

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

Barry D. Lamkin
Executive IT Specialist
blamkin@us.ibm.com

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

File Edit View Tools Navigate Help 07/03/2014 16:20:23
 Command ==> IBM MQ Health Overview
 KMQSTART Auto Update : Off
 HostName :
 QmgrName :

Queue Manager Status

Columns 2 to 7 of 24 Rows 22 to 31 of 31

ΔQMgr ▽Name	Host Name	ΔQMgr ▽Health	ΔQueue ▽Health	ΔChannel ▽Health	ΔCurrent ▽MEvents	+QMgr Status
Q6G6	SYS	Critical	Unknown	Unknown	0	Stopp
Q722	SP22	Warning	Critical	Critical	0	Runni
Q721	SP22	Warning	Critical	OK	1	Runni
Q7G4	SYS	Warning	OK	Critical	0	Runni
Q7G1	SYS	Warning	Critical	OK	0	Runni
QM7502	TIVPC033	OK	OK	OK	0	Runni
QM7501	TIVPC043	OK	OK	OK	0	Runni
QM7501	TIVPC033	OK	OK	OK	0	Runni
Q723	SP22	OK	Warning	OK	0	Runni
Q7G6	SYS	OK	Warning	OK	0	Runni

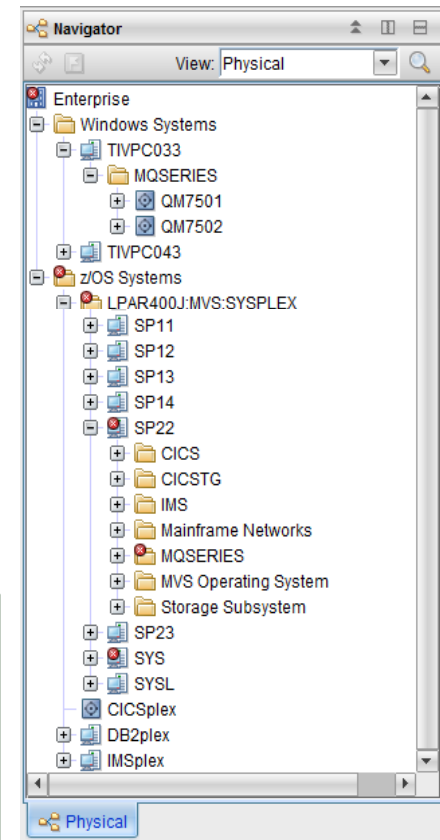
Queue-Sharing Group Nodes

Columns 2 to 4 of 5 Rows 1 to 1

Managed System	Version	Host Address
Q7G2::MQQSG	07.30.00	ip.pipe:#9.42.46.25<NM>SYS</M

