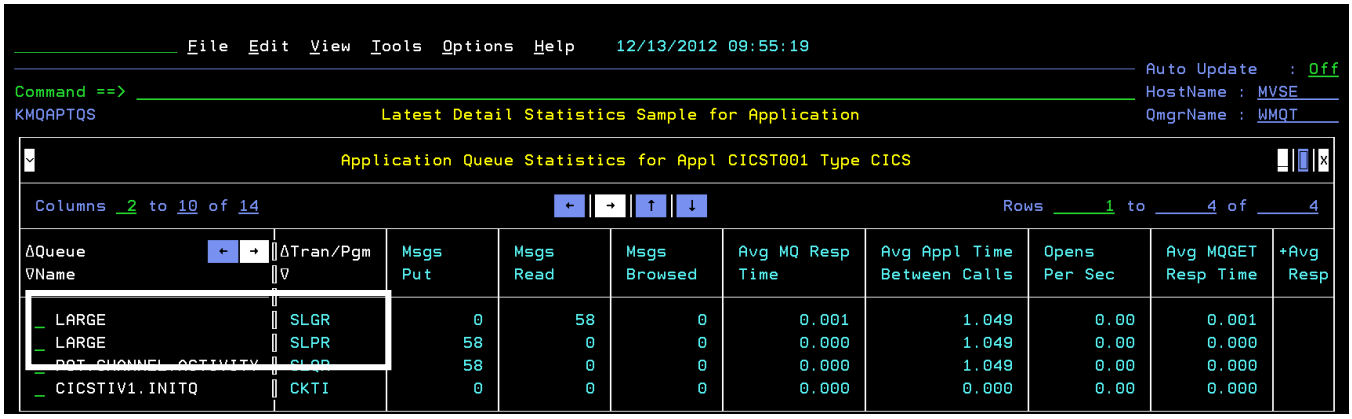
SLGR is getting messages from the queue

SLQR is putting one message/second to a remote queue.

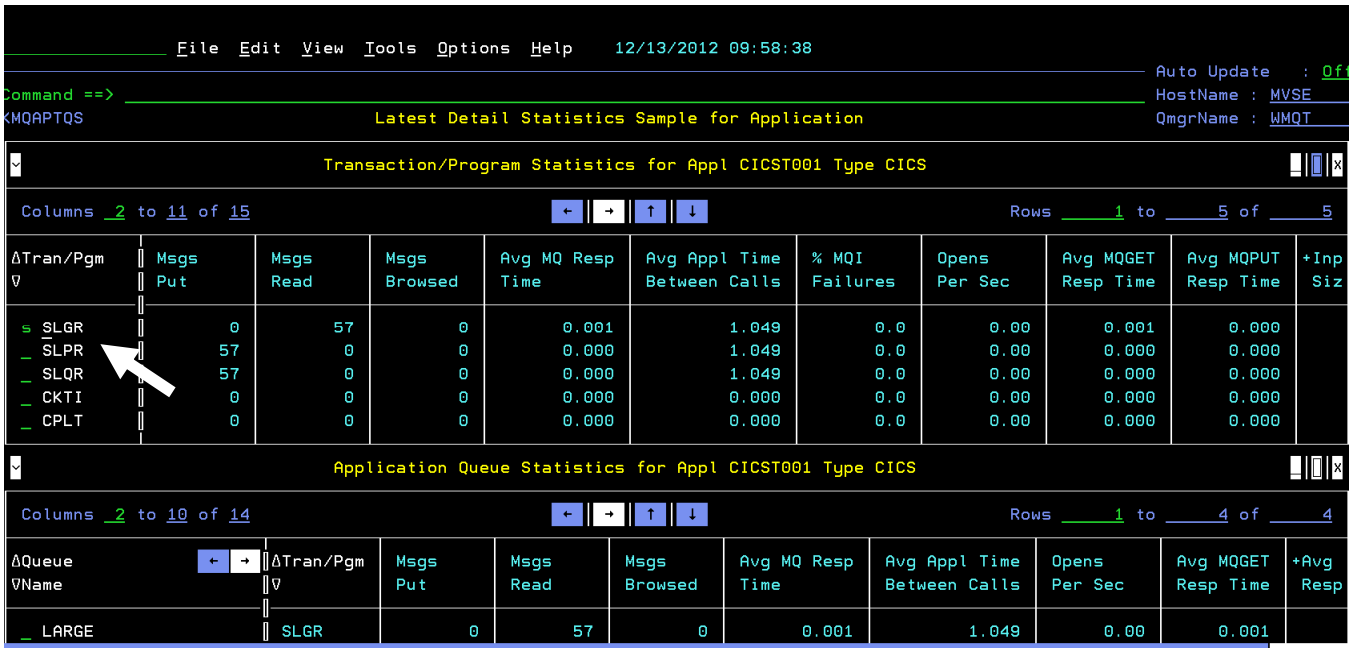
In the bottom half of the screen you will see the Application Queue Statistics (KMQAPTQS) for the application. Here we report on the MQ activity from the perspective of queue activity. Each row represents a queue being accessed by a unique workload. Multiple instances of a workload are combined, with each row reflecting the aggregated data.

b) If you see "**MORE**" in the bottom right hand corner you will have to **scroll using PF8** to see more data.

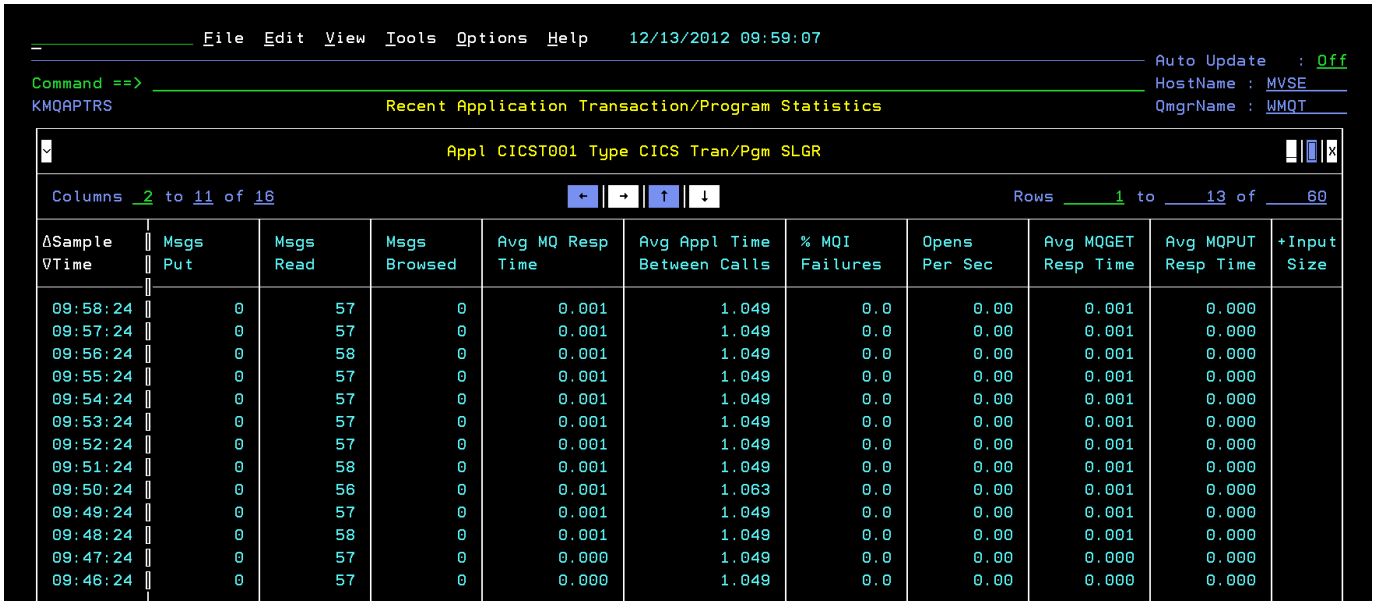
Note that you can clearly see that the LARGE queue is being accessed by two transactions concurrently.



c) **Press F7** to return to the top of the display.



d) Select the first transaction by putting an **S** next to the transaction and **Press Enter**.



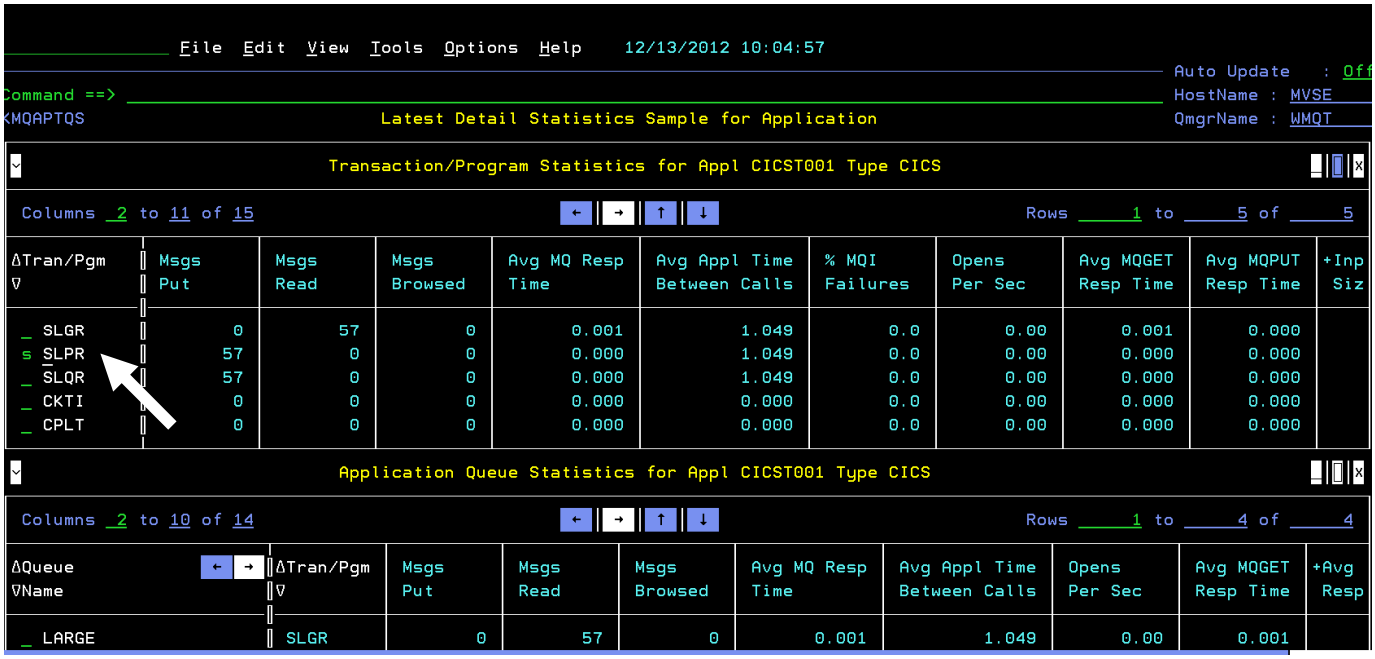
Here you see details for the transaction SLGR. You can observe the Number of Messages Read, the Average MQ Response Time, and Average Application Time Between Calls.

Note you may use the PF keys (PF7/PF8, PF10/PF11) to scroll and see what other data is available.

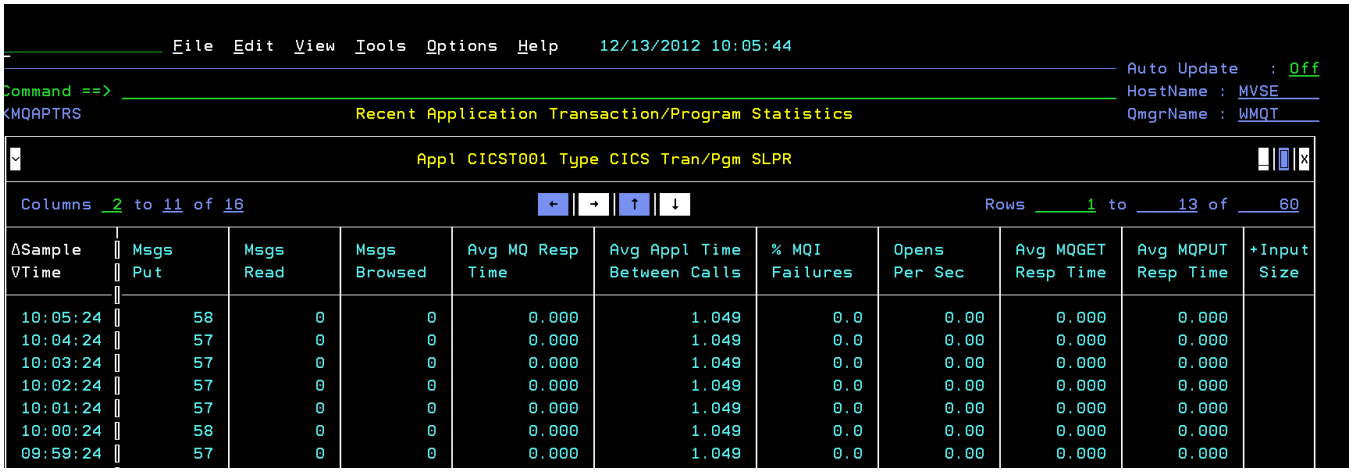
e) **Press F3** to return to panel KMQAPTQS.

Now look at the next transaction SLPR.

f) **Position the cursor** next to the SLPR transaction, **enter S** and **Press Enter**.



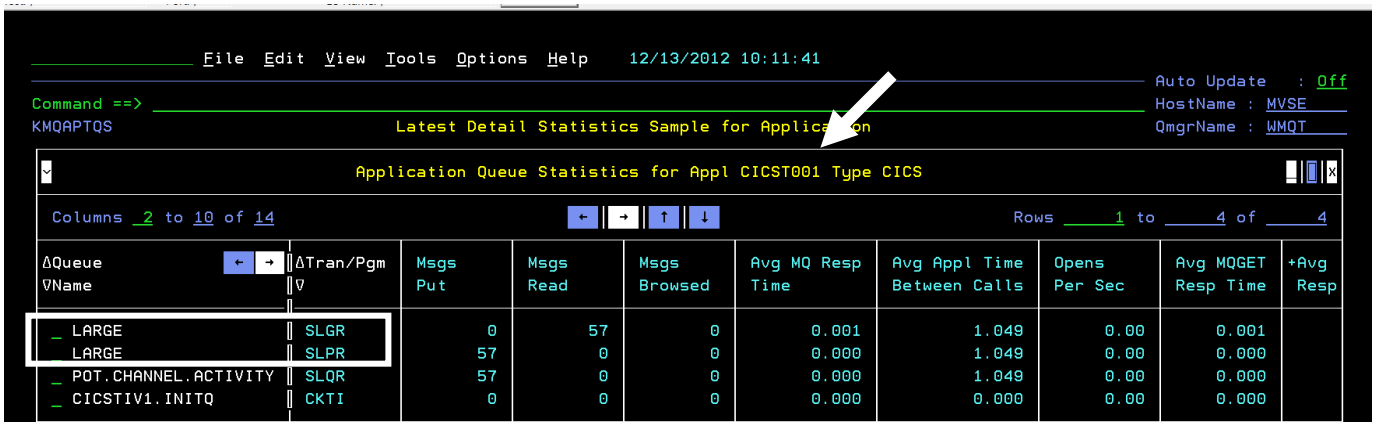
Here you see details for the transaction SLPR. This transaction executes MQPUT commands.



From this panel you can observe the Number of Messages Put, and the Average Application Time Between Calls. As before, use the PF keys (PF7/PF8, PF10/PF11) to scroll and see what other data is available.

g) **Press PF3** to return to panel KMQAPTQS.

h) **Press PF8** to scroll forward so that you can see the Application Queue Statistics portion of the panel.



Here you see the queues associated with the CICST001 application and the transactions using those queues.

Notice that the LARGE queue is being use by two transactions: SLPR and SLGR. These transactions execute MQGET and MQPUT commands. .

i) **Press PF3** to return to the KMQAPPLS panel

You have completed the scenario. Please remain on panel KMQAPPLS for the next scenario.

Scenario #3 Using Embedded Data For Application Analysis (New in V7.3)

The OMEGAMON V5.3 monitoring agents (z/OS, CICS, and Storage), along with OMEGAMON Messaging V7.3 support a new feature called Embedded Data. Embedded data is a navigation feature that enables easy cross component analysis of an application or subsystem within the e3270 user interface. For example, if a user has monitoring installed for both OMEGAMON Messaging and OMEGAMON CICS, the user will be able to transparently navigate back and forth to more fully understand the application. This section will demonstrate this feature.

