What is New in OMEGAMON XE for Messaging for z/OS Version 7.3

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Brief Overview

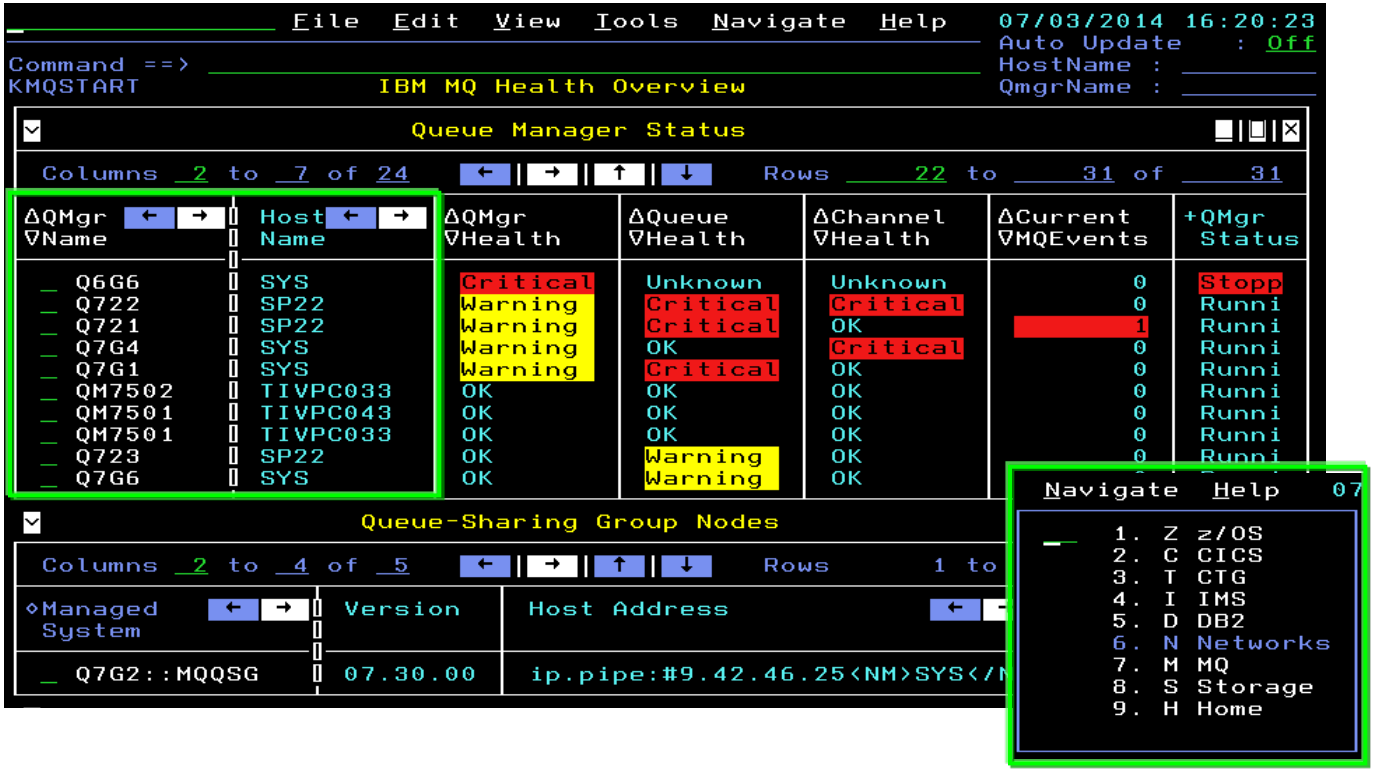
OMEGAMON XE for Messaging - Brief Overview
Provides complete solution for MQ and Broker monitoring

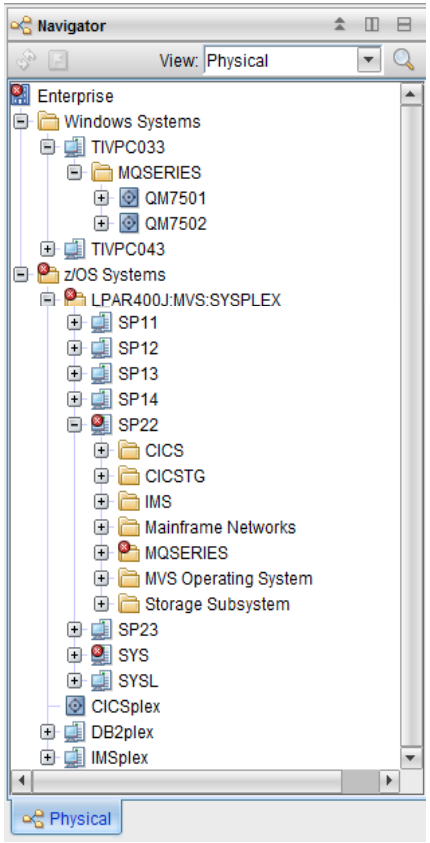
- OMEGAMON XE for Messaging includes capability to gain ***improved visibility and management*** of messaging subsystems
  - IBM MQ for z/OS (WebSphere MQ)
  - IBM Integration Bus for z/OS (WebSphere Message Broker)

- ***Efficiency and cost saving*** through integration, Messaging offers an enterprise-wide single point of control with other OMEGAMONs and distributed platform ITCAM Agents for WebSphere Messaging within both the Tivoli Enterprise Portal and the Enhanced 3270 User Interface
- ***Superior problem determination*** capability with real-time status and statistical monitoring about availability and performance, along with historical data collection for reporting, performance analysis, trend prediction and enterprise-wide business impact analysis
- ***Reduced time-to-resolution*** of problems with automated problem situation detection and corrective actions, in conjunction with a wealth of workspaces for root cause analysis and correlation with related data about other monitored subsystems

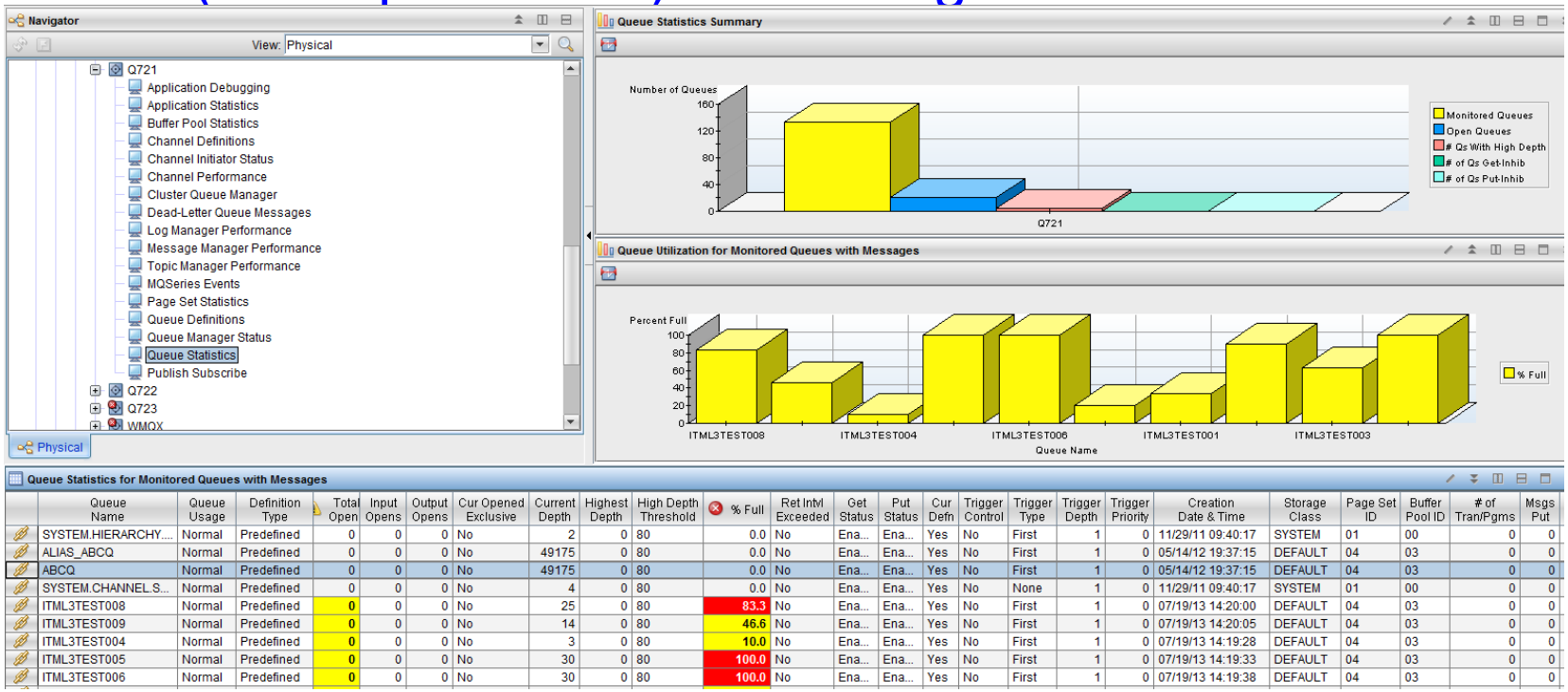
OMEGAMON XE for Messaging - Brief Overview
Integrated health monitoring solution

- Monitor the health of all queue managers in your enterprise using either the Enhanced 3270 UI or the Tivoli Enterprise Portal
- Navigate directly to other OMEGAMONs





OMEGAMON XE for Messaging - Brief Overview
IBM MQ (WebSphere MQ) Monitoring

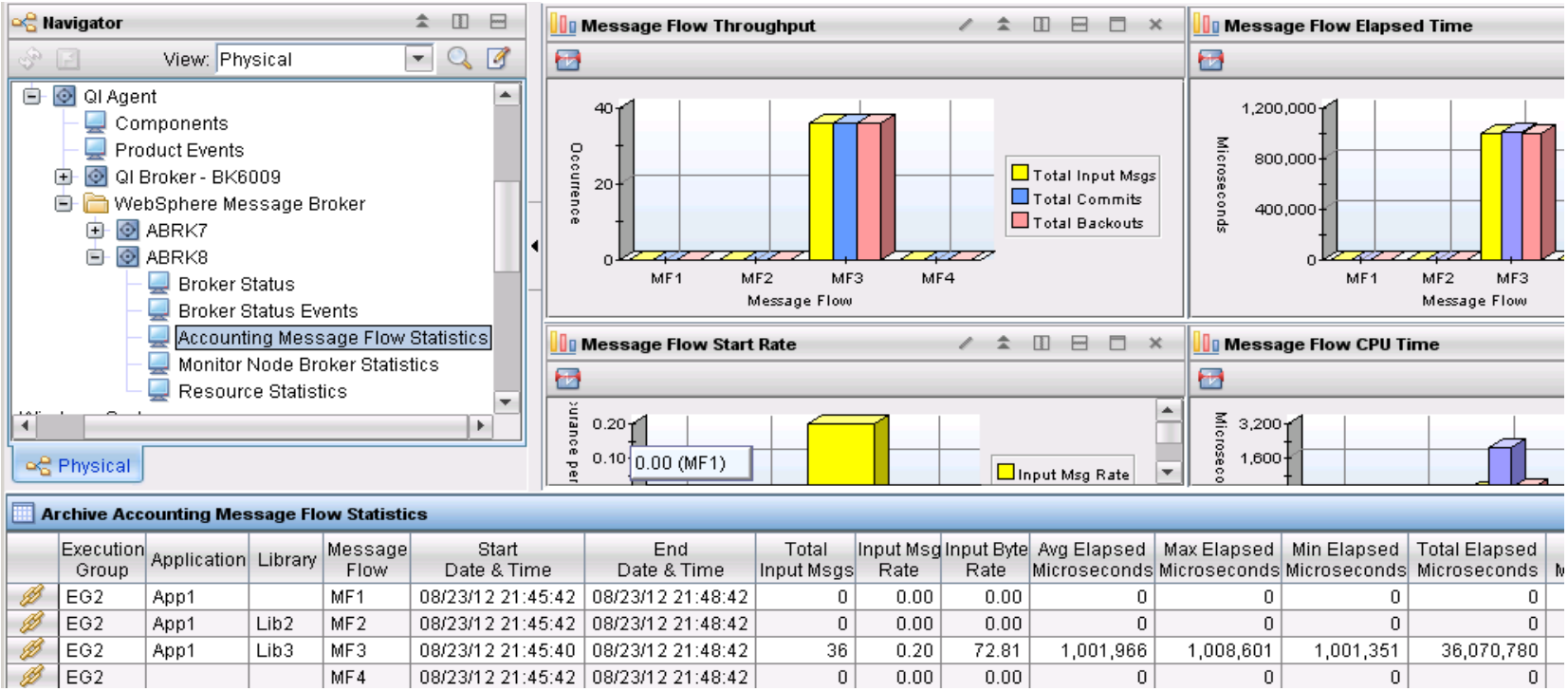


Queue Name	Queue Usage	Definition Type	Total Open	Input Opens	Output Opens	Cur Opened Exclusive	Current Depth	Highest Depth	High Depth Threshold	% Full	Ret Intvl Exceeded	Get Status	Put Status	Cur Defn	Trigger Control	Trigger Type	Trigger Depth	Trigger Priority	Creation Date & Time	Storage Class	Page Set ID	Buffer Pool ID	# of Tran/Pgms	Msgs Put
SYSTEM.HIERARCHY....	Normal	Predefined	0	0	0	No	2	0	80	0.0	No	Ena...	Ena...	Yes	No	First	1	0	11/29/11 09:40:17	SYSTEM	01	00	0	0
ALIAS_ABCQ	Normal	Predefined	0	0	0	No	49175	0	80	0.0	No	Ena...	Ena...	Yes	No	First	1	0	05/14/12 19:37:15	DEFAULT	04	03	0	0
ABCQ	Normal	Predefined	0	0	0	No	49175	0	80	0.0	No	Ena...	Ena...	Yes	No	First	1	0	05/14/12 19:37:15	DEFAULT	04	03	0	0
SYSTEM.CHANNEL.S...	Normal	Predefined	0	0	0	No	4	0	80	0.0	No	Ena...	Ena...	Yes	No	None	1	0	11/29/11 09:40:17	SYSTEM	01	00	0	0
ITML3TEST008	Normal	Predefined	0	0	0	No	25	0	80	83.3	No	Ena...	Ena...	Yes	No	First	1	0	07/19/13 14:20:00	DEFAULT	04	03	0	0
ITML3TEST009	Normal	Predefined	0	0	0	No	14	0	80	46.6	No	Ena...	Ena...	Yes	No	First	1	0	07/19/13 14:20:05	DEFAULT	04	03	0	0
ITML3TEST004	Normal	Predefined	0	0	0	No	3	0	80	10.0	No	Ena...	Ena...	Yes	No	First	1	0	07/19/13 14:19:28	DEFAULT	04	03	0	0
ITML3TEST005	Normal	Predefined	0	0	0	No	30	0	80	100.0	No	Ena...	Ena...	Yes	No	First	1	0	07/19/13 14:19:33	DEFAULT	04	03	0	0
ITML3TEST006	Normal	Predefined	0	0	0	No	30	0	80	100.0	No	Ena...	Ena...	Yes	No	First	1	0	07/19/13 14:19:38	DEFAULT	04	03	0	0

- Queue manager availability, health and performance
- Queue status, usage and statistics
- Channel status and performance
- MQ event monitoring and archival
- Application connections and topology
- Supports ITM features with historical reporting, situations, event forwarding, take-action

- Buffer pool, page set, message manager, log manager and topic manager statistics
- Pub/sub topics and subscriptions
- Dead letter queue and message manipulation
- Application (MQI monitoring) statistics
- Queue sharing group status
- MQ cluster monitoring

OMEGAMON XE for Messaging - Brief Overview
IBM Integrated Bus (WebSphere Message Broker) Monitoring

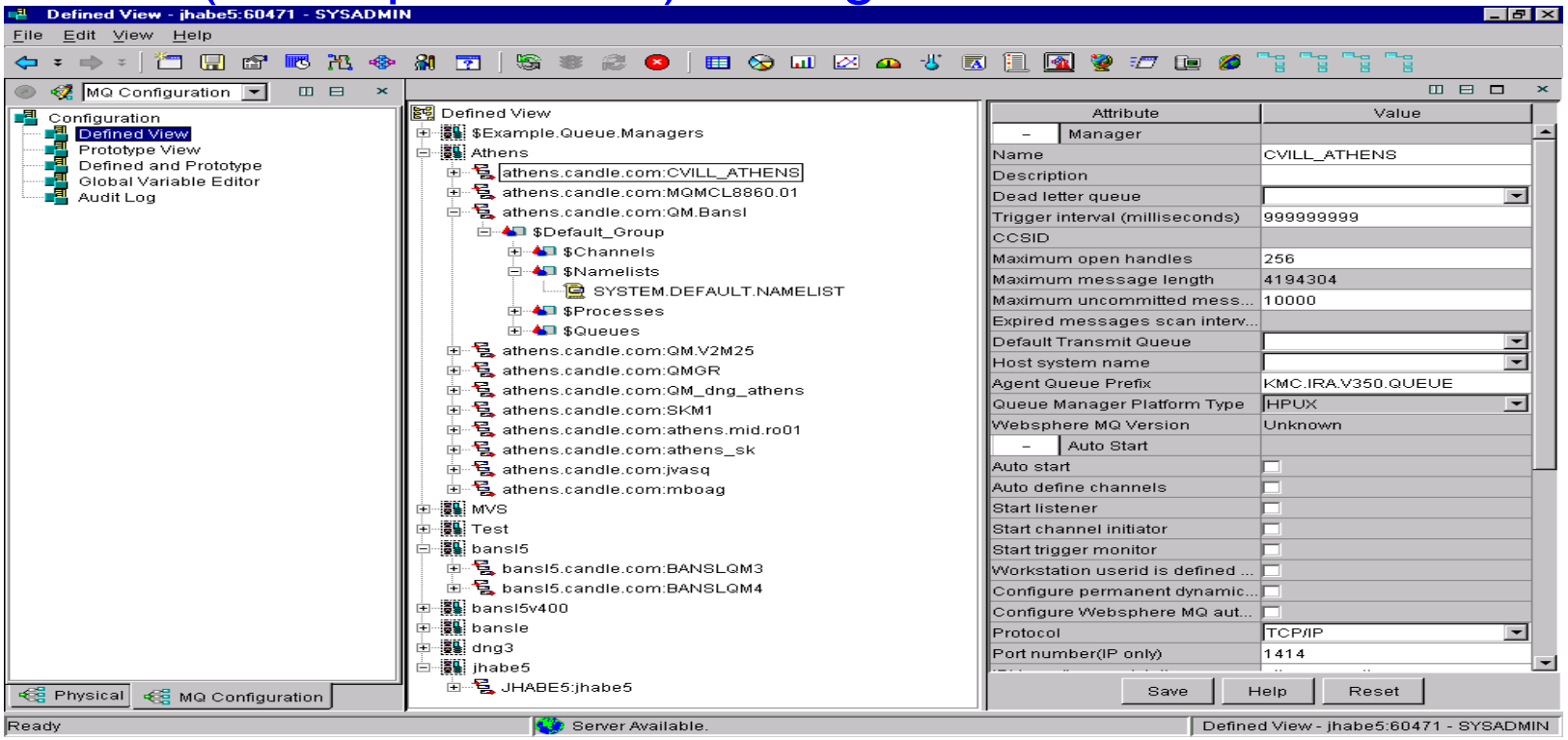


	Execution Group	Application	Library	Message Flow	Start Date & Time	End Date & Time	Total Input Msgs	Input Msg Rate	Input Byte Rate	Avg Elapsed Microseconds	Max Elapsed Microseconds	Min Elapsed Microseconds	Total Elapsed Microseconds
	EG2	App1		MF1	08/23/12 21:45:42	08/23/12 21:48:42	0	0.00	0.00	0	0	0	0
	EG2	App1	Lib2	MF2	08/23/12 21:45:42	08/23/12 21:48:42	0	0.00	0.00	0	0	0	0
	EG2	App1	Lib3	MF3	08/23/12 21:45:40	08/23/12 21:48:42	36	0.20	72.81	1,001,966	1,008,601	1,001,351	36,070,780
	EG2			MF4	08/23/12 21:45:42	08/23/12 21:48:42	0	0.00	0.00	0	0	0	0

- Broker availability and performance
- Topology with status for broker, execution groups and message flows
- Message flow node topology
- Broker status events for broker deployment
- Supports ITM features with historical reporting, situations, event forwarding, take-action

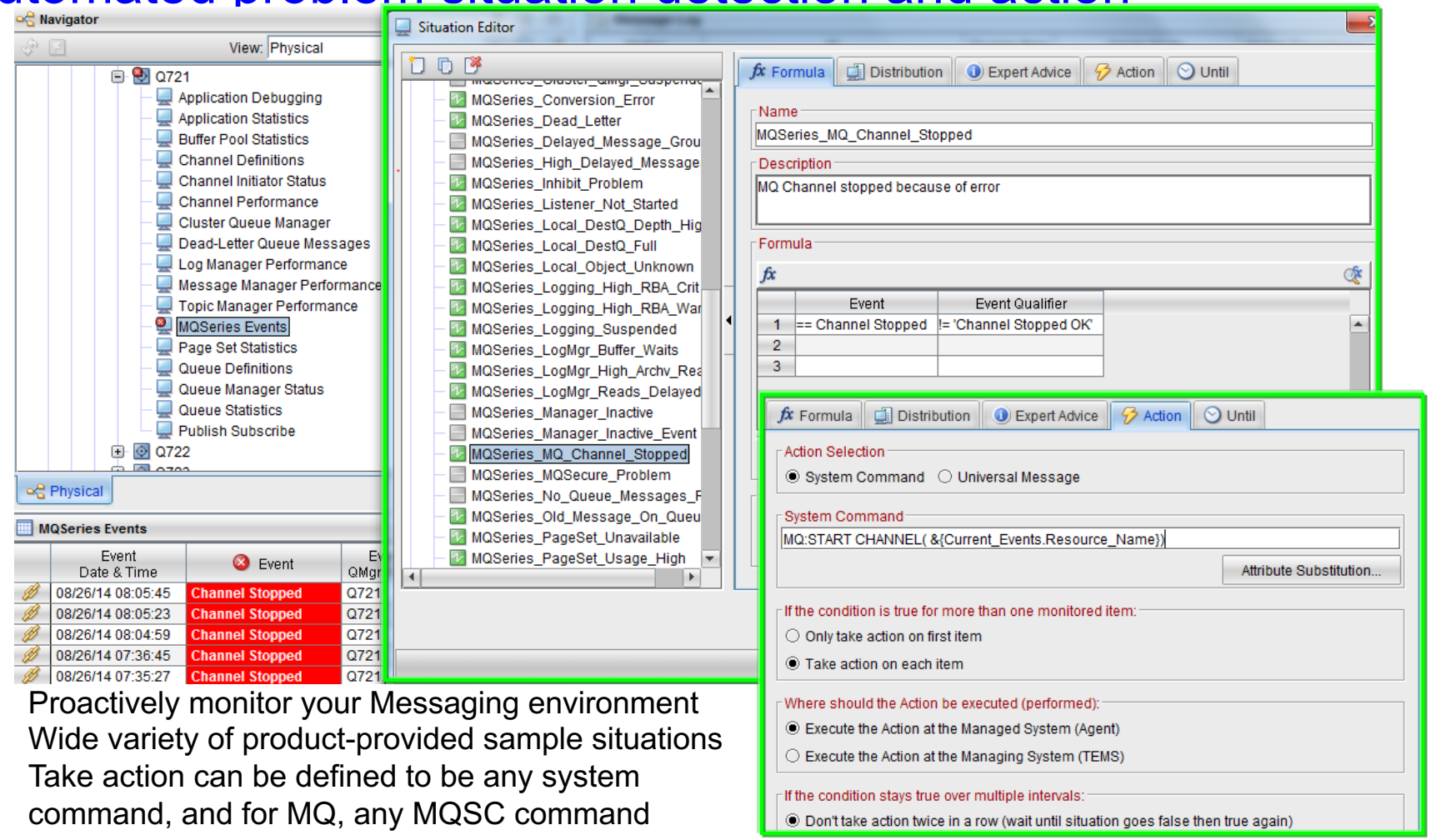
- Accounting Message Flow Statistics include message flow CPU and elapsed timings, message rate and error counts
- Resource Statistics provide Execution Group level statistics for JVM, Parsers, Files, ODBC, JDBC and SOAP

OMEGAMON XE for Messaging - Brief Overview
IBM MQ (WebSphere MQ) Configuration



- Enterprise-wide MQ configuration database
- Discovery of existing MQ resources
- Prototypes (templates) and variables for configuring multiple MQ nodes
- Validation prior to deployment
- Scheduled and immediate deployment of changes
- Synchronize actual configuration to defined (database), or defined to actual
- Identify discrepancies
- Audit trail
- Backup/restore of database
- Recovery of MQ environments

OMEGAMON XE for Messaging - Brief Overview
Automated problem situation detection and action



- Proactively monitor your Messaging environment
- Wide variety of product-provided sample situations
- Take action can be defined to be any system command, and for MQ, any MQSC command
- Both TEP and Enhanced 3270UI have event consoles

OMEGAMON XE for Messaging - Brief Overview
Historical data for reporting, trending, and analysis

File Edit View Tools Navigate Help 08/27/2014 00:12:18
Command ==> Display : HISTORY
KMQQMSTH Queue Manager Status History HostName : SP22
QmgrName : Q721

Queue Manager Q721

Columns 2 to 7 of 23 Rows 1 to 16 of 16

◊Recording Time	QMgr Health	Queue Health	Channel Health	Current MQEvents	QMgr Status	+Chann Initi
00:00:00	OK	OK	OK	11	Running	Runn
23:45:00	OK	OK	OK			
23:30:00	OK	OK	OK			
23:15:00	OK	OK	OK			
23:00:00	OK	OK	OK			
22:45:00	OK	OK	OK			
22:30:00	Warning	Warning	Critical			
22:15:00	Warning	Warning	Critical			
22:00:00	Warning	Warning	Critical			
21:45:00	Warning	Warning	Critical			
21:30:00	Warning	Warning	Critical			
21:15:00	Warning	Warning	Critical			
21:00:00	Warning	Warning	Critical			
20:45:00	Warning	Warning	Critical			
20:30:00	Warning	Warning	Critical			
20:15:00	Warning	Warning	Critical			

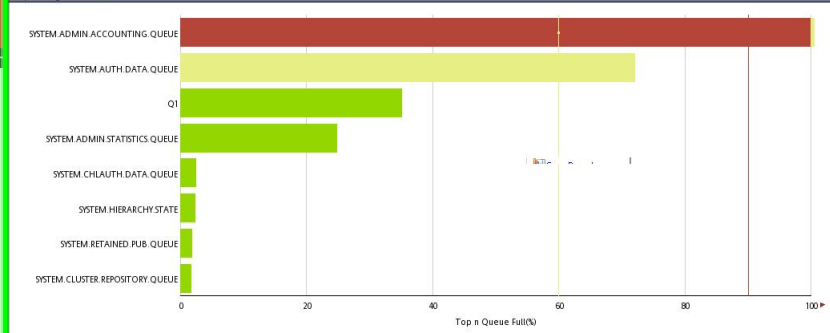
IBM® Tivoli® IBM.

Top n Queue Full Report

Date Filter:	All	Vacation Period:	All days
Start Date:	Jan 1, 1970 12:00:00 AM	End Date:	Aug 31, 2012 11:59:59 PM
Shift Period:	All Shifts	Summarization Type:	Daily
Warning:	60	Critical:	90
Number of Systems:	10		

The report shows top n queue full of queues. The upper chart show the top n queue full percentage, the lower table shows more details including the detail value of queue used.