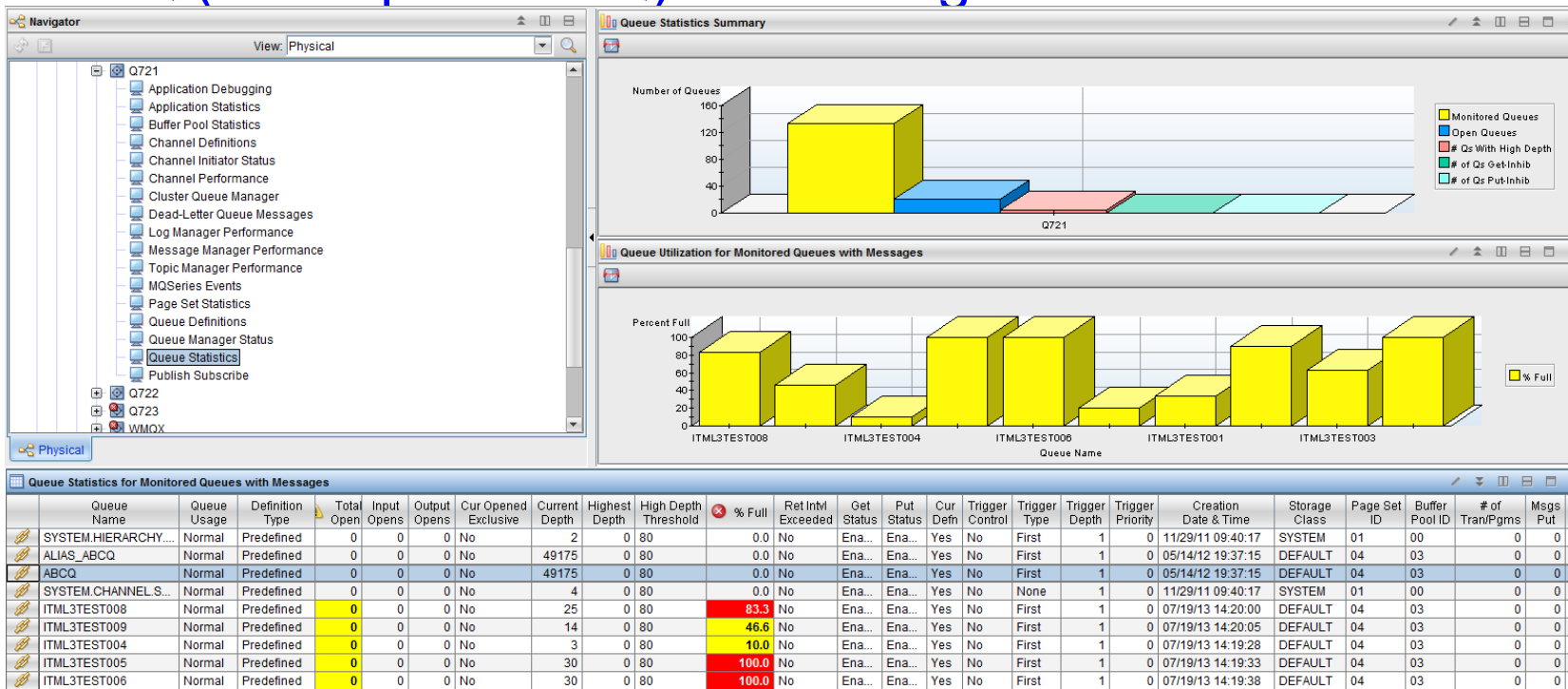
Navigate Help 07

1. Z z/OS
2. C CICS
3. T CTG
4. I IMS
5. D DB2
6. N Networks
7. M MQ
8. S Storage
9. H Home



OMEGAMON XE for Messaging - Brief Overview