From the KMQAPPLS panel, under Current Application Connections

a) **Scroll the panel** until you see CICST001

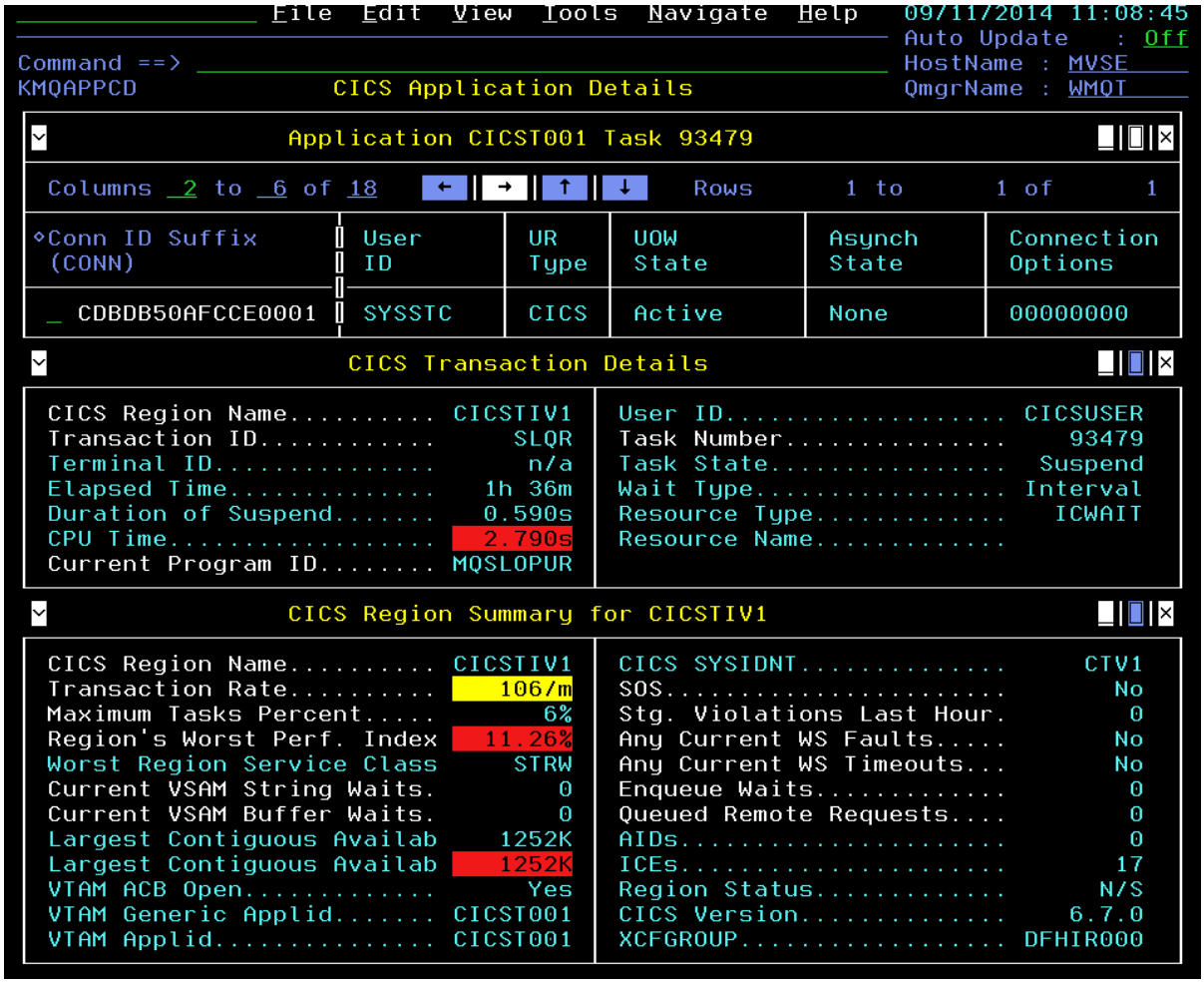
KMQAPPLS Application Summary QmgrName : WMQT

Current Application Connections

Columns 2 to 6 of 27 Rows 20 to 35 of 35

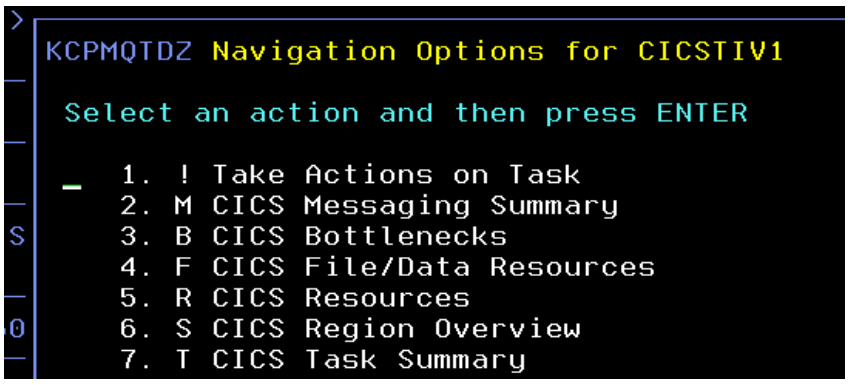
ΔAppl ∇Tag	ΔAppl ∇Type	User ID	Conn ID Suffix (CONN)	UR Type	UOW State
EXPCTL01	QMGR		CDAB56D035060001	QMgr	None
EXPWRK05	QMGR		CDAB56D034FE0001	QMgr	None
EXPWRK04	QMGR		CDAB56D034FA0001	QMgr	None
WLMCLS01	QMGR		CDAB56D014C10001	QMgr	None
EXPWRK02	QMGR		CDAB56D034E70001	QMgr	None
WLMSCN01	QMGR		CDAB56D014B50001	QMgr	None
SCAVNGOB	QMGR		CDAB56D014B40001	QMgr	None
DATACN00	QMGR		CDAB56D015970001	QMgr	None
SCAVNG01	QMGR		CDAB56D014B20001	QMgr	None
RAHEAD00	QMGR		CDAB56CFF3450001	QMgr	None
SP64TK03	QMGR		CDAB56CF60270001	QMgr	None
SCAVNG00	QMGR		CDAB56D014B30001	QMgr	None
CICST001	CICS	SYSSTC	CDBDB50AFCCE0001	CICS	Active
CICST001	CICS	SYSSTC	CDBDB52C57C70001	CICS	Active
CICST001	CICS	SYSSTC	CDBA3BD73C480001	CICS	None
CICST001	CICS	SYSSTC	CDBDB52BDDFC0001	CICS	None

b) **Position the cursor** next to CICST001 and **Press Enter**



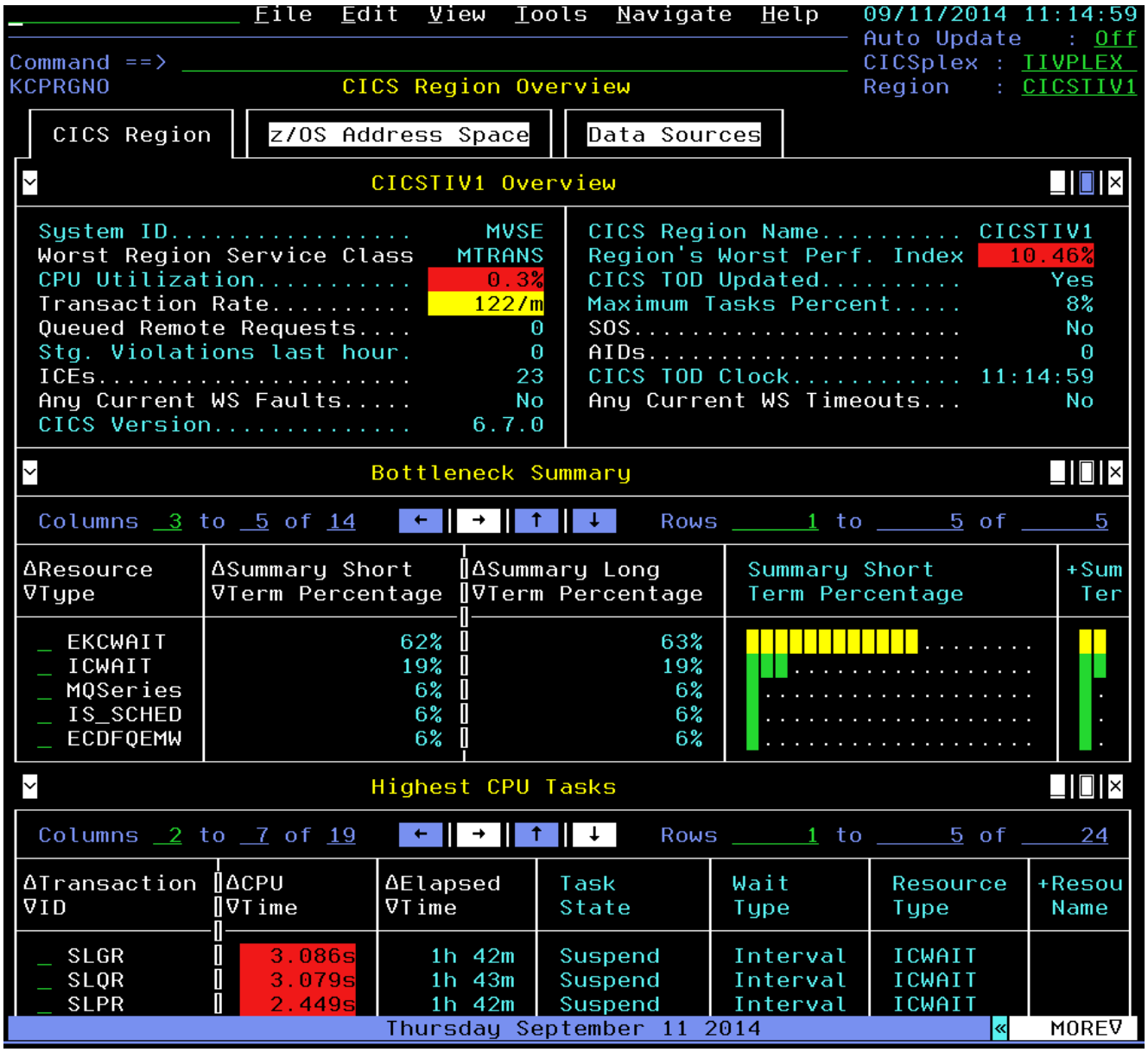
You are now looking at the CICS application detail information, as monitored by OMEGAMON Messaging. From this panel you may drill down directly to OMEGAMON CICS to see more detailed CICS specific performance information.

c) **Position the cursor** on the white text CICS Region Name and **Press Enter**



You are presented with a popup panel with various drill down options to see CICS information. Note that you may look at CICS bottlenecks, CICS active tasks, CICS file/data resources, and the CICS region overview.

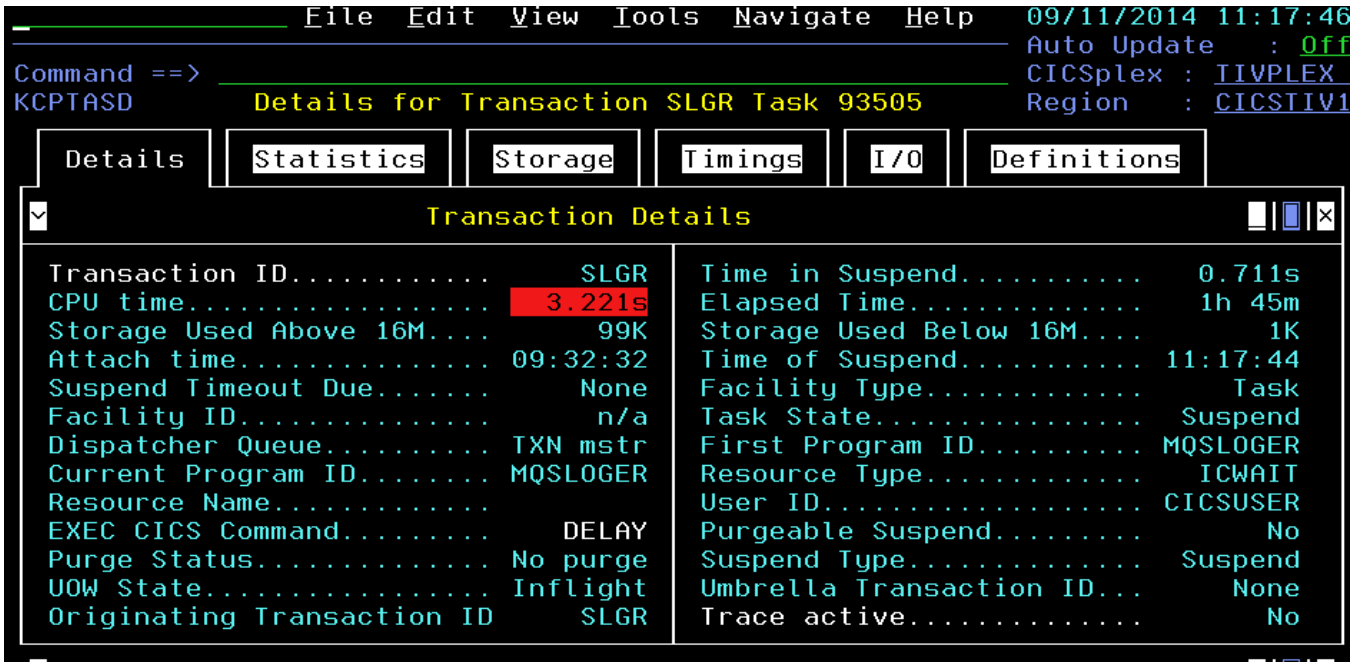
d) **Select option S** and **Press Enter**



You are now looking at the KCPRGNO panel of OMEGAMON CICS. Embedded data has enabled a drill down in context from OMEGAMON Messaging to OMEGAMON CICS detail.

Note on the bottom of the panel the MQ transactions that had been viewed earlier in these exercises, SLGR, SLQR, and SLPR.

e) Position the cursor next to one of the transactions and **Press Enter**



You are now looking at the CICS transaction details.

f) **Press F3 multiple times** until you have returned to the KMQSTART panel

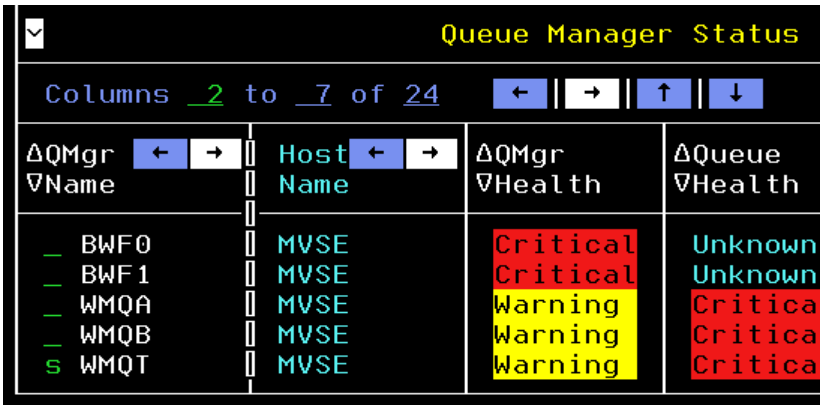
This concludes the demonstration of embedded data navigation using the e3270 user interface.

Scenario #4 Monitoring Queue Manager Status – Real Time and History (New in V7.3)

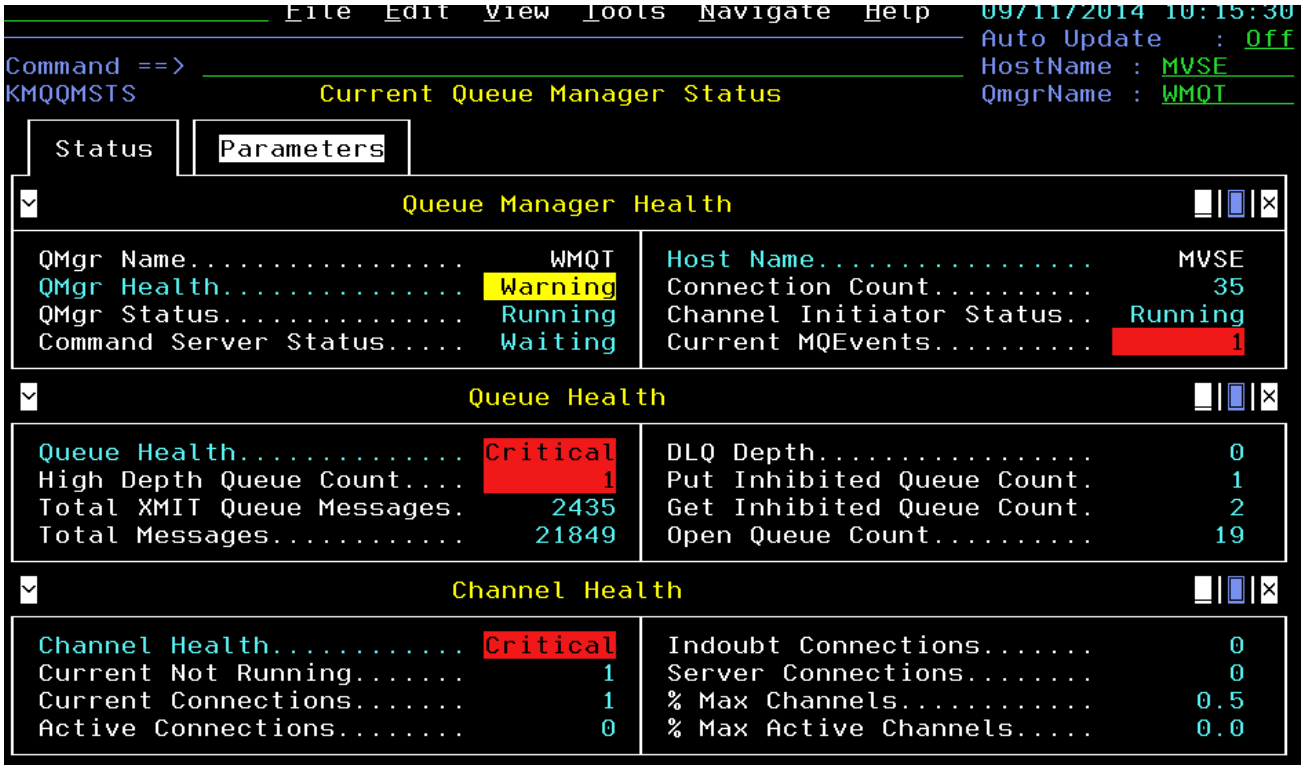
You may use OMEGAMON Messaging to monitor the MQ Queue Manager status information, both in real time, and now with V7.3 you may view Queue Manager Status history.