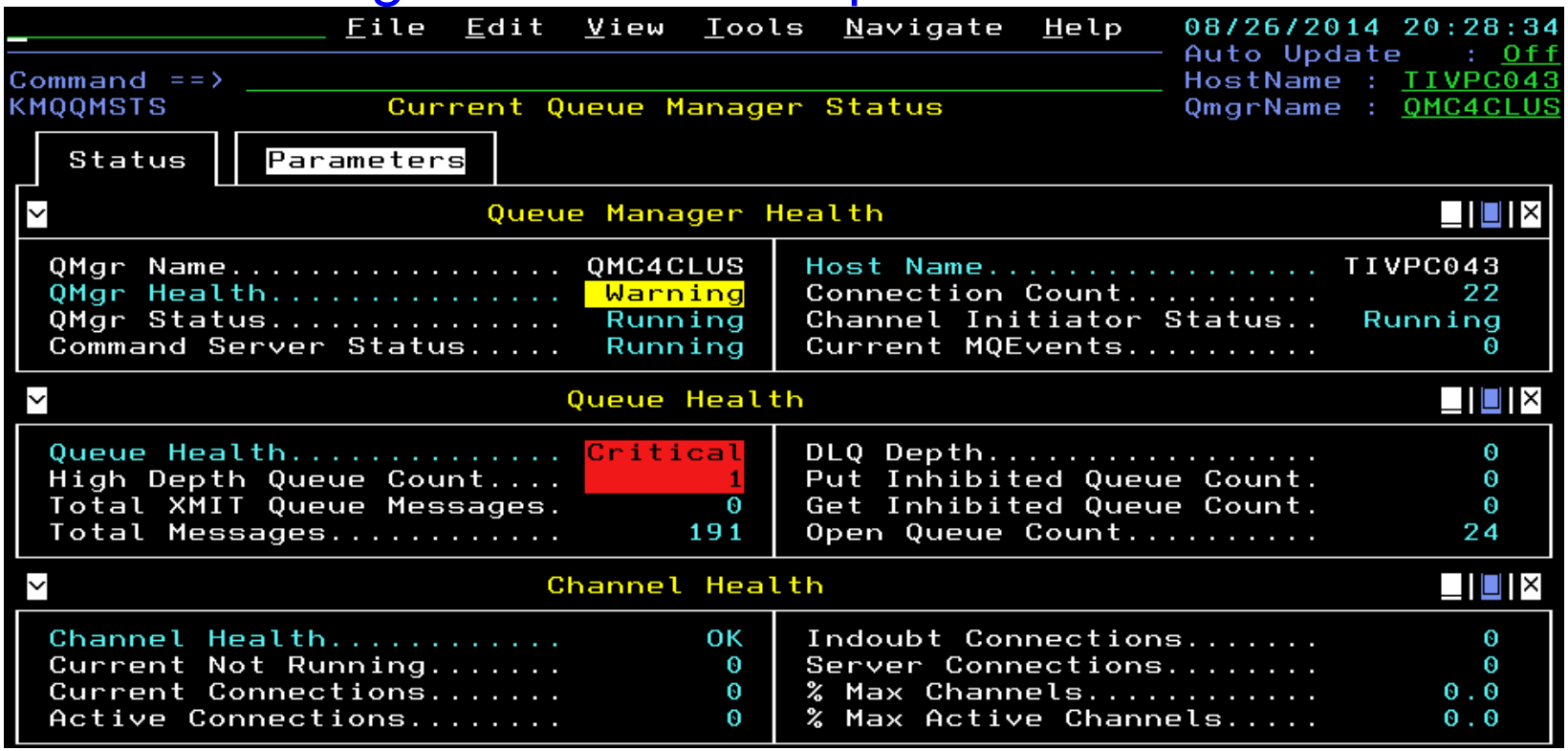
Top n Queue Full



Status	rank	Queue Name	Host Name	QMgr Name	% Full (Average)
	1	SYSTEM.ADMIN.ACCOUNTING.QUEUE	v52540078ab28	QM710	100
	2	SYSTEM.ADMIN.ACCOUNTING.QUEUE	WIN-ESFVF4C1QDA	QM71	72.59333333
	3	SYSTEM.AUTH.DATA.QUEUE	WIN-ESFVF4C1QDA	QM71	72

- Near term historical workspaces in Enhanced 3270UI and TEP allow easy access to past status and statistical data for problem determination
- Messaging data can go to the Tivoli Data Warehouse, and Tivoli Common Reporting with Cognos can be used to create and automate performance and availability reports

OMEGAMON XE for Messaging - Brief Overview
Same monitoring solution across platforms

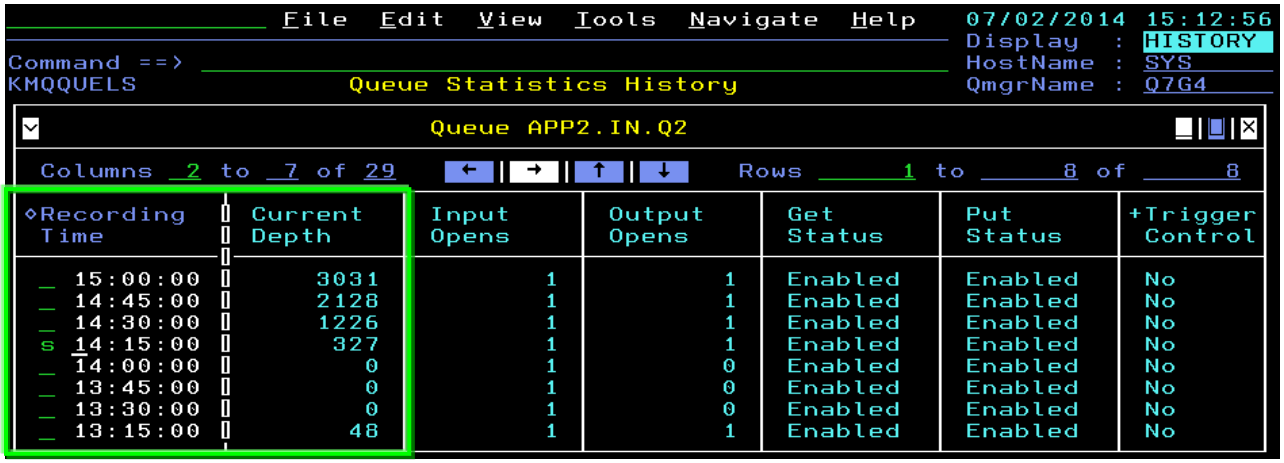


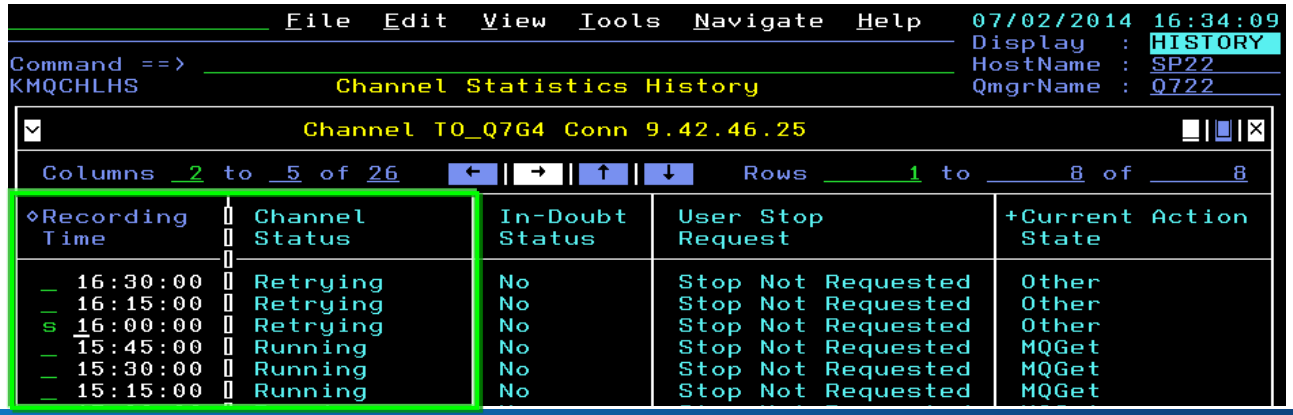
- Even in the z/OS Enhanced 3270UI, you can monitor your distributed platform queue managers
- Just zoom on any white field for more data on any item impacting the health of your queue manager
- Common attributes are available for all platforms for monitoring queue managers, queues, channels, application connections, MQ events, messages, MQ clusters, brokers, message flows, and more…
- Messaging agents on distributed platforms are available in ITCAM for Applications bundle product
- Remotely monitor MQ Managed File Transfer environment on z/OS from agent in that bundle

What's New in v7.3

OMEGAMON XE for Messaging v7.3 - What's New
Increased problem determination capability

- Understand information related to when the problem began with Enhanced 3270 User Interface Near-Term-History
  - Easily see when a queue depth began to rise, and select for details





- Effortlessly explore data around when a channel goes into retry status

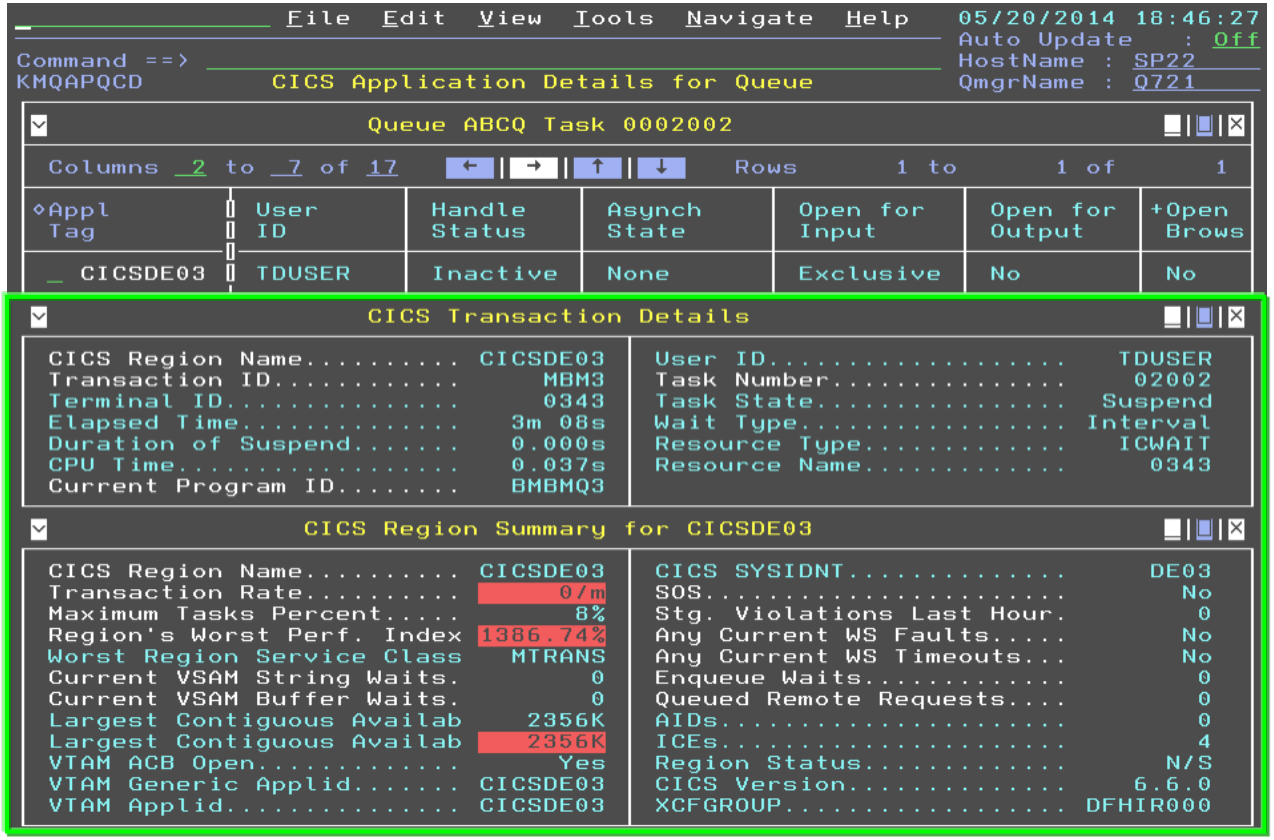
OMEGAMON XE for Messaging v7.3 - What's New
Increased problem determination capability

- Configure Near-Term-History collection for MQ attribute groups directly in the Enhanced 3270 User Interface
- Summary and detail Enhanced 3270UI workspaces support historical problem determination and trending analysis for the following objects:
  - Queue Managers
  - Queues
  - Channels
  - Applications, if enable Application Statistics, which also includes:
    - Application Transaction/Programs
    - Application Queues
  - Buffer Manager (Buffer Pools)
  - Log Manager
  - Message Manager
  - Topic Manager
  - Page Sets

OMEGAMON XE for Messaging v7.3 - What's New
Reduced time-to-resolution of problems

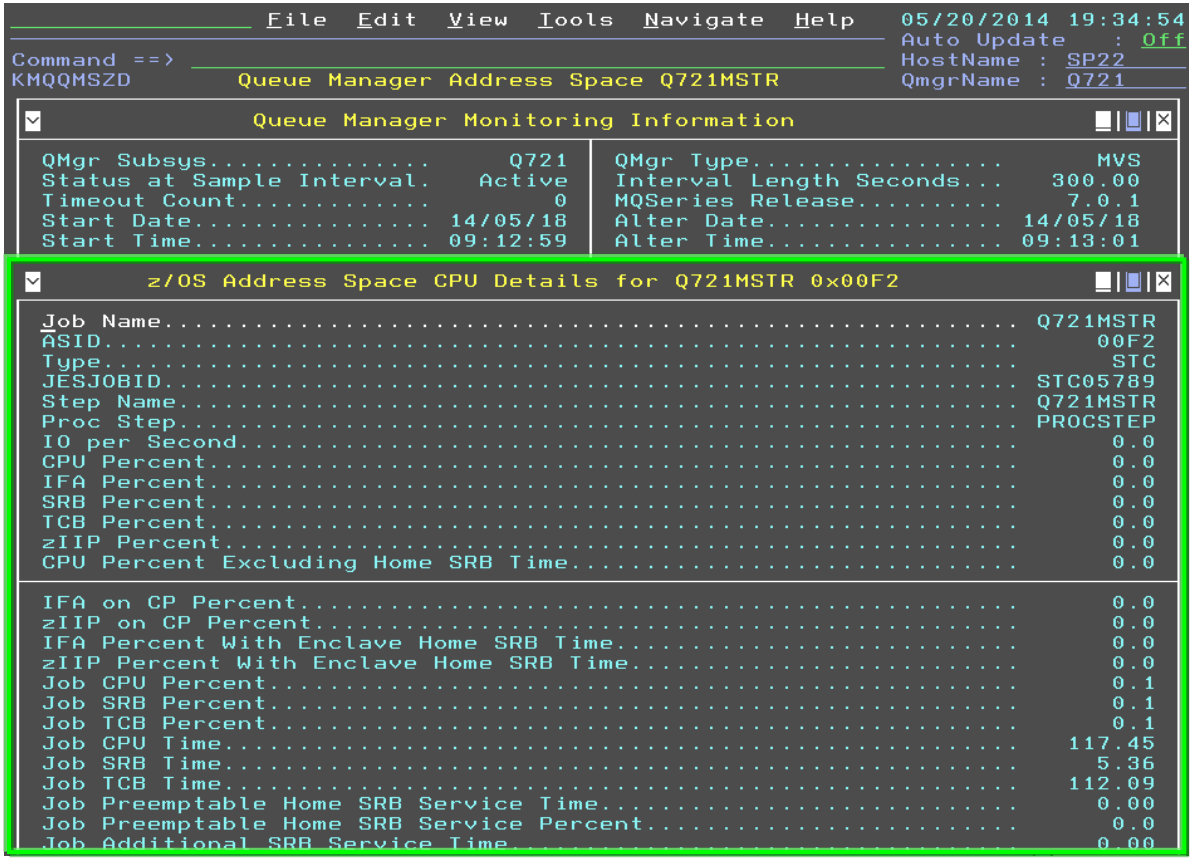
- Quickly view CICS or z/OS Enhanced 3270 User Interface embedded data for applications or queues, with automatic detection of application type

- MQ workspace includes relative CICS or z/OS monitoring data
- Click on any white field name to zoom to workspaces in the other OMEGAMON
- Easily navigate forward and backward among the workspaces

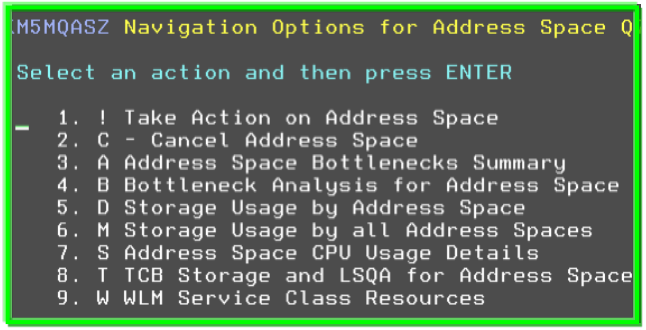


OMEGAMON XE for Messaging v7.3 - What's New
Reduced time-to-resolution of problems

- Directly access queue manager z/OS address space monitoring data in Enhanced 3270 User Interface workspaces for both MSTR and CHIN

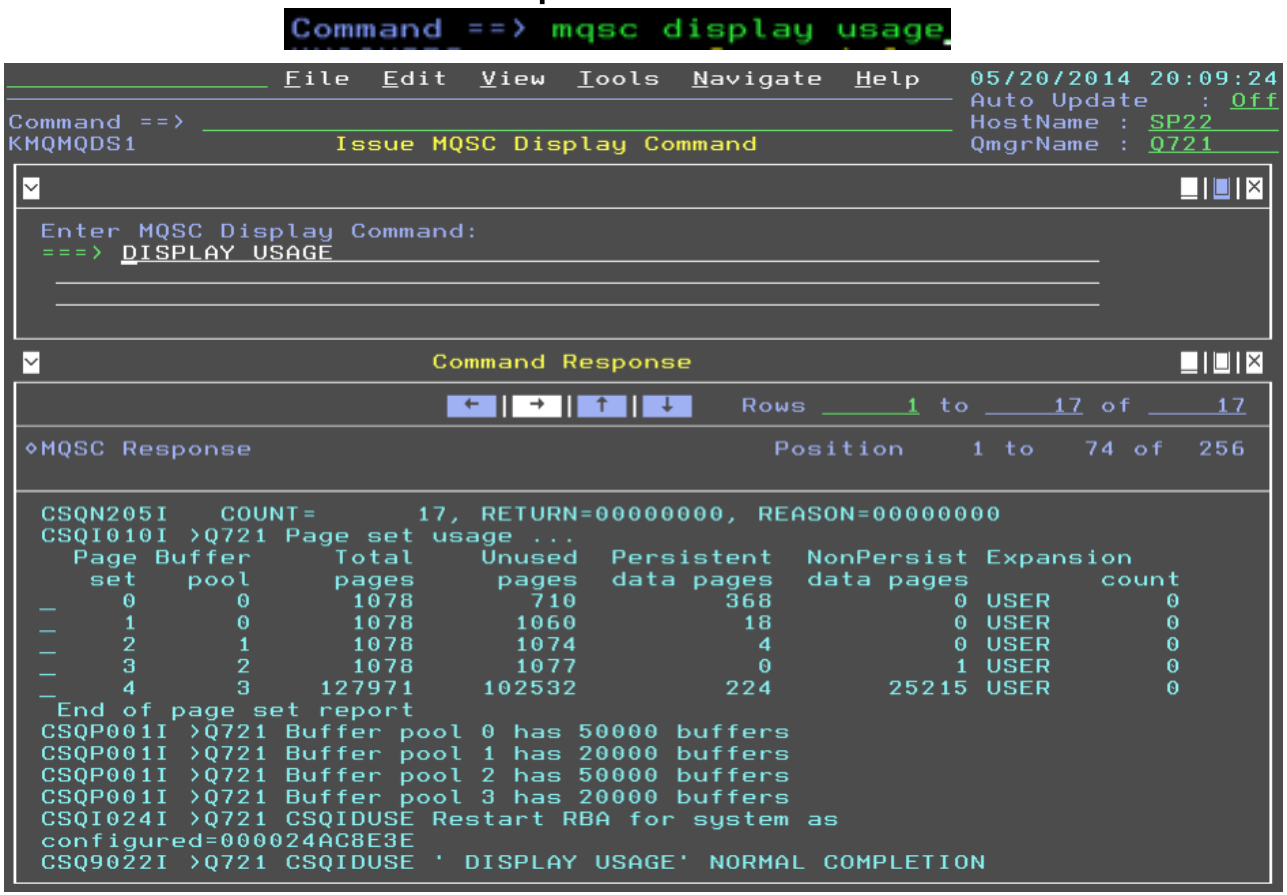


- Zoom from Current Queue Manager Status to this MQ workspace with z/OS CPU monitoring data
- Zoom on Job Name for direct access to the following z/OS options:



OMEGAMON XE for Messaging v7.3 - What's New
Reduced time-to-resolution of problems

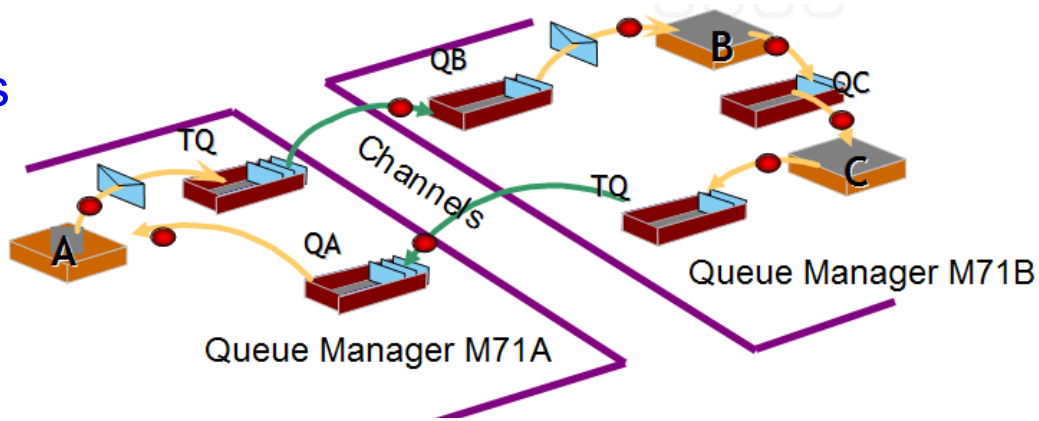
- Immediately display any MQ data available with MQSC display or ping commands from most MQ workspaces in the Enhanced 3270 User Interface



IBM MQ Monitoring

IBM MQ Monitoring Summary

Are all the MQ resources in your enterprise performing as expected for your messaging applications?



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- Queue status, usage and statistics
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- MQ event monitoring and archival
- Application connections and topology
- Buffer pool, page set, message manager, log manager and topic manager statistics
- Pub/sub topics and subscriptions and topology
- Application (MQI monitoring) statistics
- Dead letter queue and message manipulation
- Queue sharing group status
- MQ cluster monitoring
- Supports ITM features with historical reporting, situations, event forwarding, and take-action

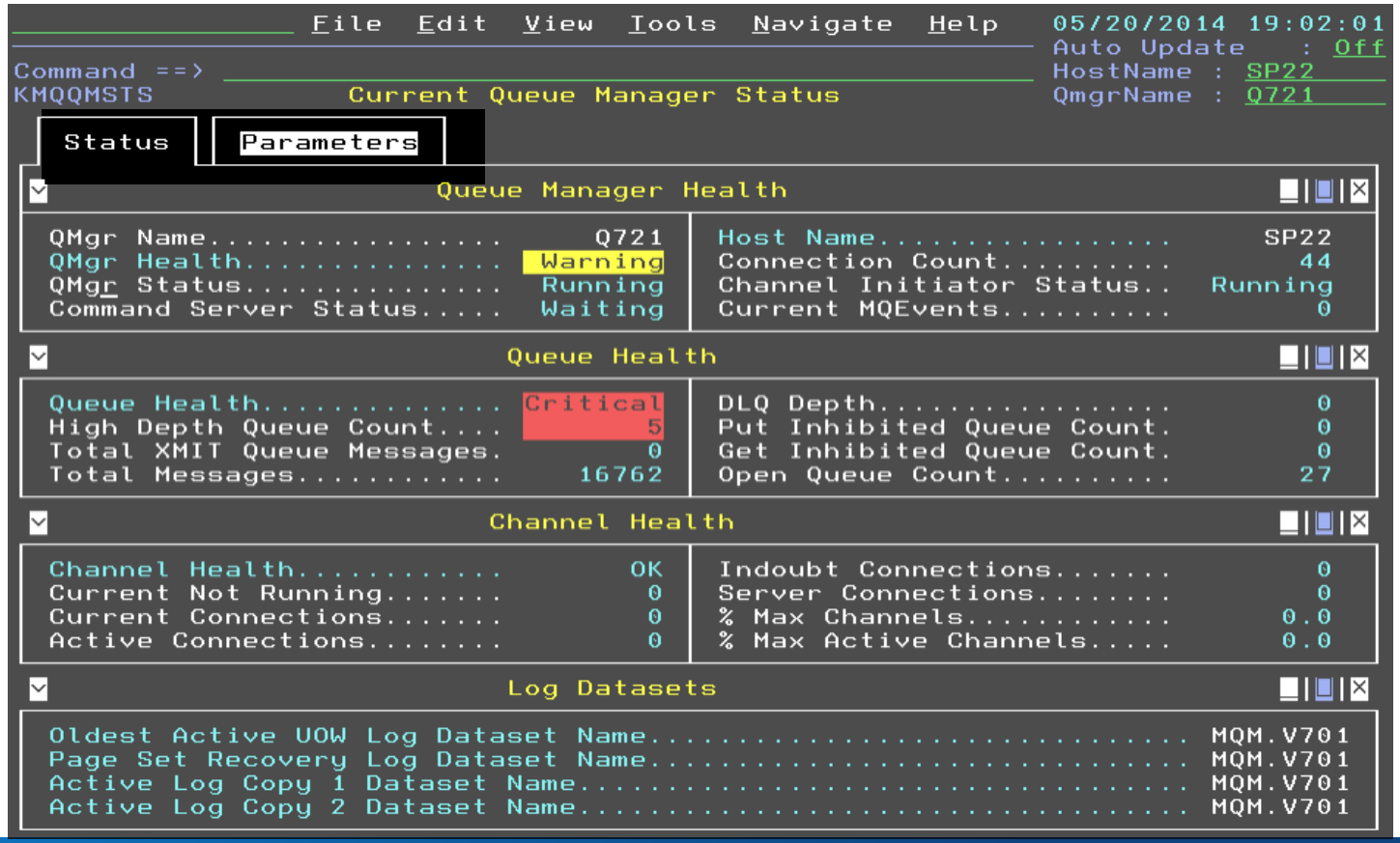
Queue Managers

- **General queue manager health assessment is based several factors such as:**
  - Availability of queue manager, channel initiator, command server
  - Queue health related to high queue depths, transmission queues with messages, dead letter queue messages, and put or get inhibited queues
  - Channel health related to current channels not running, percent active or current channels too close to maximums, in-doubt channels, and high numbers of client connections
- **Parameters can be set to pass overrides to defaults used by the agent for health assessment so that the agent can assess as desired by user or site**
- **Historical recording allows assessing general health and status changes over**

ΔQMgr ∇Name	Host Name	ΔQMgr ∇Health	ΔQueue ∇Health	ΔChannel ∇Health	ΔCurrent ∇MQEvents	QMgr Status	Channel Initiator	Command Server	Conn #	+DLQ Depth
M71C	Z014	Critical	Unknown	Unknown	0	Stopped	Stopped	Stopped	0	0
M53A	Z014	Critical	Unknown	Unknown	0	Stopped	Stopped	Stopped	0	0
M60A	Z014	Critical	Unknown	Unknown	0	Stopped	Stopped	Stopped	0	0
M70A	Z014	Warning	Critical	Critical	3	Running	Running	Waiting	37	0
M71A	Z014	Warning	Critical	Critical	0	Running	Running	Waiting	37	200
M71W	ZOC1	Warning	Warning	Critical	0	Running	Running	Waiting	47	0
M71E	Z014	OK	OK	OK	0	Running	Running	Waiting	35	0
M71L	Z014	OK	OK	OK	0	Running	Running	Waiting	21	0
M71T	Z014	OK	Warning	OK	0	Running	Running	Waiting	31	4