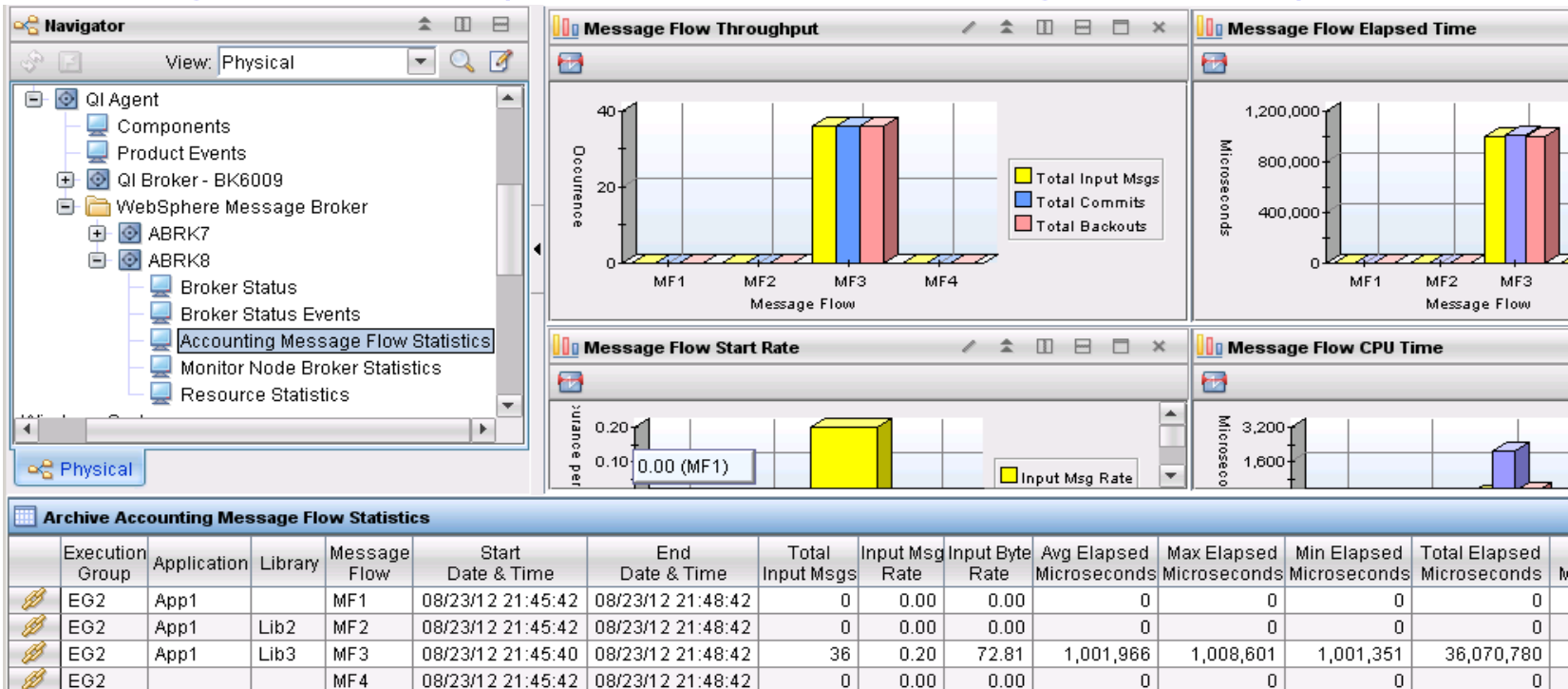
IBM MQ (WebSphere MQ) Monitoring



- 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

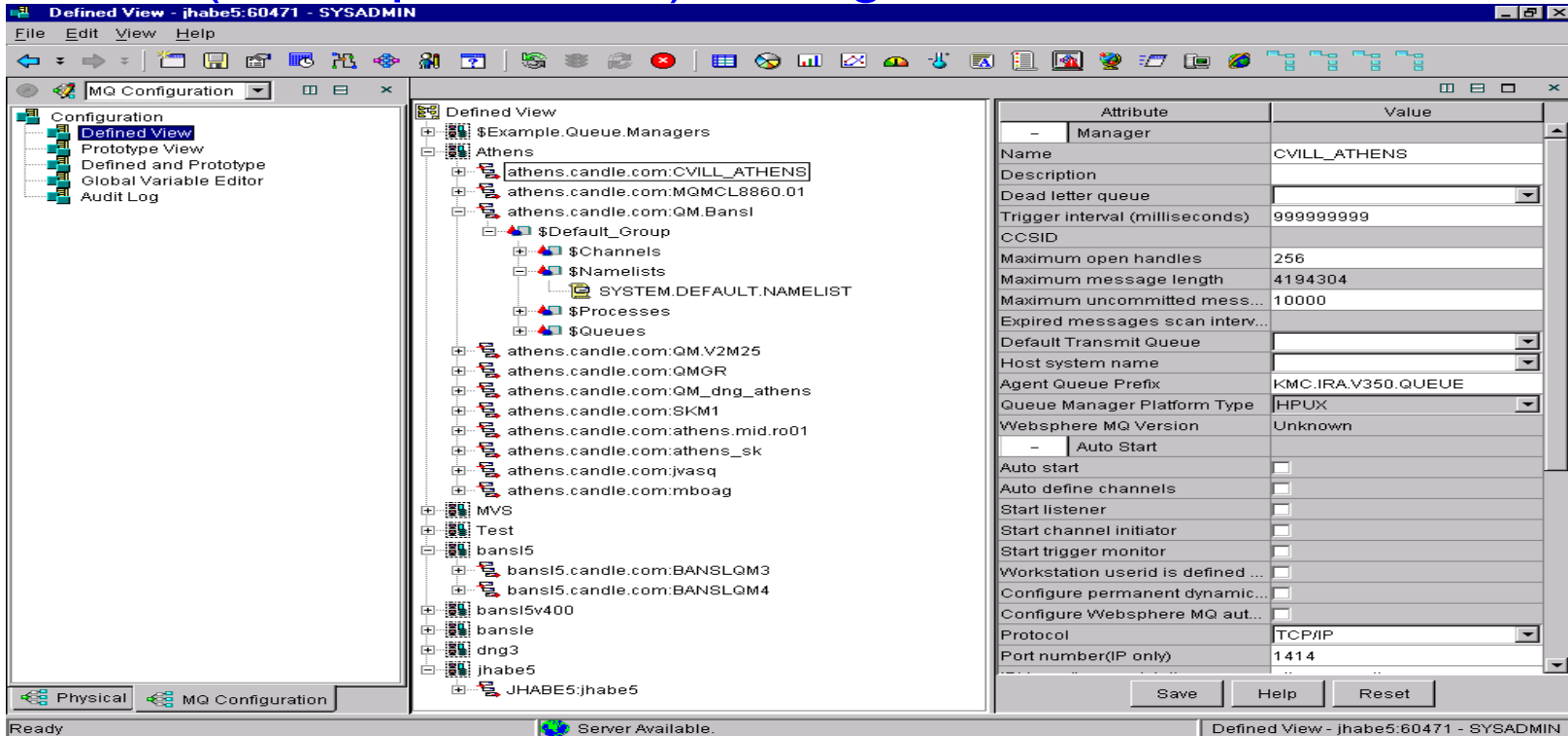
IBM Integrated Bus (WebSphere Message Broker) Monitoring