This exercise assumes you are on the KMQSTART panel

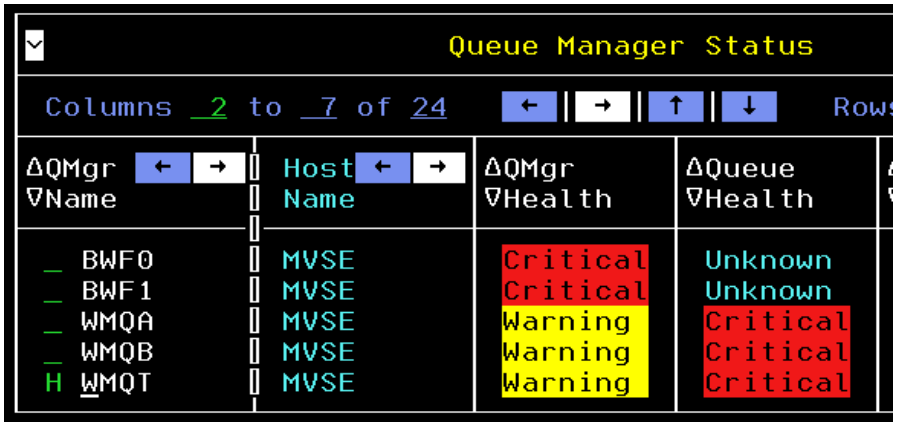
a) **Position the cursor** next to QMGR WMQT **enter S** and **Press Enter**



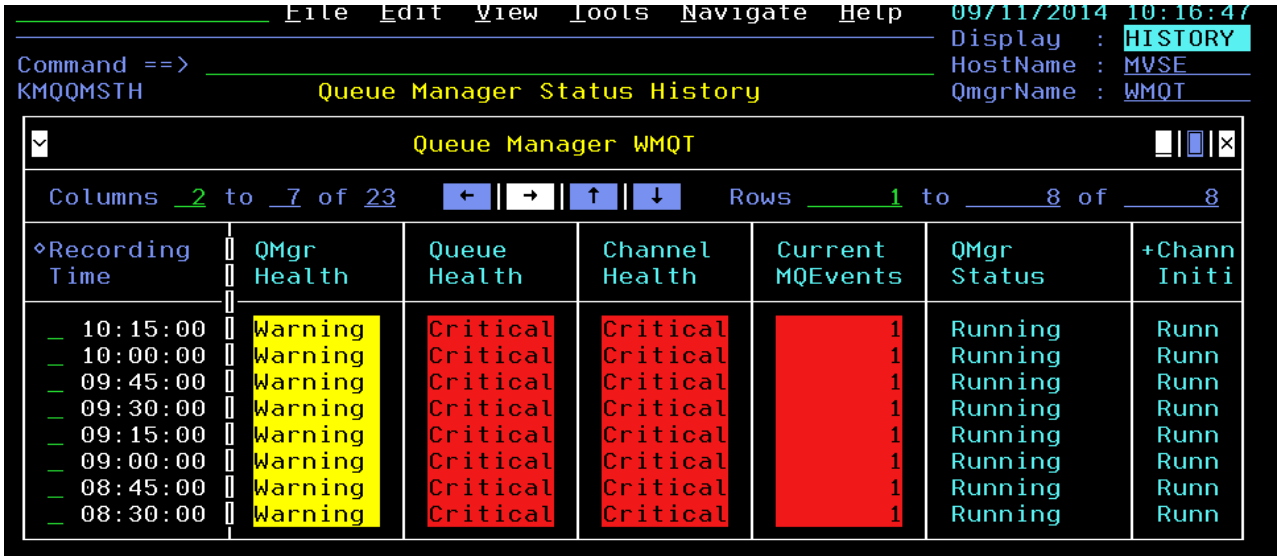
You are now looking at QMgr real time status screen. From this panel you have a variety of drill down options for more detail.



b) **Press F3** to return to KMQSTART

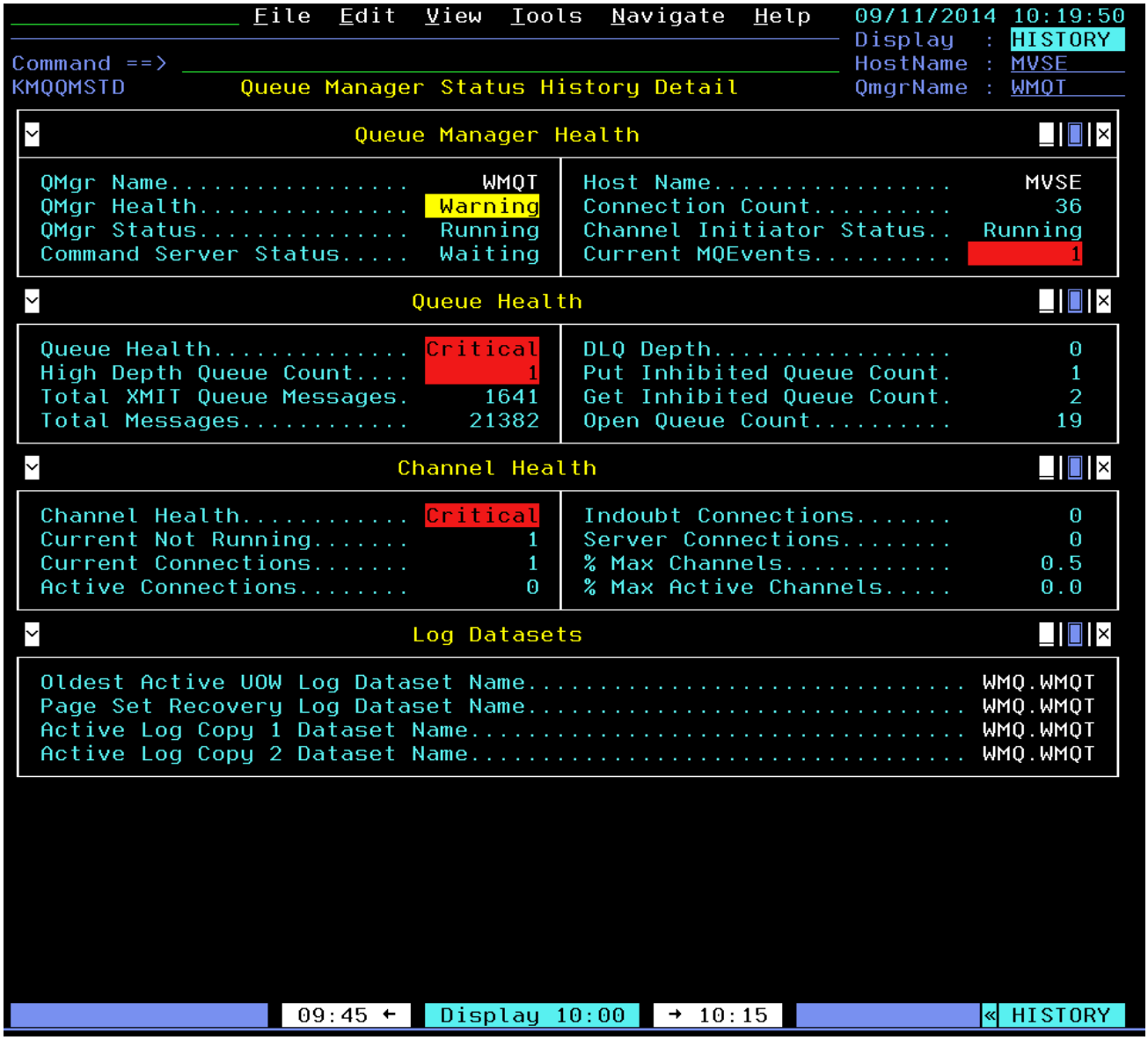


c) Now **Position the cursor** next to QMGR WMQT **enter H** and **Press Enter**



You are now looking at Queue Manager Status history. Each line represents an interval of history data for the Queue Manager. You may scroll the history data, and you may also drill down to see more detailed history.

d) **Position the cursor** next to a time interval and **Press Enter**



You are now looking at the Queue Manager Status history. Note the upper right corner indicates 'History'. Note also a tool bar at the bottom that allows you to navigate through history.

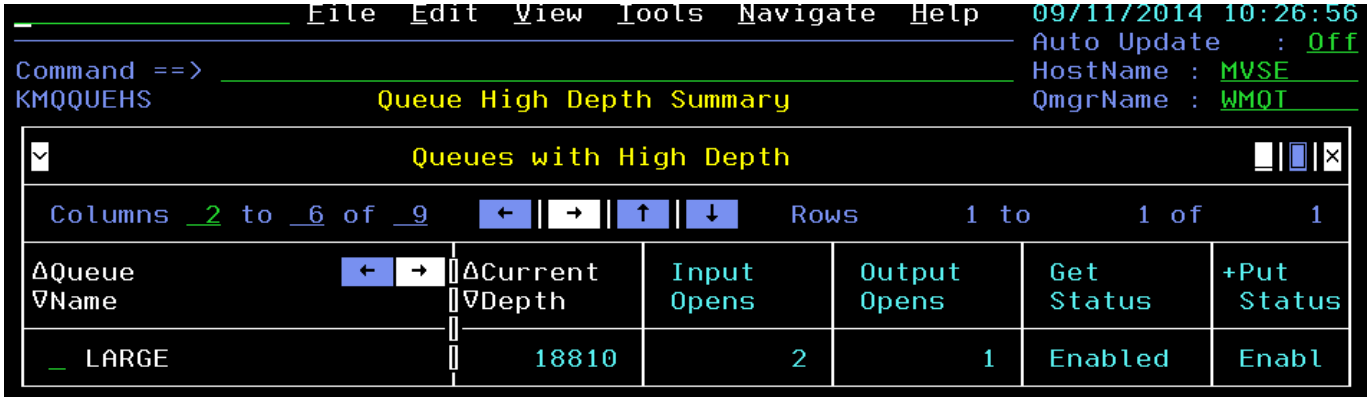
e) **Position the cursor** on the history tool bar and **Press Enter** to navigate through various time intervals

Note how as you press enter the time frame for the history on the display will change.

f) **Press F3 twice** to return to the KMQSTART panel

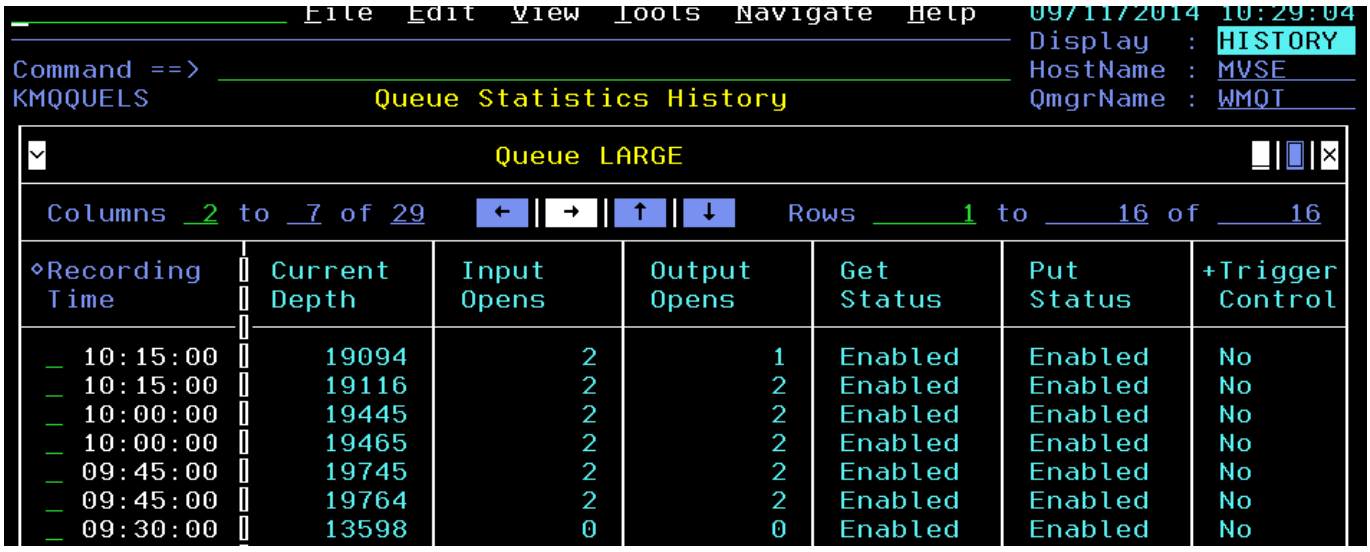
You may see history in several different levels within OMEGAMON Messaging V7.3

g) To see another example **position the cursor** next to QMGR WMQT **enter Q** and **Press Enter**



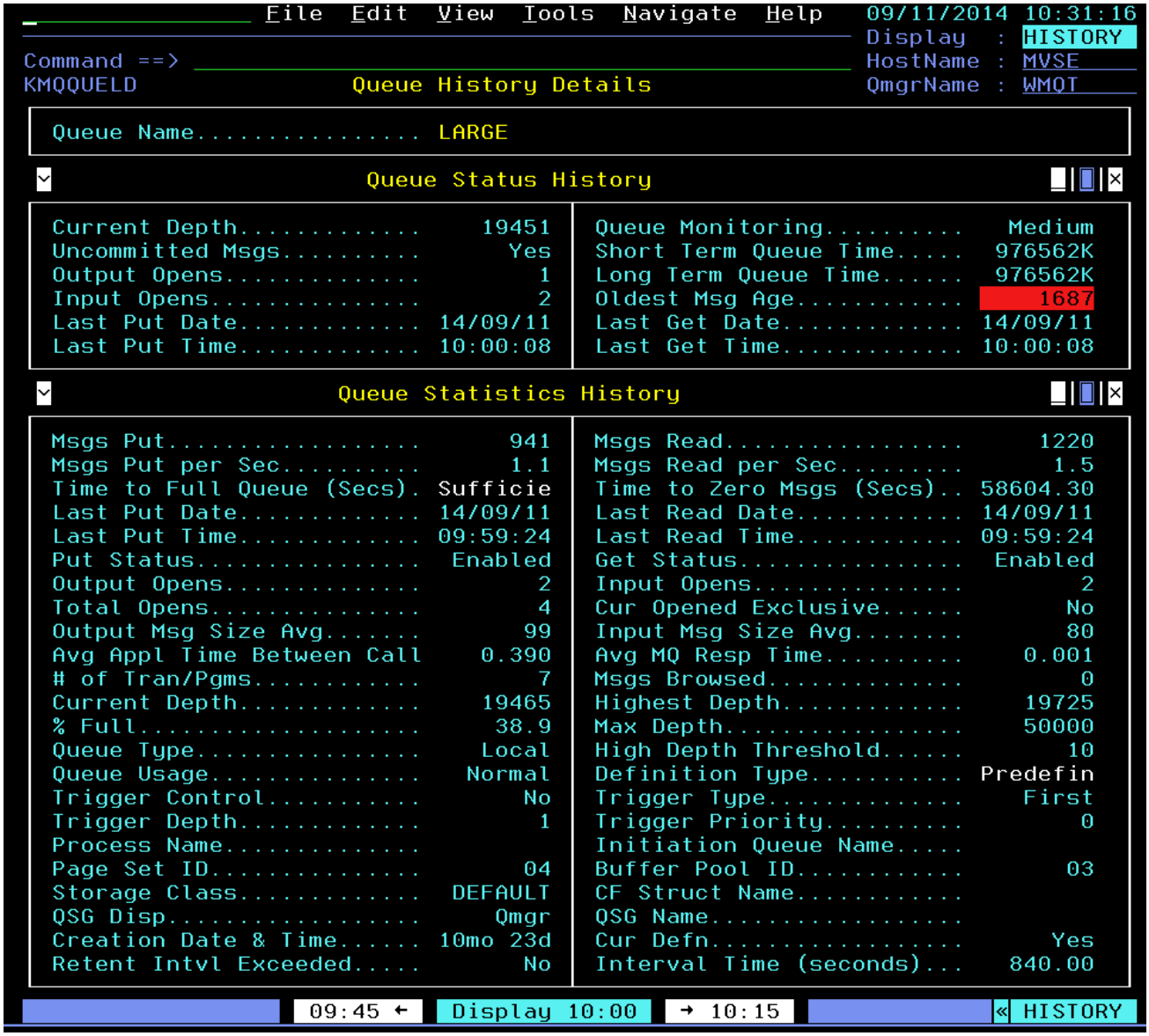
You are now looking at the Queue Depth Summary display. From here you may look at what is happening real time within MQ, but you may also see history of Queue activity.

h) **Position the cursor** next to Queue Name LARGE **enter H** and **Press Enter**



You are now looking at the history summary for the Queue LARGE. As with the Queue Manager Status example, you may drill down on a given interval and display history detail for a given time period, and then navigate through the history intervals.

i) Position the cursor next to a time interval and **Press Enter**



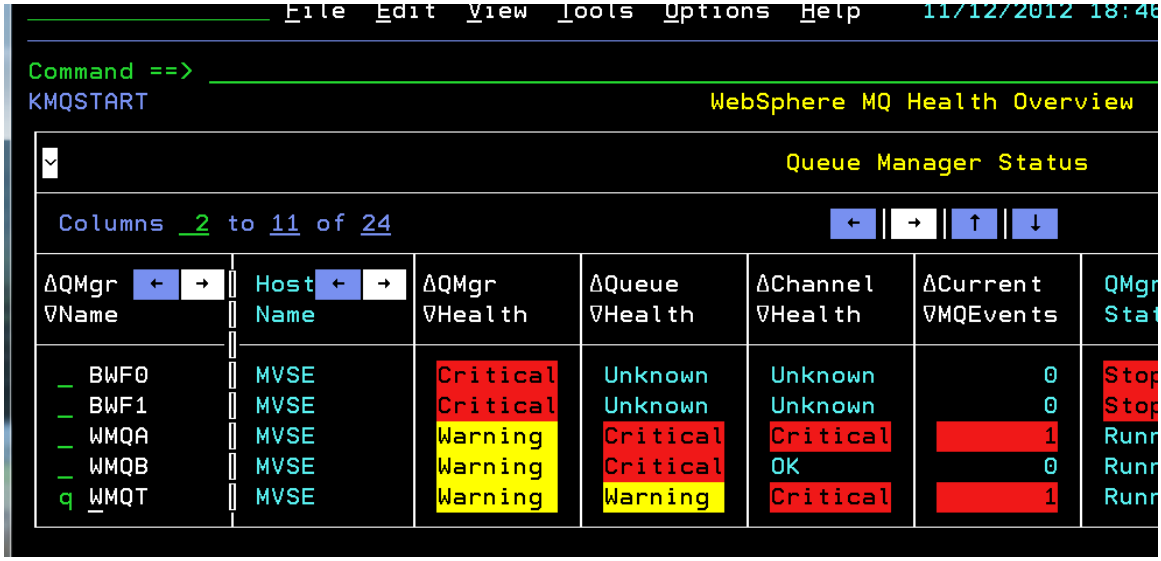
Again, you may use the history tool bar to look at other time intervals. Note variations in message counts (Msgs PUT and Msgs READ), queue % full, and other relevant counters.

j) Try using the tool bar to navigate to different time intervals.