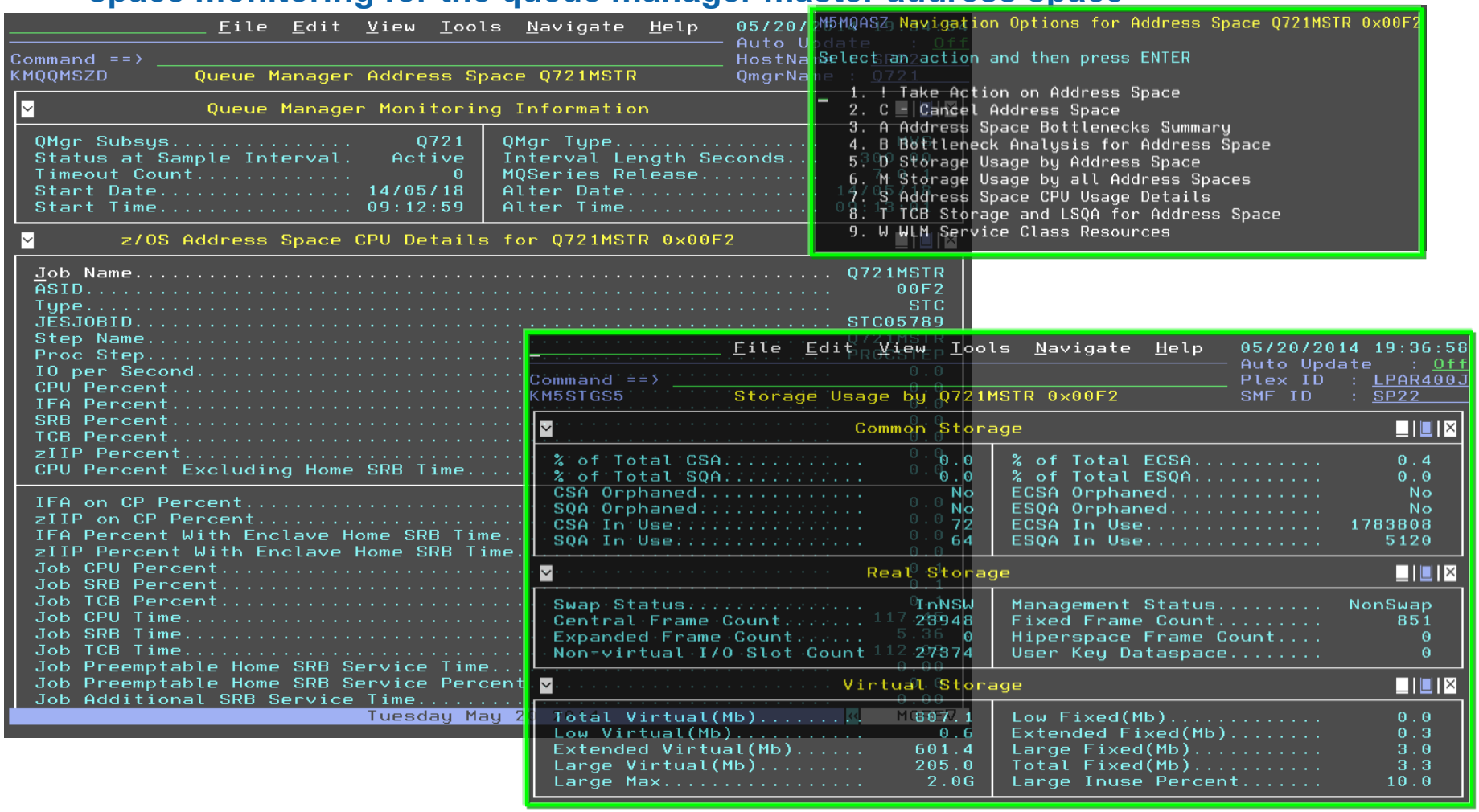
Queue Managers continued

- **Select a queue manager on the health overview to see its health indicators more clearly in Current Queue Manager Status, then zoom from any white field to get to more information supporting that field; note that the health overview also has a full list of options to get to all the various data**



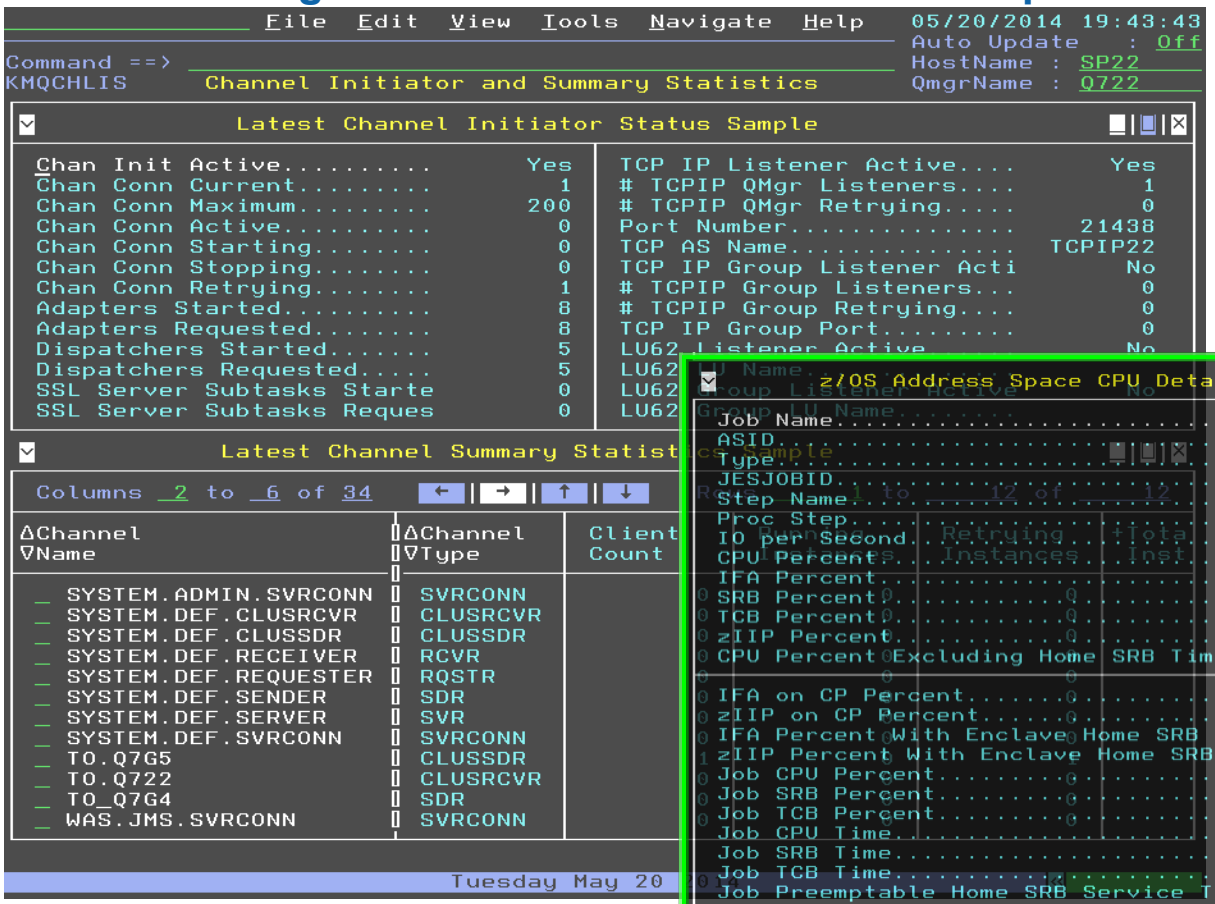
Queue Managers continued

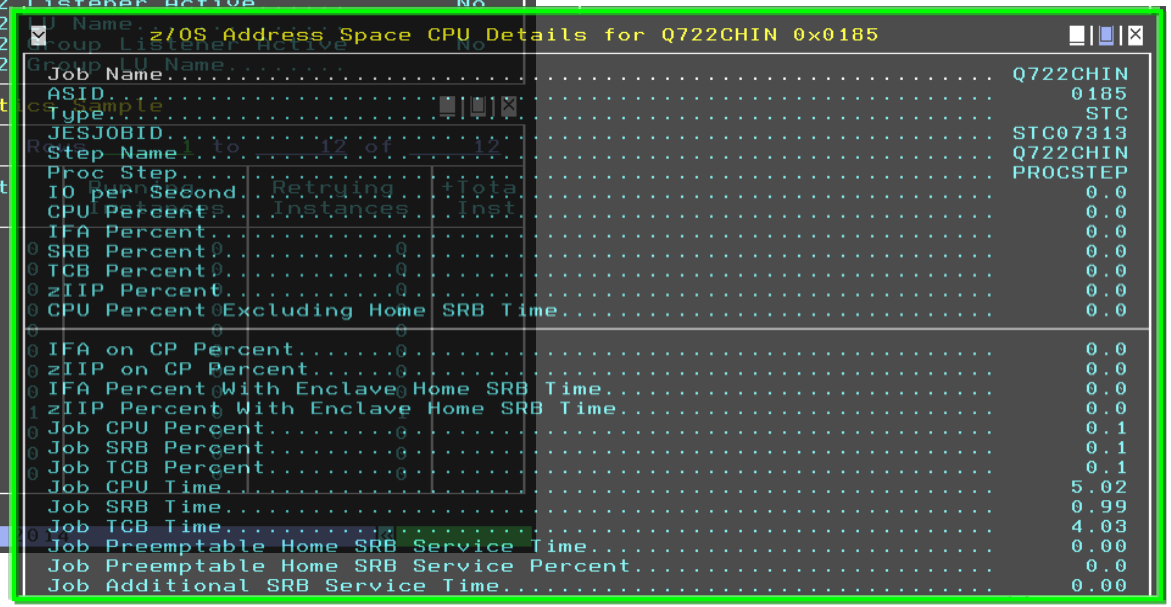
- **Zoom from QMgr Status to go to the workspace allowing direct z/OS address space monitoring for the queue manager master address space**

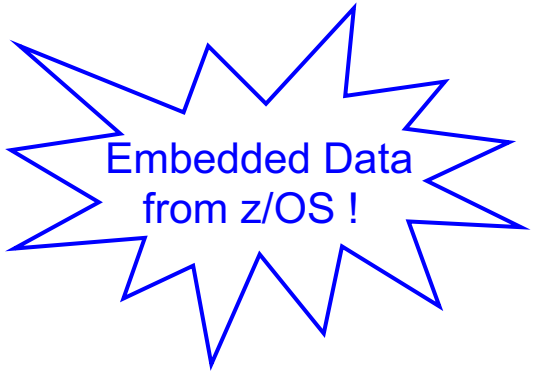


Queue Managers continued

- **Zoom from Channel Initiator Status to the workspace about the channel initiator, then additional zoom field Chan Init Active goes to the same z/OS address space monitoring for the channel initiator address space**





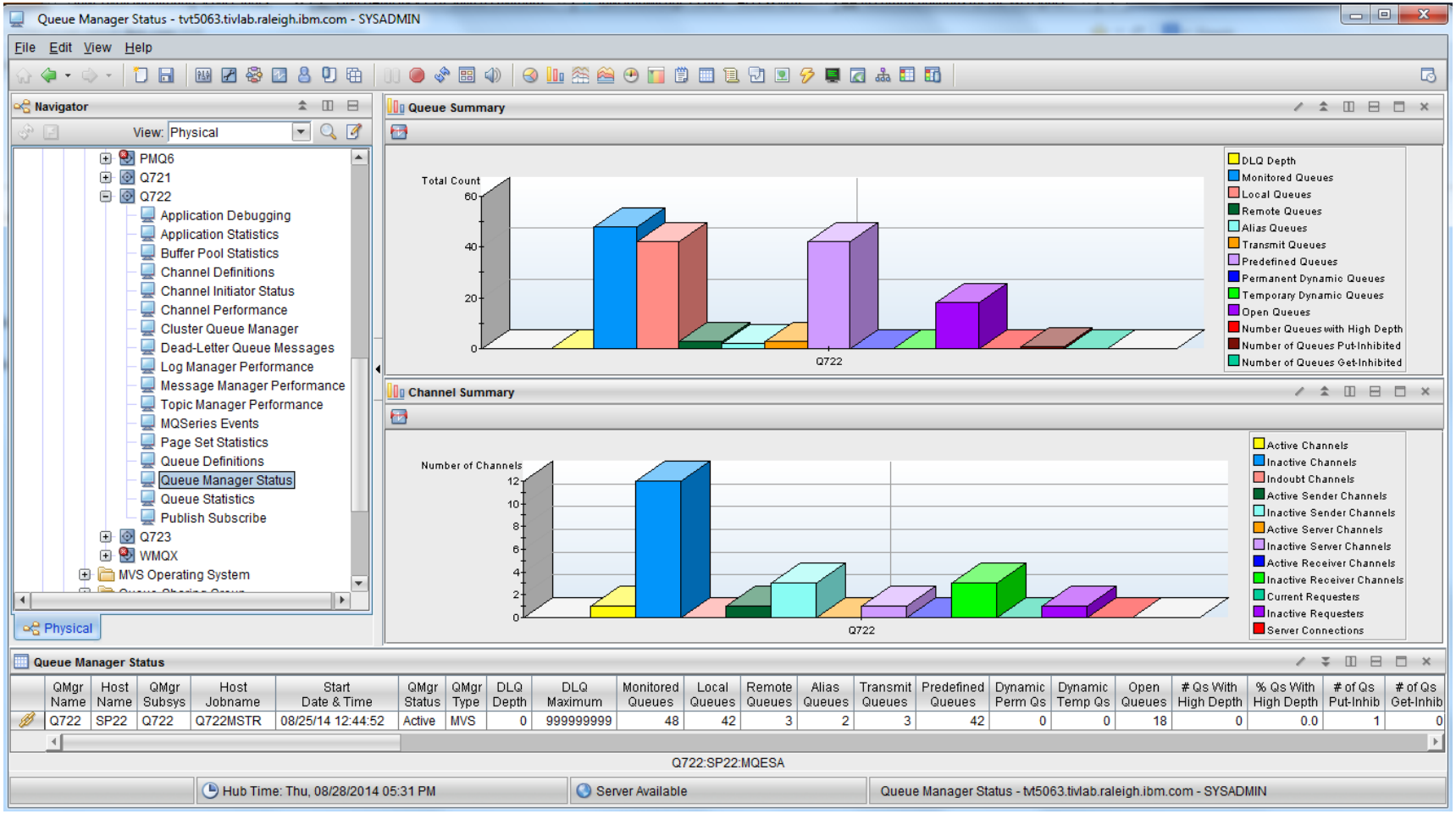


Queue Managers continued

- Many queue managers in the enterprise can make the health overview list quite long, so use the find command to narrow the list
- Select any row in the resulting list to get to the Current Queue Manager Status workspace, which leads to all data available for the queue manager
- The find command for an exact queue manager name leads directly to that workspace instead of the following list
- Find commands can be used from most MQ workspaces, and if you do not remember syntax, just enter “find”

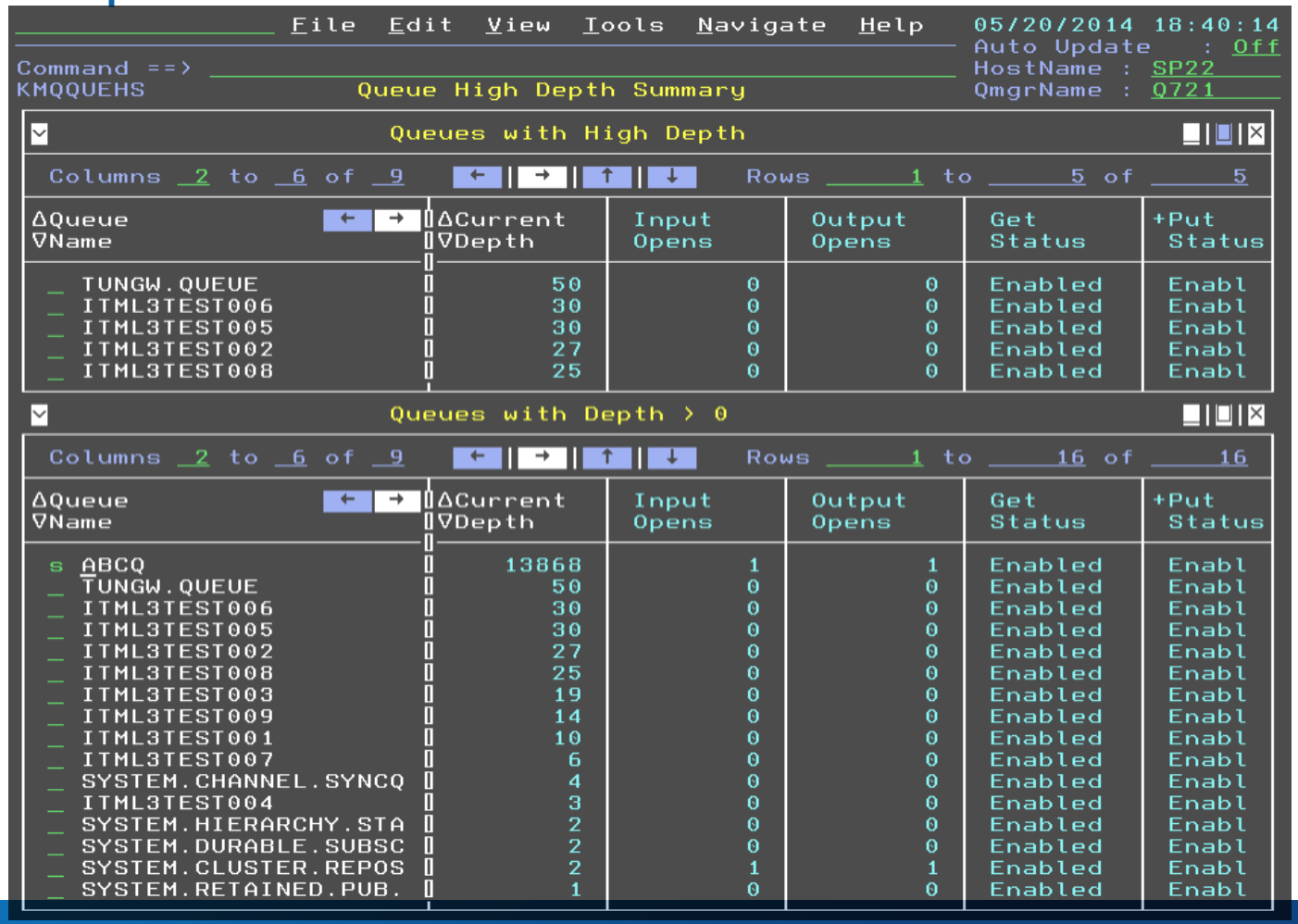
Queue Managers continued

- **Both TEP and the Enhanced 3270UI can access the same sets of monitoring data**
- **The user interfaces are quite different in style and focus**



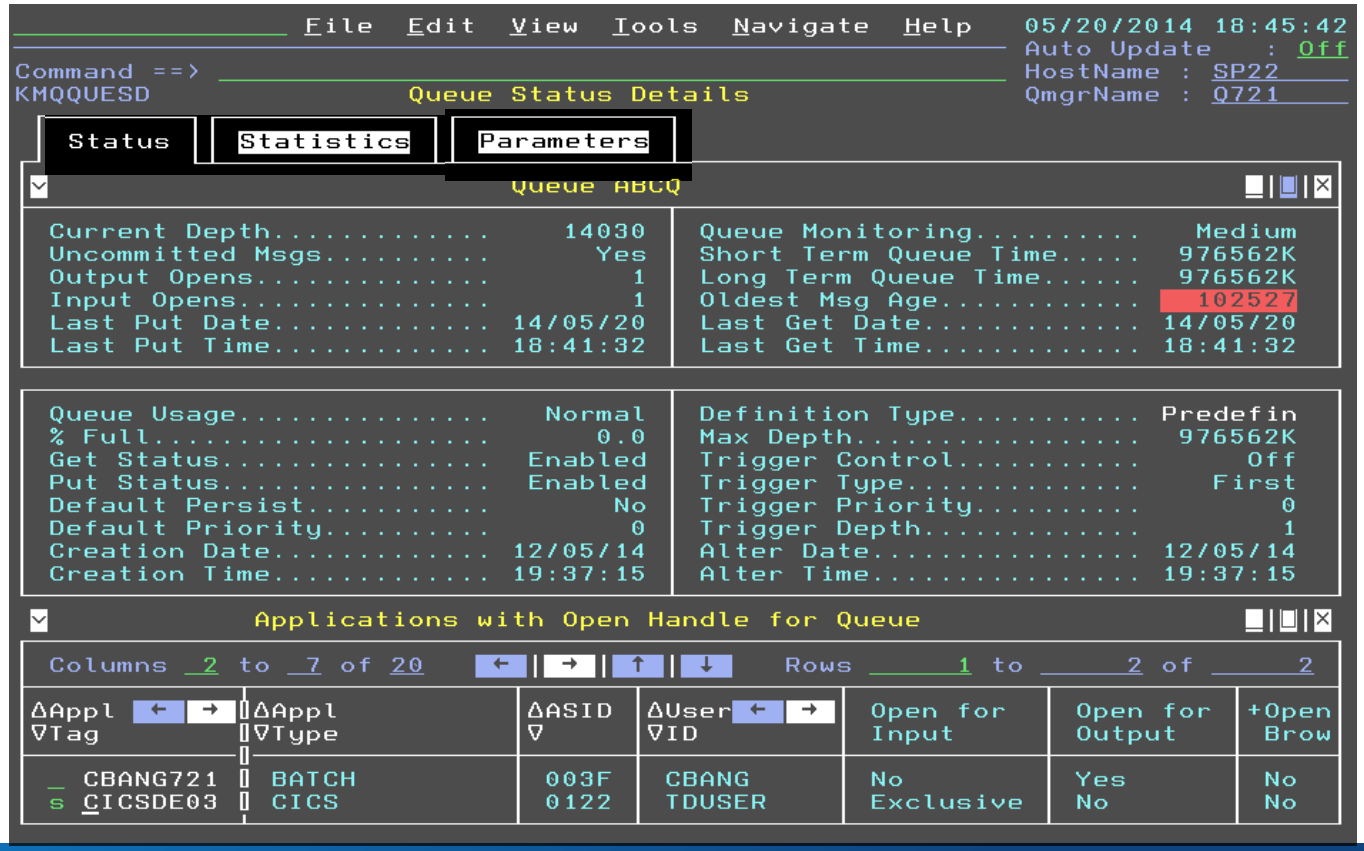
Queues

- Queues with high depth are determined by default based on the high depth threshold set for the queue, but queues with any depth may also be of interest for further exploration



Queues continued

- Select a queue to see real-time queue status, including oldest message age on the queue and several other interesting attributes (some attributes must be enabled in queue manager with MONQ setting)
- Applications with the queue open are also shown, this one has a batch application putting messages to it and a CICS application getting messages from it



Queues continued

- **Select the CICS application using the queue for direct access to CICS monitoring of it; zoom on any white field for more details in the CICS product workspaces**

File Edit View Tools Navigate Help
05/20/2014 18:46:27
Auto Update : Off
Command ==>
HostName : SP22
KMQAPQCD CICS Application Details for Queue
QmgrName : Q721

Queue ABCQ Task 0002002

Columns 2 to 7 of 17 Rows 1 to 1 of 1

◇Appl Tag	User ID	Handle Status	Asynch State	Open for Input	Open for Output	+Open Brows
_ CICSDE03	TDUSER	Inactive	None	Exclusive	No	No

CICS Transaction Details

CICS Region Name.....	CICSDE03	User ID.....	TDUSER
Transaction ID.....	MBM3	Task Number.....	02002
Terminal ID.....	0343	Task State.....	Suspend
Elapsed Time.....	3m 08s	Wait Type.....	Interval
Duration of Suspend.....	0.000s	Resource Type.....	ICWAIT
CPU Time.....	0.037s	Resource Name.....	0343
Current Program ID.....	BMBMQ3		

CICS Region Summary for CICSDE03

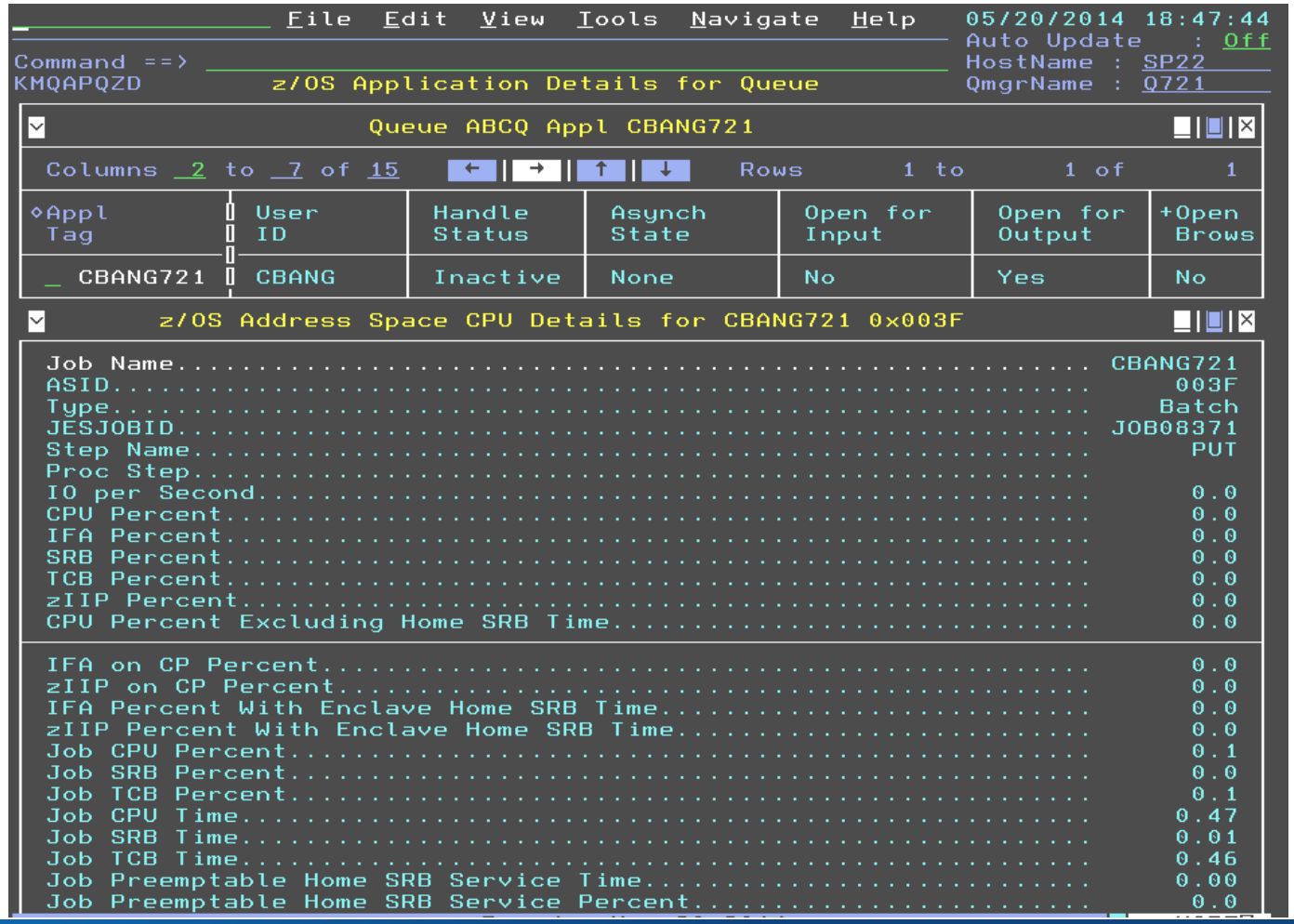
CICS Region Name.....	CICSDE03	CICS SYSIDNT.....	DE03
Transaction Rate.....	0/m	SOS.....	No
Maximum Tasks Percent.....	8%	Stg. Violations Last Hour.	0
Region's Worst Perf. Index	1386.74%	Any Current WS Faults.....	No
Worst Region Service Class	MTRANS	Any Current WS Timeouts...	No
Current VSAM String Waits.	0	Enqueue Waits.....	0
Current VSAM Buffer Waits.	0	Queued Remote Requests....	0
Largest Contiguous Availab	2356K	AIDs.....	0
Largest Contiguous Availab	2356K	ICEs.....	4
VTAM ACB Open.....	Yes	Region Status.....	N/S
VTAM Generic Applid.....	CICSDE03	CICS Version.....	6.6.0
VTAM Applid.....	CICSDE03	XCFGROUP.....	DFHIR000

Embedded Data from CICS !