- 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

The screenshot displays the OMEGAMON XE for Messaging interface. On the left, the 'Navigator' pane shows a tree view of system components, with 'MQSeries Events' selected. Below it, a table lists recent events:

Event Date & Time	Event	Event QMgr
08/26/14 08:05:45	Channel Stopped	Q721
08/26/14 08:05:23	Channel Stopped	Q721
08/26/14 08:04:59	Channel Stopped	Q721
08/26/14 07:36:45	Channel Stopped	Q721
08/26/14 07:35:27	Channel Stopped	Q721

The central 'Situation Editor' window shows a list of situations, with 'MQSeries_MQ_Channel_Stopped' selected. The right-hand pane is configured for this situation:

- Name:** MQSeries_MQ_Channel_Stopped
- Description:** MQ Channel stopped because of error
- Formula:** A table with 3 rows and 2 columns: Event and Event Qualifier.

Event	Event Qualifier
1 == Channel Stopped	!= 'Channel Stopped OK'
2	
3	
- Action Selection:** System Command (selected), Universal Message
- System Command:** MQ:START CHANNEL(&{Current_Events.Resource_Name})
- If the condition is true for more than one monitored item:** Take action on each item (selected)
- Where should the Action be executed (performed):** Execute the Action at the Managed System (Agent) (selected)
- If the condition stays true over multiple intervals:** Don't take action twice in a row (wait until situation goes false then true again) (selected)

- 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

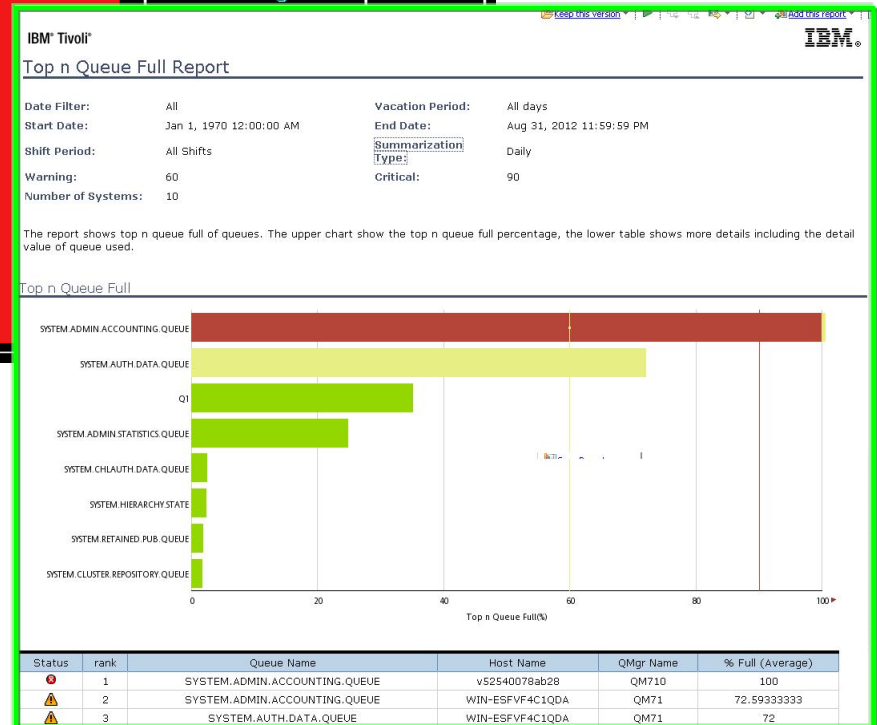
File Edit View Tools Navigate Help 08/27/2014 00:12:18
 Command ==> KMQQMSTH Queue Manager Status History
 Display : HISTORY
 HostName : SP22
 QmgrName : Q721

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			

- 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

```

File Edit View Tools Navigate Help 08/26/2014 20:28:34
Auto Update : Off
Command ==> HostName : TIVPC043
KMQQMSTS QmgrName : QMC4CLUS
Current Queue Manager Status