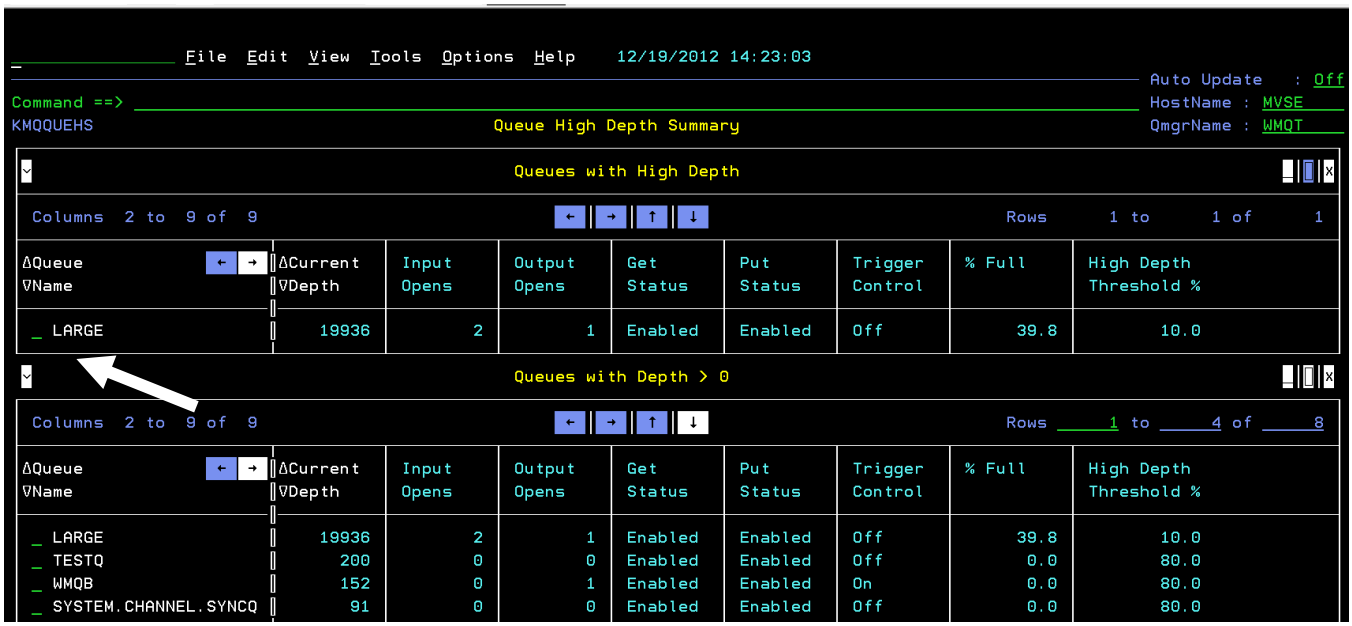
k) When done, **Press F3 three times** to return to KMQSTART

Scenario #5 Monitoring Queue Statistics

In this scenario we will look at the queue statistics related to particular applications. We will also learn how to delete and forward messages from queues.

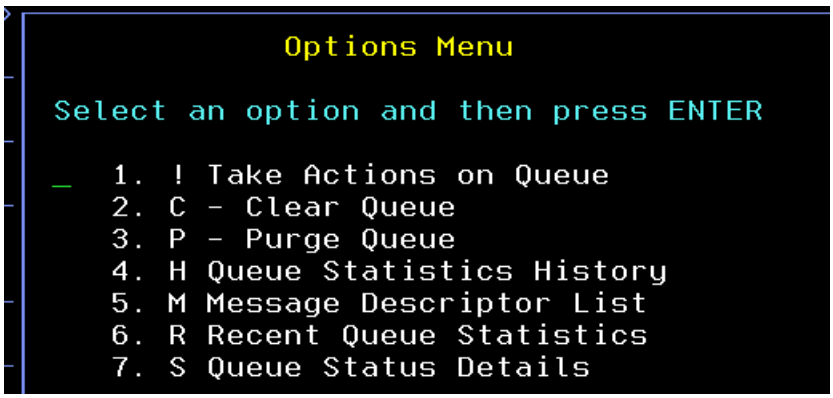


a) From the KMQSTART panel, **position the cursor** next to QMGR WMQT enter **Q** and **Press Enter.**



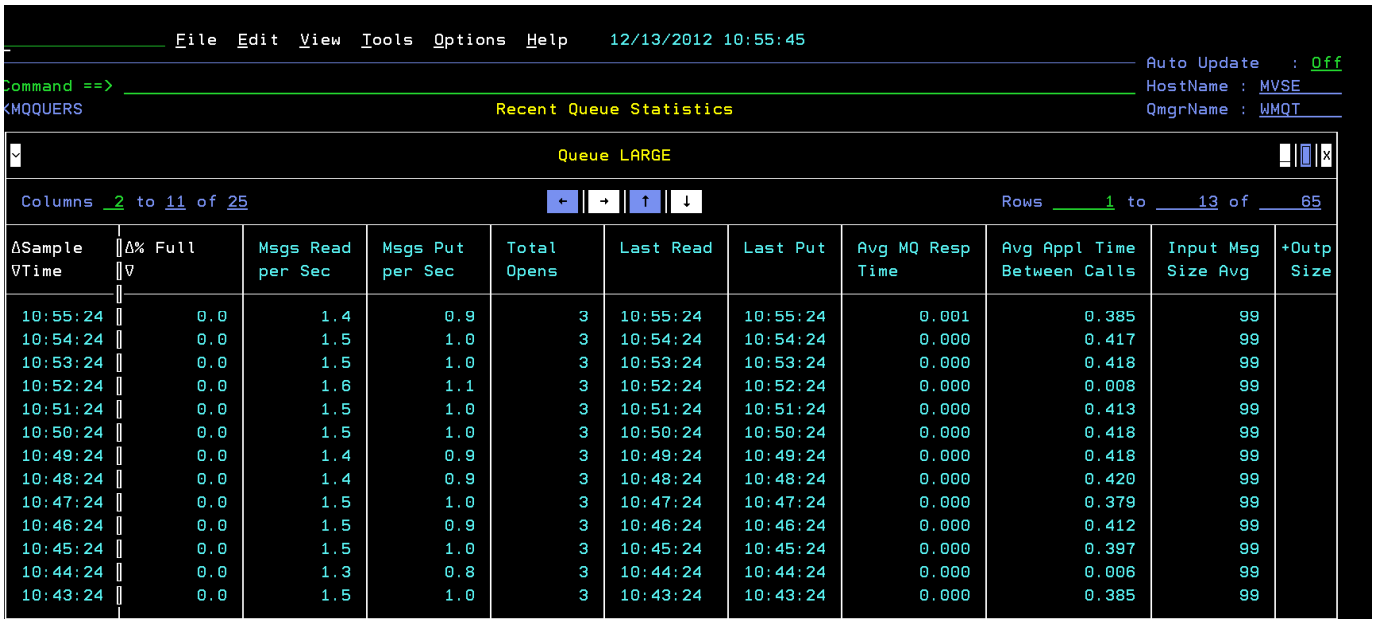
You are now looking at the Queue High Depth Summary display.

b) Place a / beside the LARGE queue and **Press Enter** to see what options are available.



Note - Please DO NOT CLEAR or PURGE any queues at this time.

c) From the popup, select option **R** for Recent Queue Statistics and **Press Enter**.



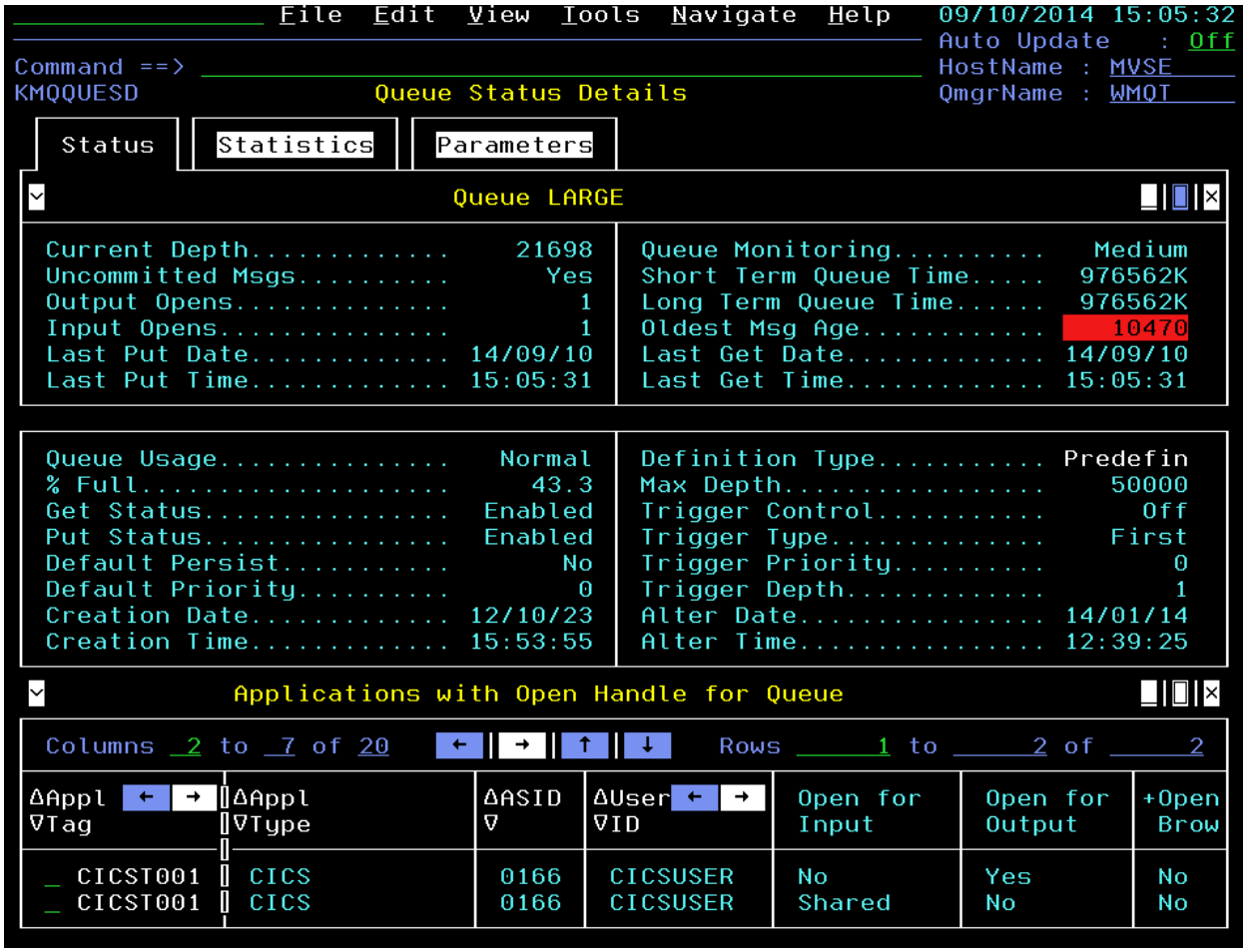
ΔSample ∇Time	Δ% Full ∇	Msgs Read per Sec	Msgs Put per Sec	Total Opens	Last Read	Last Put	Avg MQ Resp Time	Avg Appl Time Between Calls	Input Msg Size Avg	+Outp Size
10:55:24	0.0	1.4	0.9	3	10:55:24	10:55:24	0.001	0.385	99	
10:54:24	0.0	1.5	1.0	3	10:54:24	10:54:24	0.000	0.417	99	
10:53:24	0.0	1.5	1.0	3	10:53:24	10:53:24	0.000	0.418	99	
10:52:24	0.0	1.6	1.1	3	10:52:24	10:52:24	0.000	0.008	99	
10:51:24	0.0	1.5	1.0	3	10:51:24	10:51:24	0.000	0.413	99	
10:50:24	0.0	1.5	1.0	3	10:50:24	10:50:24	0.000	0.418	99	
10:49:24	0.0	1.4	0.9	3	10:49:24	10:49:24	0.000	0.418	99	
10:48:24	0.0	1.4	0.9	3	10:48:24	10:48:24	0.000	0.420	99	
10:47:24	0.0	1.5	1.0	3	10:47:24	10:47:24	0.000	0.379	99	
10:46:24	0.0	1.5	0.9	3	10:46:24	10:46:24	0.000	0.412	99	
10:45:24	0.0	1.5	1.0	3	10:45:24	10:45:24	0.000	0.397	99	
10:44:24	0.0	1.3	0.8	3	10:44:24	10:44:24	0.000	0.006	99	
10:43:24	0.0	1.5	1.0	3	10:43:24	10:43:24	0.000	0.385	99	

Here you see all the vital information related to queue health. Metrics include messages read per second, messages put per second, total opens, and more.

Use the PF keys or the white arrows to scroll around within this display.

d) Press **PF3** to return to panel KMQQUEHS.

e) Place an **S** beside the LARGE queue and **Press Enter**.

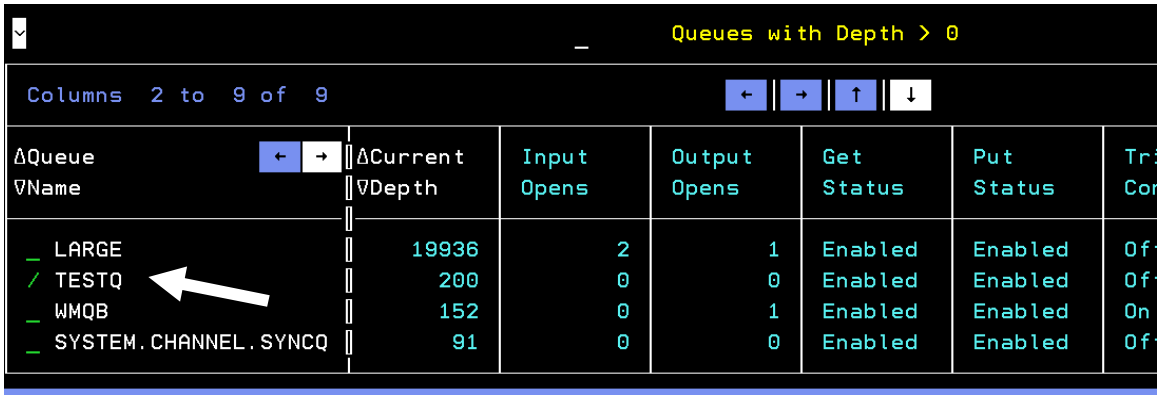


Here you see the Queue Status Details panel (KMQQUESD) for the LARGE queue.

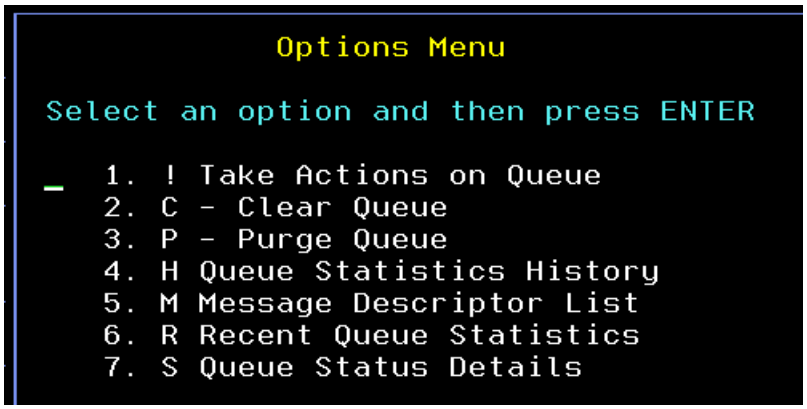
Here you see the Open Handles for the LARGE Queue.

Notice that the **CICST001** application has two open handles. Why do you think this is?