Queues continued

- **Select the batch application using the queue for direct access to z/OS monitoring of it; zoom on Job Name field for various options for z/OS address space workspaces**

Embedded Data from z/OS !



Queues continued

- **Besides looking at queues with a depth, there are several ways to list queues by zooming from Current Queue Manager Status, but also you can find any queue in the enterprise easily...**

```
Command ==> find queue APP* Q7*_
```

File Edit View Tools Navigate Help 08/28/2014 19:07:01

Command ==>
KMQQNMLS

Queue Name List

Queues Matching APP*

Columns 2 to 13 of 14

ΔQueue ∇Name	ΔQMgr ∇Name	Host Name	ΔQueue ∇Type	Queue Usage	ΔCurrent ∇Depth	Input Opens	Output Opens
APPG_REMOTE	Q7G1	SYS	Remote	n/a	n/a	n/a	n/a
APPG.OUT.Q2	Q7G1	SYS	Remote	n/a	n/a	n/a	n/a
APP2.OUT.Q2	Q722	SP22	Remote	n/a	n/a	n/a	n/a
APP1.OUT.Q1	Q7G4	SYS	Local	Normal	3701	0	0
APPG.IN.Q2	Q7G4	SYS	Local	Normal	1000	0	0
APP7.OUT.Q1	Q723	SP22	Local	Normal	0	0	0
APP2_XMIT	Q721	SP22	Local	XmitQ	0	0	0
APPQ1	Q721	SP22	Local	Normal	0	0	0
APP2.IN.Q2	Q7G1	SYS	Local	Normal	0	0	0
APP1.OUT.Q1	Q7G1	SYS	Local	Normal	0	0	0
APP5TEST	Q7G1	SYS	Local	Normal	0	0	0
APP5.LOOP.Q1	Q7G1	SYS	Local	Normal	0	0	0
APP2.Q7G4.XMITQ	Q722	SP22	Local	XmitQ	0	0	0
APP2.OUT.Q2	Q7G4	SYS	Local	Normal	0	0	0
APP2.IN.Q2	Q7G4	SYS	Local	Normal	0	0	0
APPG_XMIT	Q7G1	SYS	Local	XmitQ	0	0	0
APPG_LOCAL	Q7G4	SYS	Local	Normal	0	0	0
APP2.OUT.Q2	Q7G1	SYS	Local	Normal	0	0	0

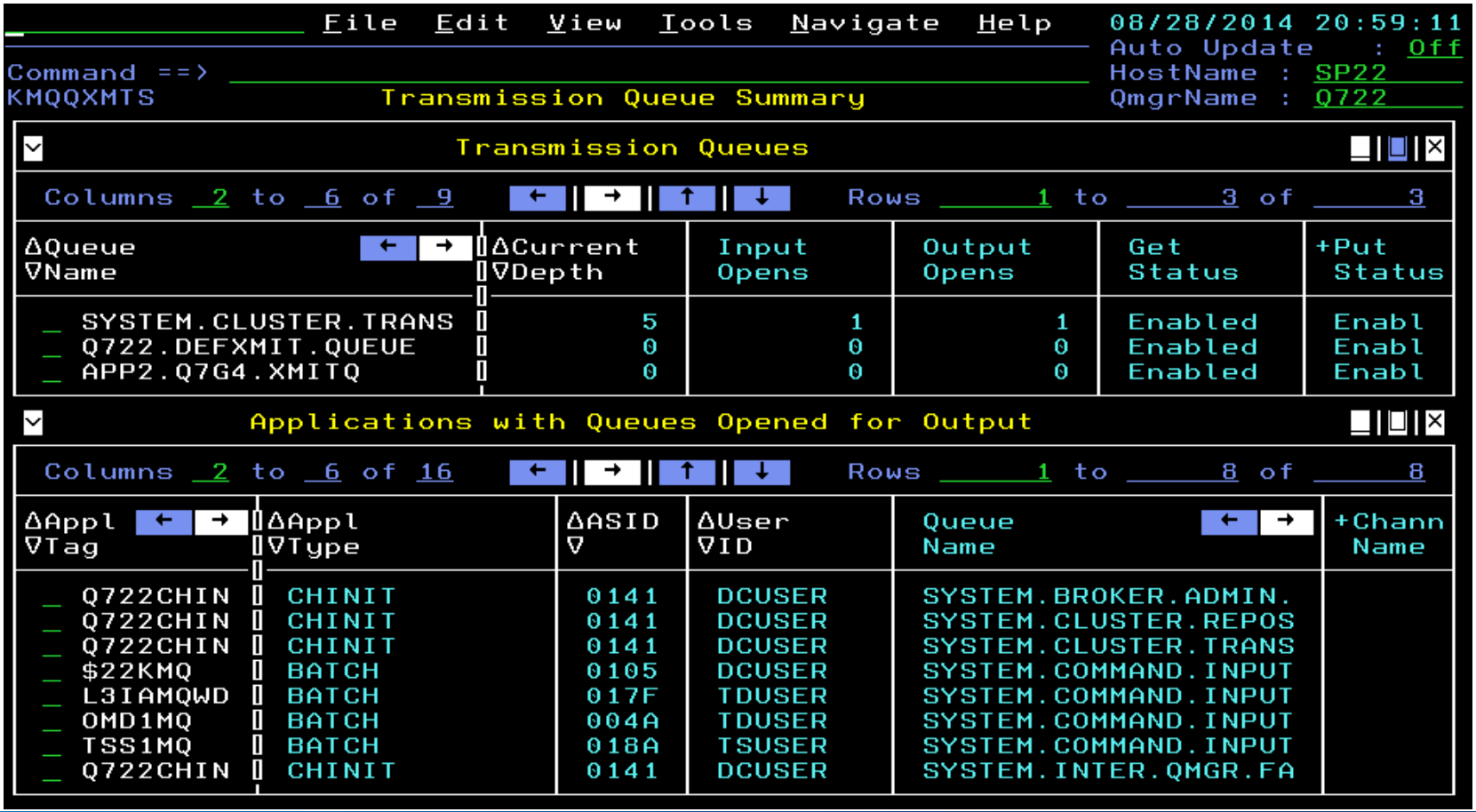
Options Menu

Select an option and then press ENTER

_ 1. ! Take Actions on Queue
2. C - Clear Queue
3. P - Purge Queue
4. H Queue Statistics History
5. R Recent Queue Statistics
6. S Queue Status Details

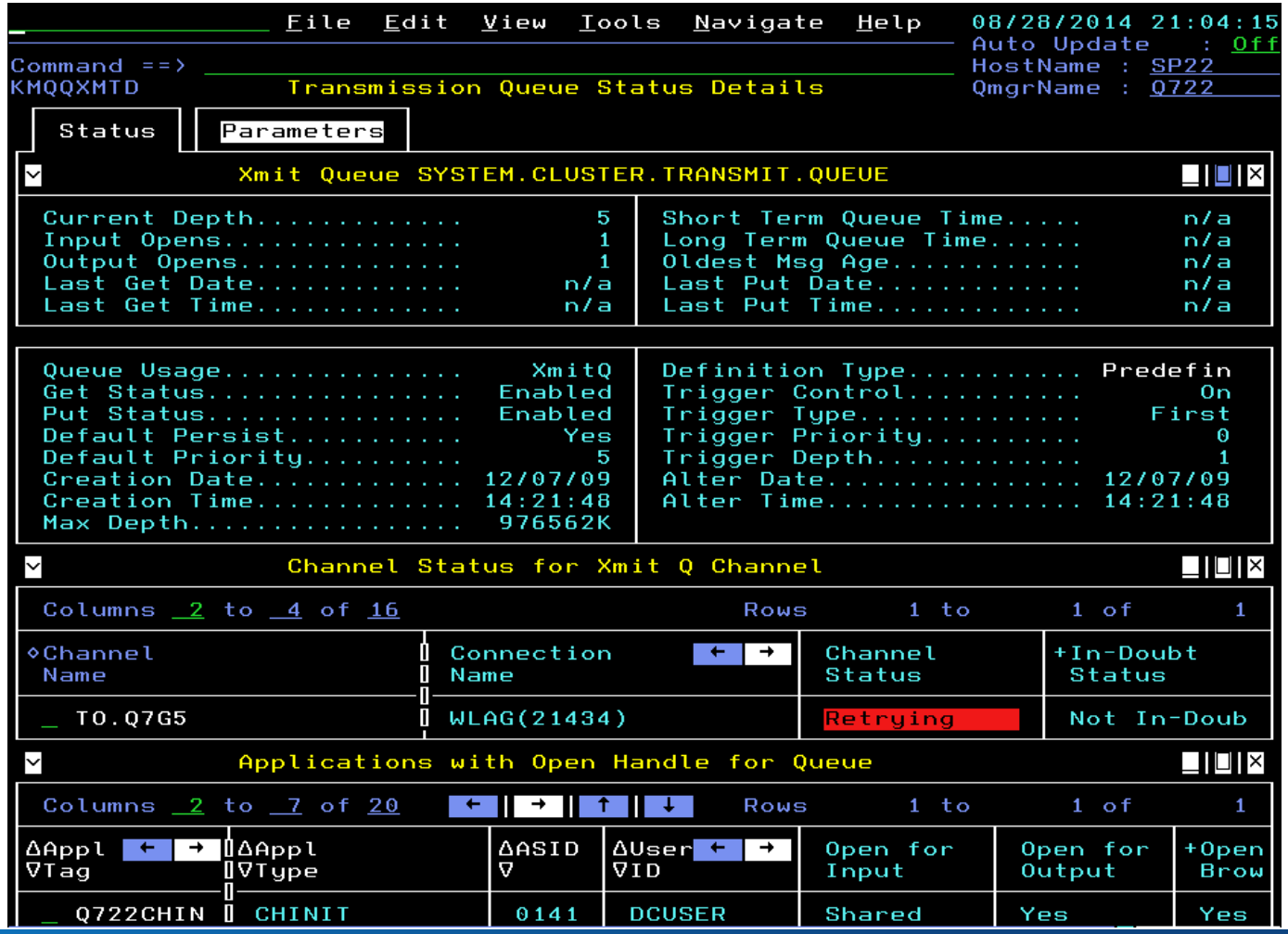
Queues continued

- Transmission queues usually should not have messages remaining on them
- Applications with queues opened for output may be the ones impacted most by a channel issue causing a transmission queue to have depth



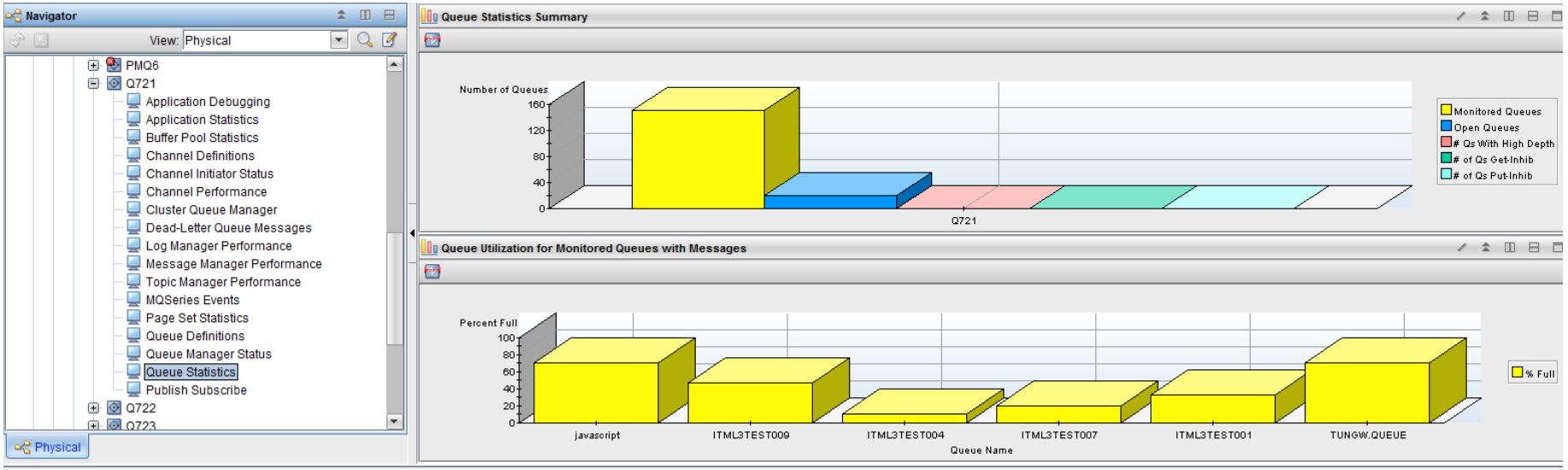
Queues continued

- **Select a transmission queue for detailed status, and immediately see the associated channel and its status, which is selectable for further details**



Queues continued

- **Regularly sampled queue statistics are available in both TEP and the Enhanced 3270UI**
- **Recent interval samples also are available for determining very recent trends**
- **Historical statistics are based on the sampled data, and where applicable, the**

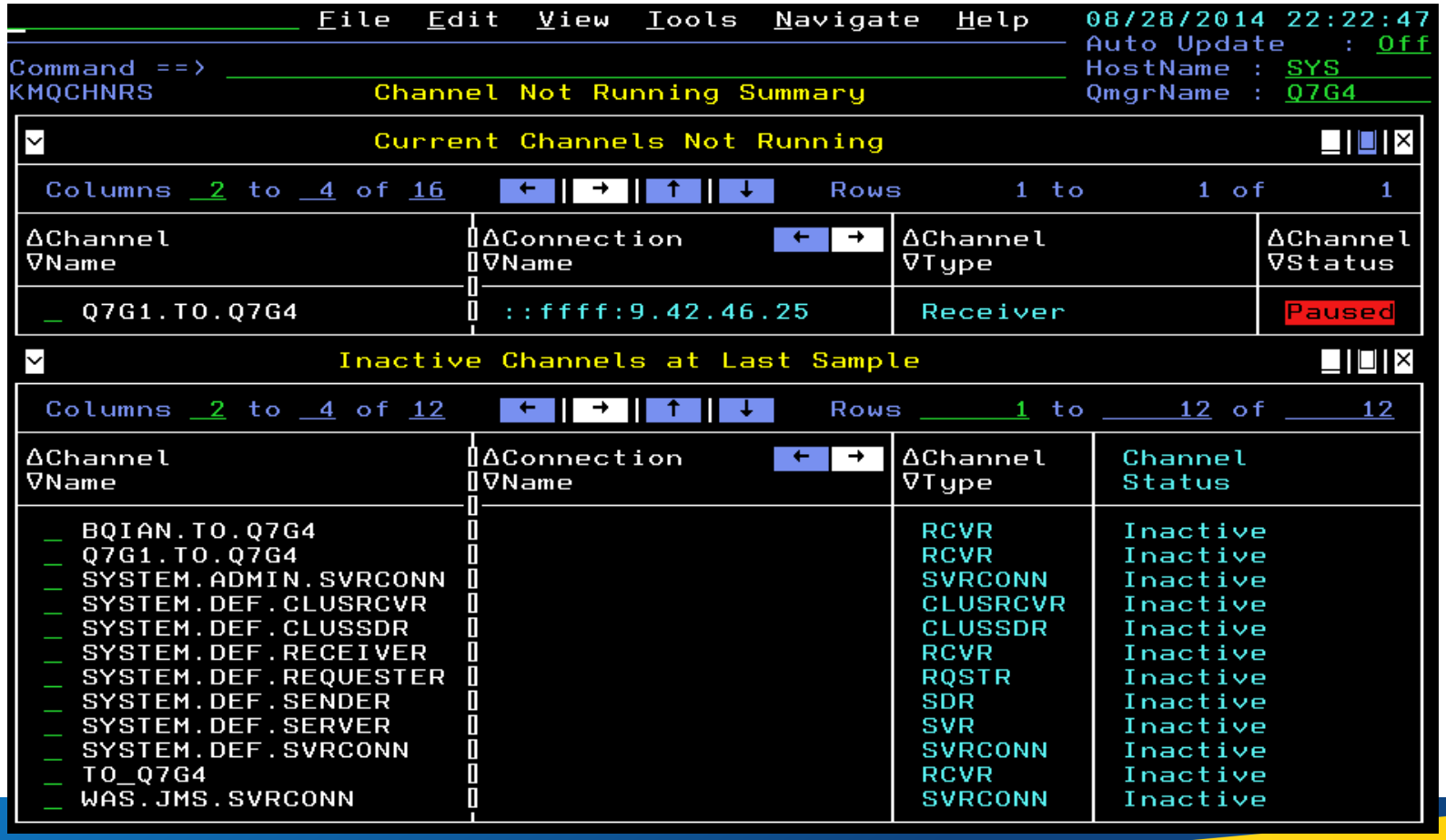


Queue Statistics for Monitored Queues with Messages

Queue Name	Queue Usage	Definition Type	Total Opens	Input Opens	Output Opens	Cur Opened Exclusive	Current Depth	Highest Depth	High Depth Threshold	% Full	Ret Intvl Exceeded	Get Status	Put Status	Cur Defn	Trigger Control	Trigger Type	Trigger Depth	Trigger Priority	Creation Date & Time	Storage Class	Page Set ID	Buffer Pool ID	# of Tran/Pgms	Msgs Put	Msgs Read
SYSTEM.HIERARCHY....	Normal	Predefined	0	0	0	No	2	0	80	0.0	No	Ena...	Ena...	Yes	No	First	1	0	11/29/11 ...	SYSTEM	01	00	0	0	0
javascript	Normal	Predefined	0	0	0	No	7	0	80	70.0	No	Ena...	Ena...	Yes	No	First	1	0	06/02/14 ...	DEFAULT	04	03	1	0	0
SYSTEM.CHANNEL.S...	Normal	Predefined	0	0	0	No	27	0	80	0.0	No	Ena...	Ena...	Yes	No	None	1	0	11/29/11 ...	SYSTEM	01	00	0	0	0
ITML3TEST009	Normal	Predefined	0	0	0	No	14	0	80	46.6	No	Ena...	Ena...	Yes	No	First	1	0	07/19/13 ...	DEFAULT	04	03	0	0	0
ITML3TEST004	Normal	Predefined	0	0	0	No	3	0	80	10.0	No	Ena...	Ena...	Yes	No	First	1	0	07/19/13 ...	DEFAULT	04	03	0	0	0
ITML3TEST007	Normal	Predefined	0	0	0	No	6	0	80	20.0	No	Ena...	Ena...	Yes	No	First	1	0	07/19/13 ...	DEFAULT	04	03	0	0	0
ITML3TEST001	Normal	Predefined	0	0	0	No	10	0	80	33.3	No	Ena...	Ena...	Yes	No	First	1	0	07/19/13 ...	DEFAULT	04	03	0	0	0
ITML3TEST003	Normal	Predefined	0	0	0	No	26	0	80	0.0	No	Ena...	Ena...	Yes	No	First	1	0	07/19/13 ...	DEFAULT	04	03	0	0	0
SYSTEM.CLUSTER.R...	Normal	Predefined	2	1	1	Yes	36	0	80	0.0	No	Ena...	Ena...	Yes	No	None	1	0	11/29/11 ...	SYSTEM	01	00	1	0	0
SYSTEM.DURABLE.S...	Normal	Predefined	0	0	0	No	2	0	80	0.0	No	Ena...	Ena...	Yes	No	First	1	0	11/29/11 ...	SYSLNGLV	02	01	0	0	0
SYSTEM.RETAINED.P...	Normal	Predefined	0	0	0	No	1	0	80	0.0	No	Ena...	Ena...	Yes	No	First	1	0	11/29/11 ...	SYSTEM	01	00	0	0	0

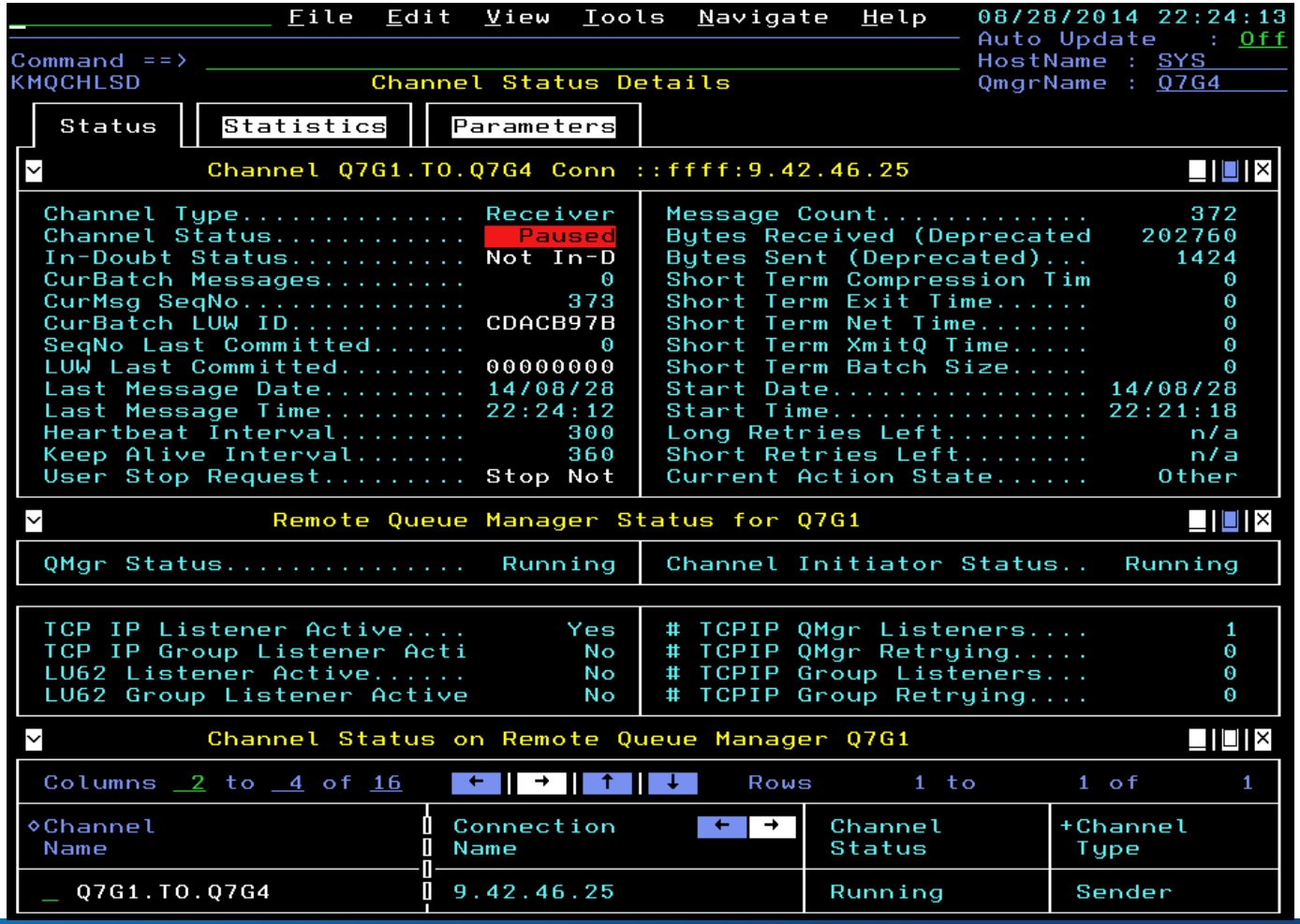
Channels

- Channels that are not in running status, especially current channels that have been started, may imply application communication is not occurring as expected
- The Channel Not Running Summary quickly identifies any channels not in running status



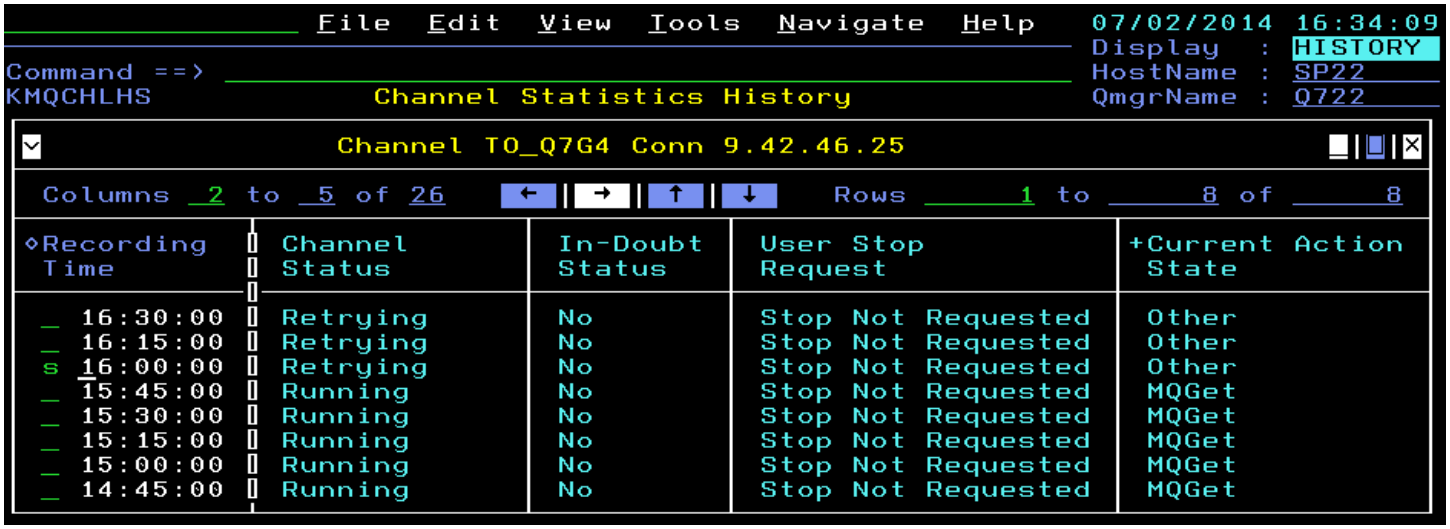
Channels continued

- **Select the channel for channel status details, including the status of the remote queue manager and channel status on that side, if applicable for the type of channel**

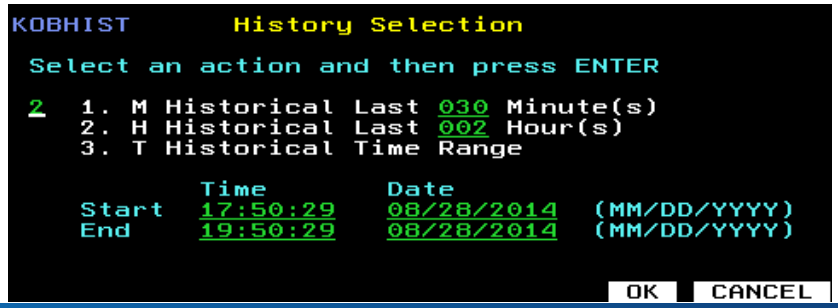


Channels continued

- The H option for History available from any list of channels allows going back in time to determine issues, like when a channel went into retry status