```

Status	Parameters
Queue Manager Health	
QMgr Name..... QMC4CLUS QMgr Health..... Warning QMgr Status..... Running Command Server Status..... Running	Host Name..... TIVPC043 Connection Count..... 22 Channel Initiator Status.. Running Current MQEvents..... 0
Queue Health	
Queue Health..... Critical High Depth Queue Count... 1 Total XMIT Queue Messages. 0 Total Messages..... 191	DLQ Depth..... 0 Put Inhibited Queue Count. 0 Get Inhibited Queue Count. 0 Open Queue Count..... 24
Channel Health	
Channel Health..... OK Current Not Running..... 0 Current Connections..... 0 Active Connections..... 0	Indoubt Connections..... 0 Server Connections..... 0 % Max Channels..... 0.0 % Max Active Channels..... 0.0

- 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

07/02/2014 15:12:56
 Display : HISTORY
 HostName : SYS
 QmgrName : Q7G4

Command ==> KMQQUELS
 Queue Statistics History

Queue APP2.IN.Q2

Columns 2 to 7 of 29 Rows 1 to 8 of 8

Recording Time	Current Depth	Input Opens	Output Opens	Get Status	Put Status	+Trigger Control
15:00:00	3031	1	1	Enabled	Enabled	No
14:45:00	2128	1	1	Enabled	Enabled	No
14:30:00	1226	1	1	Enabled	Enabled	No
s 14:15:00	327	1	1	Enabled	Enabled	No
14:00:00	0	1	0	Enabled	Enabled	No
13:45:00	0	1	0	Enabled	Enabled	No
13:30:00	0	1	0	Enabled	Enabled	No
13:15:00	48	1	1	Enabled	Enabled	No

07/02/2014 16:34:09
 Display : HISTORY
 HostName : SP22
 QmgrName : Q722

Command ==> KMQCHLHS
 Channel Statistics History

Channel T0_Q7G4 Conn 9.42.46.25

Columns 2 to 5 of 26 Rows 1 to 8 of 8

Recording Time	Channel Status	In-Doubt Status	User Stop Request	+Current Action State
16:30:00	Retrying	No	Stop Not Requested	Other
16:15:00	Retrying	No	Stop Not Requested	Other
s 16:00:00	Retrying	No	Stop Not Requested	Other
15:45:00	Running	No	Stop Not Requested	MQGet
15:30:00	Running	No	Stop Not Requested	MQGet
15:15:00	Running	No	Stop Not Requested	MQGet

- 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

The screenshot displays the OMEGAMON XE for Messaging v7.3 interface. At the top, there is a menu bar with 'File', 'Edit', 'View', 'Tools', 'Navigate', and 'Help'. The date and time are '05/20/2014 18:46:27'. Below the menu bar, the command 'Command ==> KMQAPQCD' is shown. The main window is titled 'CICS Application Details for Queue' and displays the following data:

Queue ABCQ Task 0002002						
Columns			Rows			
2 to 7 of 17			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

Below this, the 'CICS Transaction Details' window is shown, displaying the following data:

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		

Finally, the 'CICS Region Summary for CICSDE03' window is shown, displaying the following data:

CICS Region Name.....	CICSDE03	CICS SYSIDNT.....	DE03
Transaction Rate.....	07/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

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

```

File Edit View Tools Navigate Help 05/20/2014 19:34:54
Auto Update : Off
Command ==> HostName : SP22
KMQQMSZD Queue Manager Address Space Q721MSTR QmgrName : Q721

Queue Manager Monitoring Information
QMGr Subsys..... Q721 QMgr Type..... MVS
Status at Sample Interval. Active Interval Length Seconds... 300.00
Timeout Count..... 0 MQSeries Release..... 7.0.1
Start Date..... 14/05/18 Alter Date..... 14/05/18
Start Time..... 09:12:59 Alter Time..... 09:13:01

z/OS Address Space CPU Details for Q721MSTR 0x00F2
Job Name..... Q721MSTR
ASID..... 00F2
Type..... STC
JESJOBID..... STC05789
Step Name..... Q721MSTR
Proc Step..... PROCSTEP
IO per Second..... 0.0
CPU Percent..... 0.0
IFA Percent..... 0.0
SRB Percent..... 0.0
TCB Percent..... 0.0
zIIP Percent..... 0.0
CPU Percent Excluding Home SRB Time..... 0.0

IFA on CP Percent..... 0.0
zIIP on CP Percent..... 0.0
IFA Percent With Enclave Home SRB Time..... 0.0
zIIP Percent With Enclave Home SRB Time..... 0.0
Job CPU Percent..... 0.1
Job SRB Percent..... 0.1
Job TCB Percent..... 0.1
Job CPU Time..... 117.45
Job SRB Time..... 5.36
Job TCB Time..... 112.09
Job Preemptable Home SRB Service Time..... 0.00
Job Preemptable Home SRB Service Percent..... 0.0
Job Additional SRB Service Time..... 0.00
  