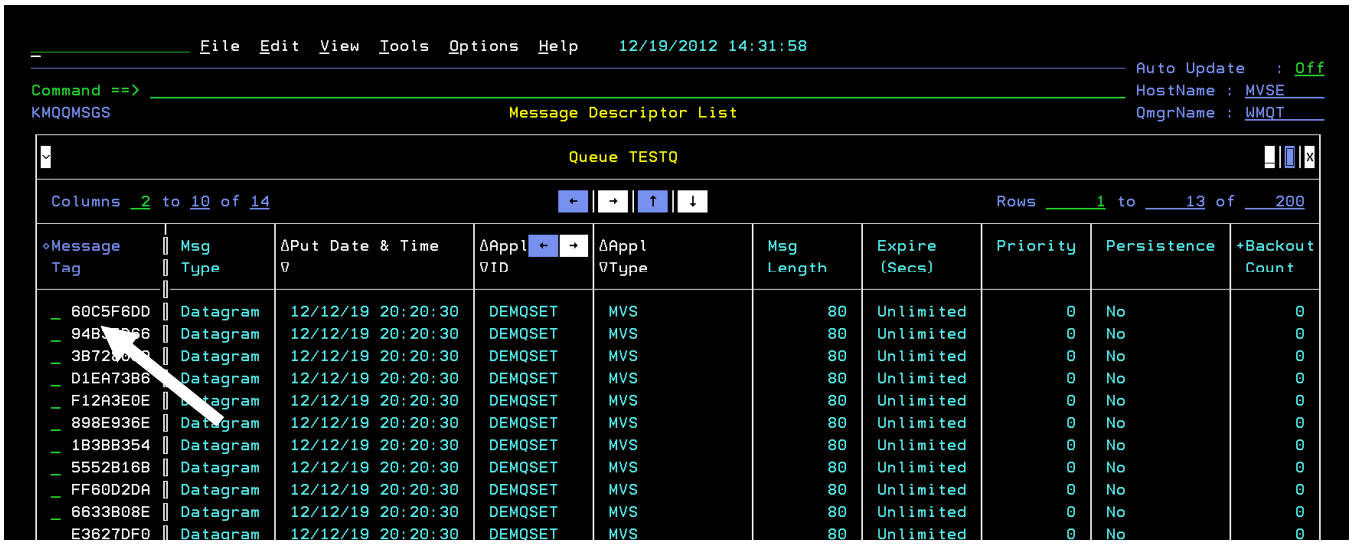
f) Press F3 to return to KMQQUEHS.



g) Position the cursor next to TESTQ enter / and **Press Enter**.

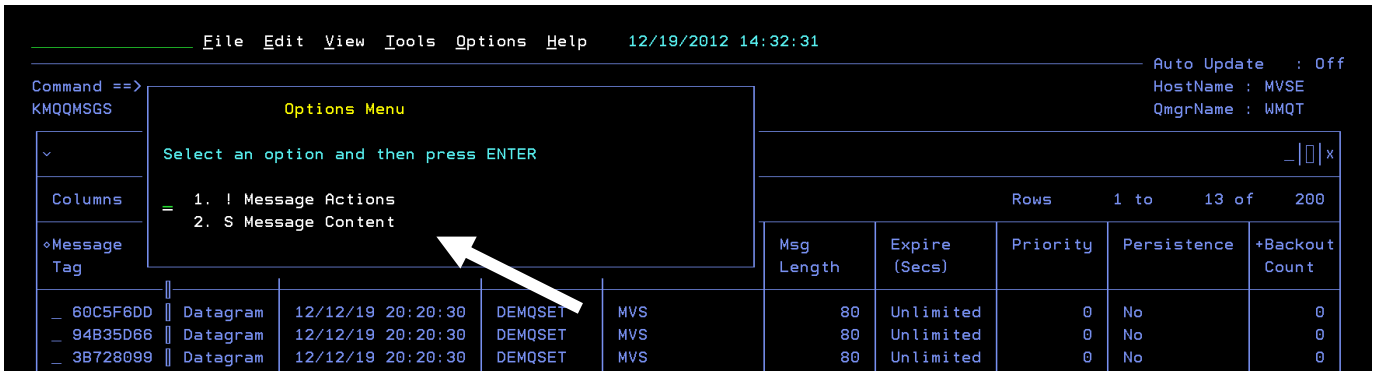


h) From the popup select Message Descriptor list **option 5** and **Press Enter**



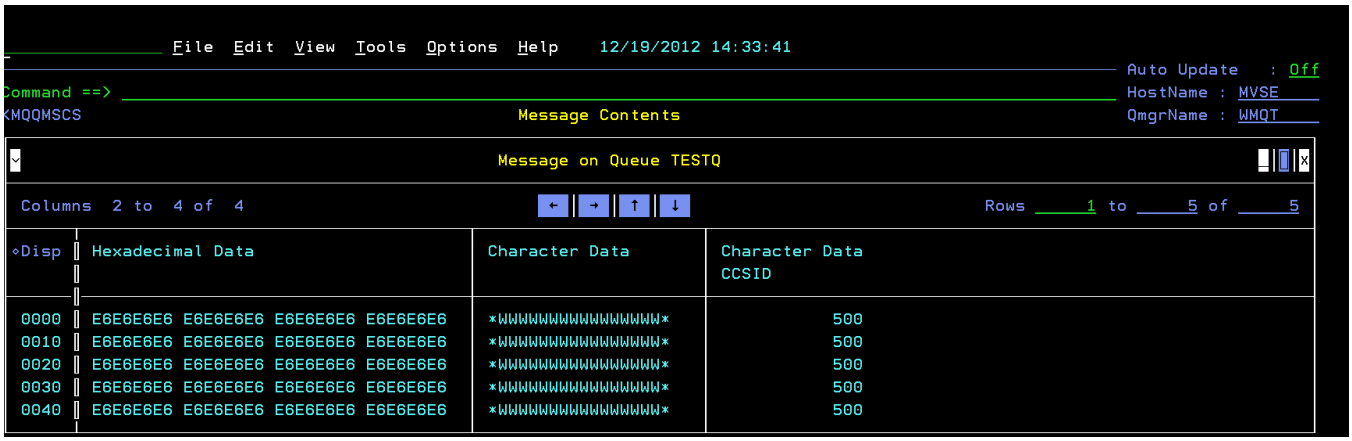
You are now looking at messages on the queue.

i) Select any message using a / and **Press Enter**.



From the popup you can look at the message content or take action on that message.

j) In this example, look at its content by selecting **option 2** and **Press Enter**.

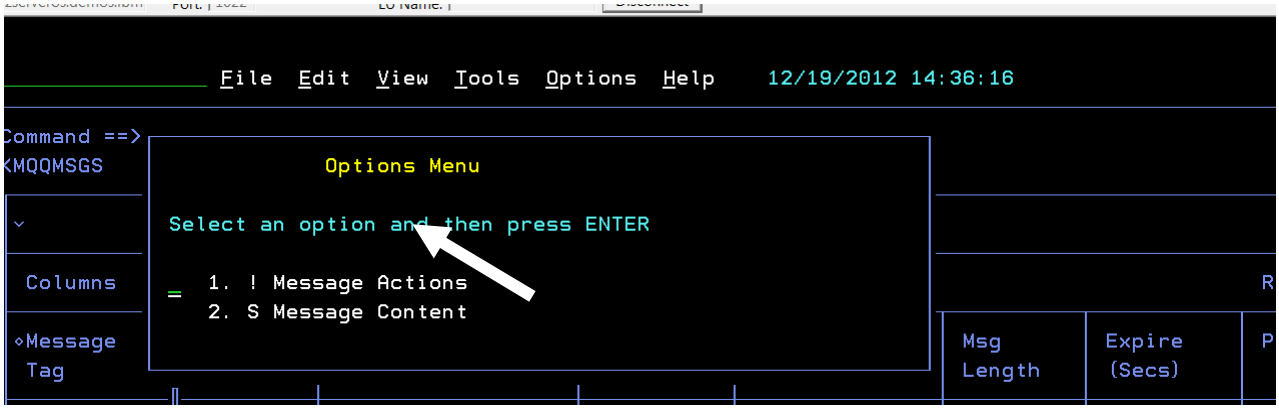


You are now looking at the message contents.

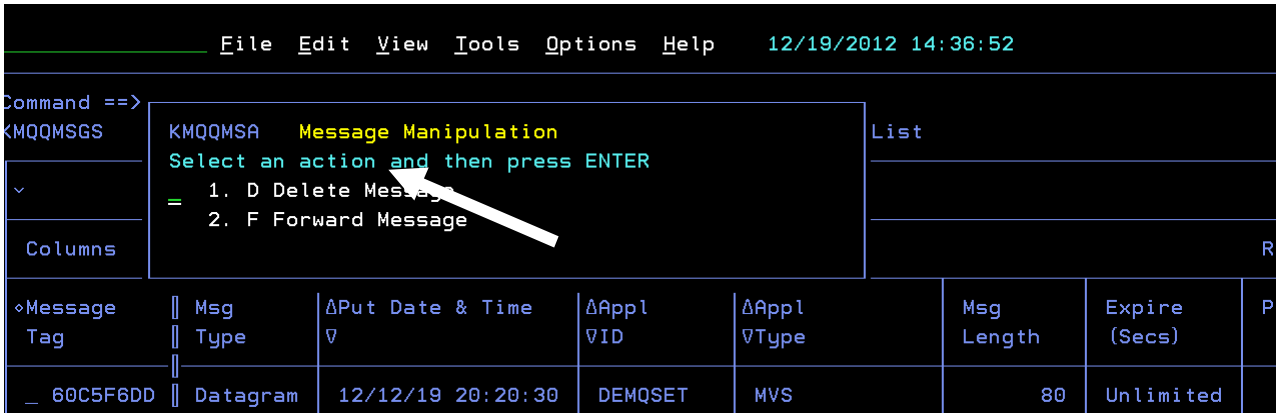
k) To see actions on a message, **Press PF3** to return to the list of messages (KMQQMSGS).

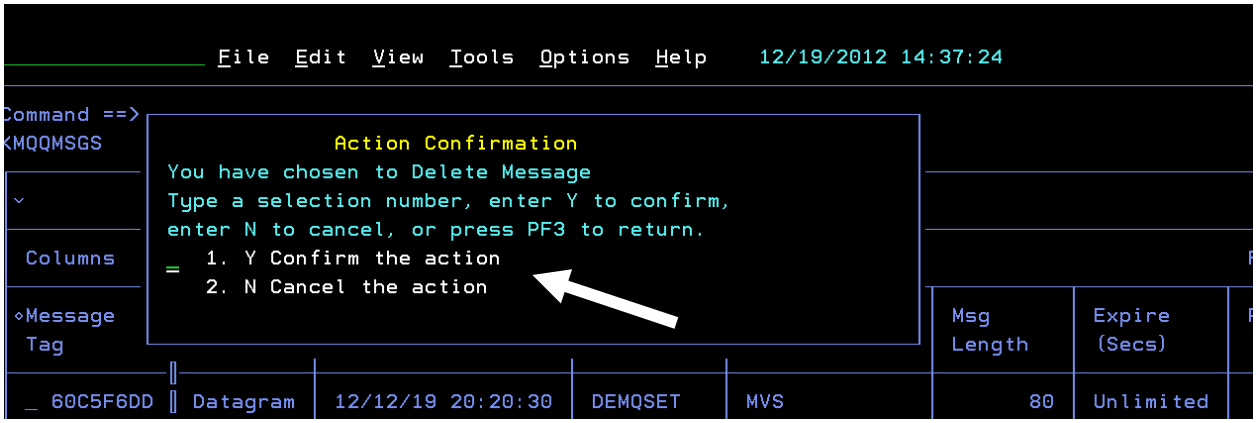
l) Select any message using a / and **Press Enter**

m) Now select **option 1** and **Press Enter**

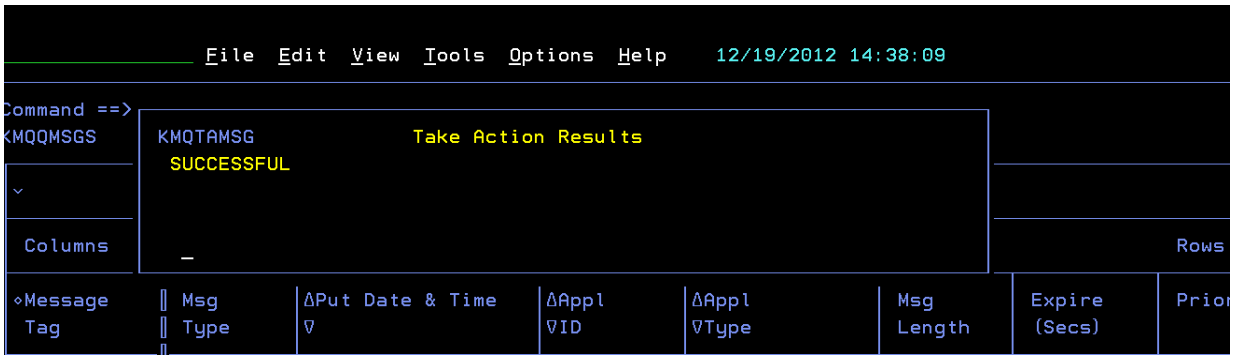


n) Now select **option 1** to see how to delete a message and **Press Enter**





o) Choose option 1 and **Press Enter** to confirm your delete request.

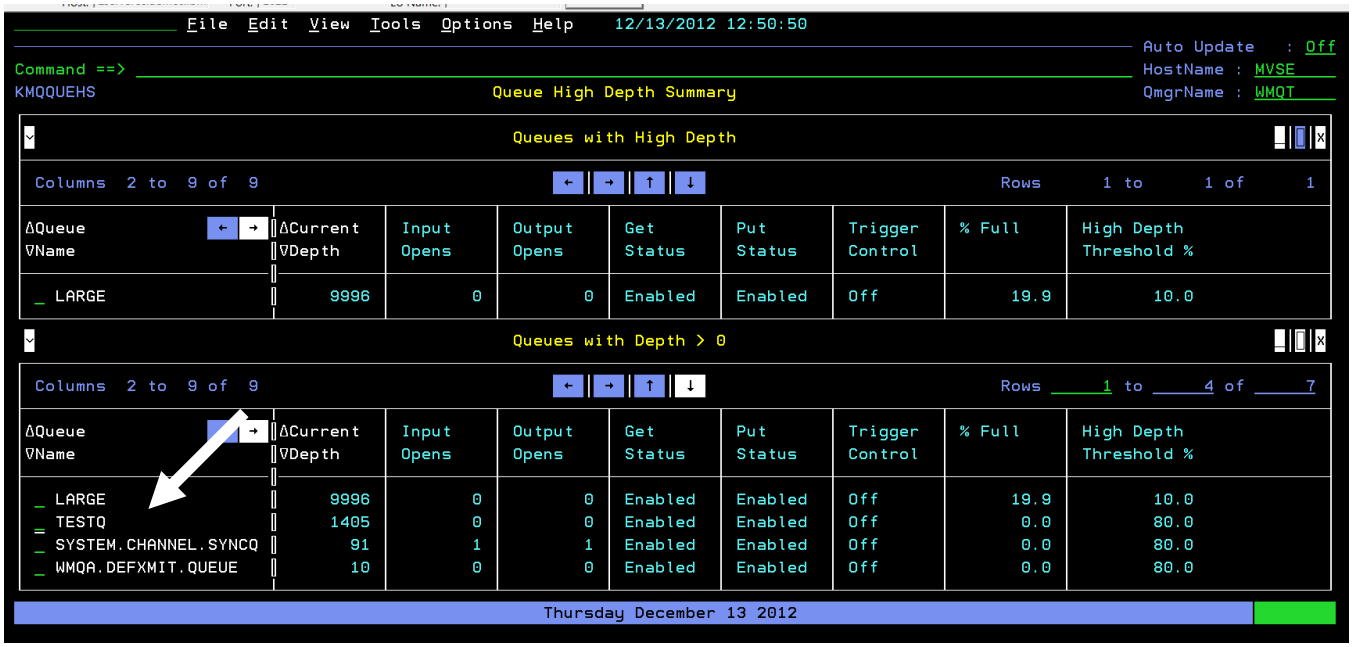


Note the action was successful.

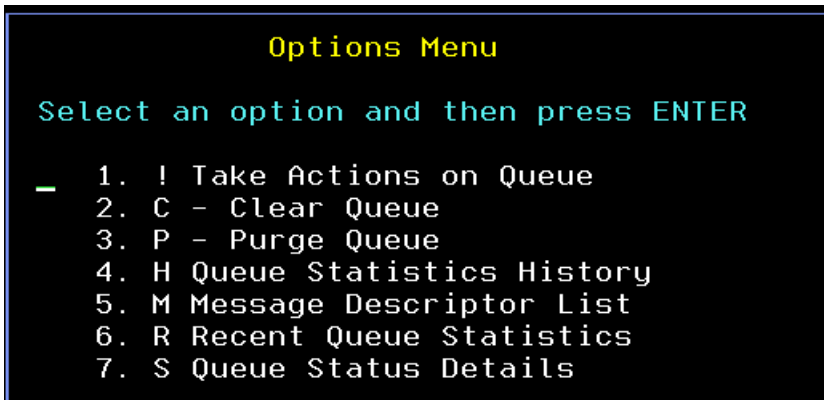
Now let's take a look at forwarding a message from one queue to another. For this exercise we will forward a message from the TESTQ to the LARGE queue.