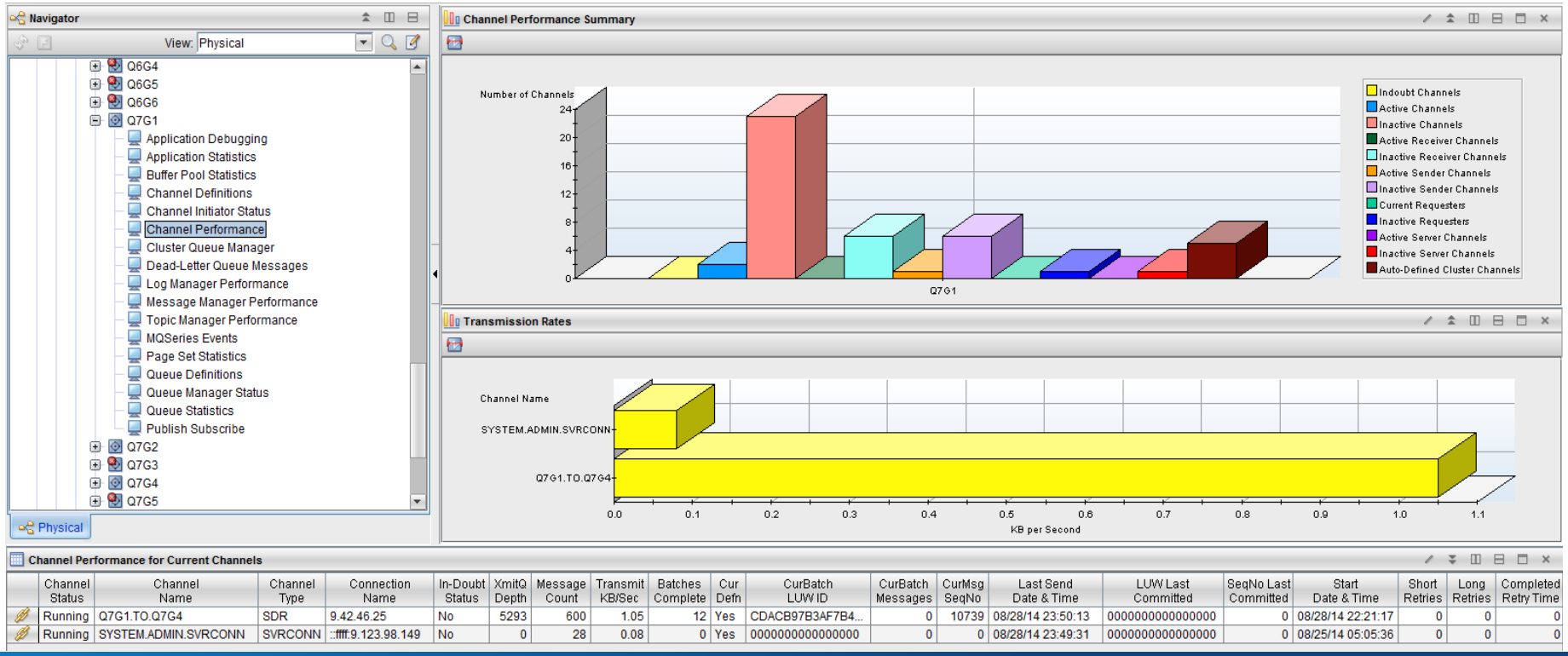


- Again, if necessary, adjust the timespan for the history display to show a longer period of time or a selected period of time



Channels continued

- **Regularly sampled channel statistics are available in both TEP and the Enhanced 3270UI**
- **Recent interval samples also are available for determining very recent trends**
- **Historical statistics are based on the sampled data, and where applicable, the attributes summarized over the historical interval**

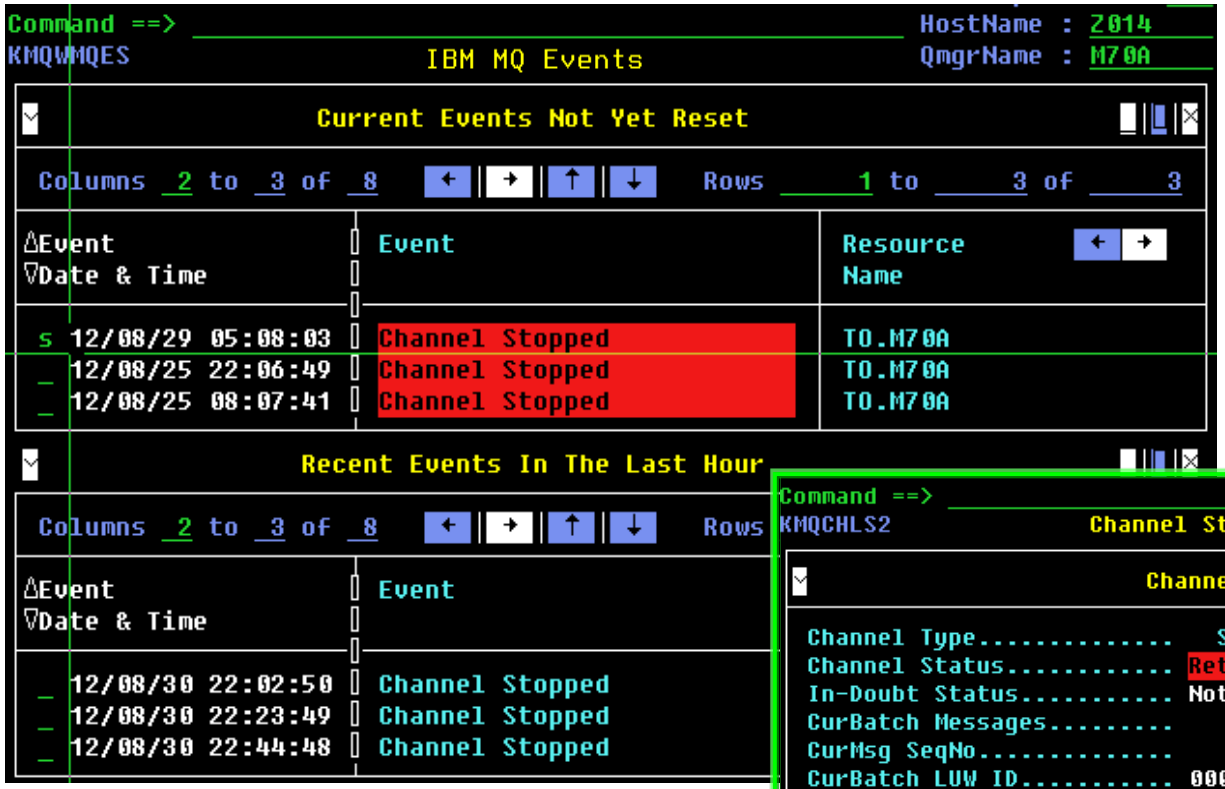


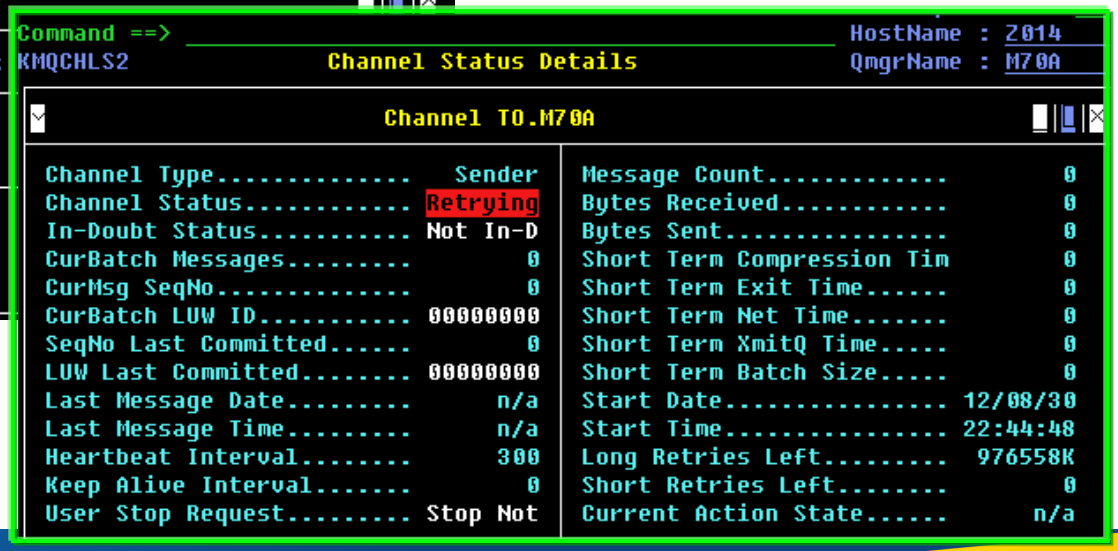
Channel Performance for Current Channels

Channel Status	Channel Name	Channel Type	Connection Name	In-Doubt Status	XmitQ Depth	Message Count	Transmit KB/Sec	Batches Complete	Cur Defn	CurBatch LUW ID	CurBatch Messages	CurMsg SeqNo	Last Send Date & Time	LUW Last Committed	SeqNo Last Committed	Start Date & Time	Short Retries	Long Retries	Completed Retry Time
Running	Q7G1.TO.Q7G4	SDR	9.42.46.25	No	5293	600	1.05	12	Yes	CDACB97B3AF7B4...	0	10739	08/28/14 23:50:13	0000000000000000	0	08/28/14 22:21:17	0	0	0
Running	SYSTEM.ADMIN.SVRCONN	SVRCONN	::ffff:9.123.98.149	No	0	28	0.08	0	Yes	0000000000000000	0	0	08/28/14 23:49:31	0000000000000000	0	08/25/14 05:05:36	0	0	0

MQ Events

- **MQ Events as shown in Enhanced 3270UI; select one for the most current data on resource**

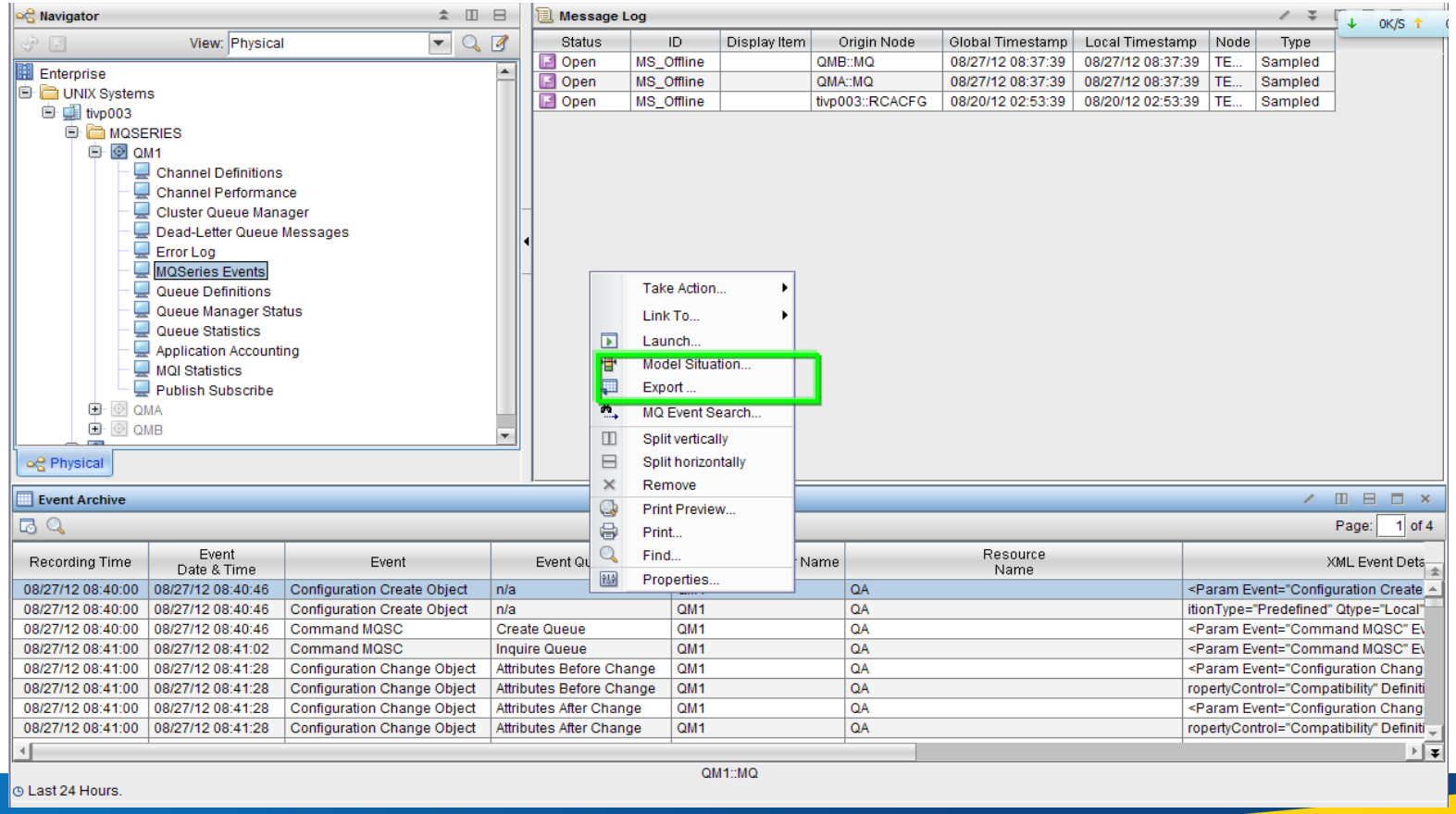




- **The agent automatically monitors event queues, and also has options for sharing with other applications if needed**

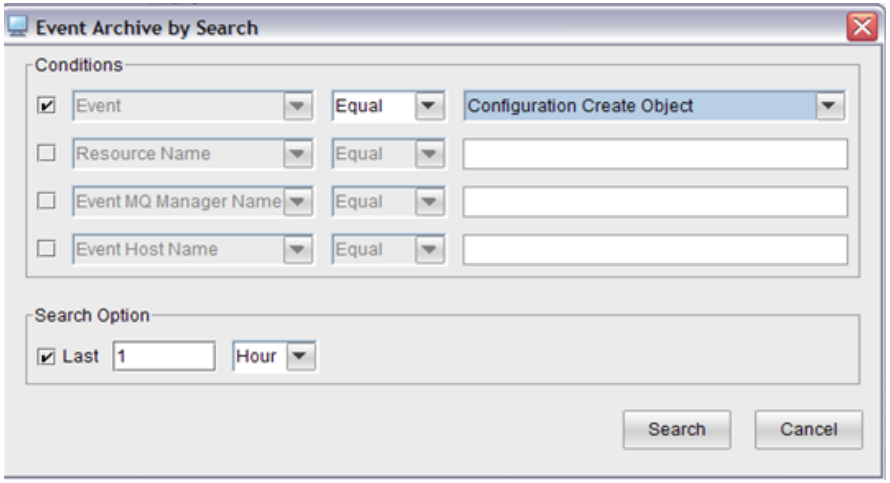
MQ Events continued

- If enabled in the queue manager, MQ Events can be the best performing way for situations to detect problems with queues and channels
- The Event Archive feature captures events, including detail attributes, when configured for historical collection, in order to facilitate event auditing, such as for configuration changes

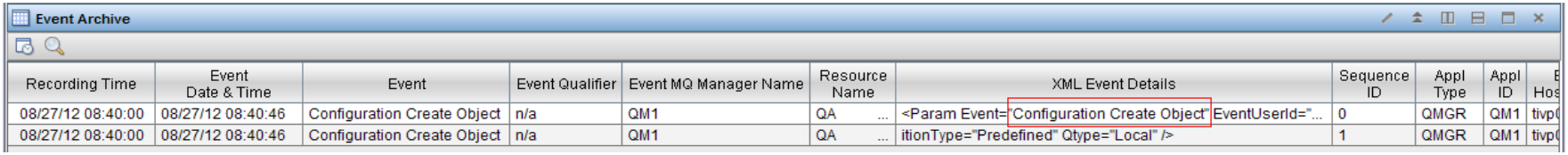


MQ Events continued

- The MQ Event Search menu item for the Event Archive workspace allows specifying conditions for finding matching events
- When the queue manager produces many kinds of events, this can be a big help for finding particular events of interest



- The XML Event Details column contains all data included with the MQ event in XML format

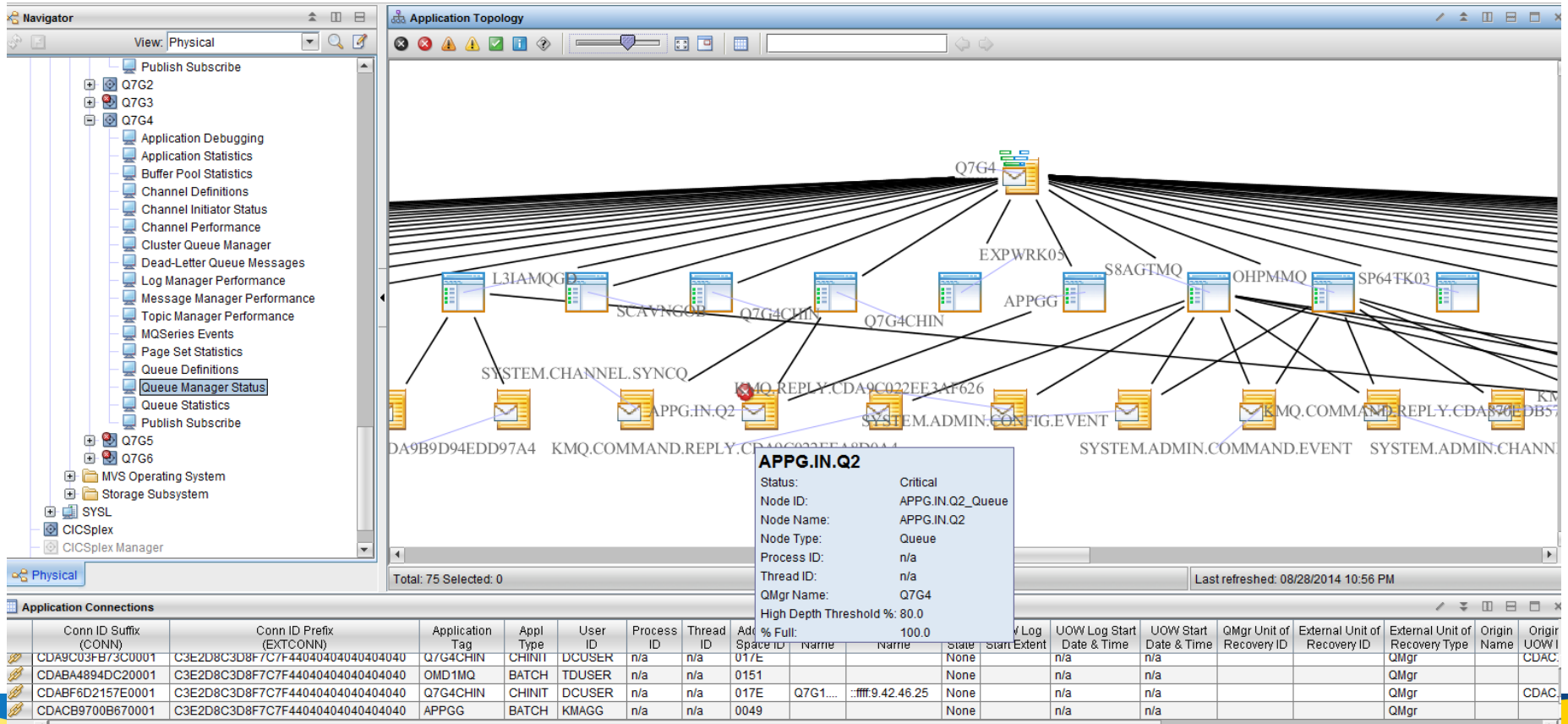


Recording Time	Event Date & Time	Event	Event Qualifier	Event MQ Manager Name	Resource Name	XML Event Details	Sequence ID	Appl Type	Appl ID	E Hos
08/27/12 08:40:00	08/27/12 08:40:46	Configuration Create Object	n/a	QM1	QA ...	<Param Event="Configuration Create Object" EventUserId="...	0	QMGR	QM1	tivp(
08/27/12 08:40:00	08/27/12 08:40:46	Configuration Create Object	n/a	QM1	QA ...	itionType="Predefined" Qtype="Local" />	1	QMGR	QM1	tivp(

- When there are many attributes, more than one row may occur for the same event to contain all the

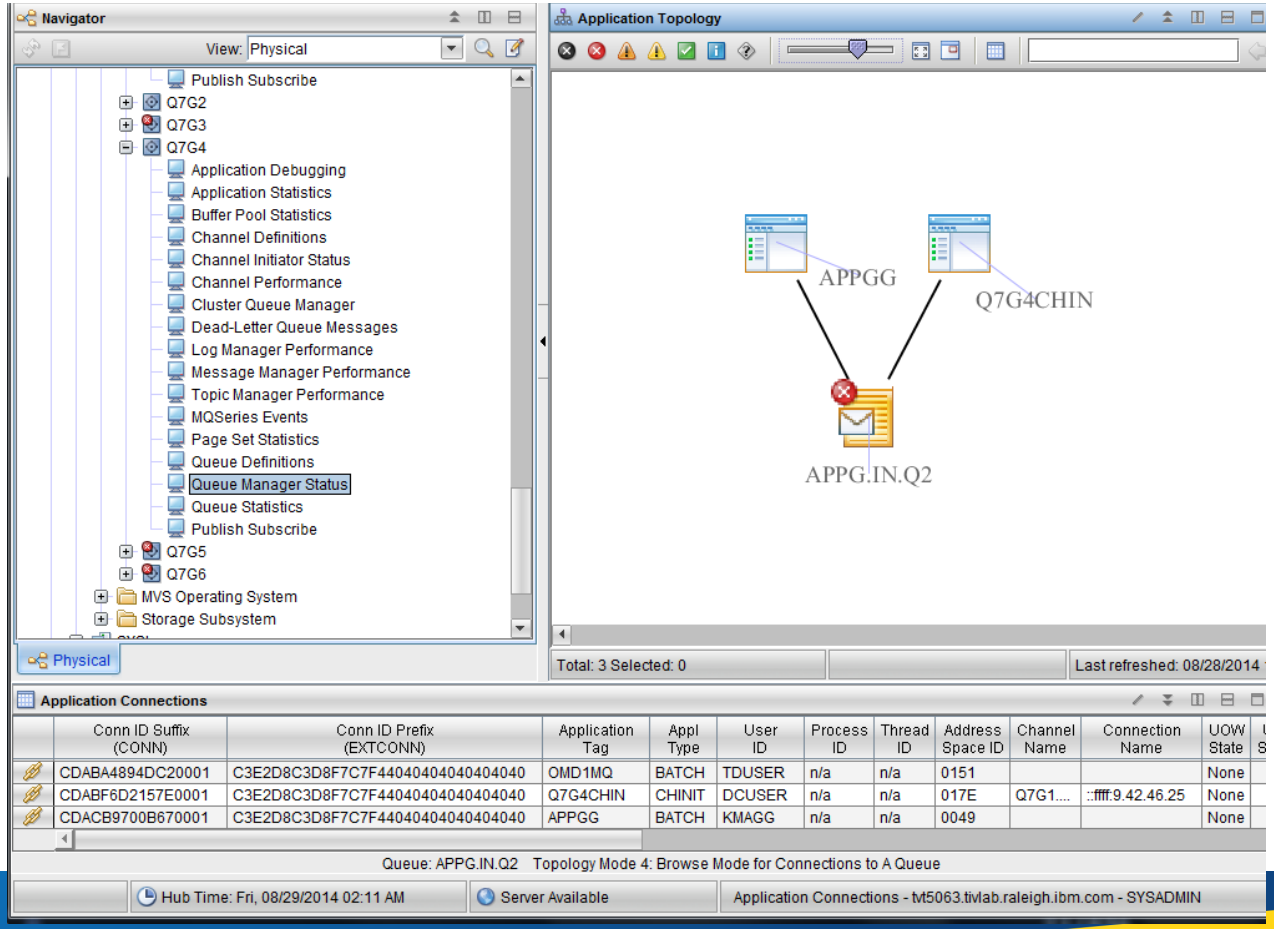
Application Connections

- **Find out which applications are connected to the queue manager, how they are interconnected, and which queues they have open with the Application Connections workspace, which is an alternative workspace in the Queue Manager Status navigator item**
- **Topology notes queue in critical status because it is full**



Application Connections continued

- Link from node in topology to different forms of the topology, and zoom is available too
- Here link is to Application Topology for Selected Queue to see applications with queue open



Buffer Pools

- **Monitoring buffer pool statistics is recommended since buffer pool I/O can affect system performance; these statistics come from MQ SMF type 115 data**

File Edit View Tools Navigate Help 08/29/2014 02:30:18
Auto Update : Off
Command ==> HostName : SYS
KMQMSBMD Buffer Manager QmgrName : Q7G4

Latest Buffer Manager SMF Sample Summary

# of Pools In Use.....	4	Low % Avail.....	49.3
Low # Avail.....	9855	Zero Bufrs Count.....	0
Synch Writes.....	0	GetPg IO %.....	0.0
% GetPg Outside Pool.....	0.0		

Buffer Pools

Columns 2 to 7 of 19 Rows 1 to 4 of 4

ΔPool ∇ID	Δ% of Bufrs ∇Available	Available Buffers	Low # Avail	Zero Bufrs Count	Page Sets Assigned	+Queue Assig
00	99.9	49961	49961	0	2	
01	100.0	19999	19999	0	1	
02	100.0	49990	49990	0	1	
03	49.3	9855	9855	0	1	

Queues Assigned	Number Buffers	GetPg IO %	% GetPg Outside Pool	Low Buffer Synch Writes	Asynch Writes Processing Started	Updated Pgs/Wrt	% Updated Pgs Written	DASD Page Reads/Sec	DASD Page Writes/Sec
18	50000	0.0	0.0	0	0	153510.5	0.0	0.8	0.2
1	20000	0.1	0.1	0	0	2.0	75.0	0.0	0.0
5	50000	0.0	0.0	0	0	198012.5	0.0	0.0	0.0
18	20000	0.0	0.0	0	0	5177077.5	0.0	0.0	0.0

Options Menu

Select an option and then press ENTER

1. H Buffer Pool Statistics History
2. P Page Sets in Buffer Pool
3. R Recent Buffer Pool Statistics
4. S Queues in Buffer Pool

Page Sets

- **Monitoring page set statistics is important to avoid a full page set preventing messages being put to assigned queues, and to help check for buffer pool efficiency**

File Edit View Tools Navigate Help 08/29/2014 03:07:09
Auto Update : Off
Command ==>
KMQPGSTD Page Set Statistics
HostName : SYS
QmgrName : Q7G4

Latest Page Set Sample Summary

# of Page Sets.....	5	High % In Use.....	20.9
Unavailable Page Sets.....	0	Avg Extents.....	5.2
Full Page Sets.....	0	High Extents.....	22
Avg % In Use.....	7.5	Avg Pages Allocated.....	21272.8

Page Sets

Columns 2 to 7 of 18 Rows 1 to 5 of 5

ΔPage Set ∇VID	Status	Δ% Pages ∇In Use	Allocated Data Pages	Unused Pages	Persistent Pages	+Non Pag
00	Available	20.8	1078	853	225	
01	Available	1.3	1078	1063	15	
02	Available	0.3	1078	1074	4	
03	Available	0.0	1078	1077	0	
04	Available	7.5	102052	94314	0	

Non-Persistent Pages	Total Extents	Extents Since Restart	Buffer Pool ID	Buffers In Use	% Buffer Pool In Use	Queues Assigned	Queue Messages	+Dataset Name
0	1	0	00	17	0.0	0	0	MQM.V701.Q7G4.PSID00
0	1	0	00	22	0.0	18	8	MQM.V701.Q7G4.PSID01
0	1	0	01	1	0.0	1	2	MQM.V701.Q7G4.PSID02
1	1	0	02	10	0.0	5	0	MQM.V701.Q7G4.PSID03
7738	22	0	03	10145	50.7	18	7192	MQM.V701.Q7G4.PSID04

Options Menu

Select an option and then press ENTER

1. B Recent Buffer Pool Statistics
2. D Page Set Dataset Details
3. H Page Set Statistics History
4. R Recent Page Set Statistics
5. S Queues in Page Set

Message Manager

- **Message Manager statistics indicate MQI call usage counted at the queue manager level to understand how active the queue manager is processing requests**

File Edit View Tools Navigate Help 08/29/2014 03:28:21
Auto Update : Off
Command ==> HostName : SYS
KMQMSMMD Message Manager QmgrName : Q7G4

Latest Message Manager SMF Sample

MQOPEN Per Sec	0.0	MQCLOSE Per Sec	0.0
MQGET Per Sec	17.0	MQPUT Per Sec	17.1
MQPUT1 Per Sec	0.0	MQINQ Per Sec	0.1
MQSET Per Sec	0.0	Close Hndl Per Sec	0.0
MQSUB Per Sec	0.0	MQSUBRQ Per Sec	0.0
MQCB Per Sec	0.0	MQCTL Per Sec	0.0
MQSTAT Per Sec	0.0	Pub Put Per Sec	0.0