```

- 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:

```

M5MQASZ Navigation Options for Address Space Q
Select an action and then press ENTER

- 1. ! Take Action on Address Space
  2. C - Cancel Address Space
  3. A Address Space Bottlenecks Summary
  4. B Bottleneck Analysis for Address Space
  5. D Storage Usage by Address Space
  6. M Storage Usage by all Address Spaces
  7. S Address Space CPU Usage Details
  8. T TCB Storage and LSQA for Address Space
  9. W WLM Service Class Resources
  
```

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

Command ==> mqsc display usage

```
File Edit View Tools Navigate Help 05/20/2014 20:09:24
Auto Update : Off
Command ==> HostName : SP22
KMQMQDS1 Issue MQSC Display Command QmgrName : Q721

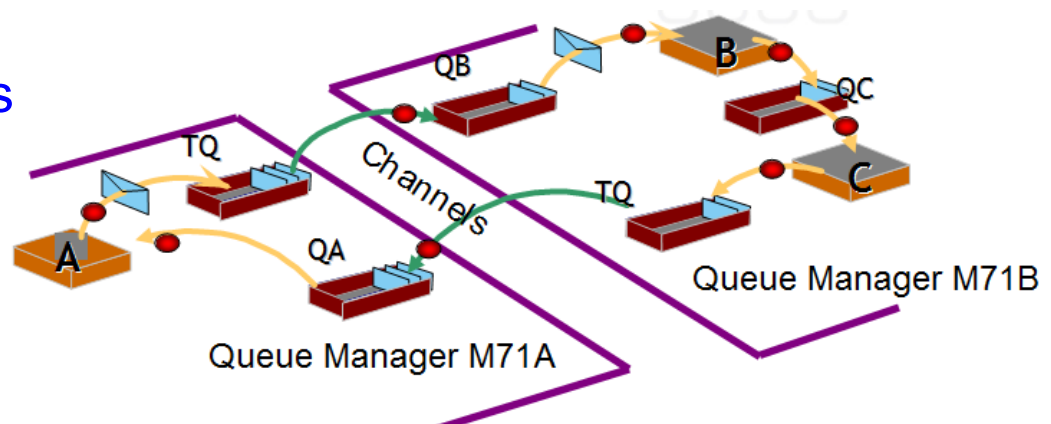
Enter MQSC Display Command:
==> DISPLAY USAGE

Command Response
Rows 1 to 17 of 17
MQSC Response Position 1 to 74 of 256
CSQN205I COUNT= 17, RETURN=00000000, REASON=00000000
CSQI010I >Q721 Page set usage ...
Page Buffer Total Unused Persistent NonPersist Expansion
set pool pages pages data pages data pages count
-- 0 0 1078 710 368 0 USER 0
-- 1 0 1078 1060 18 0 USER 0
-- 2 1 1078 1074 4 0 USER 0
-- 3 2 1078 1077 0 1 USER 0
-- 4 3 127971 102532 224 25215 USER 0
End of page set report
CSQP001I >Q721 Buffer pool 0 has 50000 buffers
CSQP001I >Q721 Buffer pool 1 has 20000 buffers
CSQP001I >Q721 Buffer pool 2 has 50000 buffers
CSQP001I >Q721 Buffer pool 3 has 20000 buffers
CSQI024I >Q721 CSQIDUSE Restart RBA for system as
configured=000024AC8E3E
CSQ9022I >Q721 CSQIDUSE ' DISPLAY USAGE ' NORMAL COMPLETION
```


IBM MQ Monitoring

IBM MQ Monitoring Summary

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



- Queue manager availability, health and performance
- Queue status, usage and statistics
- Channel status and performance
- 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**

Command ==> _____ Auto Update: On
 KMQSTART _____ IBM MQ Health Overview HostName: _____ QmgrName: _____