To return to the Queue High Depth Summary screen use the fast path command

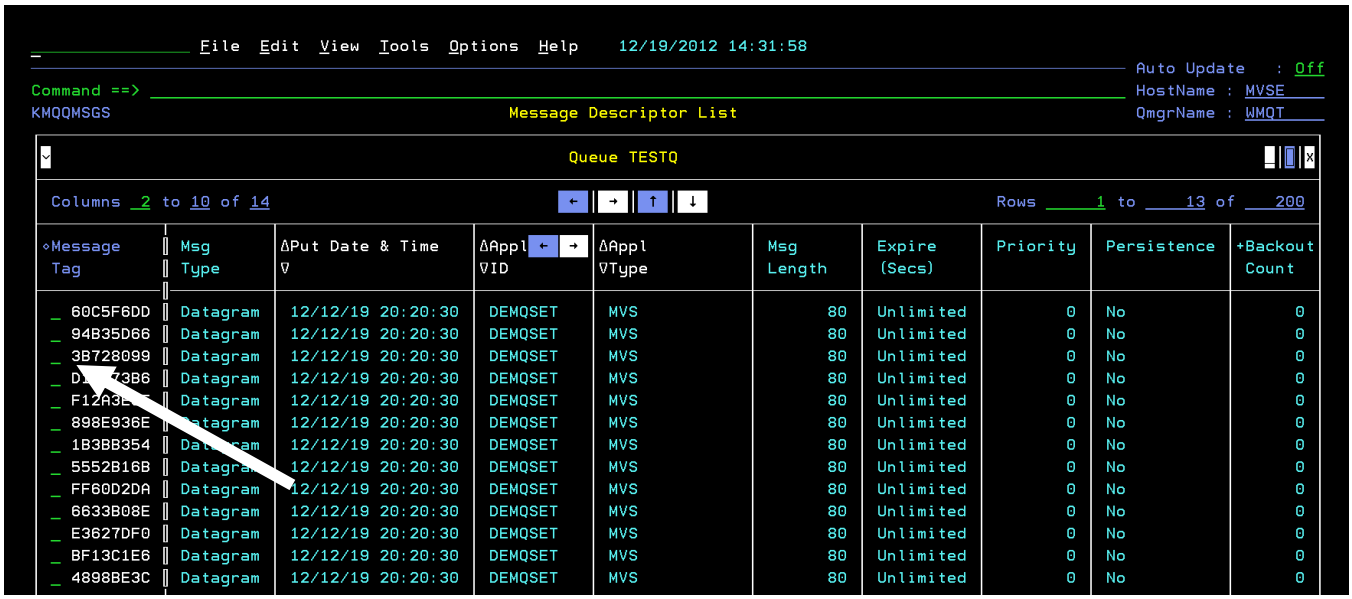
p) =KMQQUEHS and **Press Enter**. You should now be on the KMQQUEHS panel.



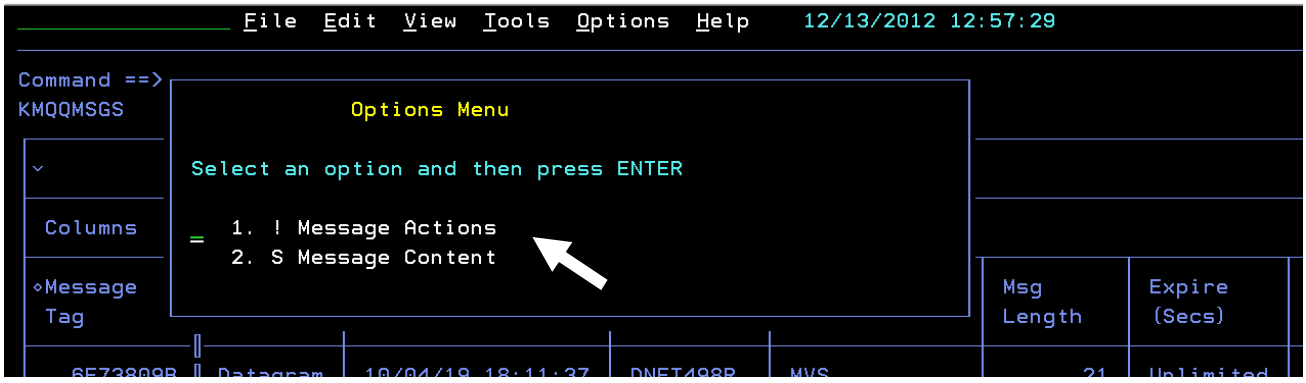
q) Place a / next to TESTQ and **Press Enter**



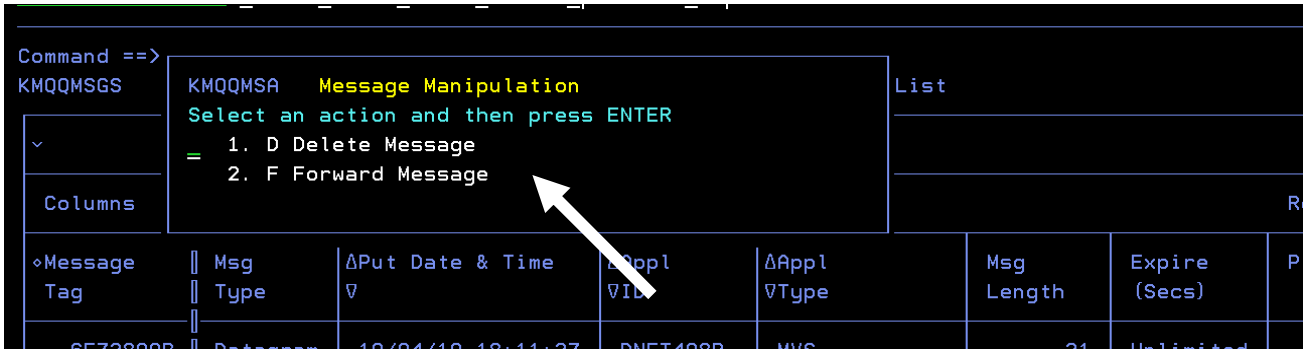
r) From the popup select **option 5** Message Descriptor list and **Press Enter**.



s) Select any message by putting a / beside it and **Press Enter**.

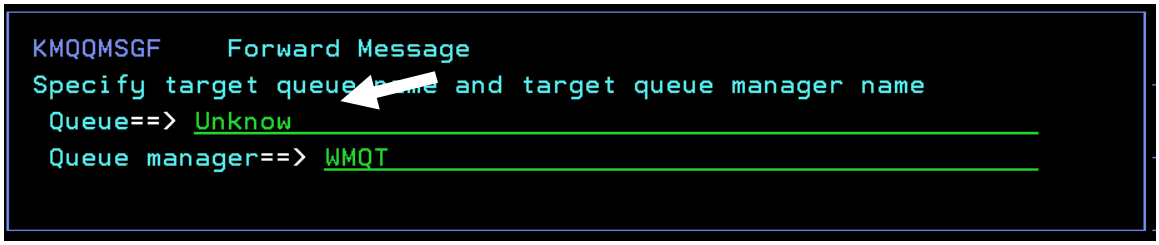


t) From the popup select **Option 1** for Message Actions and **Press Enter**.



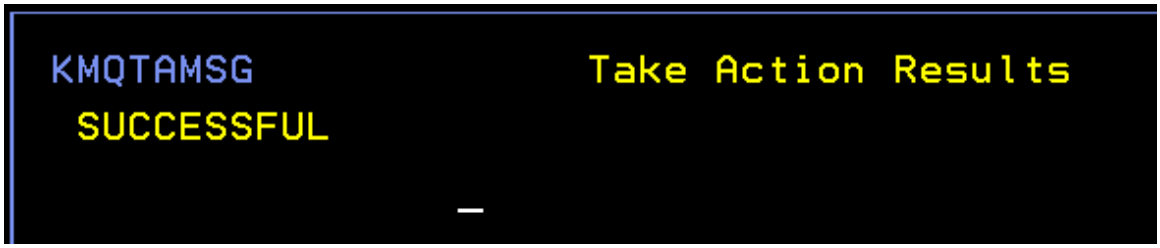
u) Select **Option 2** for forward message, and **Press Enter**.

You get the following pop-up window



v) Type **LARGE** in the queue name and hit enter.

Note that you could send the message to queue on a different queue manager by typing over the queue manager name. For this exercise we will stay within the same queue manager, WMQT.

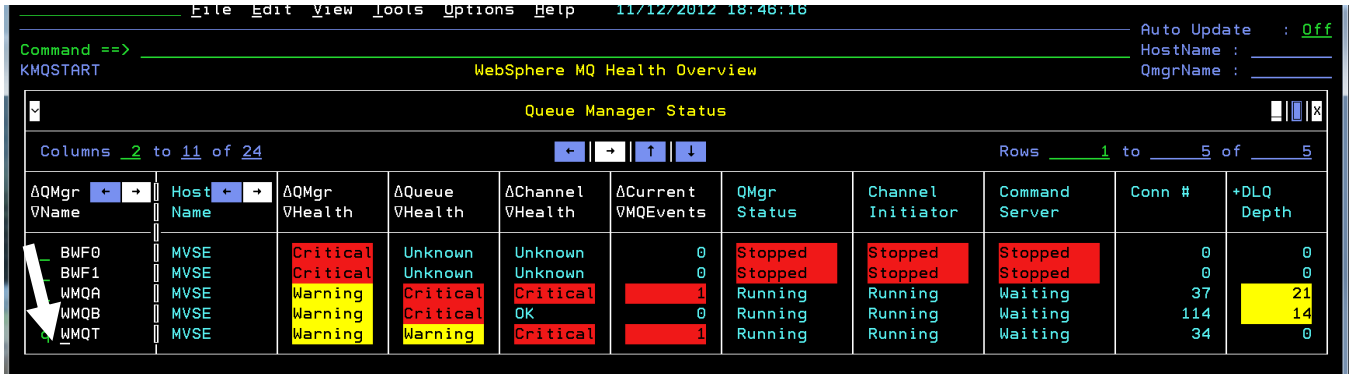


This is the end of the Queue Statistics exercise, but if you have time please explore some more.

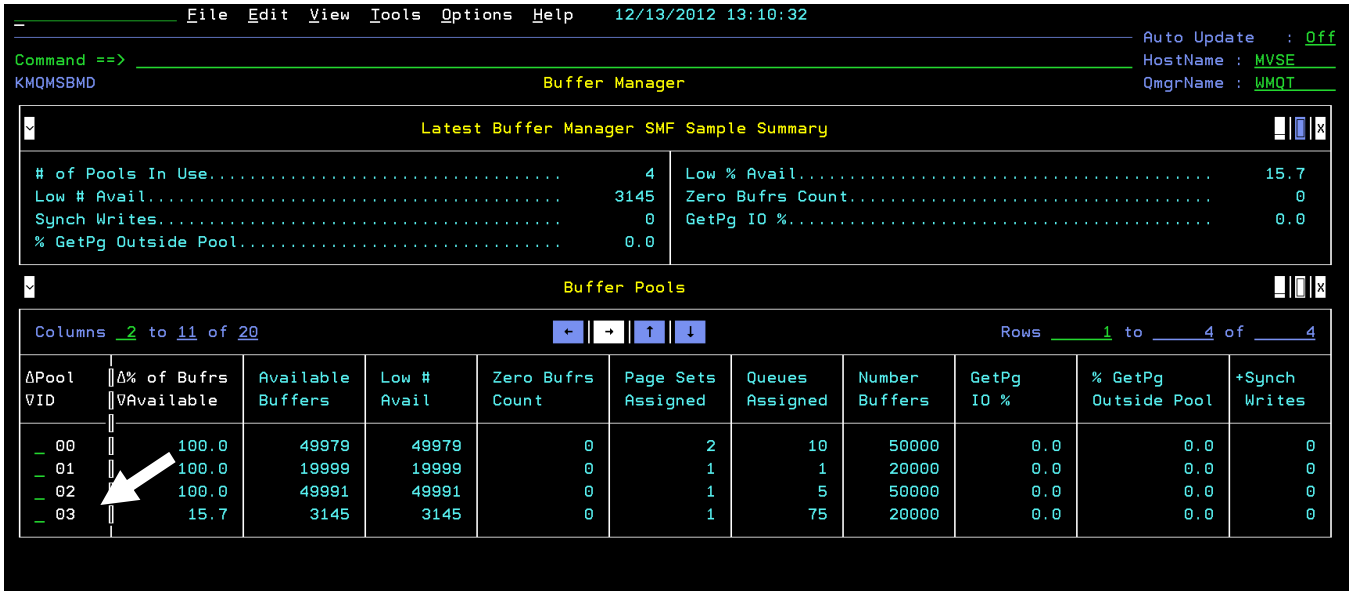
w) When you are done fast path back to the Queue Manager Health screen using **=KMQSTART**

Scenario #6 Monitoring MQ Buffer Pools and Page Sets

In this scenario we will look at MQ Buffer Pools and Page Sets utilization and performance statistics.

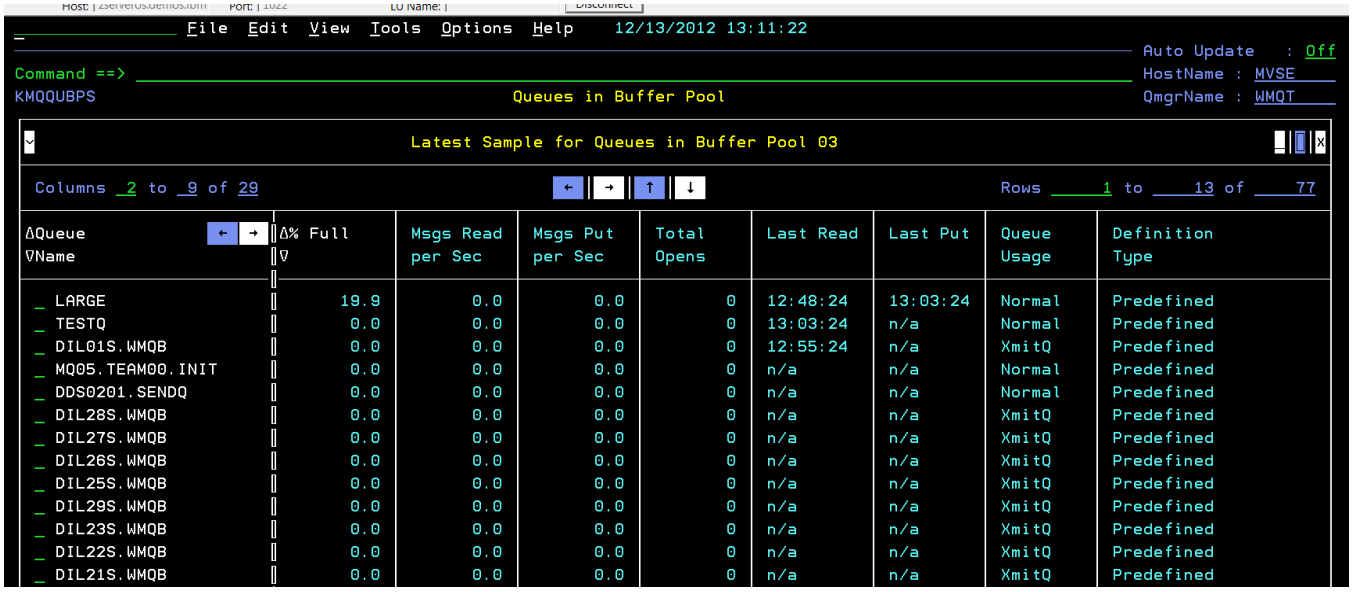


a) From the KMQSTART panel, place a **B** beside WQMT and **Press Enter**.



You are now looking at the Buffer Manager display for WMQT.

b) Put an **S** beside Pool ID 03 and **Press Enter** to display the Queues in that Buffer pool.

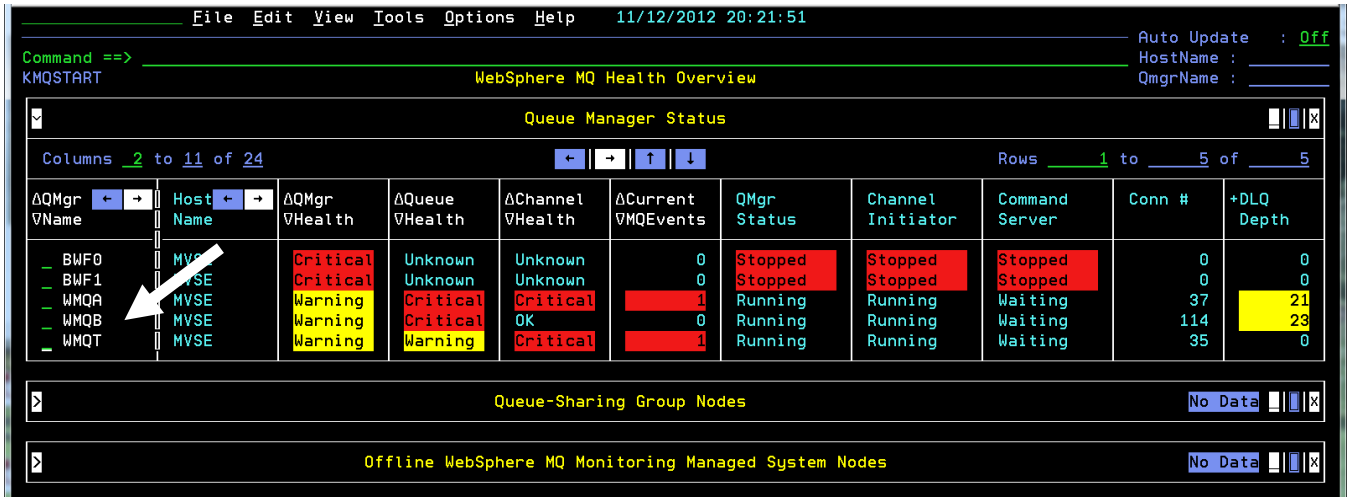


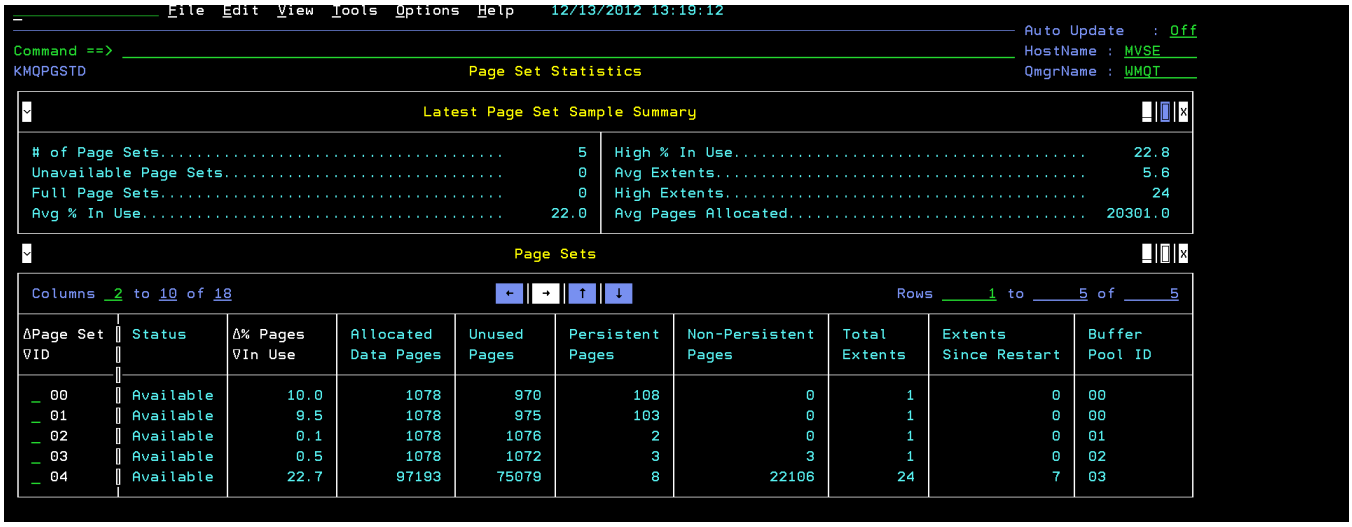
You are now looking at a panel that displays queues in the buffer pool. You will see that the LARGE queue and the TESTQ (as well as many other queues) are in this buffer pool. Also, observe the **%** full, and the Last Put and Last Read times.

c) **Press PF3 twice** to go back to the Queue Manager Status screen KMQSTART

Now let's look at the Queue Manager Page Set utilization.