Recent Message Manager SMF Samples

Columns 2 to 6 of 16 Rows 1 to 15 of 15

ΔSample ∇Time	MQOPEN Per Sec	MQCLOSE Per Sec	MQGET Per Sec	MQPUT Per Sec	MQPUT1 Per Sec
03:25:25	0.3	0.2	17.0	17.1	0.0
03:20:25	0.3	0.3	17.7	17.3	0.0
03:15:25	0.3	0.3	19.8	19.4	0.0
03:10:25	0.3	0.3	19.6	19.2	0.0
03:05:24	0.3	0.2	16.4	15.4	0.0

MQINQ Per Sec	MQSET Per Sec	Close Hndl Per Sec	MQSUB Per Sec	MQSUBRQ Per Sec	MQCB Per Sec	MQCTL Per Sec	MQSTAT Per Sec	Pub Put Per Sec	Interval Time
0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	299.99
0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	300.00
0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	299.99
0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	300.12
0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	299.89

Options Menu

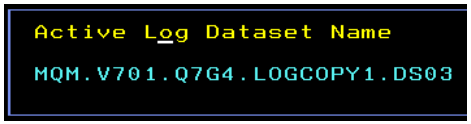
Select an option and then press ENTER

1. H Message Manager SMF Samples History

Log Manager

- Examine Log Manager statistics to insure there are not problems with the writing to the active log and to check for that log manager related parameters are sufficient

- Usage tip, click on white value to popup complete length



File Edit View Tools Navigate Help 08/29/2014 03:42:04
Auto Update : Off
Command ==> HostName : SYS
KMQMSLMD Log Manager QmgrName : Q7G4

Latest Log Manager SMF Sample

Active Log Dataset Name...	MQM.V701	Archive Delay Due to Max T	0
% Current Active Log Full.	50.0	Archive Delay Unavail Reso	0
Active Log Copy 2 Dataset	MQM.V701	Lookahead Tape Mounts.....	0
% Current Active Log Copy	50.0	% Failed Lookahead Tape Mo	0.0
Logging Suspended.....	No	Busy Archive Tapes.....	0
Archiving Quiesced.....	No	% of Busy Tape Units.....	0.0
Offload Task Status.....	Availabl	Log Write Request Per Min.	0.4
Full Logs To Offload.....	0	Log Write CI Per Min.....	0.4
Active Logs Available.....	8	Log Wr Req for CI Rewrite/	0.0
Checkpoints.....	0	Compression Request Per Mi	0.0
Log Write Threshold.....	0	Compression Failure Per Mi	0.0
Log Write Buffer Pagein...	0	Uncompressed KB Before Com	0
Write Requests Suspended..	1	Compressed KB After Compre	0
Zero Bufr Waits.....	0	Decompression Request Per	0.0
Arch Log Read %.....	0.0	Decompression Failure Per	0.0
% Rd Log Delayed.....	0.0	Uncompressed KB After Deco	0
Read Log Per Min.....	0.0	Compressed KB Before Decom	0
Write Log Per Min.....	0.8		

Recent Log Manager SMF Samples

Columns 2 to 6 of 37 Rows 1 to 8 of 15

ΔSample ∇Time	Zero Bufr Waits	Arch Log Read %	% Rd Log Delayed	Read Log Per Min	Write Log Per Min
03:40:24	0	0.0	0.0	0.0	0.8
03:35:25	0	0.0	0.0	0.0	0.0
	0	0.0	0.0	0.0	0.0
	0	0.0	0.0	0.0	0.0
	0	0.0	0.0	0.0	0.0
	0	0.0	0.0	0.0	0.0
	0	0.0	0.0	0.0	0.0
	0	0.0	0.0	0.0	0.0

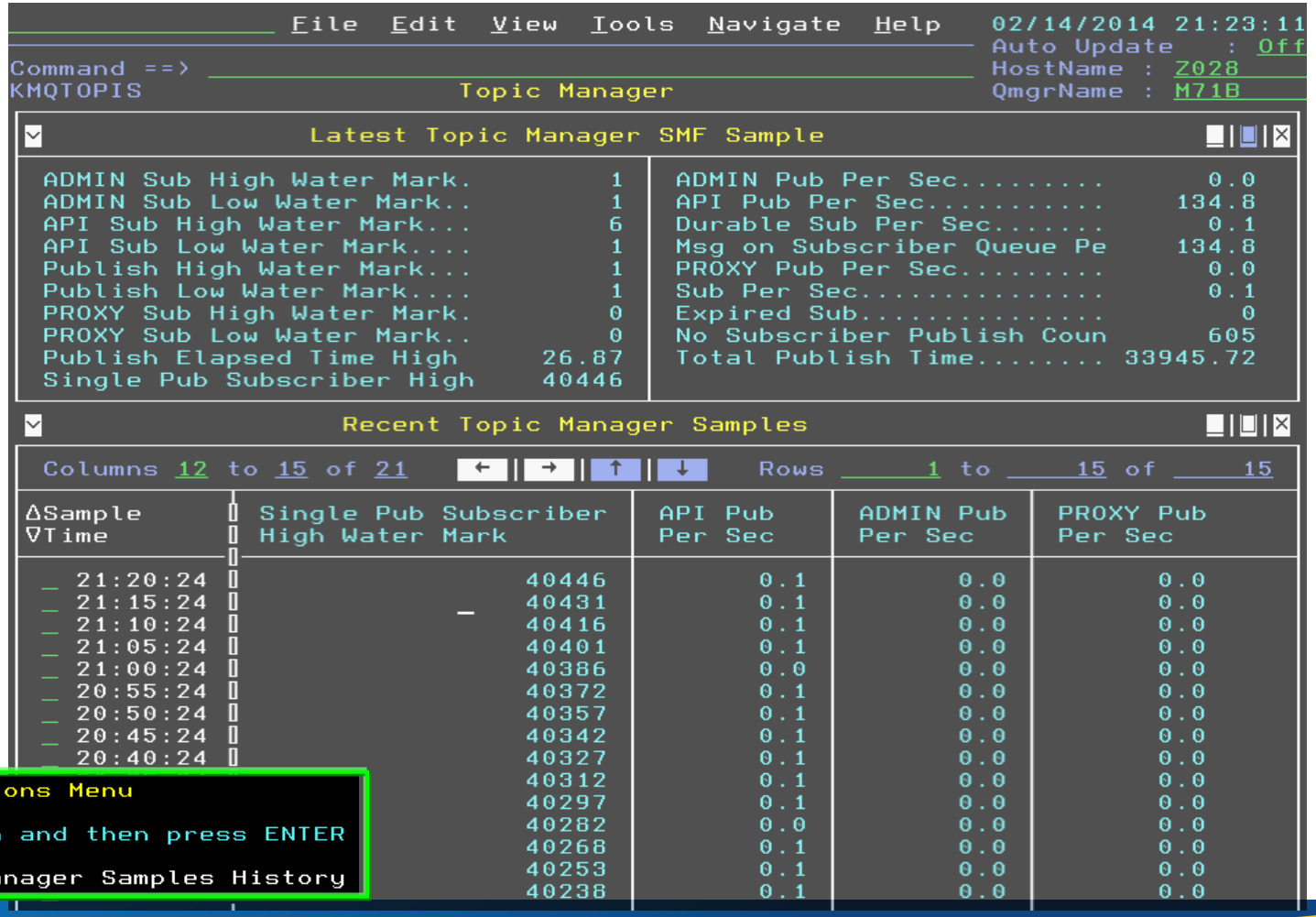
Options Menu

Select an option and then press ENTER

1. H Log Manager SMF Samples History

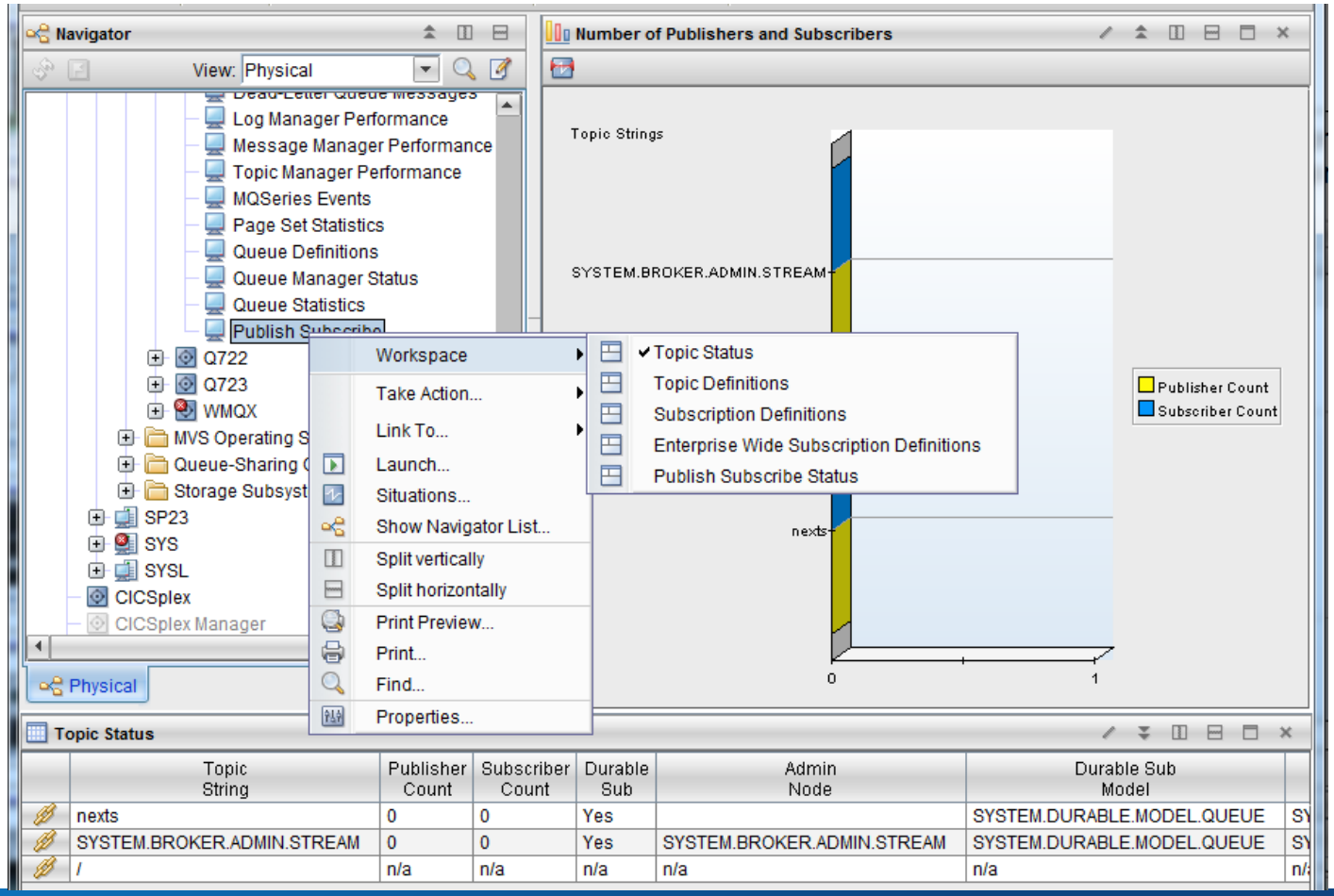
Topic Manager

- **Topic Manager statistics indicate publication and subscription activity counted at the queue manager level to understand how busy the queue manager is with pub/sub**



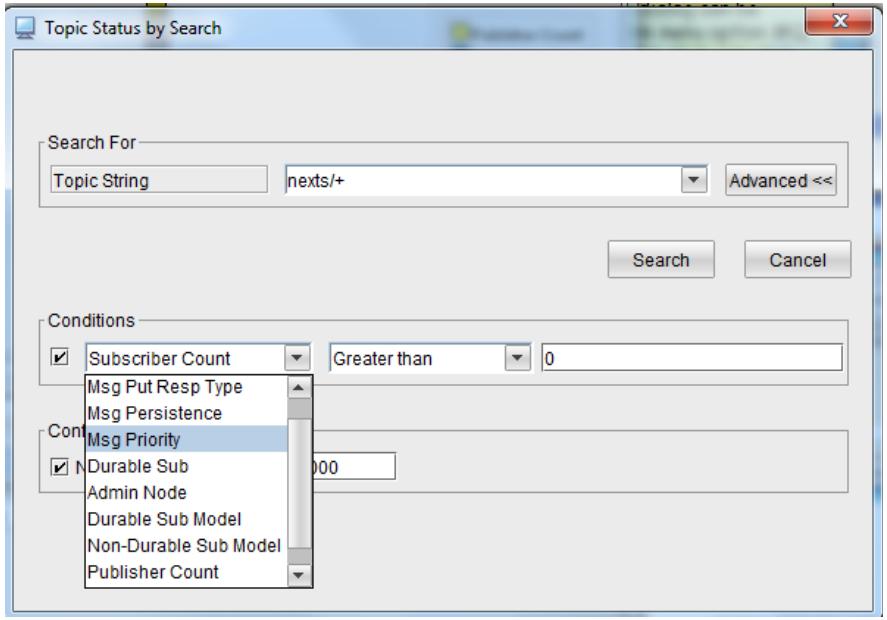
Publish Subscribe

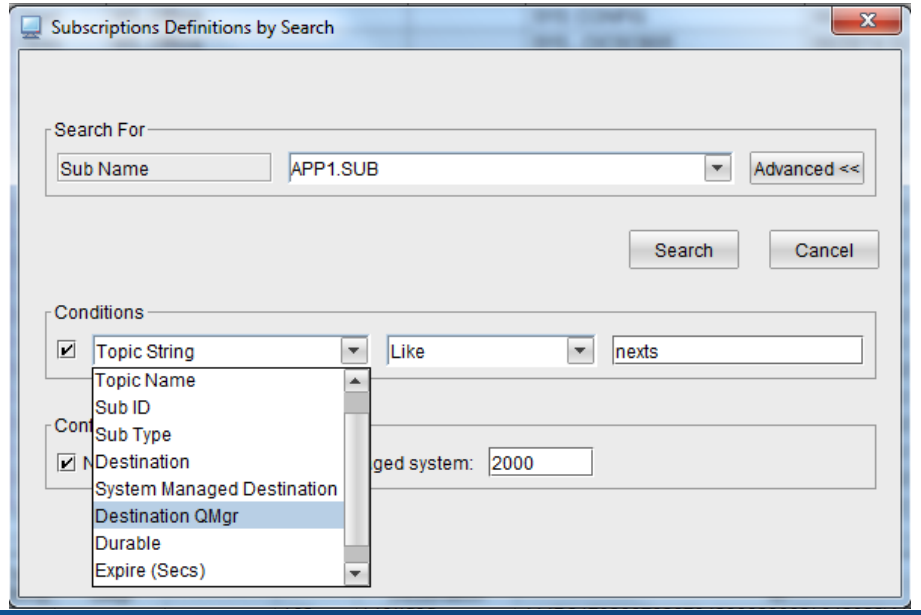
- **The TEP Publish Subscribe navigator item contains several workspaces showing definitions of topics and subscriptions and their status, including topic status with respect to subscribers and publishers**



Publish Subscribe continued

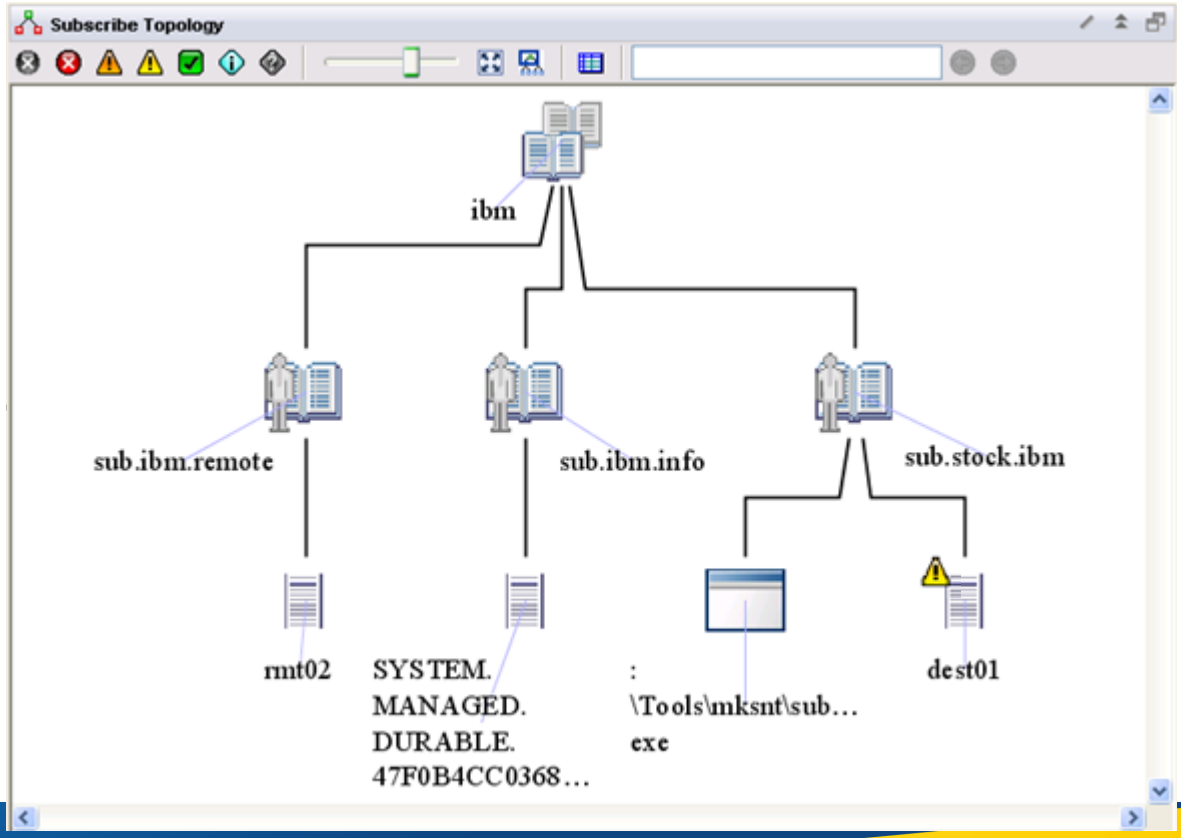
- MQ Search is a menu item available by right clicking on a row in a table in several of the pub/sub workspaces, and the exact search performed is case sensitive to the workspace it is invoked from
- Search helps narrow down the set of topics and subscriptions of interest
- There is also an enterprise-wide search capability for subscriptions





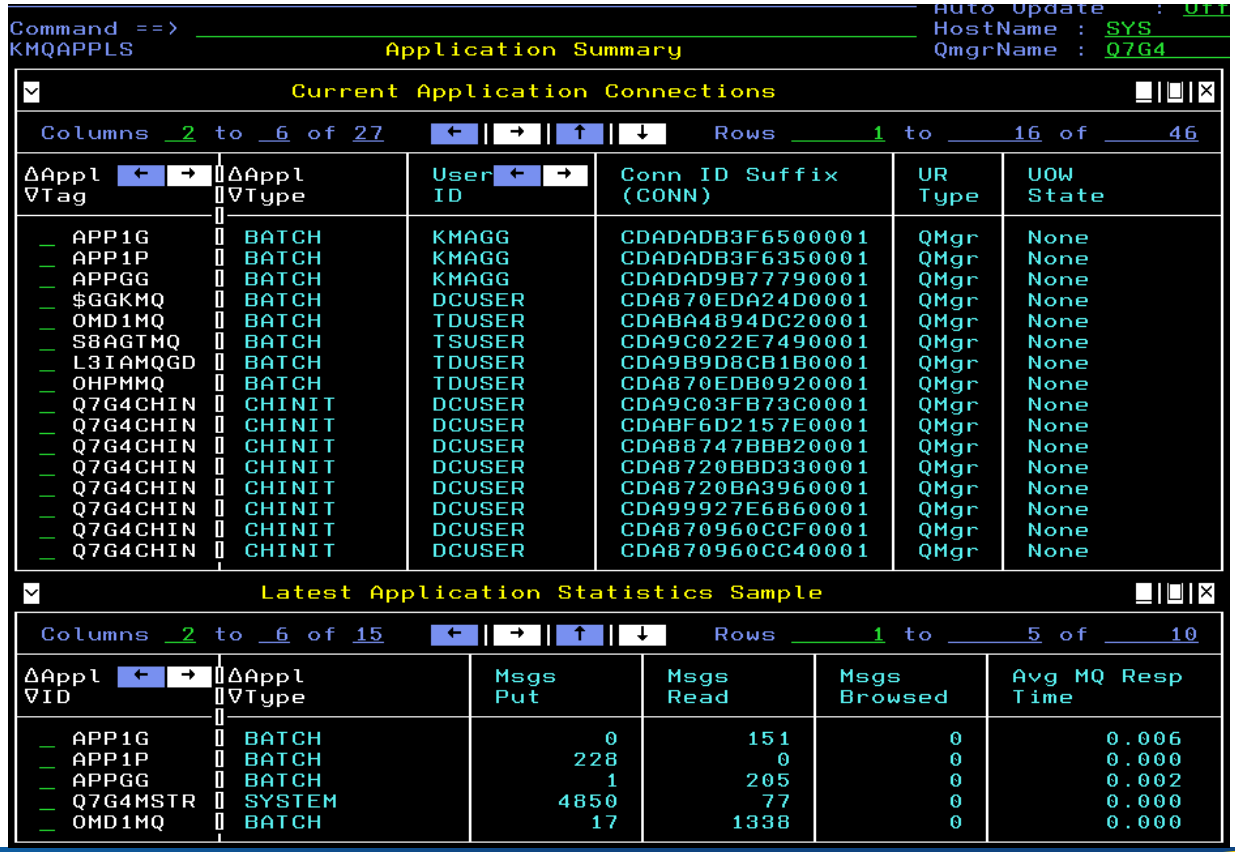
Publish Subscribe continued

- Subscribing topology is shown on the Topic Status – Subscribers workspace
- It includes nodes for topic, subscriptions, applications and destinations
- Subscription node can link to Subscriptions Definitions and Subscription Status
- Destination node can link to Queue Status and Application Topology for Selected Queue
- Application node can link to Application Topology for Selected Application
- Status of the destination node indicates status of the destination queue with respect to its current depth compared to its high depth threshold
- Remember that the same destination queue can be shared by multiple subscriptions



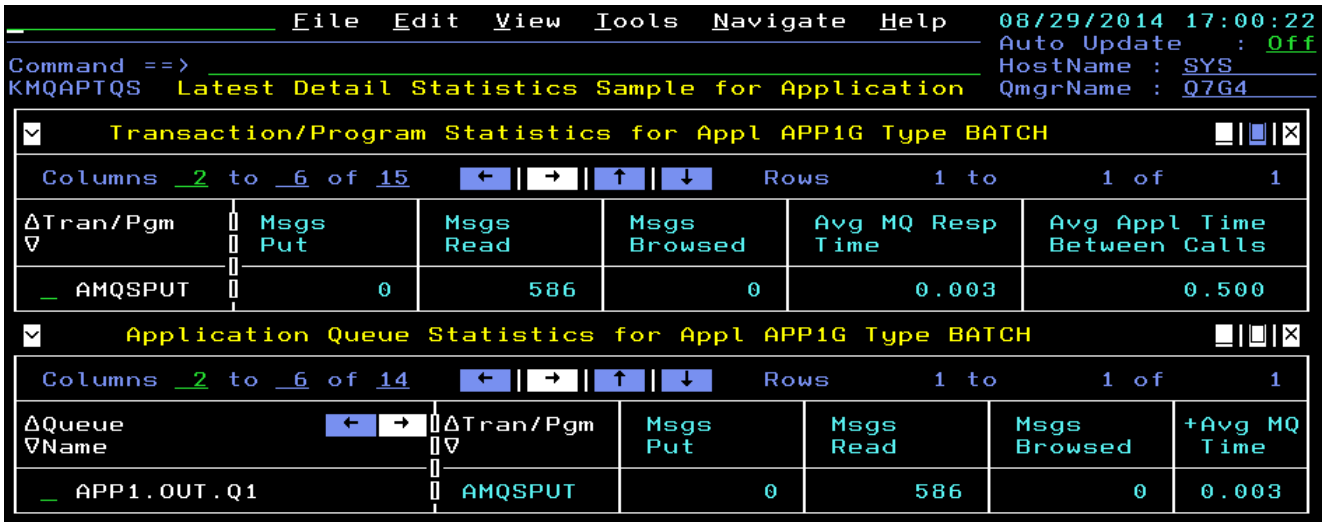
Application Statistics

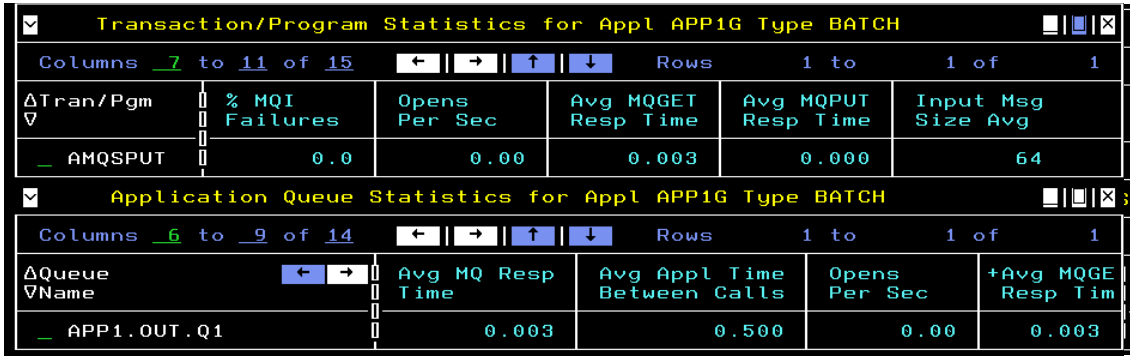
- The optional MQI monitoring feature can be configured for the monitoring agent to provide three levels of application statistics for z/OS messaging applications
- Application Summary shows current application connections on top subpanel (which does not require MQI monitoring enablement), and application statistics on bottom subpanel
- Select a row for an application connection to get to embedded data from CICS or z/OS based on type (same data as available for open queues)
- Select a row for application statistics to see transaction/program and queue levels of the statistics

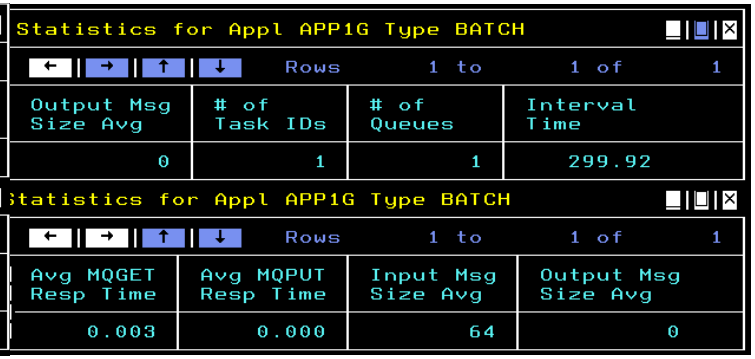


Application Statistics continued

- **Each level reports similar statistics, relative to the application, transaction/program within application, or queue in use by application**