Queue Manager Status

Columns 2 to 11 of 24 Rows 1 to 9 of 9

ΔQMgr ▽Name	Host Name	ΔQMgr ▽Health	ΔQueue ▽Health	ΔChannel ▽Health	ΔCurrent ▽MQEvents	QMgr Status	Channel Initiator	Command Server	Conn #	+DLQ Depth
— M71C	2014	Critical	Unknown	Unknown	0	Stopped	Stopped	Stopped	0	0
— M53A	2014	Critical	Unknown	Unknown	0	Stopped	Stopped	Stopped	0	0
— M60A	2014	Critical	Unknown	Unknown	0	Stopped	Stopped	Stopped	0	0
— M70A	2014	Warning	Critical	Critical	3	Running	Running	Waiting	37	0
— M71A	2014	Warning	Critical	Critical	0	Running	Running	Waiting	37	200
— M71W	Z0C1	Warning	Warning	Critical	0	Running	Running	Waiting	47	0
— M71E	2014	OK	OK	OK	0	Running	Running	Waiting	35	0
— M71L	2014	OK	OK	OK	0	Running	Running	Waiting	21	0
— M71T	2014	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

```

File Edit View Tools Navigate Help 05/20/2014 19:02:01
Auto Update : Off
HostName : SP22
QmgrName : Q721
Command ==>
KMQQMSTS Current Queue Manager Status

```

Status	Parameters
<input checked="" type="checkbox"/> Queue Manager Health ▢ ▣ ▤ ▥	
QMgr Name.....	Q721
QMgr Health.....	Warning
QMgr Status.....	Running
Command Server Status.....	Waiting
Host Name.....	SP22
Connection Count.....	44
Channel Initiator Status..	Running
Current MQEvents.....	0
<input checked="" type="checkbox"/> Queue Health ▢ ▣ ▤ ▥	
Queue Health.....	Critical
High Depth Queue Count....	5
Total XMIT Queue Messages..	0
Total Messages.....	16762
DLQ Depth.....	0
Put Inhibited Queue Count..	0
Get Inhibited Queue Count..	0
Open Queue Count.....	27
<input checked="" type="checkbox"/> Channel Health ▢ ▣ ▤ ▥	
Channel Health.....	OK
Current Not Running.....	0
Current Connections.....	0
Active Connections.....	0
Indoubt Connections.....	0
Server Connections.....	0
% Max Channels.....	0.0
% Max Active Channels.....	0.0
<input checked="" type="checkbox"/> Log Datasets ▢ ▣ ▤ ▥	
Oldest Active UOW Log Dataset Name.....	MQM.V701
Page Set Recovery Log Dataset Name.....	MQM.V701
Active Log Copy 1 Dataset Name.....	MQM.V701
Active Log Copy 2 Dataset Name.....	MQM.V701

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

05/20/2014 19:36:58
 Auto Update : Off
 HostName : LPAR400J
 QmgrName : Q721
 SMF ID : SP22

Command ==>
 KMQQMSZD Queue Manager Address Space Q721MSTR

Queue Manager Monitoring Information

QMgr Subsys.....	Q721	QMgr Type.....	Active
Status at Sample Interval.....	0	Interval Length Seconds.....	530
Timeout Count.....	14/05/18	MQSeries Release.....	17/05/18
Start Date.....	09:12:59	Alter Date.....	
Start Time.....		Alter Time.....	

z/OS Address Space CPU Details for Q721MSTR 0x00F2

Job Name.....	Q721MSTR
ASID.....	00F2
Type.....	STC
JESJOBID.....	STC05789
Step Name.....	
Proc Step.....	
IO per Second.....	0.0
CPU Percent.....	0.0
IFA Percent.....	0.0
SRB Percent.....	0.0
TCB Percent.....	0.0
zIIP Percent.....	0.0
CPU Percent Excluding Home SRB Time.....	0.0
IFA on CP Percent.....	0.0
zIIP on CP Percent.....	0.0
IFA Percent With Enclave Home SRB Time.....	0.0
zIIP Percent With Enclave Home SRB Time.....	0.0
Job CPU Percent.....	0.0
Job SRB Percent.....	0.0
Job TCB Percent.....	0.0
Job CPU Time.....	0.00
Job SRB Time.....	0.00
Job TCB Time.....	0.00
Job Preemptable Home SRB Service Time.....	0.00
Job Preemptable Home SRB Service Percent.....	0.00
Job Additional SRB Service Time.....	0.00