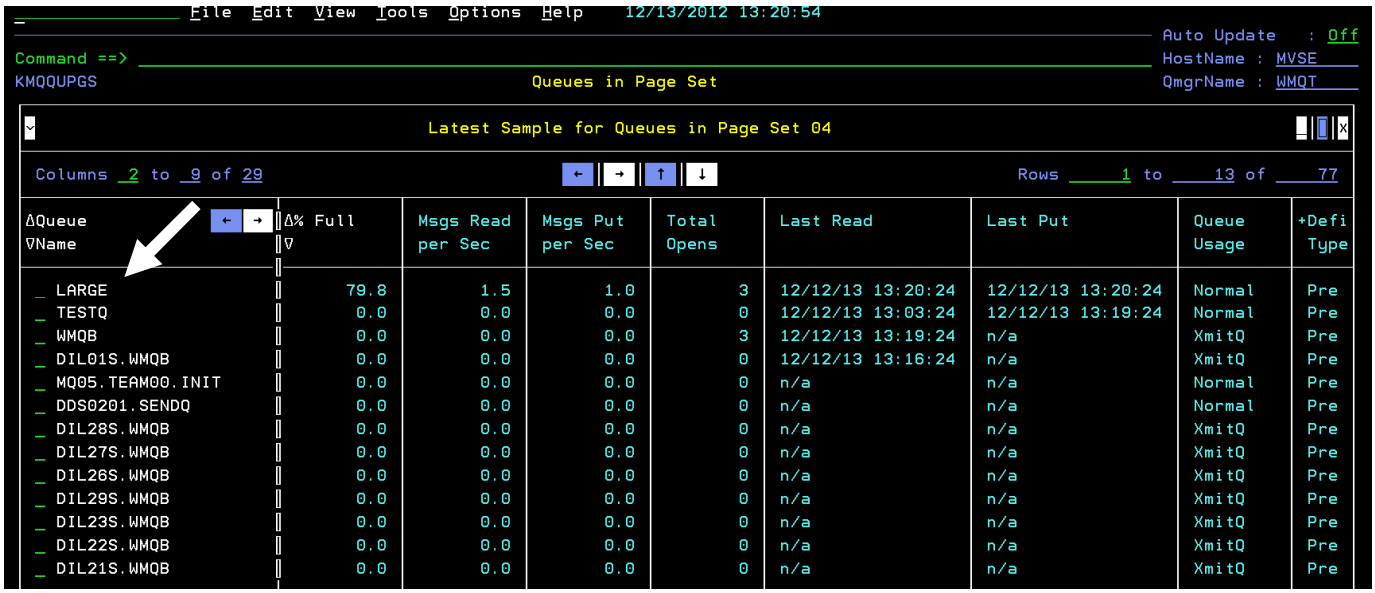
d) Place a **P** beside a Queue Manager WMQT and **Press Enter** to look at Page Set Statistics





You are now looking at page set statistics.

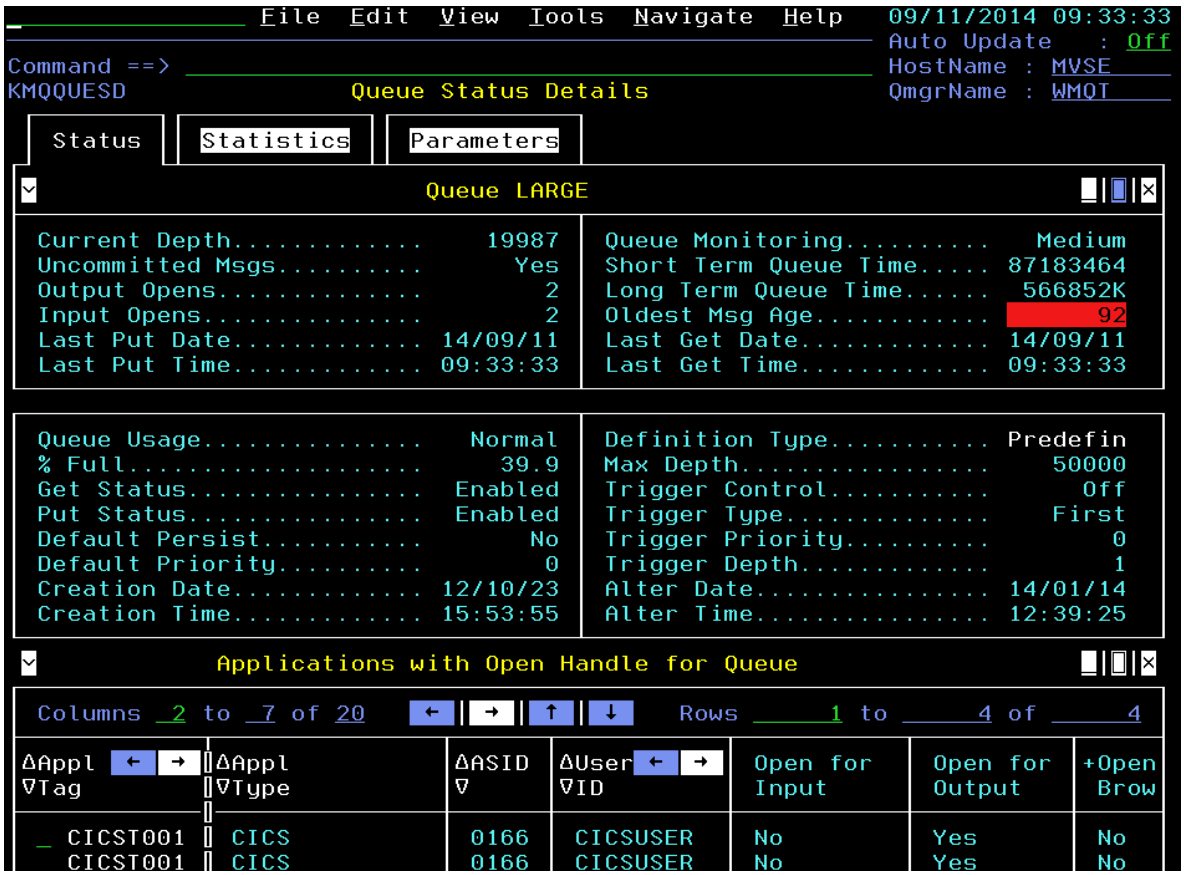
e) To drill down for more information, place an **S** beside Page Set 04 and **Press Enter** to display the Queues in the Page Set.



From the KMQQUPGS panel observe the **%** full, and the last Put and last Read times, and the message PUT and GET rates.

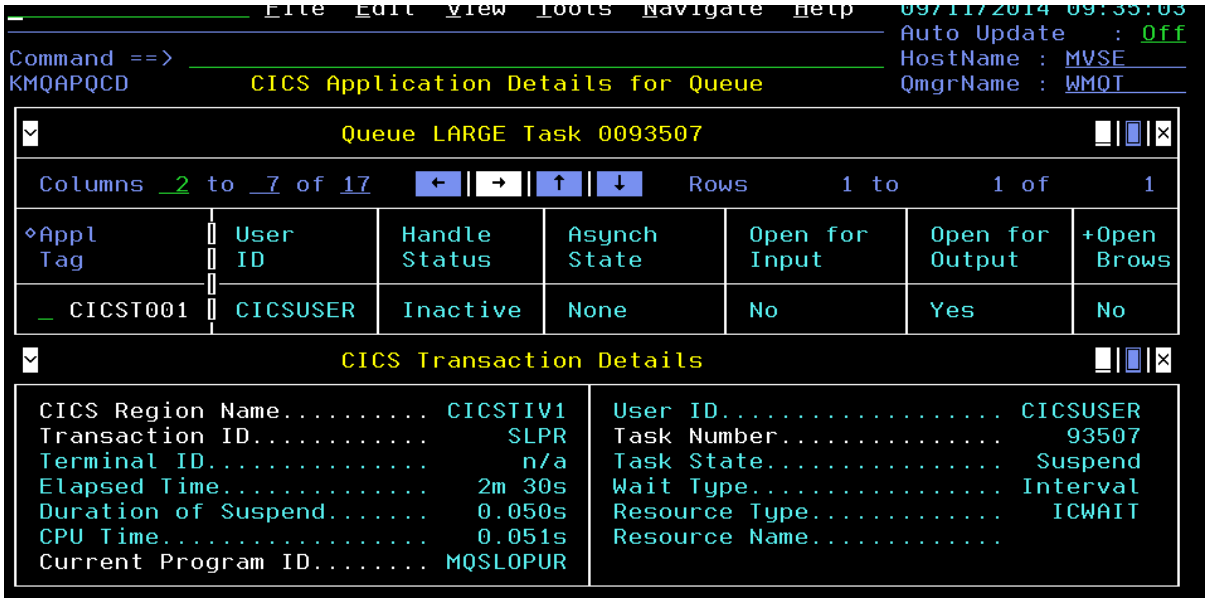
f) **Position the cursor** by the LARGE queue enter an **S** and **Press Enter**.

You should now be on the Queue Statistics panel, KMQQUESD.



g) To look at the application details; **put an S beside CICST001 and Press Enter.**

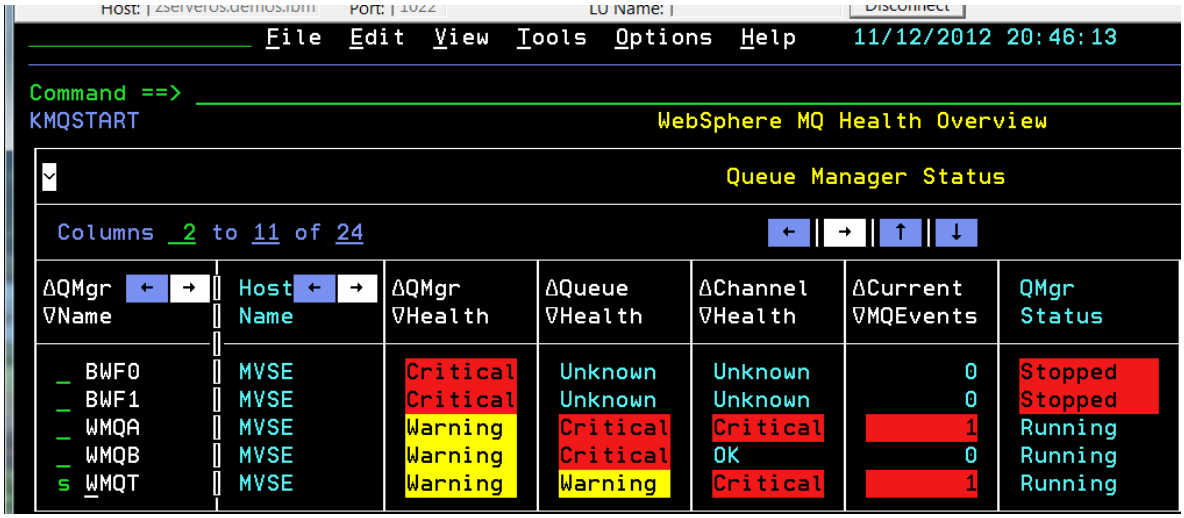
You are now looking at the Application Details panel.



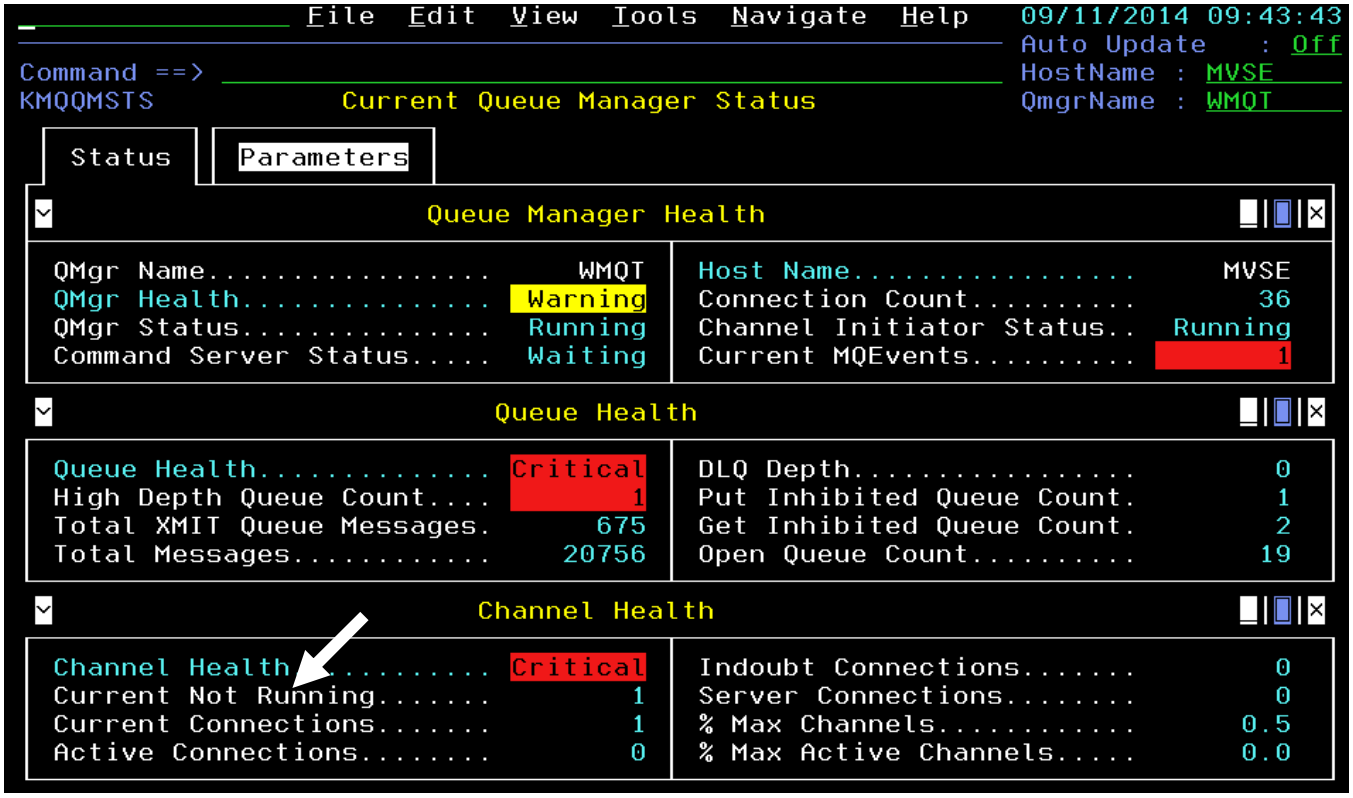
h) Once finished, return to the Queue Manager Status main screen by entering the fast path command **Press F3 multiple times** to return to the KMQSTART panel.