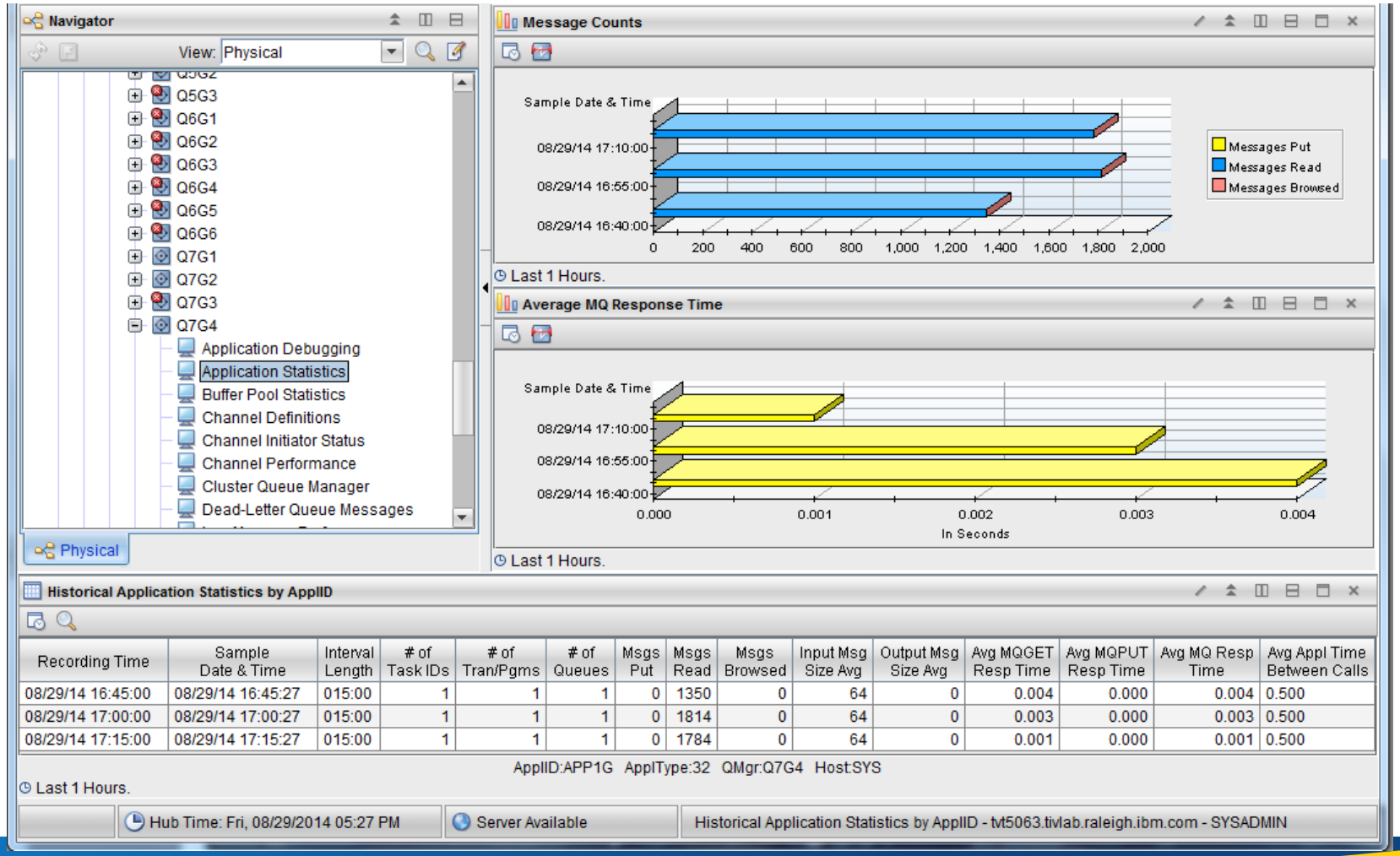






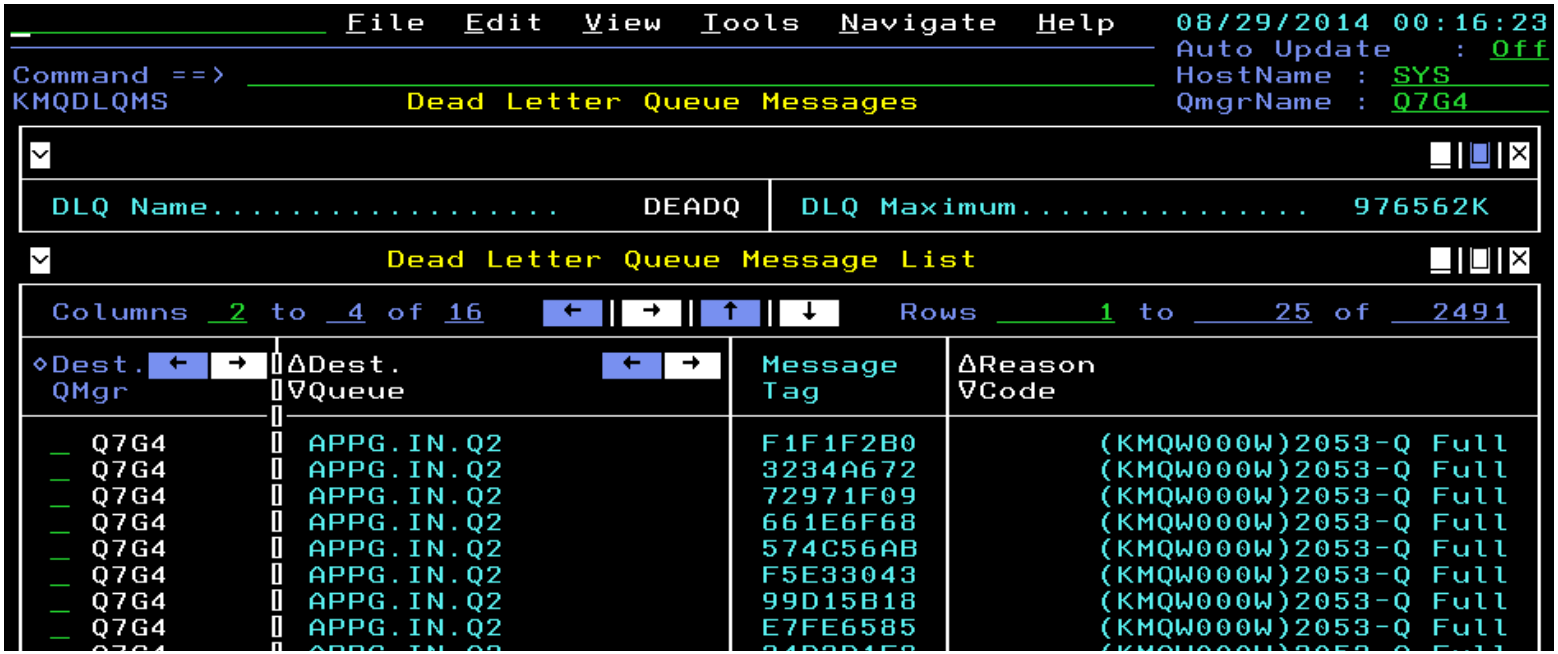
Application Statistics continued

- **All levels of data, within current, recent and historical workspaces, also are available in TEP**

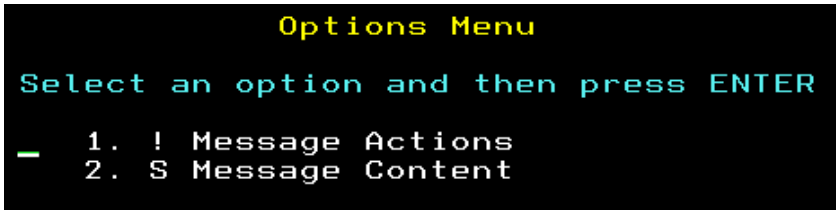


Dead Letter Queue

- **Option D for a queue manager lists the messages on the dead letter queue**



- **For each message, options are to do a message manipulation action or view the contents**



Dead Letter Queue continued

- **Deleting a message requires a confirmation**

```
                Action Confirmation
You have chosen to Delete Message
Type a selection number, enter Y to confirm,
enter N to cancel, or press PF3 to return.
_   1. Y Confirm the action
    2. N Cancel the action
```

- **Message forwarding for a DLQ message pre-fills the queue and queue manager name from the header information, so that by default, if these values are not changed, the message is "retried" to the original destination queue**

```
KMQQMSGF     Forward Message
Specify target queue name and target queue manager name
 Queue==> APPG.IN.Q2
 Queue manager==> Q7G4
```

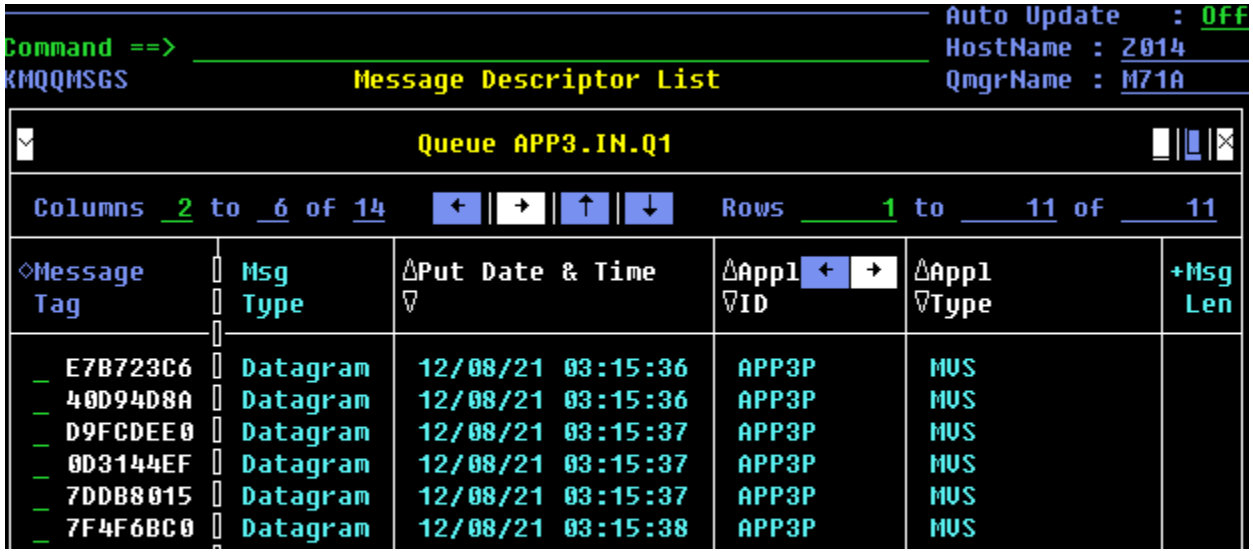
- **Actions and viewing contents require sufficient authority according to agent parameters and queue manager security settings**

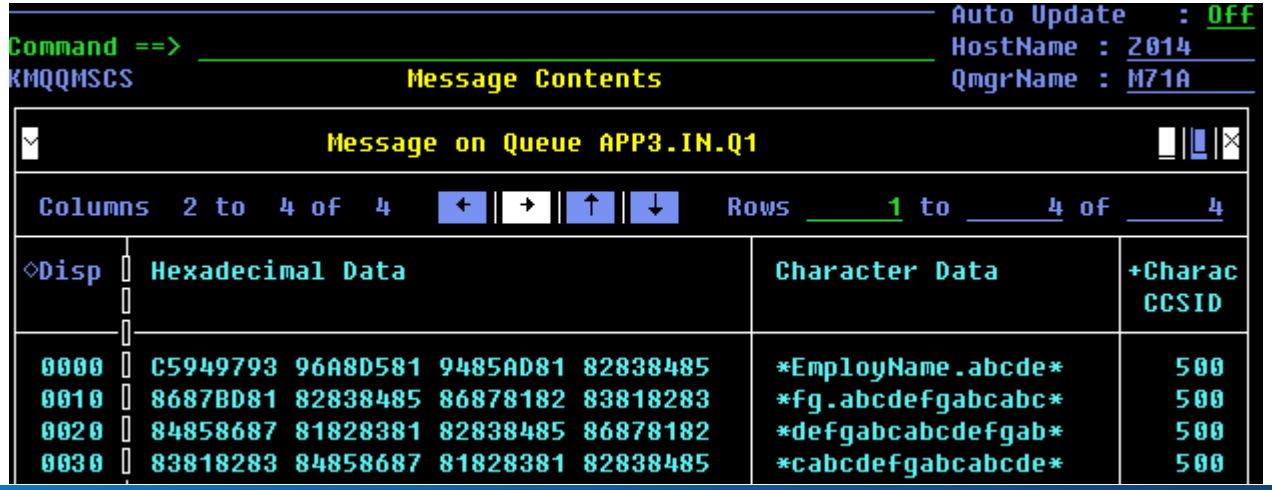
```
File  Edit  View  Tools  Navigate  Help      08/29/2014 00:28:09
                                             Auto Update    : Off
Command ==>                                  HostName  : SYS
KMQQMSCS              Message Contents       QmgrName  : Q7G4

                Message on Queue DEADQ
 Columns  1 to  1 of  1   ←  →  ↑  ↓   Rows  1 to  1 of  1
◊Status

 (KMQW008E)Not Allowed By MSGACCESS
```

Message Manipulation

- One of the options for queues is to display messages on the queue

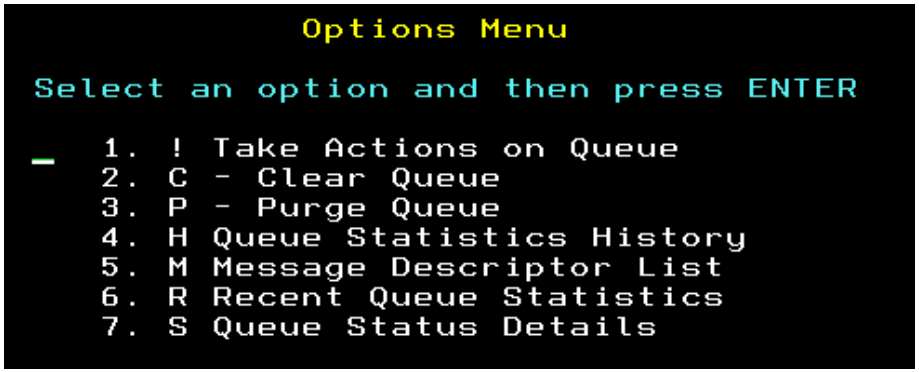
- The same options as for DLQ messages are available
- Select a row to view the contents of the message





Message Manipulation continued

- **Two message manipulation actions are available on the options menu available for queues**
  - Clear Queue uses the MQSC CLEAR QLOCAL command
  - Purge Queue uses destructive MQGET MQI calls to clear the queue

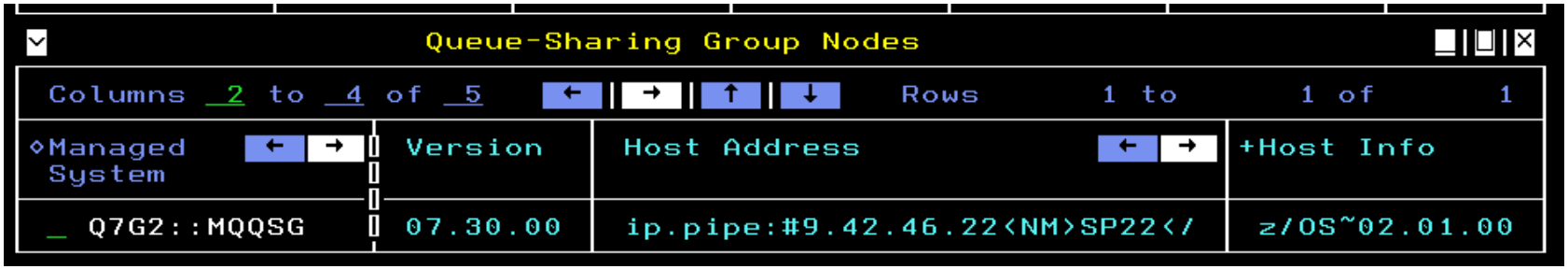


- **Message manipulation requires proper authorization via agent parameter settings and queue manager security settings; authorization can be at the queue level**

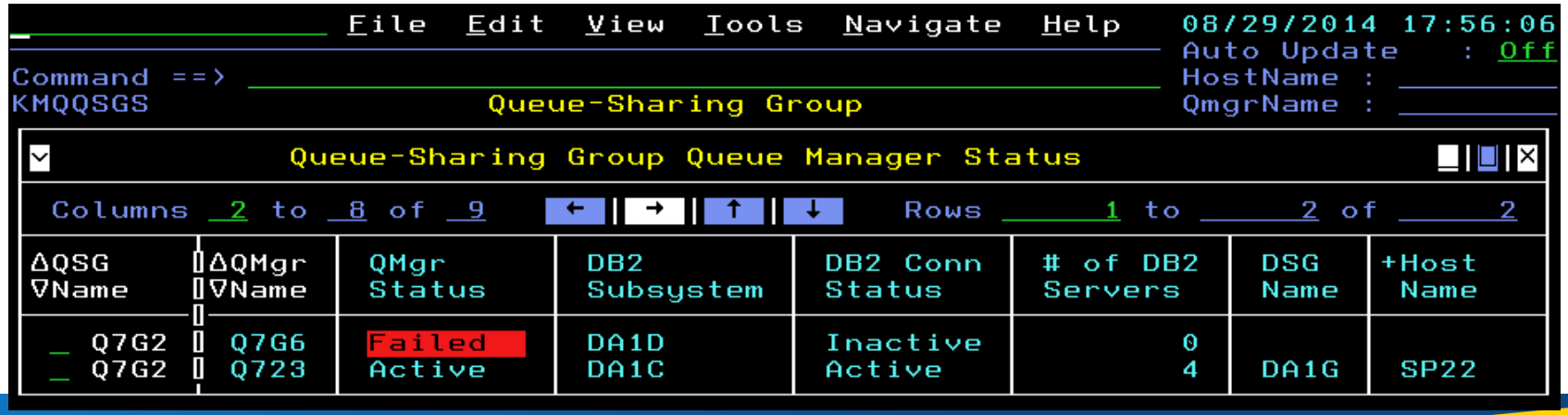
- **Note that TEP has the same capabilities with respect to the dead letter queue and message manipulation**

Queue-Sharing Groups

- Queue-sharing group nodes in the enterprise are listed on the health overview workspace
- Only one agent monitors a queue-sharing group, but should that agent go offline, another agent monitoring a queue manager in the group will take over monitoring it

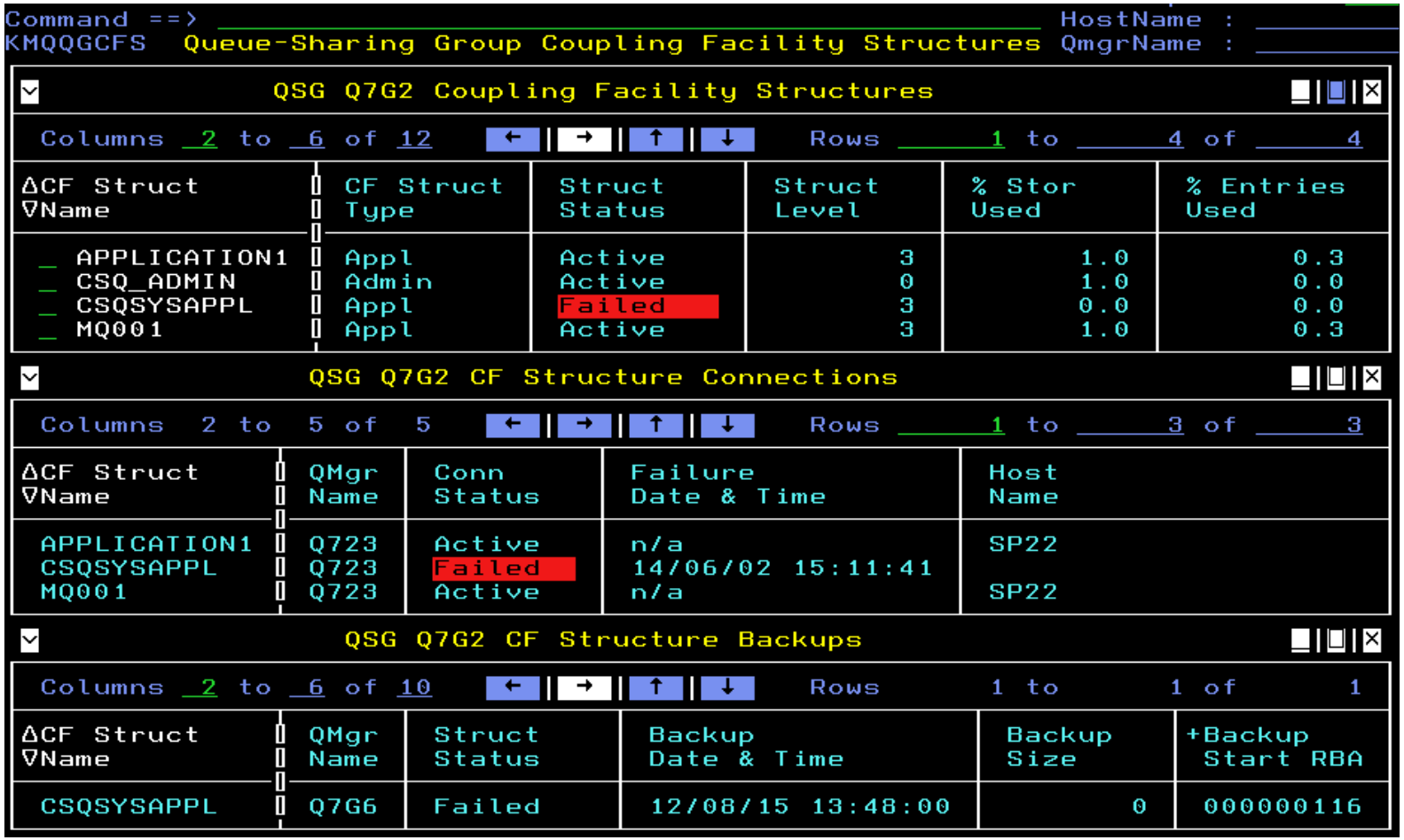


- Select the node to see status related to queue managers in the queue-sharing group



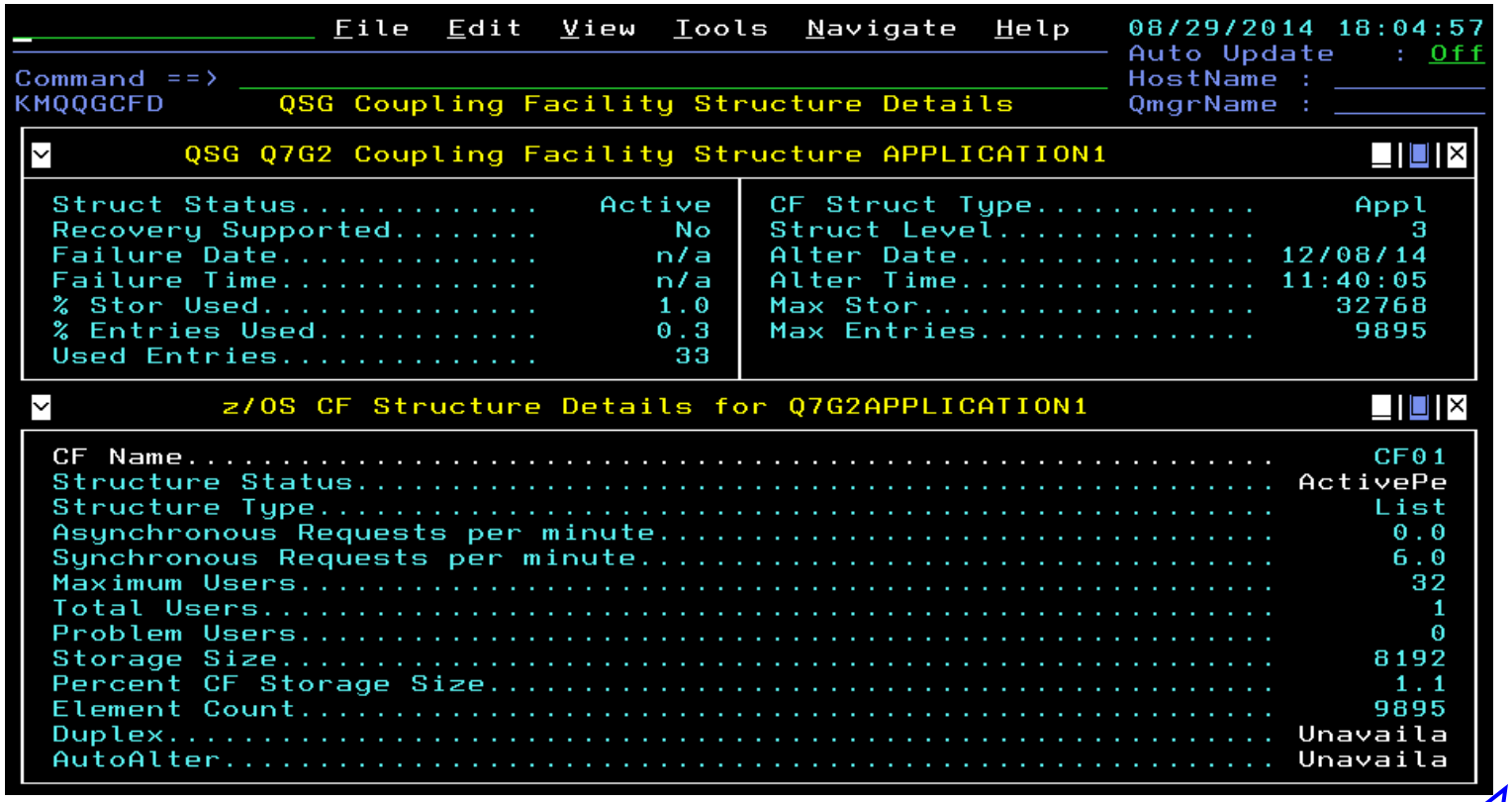
Queue-Sharing Groups continued

- **Select a row to see all the Couple Facility Structure information from MQ side**

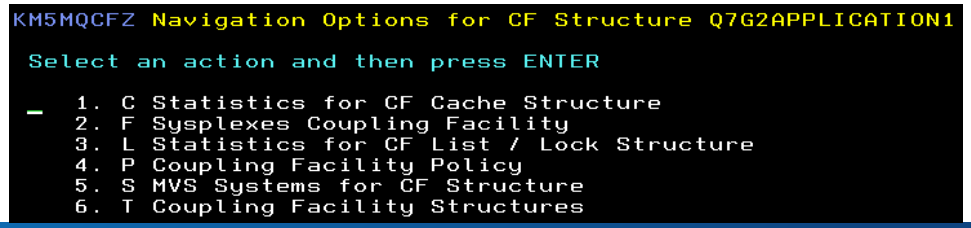


Queue-Sharing Groups continued

- **Select a structure in the top subpanel to see details including z/OS CF information**



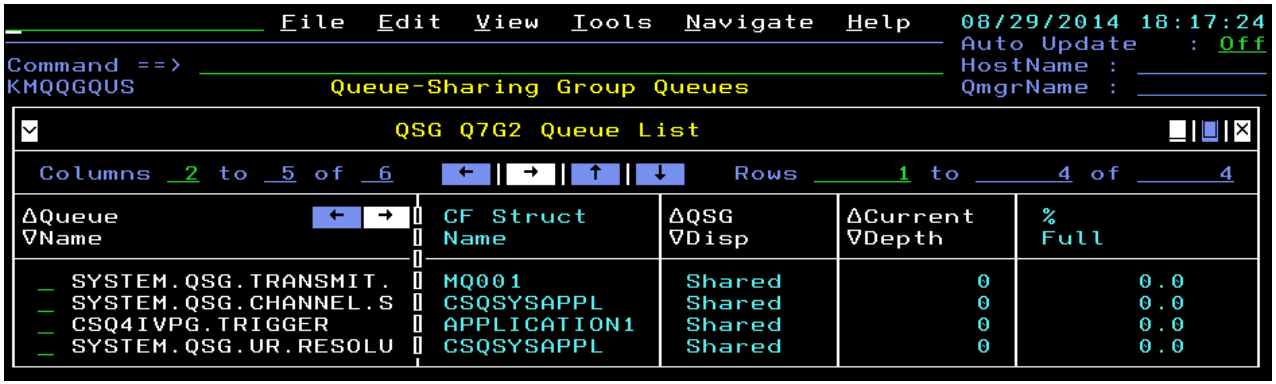
- **Options from zoom on CF Name**



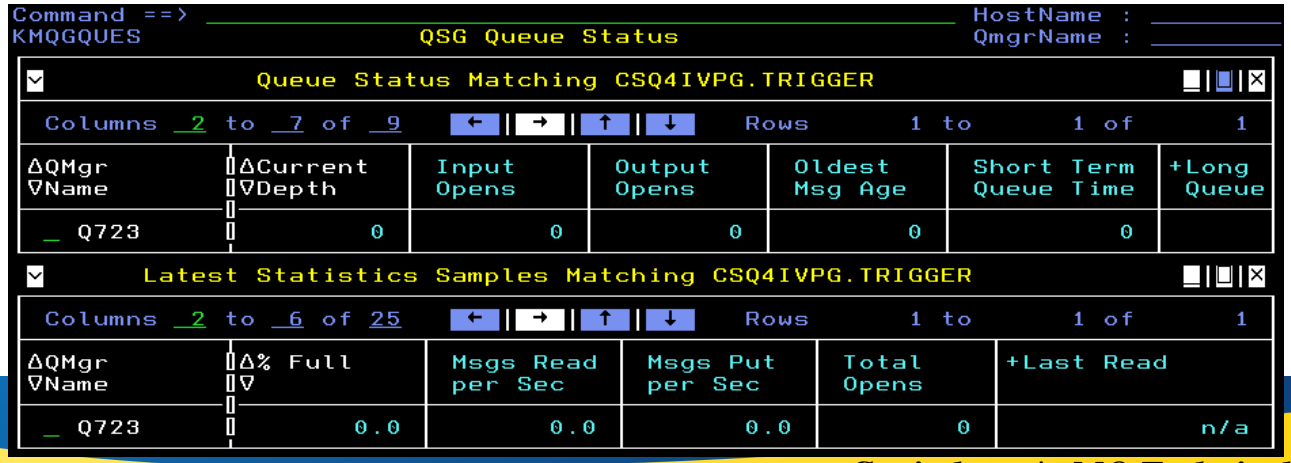
Embedded Data from z/OS !