Scenario #7 Monitoring MQ Channel Performance

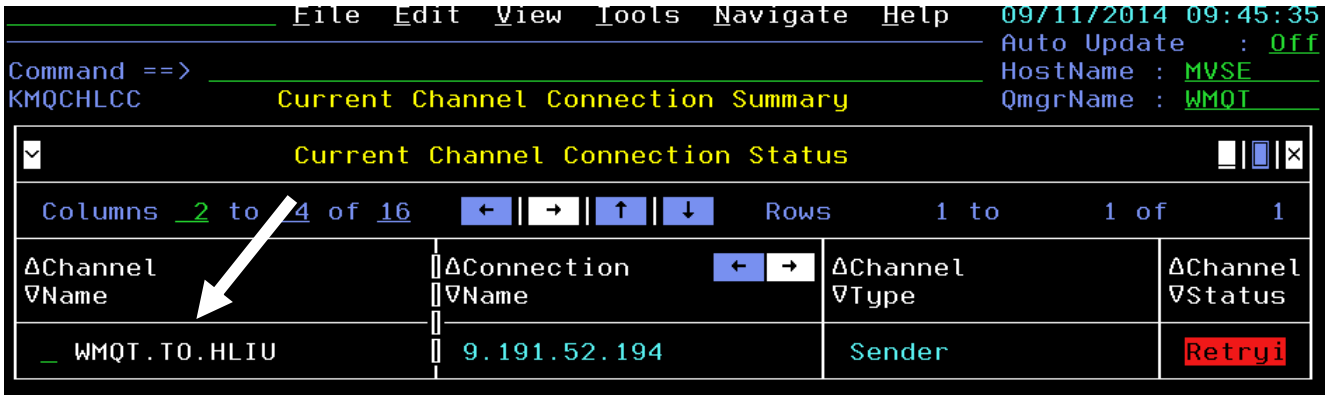
In this scenario we will look at channel activity and connections between queue managers.



a) From the KMQSTART panel place an **S** beside WQMT and **Press Enter**

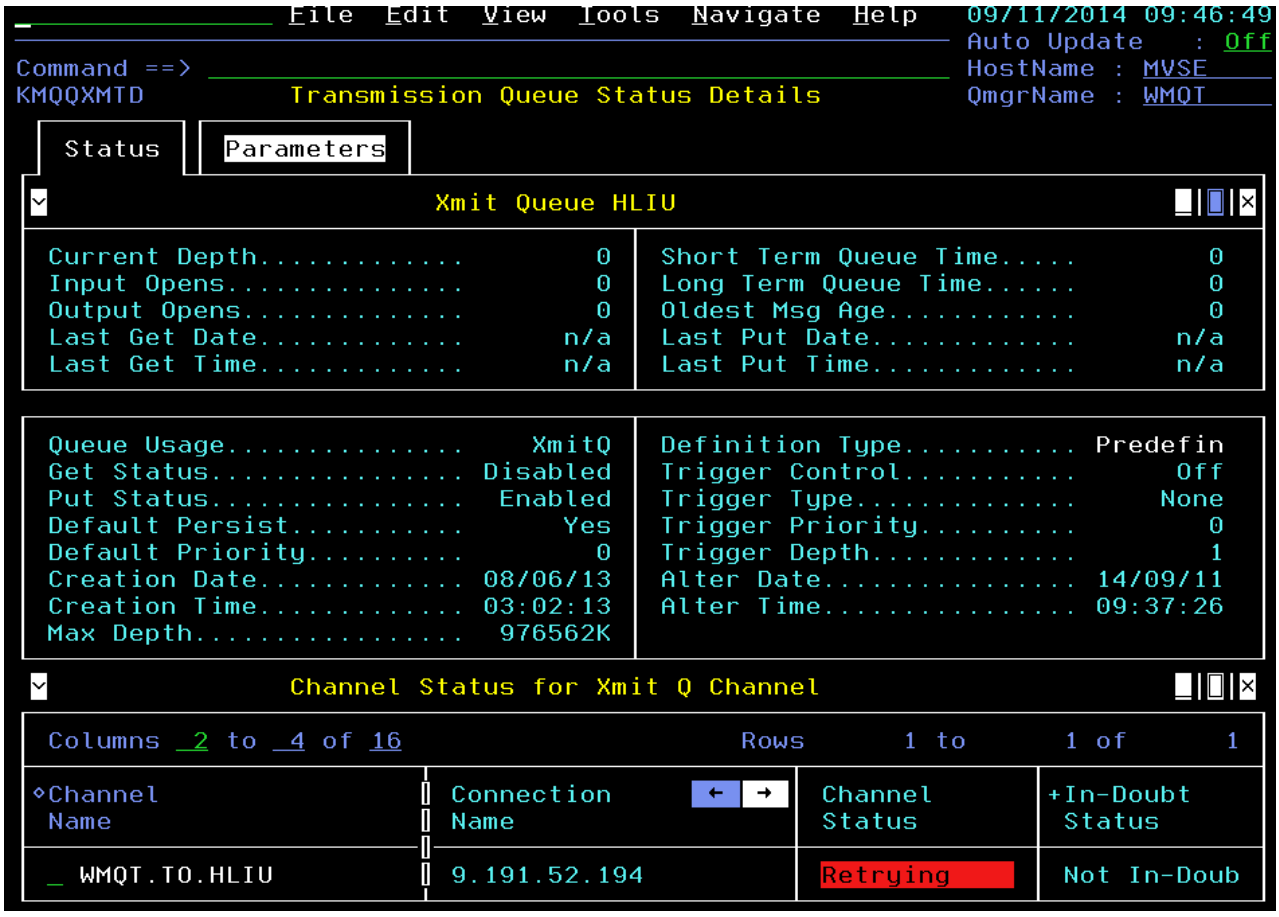


b) On this screen **Cursor Select** Current Connections (bottom left) and **Press Enter**.



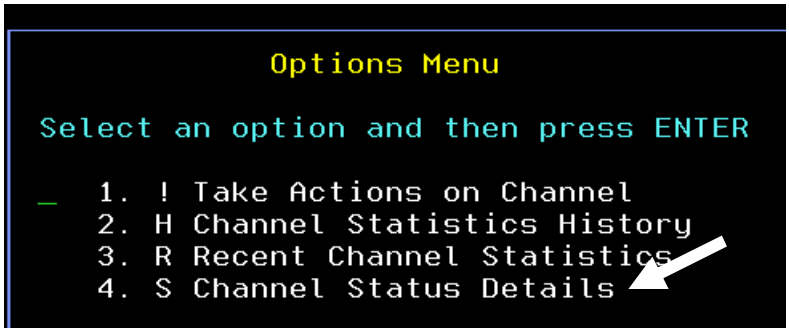
Here we see the Current Channel Connection Status display.

c) **Place an X** beside the Channel Name and **Press Enter** to display the Transmission Queue Status Details

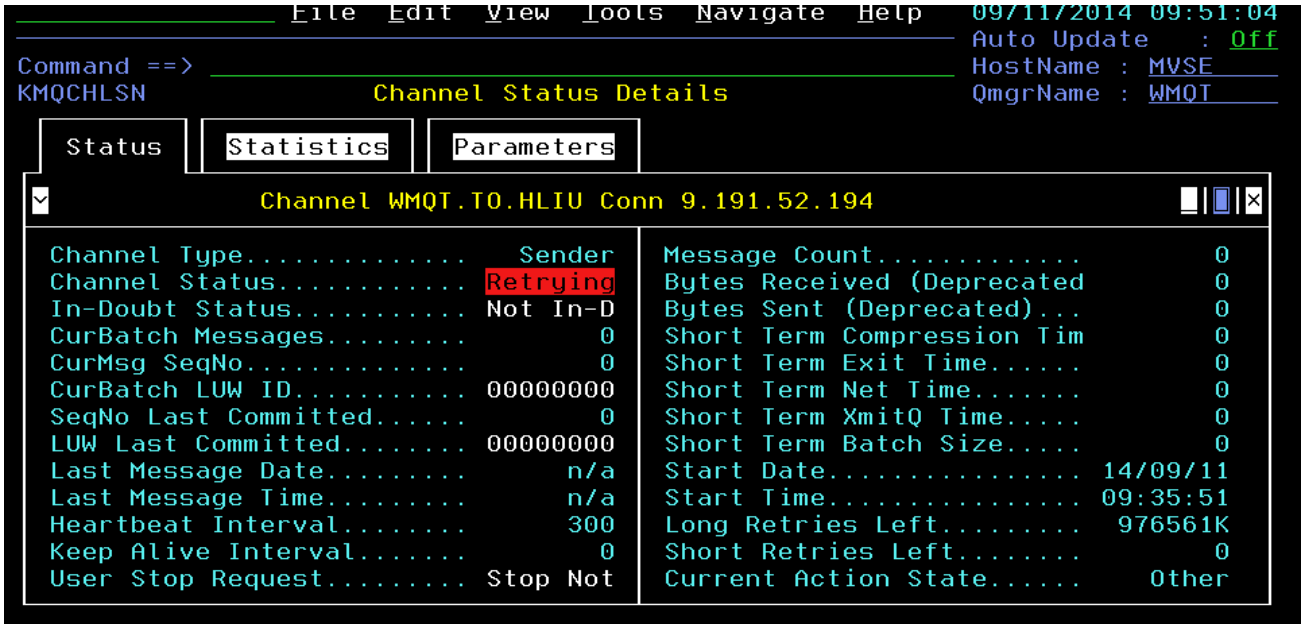


Note information such as the channel status.

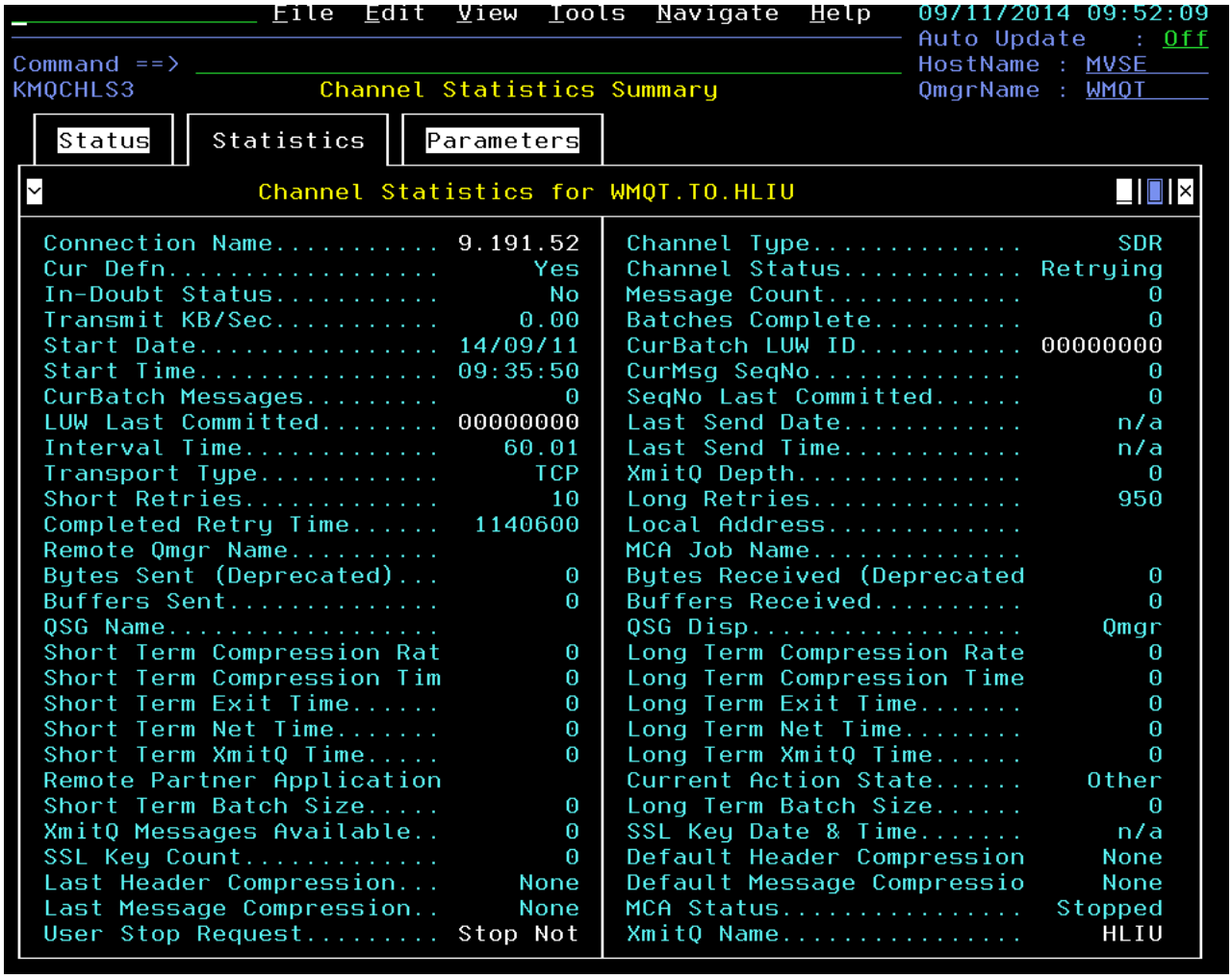
d) Now put a / beside the channel and **select option 4** from the popup and **Press Enter** to display the Channel Status Details



You are now looking at the Channel Status detail display.



e) **Press the Statistics tab** to see detailed statistics for the channel.



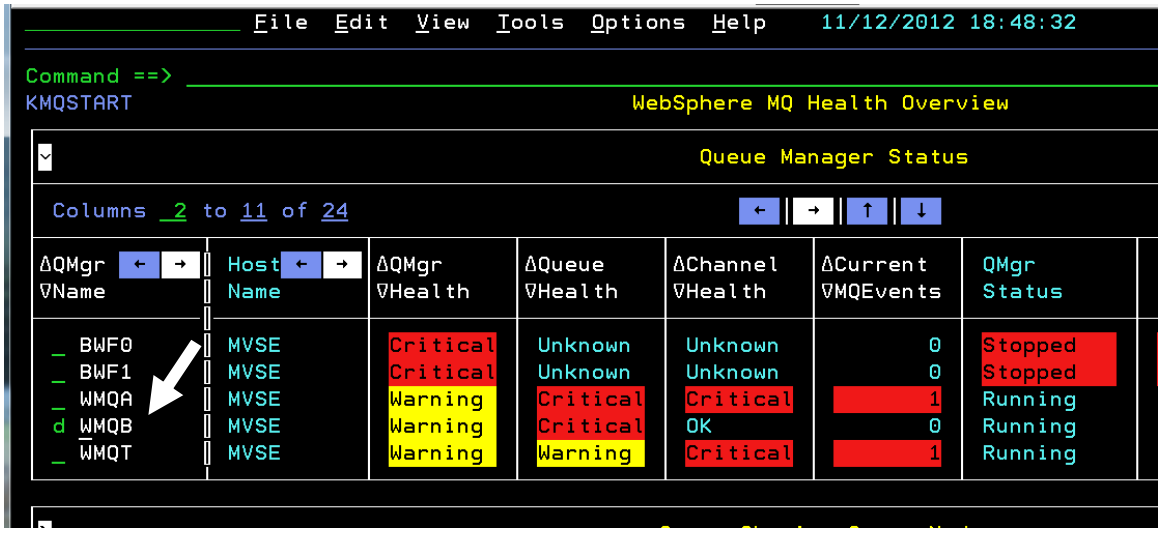
You are now looking at the Channel statistics. Note if the channel is operational or not, the status of the channel, transmission and retry counts.

f) **Perform =KMQSTART** to return to the KMQSTART panel for the next exercise.

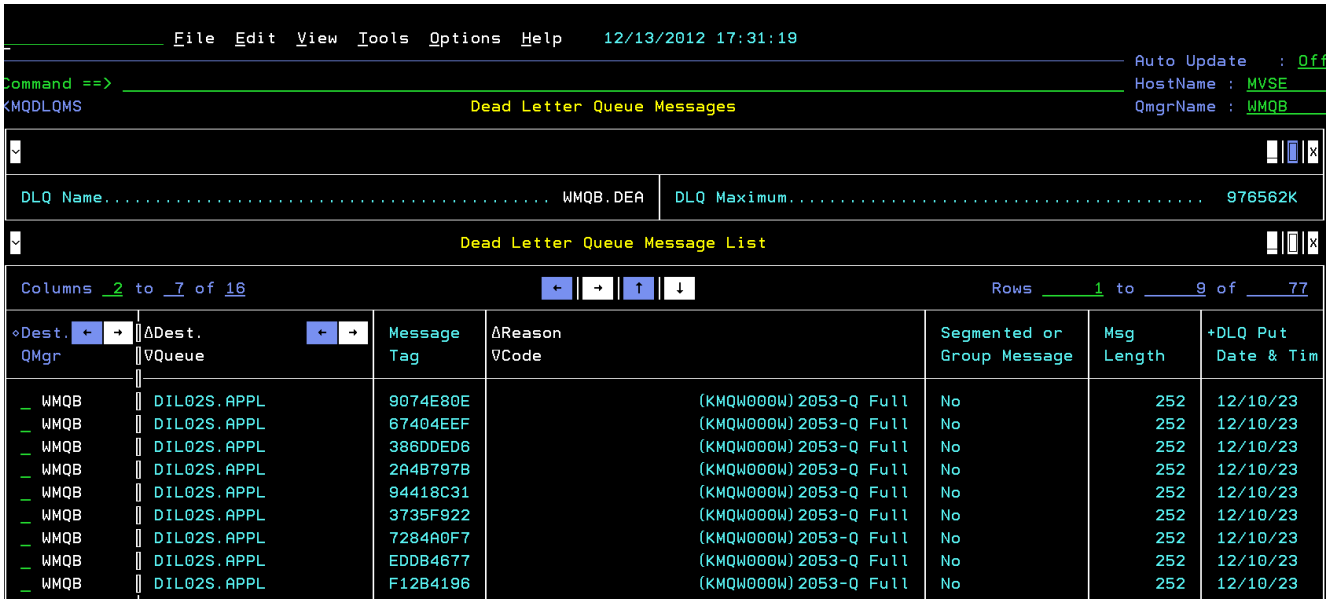
This completes lab exercise.

Scenario #8 Monitoring Dead Letter Queue

Now let's look at the Dead Letter Queue on WMQB. Begin on the KMQSTART panel.



a) From the KMQSTART panel, **position the cursor** next to **WMQB,** enter **D,** and **Press Enter.**



Here you see the messages on the DLQ (Dead Letter Queue).

b) Place a / and **Press Enter** beside any message to get the pop-up menu.

c) To see the message contents try option **2**.

d) To see the message actions look at option **1**.

e) If you recall the earlier exercise:

Try to delete a message.

Try to forward a message to the LARGE queue on WMQT.

Congratulations! This concludes the scenario, and also concludes the OMEGAMON XE for Messaging Enhanced 3270 exercises.

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Appendix C. Documentation Revision History

Date of Revision	Number	Completed by	Revision Log
9/10/2014	V16.0	Ed Woods	Principal author Lab design and lab document creation Combined e3270 and classic into one doc
9/19/2014	V730	Lih Wang	Edits for Enterprise2014 conference lab session. and rename the file with matching GA release number

NOTES

NOTES

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