Queue-Sharing Groups continued

- From queue-sharing group queue manager status, use option “C” to see channels for the queue-sharing group and directly get to data from queue managers about them
- Here the “Q” option shows queues associated with the queue-sharing group

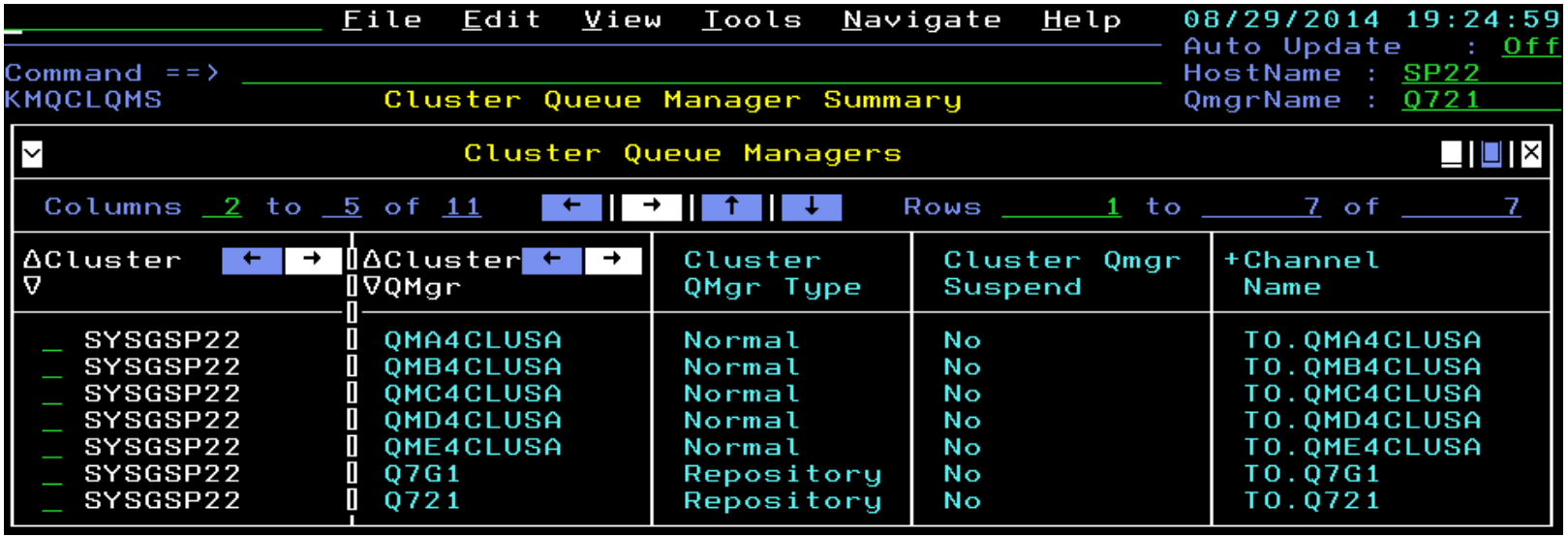


- Select a queue to see queue status and statistics from each queue manager with the queue (here only one queue manager shows, but there typically would be multiple)



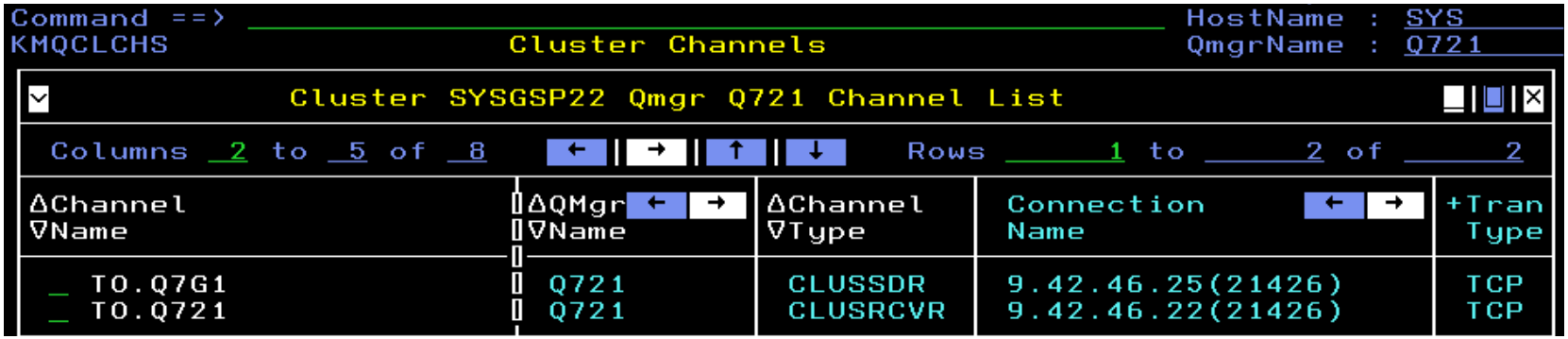
MQ Clusters

- The “G” option for a queue manager displays a workspace indicating cluster(s) associated with the queue manager and other queue managers in the cluster(s)

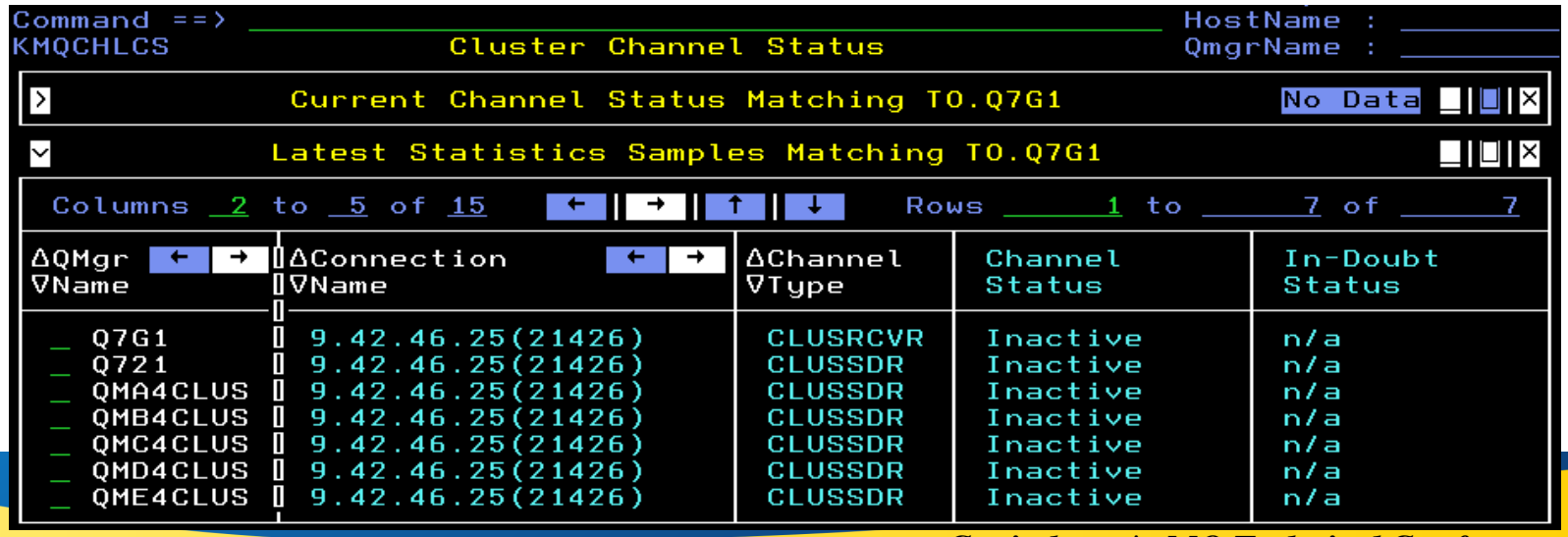


MQ Clusters continued

- **Select a row for channels associated with the cluster related to the given queue manager**

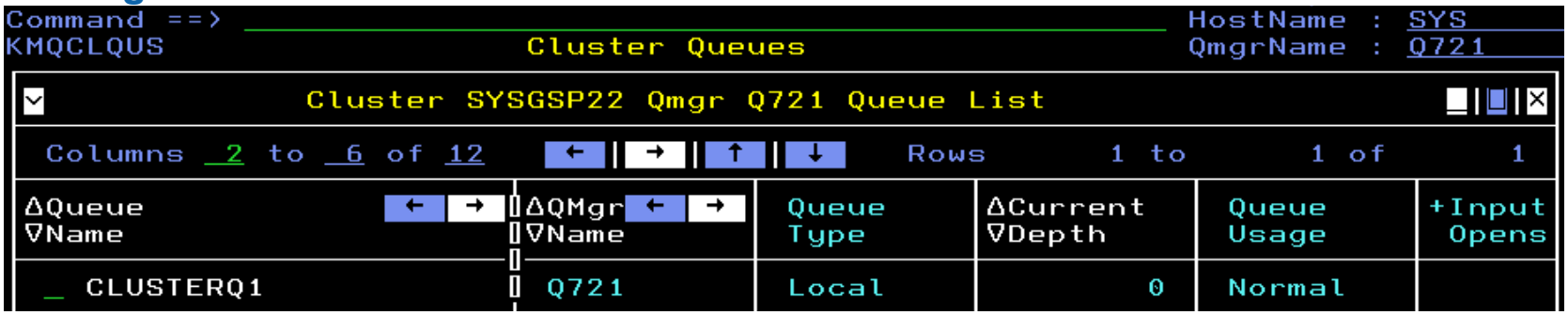


- **Select channel for convenient display of status and statistics from each queue manager in the cluster (more options available for data from particular queue manager, like historical)**

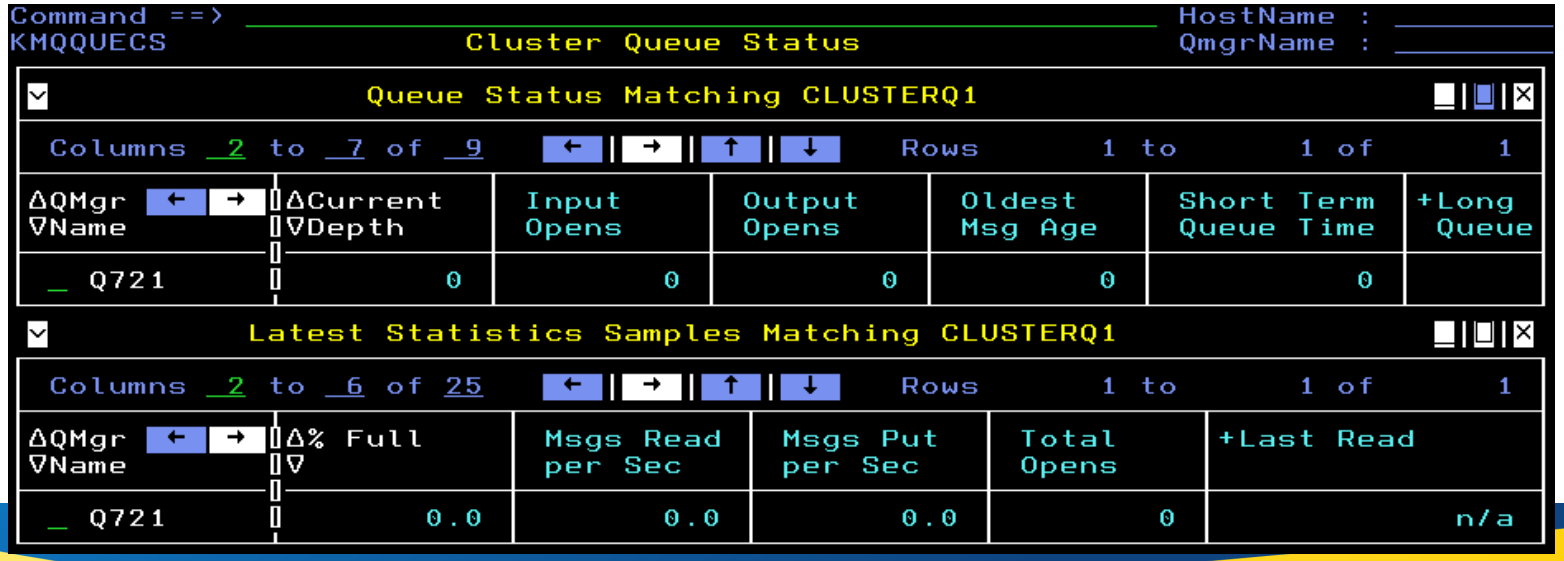


MQ Clusters continued

- **Use “Q” option for queues associated with the cluster related to the given queue manager**

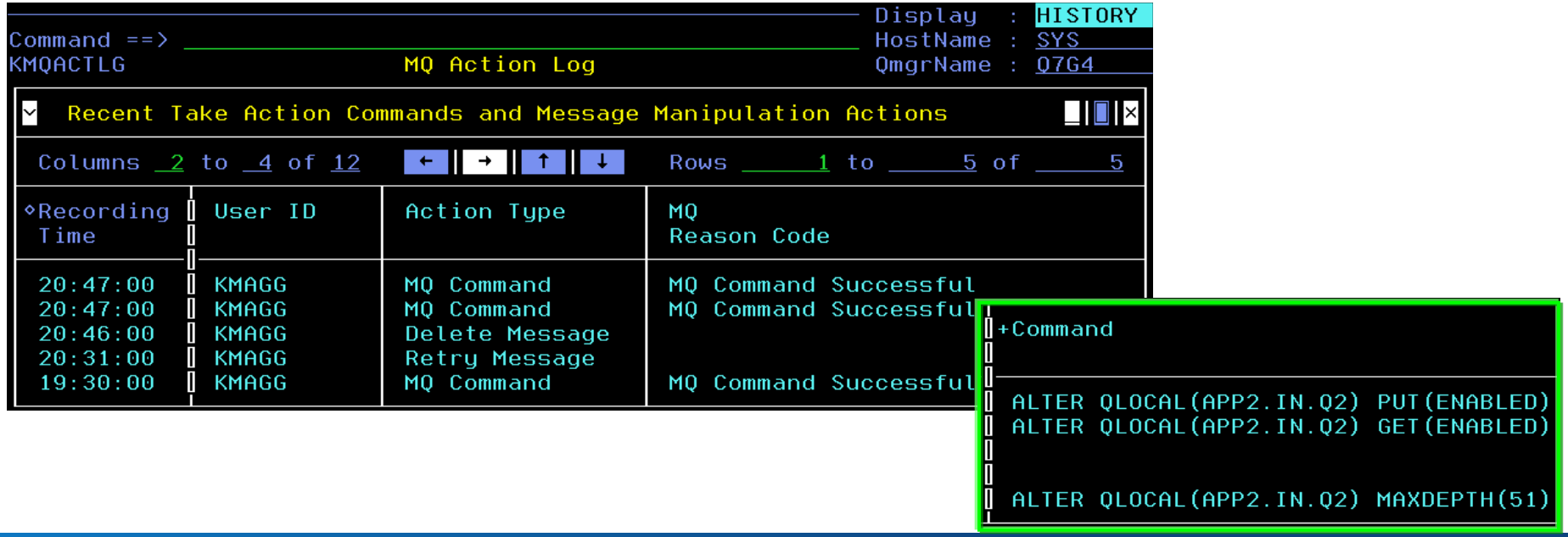


- **Select a queue for convenient display of status and statistics from each queue manager hosting it in the cluster (more options available for data from particular queue manager)**



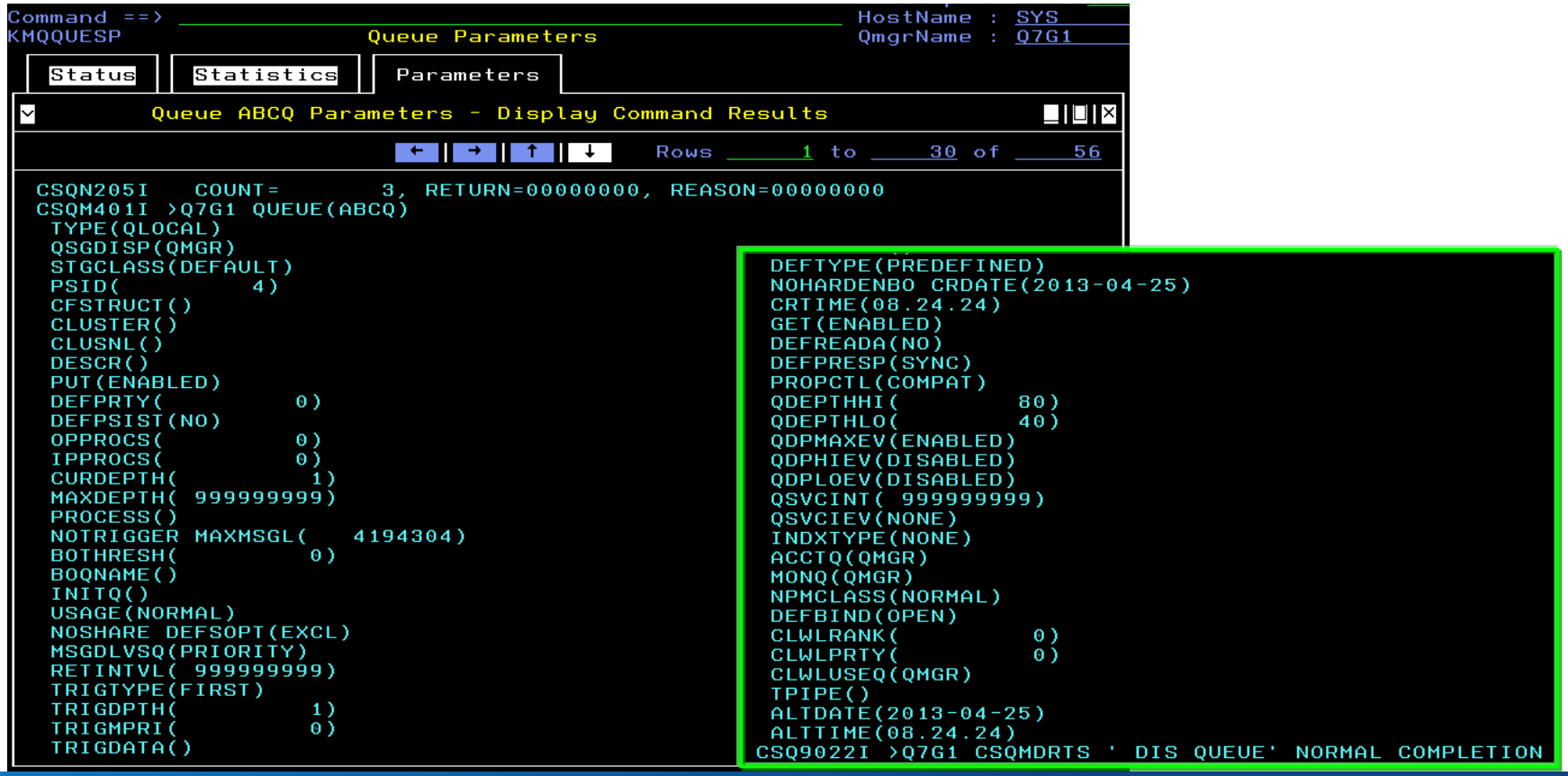
MQSC Commands

- **Any MQSC command that makes a configuration change can be issued via take-action**
- **Several actions are provided with the product, but any MQSC command can be used in either the TEP or Enhanced 3270UI**
  - In TEP, create a take-action command of type MQSeries
  - In Enhanced 3270UI, the “Z” option on action menus allows entering any MQSC command
- **Actions are logged by the agent and available in the MQ Action Log for auditing**



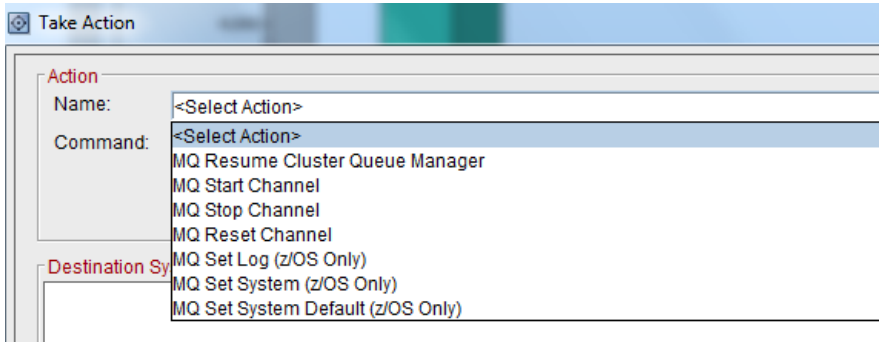
MQSC Commands continued

- Any MQSC display or ping command can be issued in the Enhanced 3270UI using the “mqsc” command, which will invoke a workspace with the data to display
- This same facility is used automatically in the “Parameters” tabs in the Enhanced 3270UI to display parameters for queue managers, queues and channels



Product-Provided Take-Action Commands

- **TEP:**



- **Enhanced 3270UI:**

```
KMQQMACT     Take Actions for Queue Manager
             Q6G6
Select an action and then press ENTER
_    1. D Set System Default (z/OS Only)
     2. L Set Log (z/OS Only)
     3. R Resume Cluster Queue Manager
     4. S Set System (z/OS Only)
     5. Z Issue MQSC Action Command
```

```
KMQQACT      Take Actions for Queue
             P5.IN.Q1
Select an action and then press ENTER
_    1. C Clear Queue
     2. D Disable PUT
     3. E Enable PUT
     4. F Disable GET
     5. G Enable GET
     6. H Change High Depth Threshold for Queue
     7. L Change Low Depth Threshold for Queue
     8. M Change Maximum Depth for Queue
     9. P Purge Queue
    10. S Set Trigger Control OFF
    11. T Set Trigger Control ON
    12. Z Issue MQSC Command
```

```
KMQCHLAT     Take Actions for Channel
             TO.Q7G5
Select an action and then press ENTER
_    1. F Stop Channel (Force)
     2. I Ping Channel
     3. R Reset Channel
     4. S Start Channel
     5. P Stop Channel
     6. Z Issue MQSC Command
```

```
KMQQACT      Take Actions for Queue
             CSQ4SAMP.B2.OUTPUT.ALIAS
Select an action and then press ENTER
_    1. Q Change Base Queue
     2. Z Issue MQSC Command
```

```
KMQQACT      Take Actions for Queue
             CSQ4SAMP.B1.MODEL
Select an action and then press ENTER
_    1. Z Issue MQSC Command
```

```
KMQQACT      Take Actions for Queue
             APPG_REMOTE
Select an action and then press ENTER
_    1. R Change Remote Queue
     2. U Change Remote Queue Manager
     3. Z Issue MQSC Command
```

Product-Provided Sample Situations

MQSeries_Alias_Queue_Problem
MQSeries_Appl_MQ_RespTime_High
MQSeries_Appl_MQI_Failures_High
MQSeries_Appl_Msgs_Put_High
MQSeries_Authority_Problem
MQSeries_Automation_ChlStart
MQSeries_Automation_Fix_XmitQ
MQSeries_Bufpool_Buffer_Shrt_C
MQSeries_Bufpool_Buffer_Shrt_W
MQSeries_Bufpool_High_GetPag_IO
MQSeries_Channel_Active_High
MQSeries_Channel_Autodef_Error
MQSeries_Channel_Current_High
MQSeries_Channel_Initiator_Prob
MQSeries_Channel_Instance_High
MQSeries_Channel_Out_Of_Sync
MQSeries_Channel_Remain_Indoubt
MQSeries_Channel_SSL_Error
MQSeries_Channels_Indoubt
MQSeries_ChInst_per_Client_High
MQSeries_CICS_Channel_Stopped
MQSeries_Cluster_QMgr_Suspended
MQSeries_Conversion_Error
MQSeries_Dead_Letter
MQSeries_Delayed_Message_Group
MQSeries_High_Delayed_Messages
MQSeries_Inhibit_Problem
MQSeries_Listener_Not_Started
MQSeries_Local_DestQ_Depth_High
MQSeries_Local_DestQ_Full
MQSeries_Local_Object_Unknown
MQSeries_Logging_High_RBA_Crit
MQSeries_Logging_High_RBA_Warn
MQSeries_Logging_Suspended
MQSeries_LogMgr_Buffer_Waits
MQSeries_LogMgr_High_Archv_Read
MQSeries_LogMgr_Reads_Delayed
MQSeries_Manager_Inactive
MQSeries_Manager_Inactive_Event
MQSeries_MQ_Channel_Stopped
MQSeries_No_Queue_Messages_Read
MQSeries_Old_Message_On_Queue
MQSeries_PageSet_Unavailable
MQSeries_PageSet_Usage_High
MQSeries_PubSub_Problem
MQSeries_QMgr_Instance_Standby
MQSeries_Queue_Depth_High
MQSeries_Queue_Full
MQSeries_Queue_Full_Until
MQSeries_Queue_Manager_Problem
MQSeries_Queue_Manager_Quiesce
MQSeries_Queue_Not_Being_Read
MQSeries_Queue_Service_Int_High
MQSeries_QSG_CFBackup_Delay
MQSeries_QSG_CFStruct_Failed
MQSeries_QSG_CFStruct_HighEnts
MQSeries_QSG_CFStruct_HighMem
MQSeries_QSG_CFStruct_Inhibit
MQSeries_QSG_DB2_Failed
MQSeries_QSG_QMgr_Failed
MQSeries_QSG_QMgr_NotStarted
MQSeries_QSG_Queue_HighUse
MQSeries_QSG_StrConn_Failed
MQSeries_Remote_Queue_Error
MQSeries_Remote_Queue_Problem

Historical Collection

- Attribute groups recommended to be considered for enabling for historical collection for z/OS:
  - Queue Long Term History*
  - Queue Status (only if you enable MONQ in queue manager)
  - Channel Long-Term History*
  - Channel Summary (only if you use client connections to SVRCONN channels)
  - Current Queue Manager Status
  - Buffer Manager Long-Term History*
  - Log Manager Long-Term History*
  - Message Manager Long-Term History*
  - Topic Manager Long-Term History*
  - Page Set Long-Term History*
  - Application Long-Term History* (only if you enable and use Application Statistics feature)
  - Application Queue Long-Term History* (only if you enable and use Application Statistics feature)
  - Application Transaction/Program Long-Term History* (only if you enable and use Application Statistics feature)
- Attribute groups recommended to be considered for enabling for historical collection for distributed platforms:
  - Queue Long Term History*
  - Queue Status (only if you enable MONQ in queue manager)
  - Channel Long-Term History*
  - Channel Summary (only if you use client connections to SVRCONN channels)
  - Current Queue Manager Status
  - MQI Statistics (only if you enable STATMQI in queue manager)
  - MQ Queue Statistics (only if you enable STATQ in queue manager, and if so, you may not want Queue Status historical in addition)
  - MQ Channel Statistics (only if you enable STATCHL in queue manager but do not enable MONCHL for Channel Long-Term History)
  - Error Log (but it is highly recommended to configure filters to reduce amount collected)
- Attribute groups marked with * above require HISTORY(YES) in agent parameters to populate sampled historical data.

Questions & Answers