Navigation Options for Address Space Q721MSTR 0x00F2

- Take Action on Address Space
- Cancel Address Space
- Address Space Bottlenecks Summary
- Bottleneck Analysis for Address Space
- Storage Usage by Address Space
- Storage Usage by all Address Spaces
- Address Space CPU Usage Details
- TCB Storage and LSQA for Address Space
- WLM Service Class Resources

Storage Usage by Q721MSTR 0x00F2

Common Storage

% of Total CSA.....	0.0	% of Total ECSA.....	0.4
% of Total SQA.....	0.0	% of Total ESQA.....	0.0
CSA Orphaned.....	No	ECSA Orphaned.....	No
SQA Orphaned.....	No	ESQA Orphaned.....	No
CSA In Use.....	0.0 72	ECSA In Use.....	1783808
SQA In Use.....	0.0 64	ESQA In Use.....	5120

Real Storage

Swap Status.....	InNSW	Management Status.....	NonSwap
Central Frame Count.....	117 23948	Fixed Frame Count.....	851
Expanded Frame Count.....	5.36 0	Hiperspace Frame Count.....	0
Non-virtual I/O Slot Count.....	112 27374	User Key Dataspace.....	0

Virtual Storage

Total Virtual(Mb).....	607.1	Low Fixed(Mb).....	0.0
Low Virtual(Mb).....	0.6	Extended Fixed(Mb).....	0.3
Extended Virtual(Mb).....	601.4	Large Fixed(Mb).....	3.0
Large Virtual(Mb).....	205.0	Total Fixed(Mb).....	3.3
Large Max.....	2.0G	Large Inuse Percent.....	10.0

Queue Managers continued

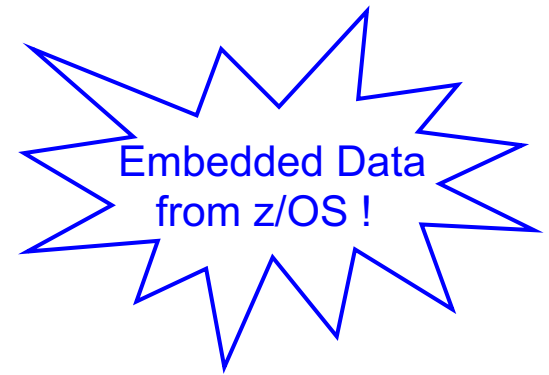
- Zoom from Channel Initiator Status to the workspace about the channel initiator, then additional zoom field Chan Init Active goes to the same z/OS address space monitoring for the channel initiator address space

```

File Edit View Tools Navigate Help 05/20/2014 19:43:43
Auto Update : Off
HostName : SP22
QmgrName : Q722
Command ==>
KMQCHLIS Channel Initiator and Summary Statistics

Latest Channel Initiator Status Sample
Chan Init Active..... Yes TCP IP Listener Active.... Yes
Chan Conn Current..... 1 # TCPIP QMgr Listeners.... 1
Chan Conn Maximum..... 200 # TCPIP QMgr Retrying.... 0
Chan Conn Active..... 0 Port Number..... 21438
Chan Conn Starting..... 0 TCP AS Name..... TCPIP22
Chan Conn Stopping..... 0 TCP IP Group Listener Acti No
Chan Conn Retrying..... 1 # TCPIP Group Listeners... 0
Adapters Started..... 8 # TCPIP Group Retrying... 0
Adapters Requested..... 8 TCP IP Group Port..... 0
Dispatchers Started..... 5 LU62 Listener Active..... No
Dispatchers Requested..... 5 LU62
SSL Server Subtasks Starte 0 LU62
SSL Server Subtasks Reques 0 LU62

Latest Channel Summary Statistics
Columns 2 to 6 of 34
ΔChannel ΔChannel Client
▽Name ▽Type Count
SYSTEM.ADMIN.SVRCONN || SVRCONN
SYSTEM.DEF.CLUSRCVR || CLUSRCVR
SYSTEM.DEF.CLUSSDR || CLUSSDR
SYSTEM.DEF.RECEIVER || RCVR
SYSTEM.DEF.REQUESTER || RQSTR
SYSTEM.DEF.SENDER || SDR
SYSTEM.DEF.SERVER || SVR
SYSTEM.DEF.SVRCONN || SVRCONN
TO.Q7G5 || CLUSSDR
TO.Q722 || CLUSRCVR
TO_Q7G4 || SDR
WAS.JMS.SVRCONN || SVRCONN
    
```




```

z/OS Address Space CPU Details for Q722CHIN 0x0185
Job Name..... Q722CHIN
ASID..... 0185
Type..... STC
JESJOBID..... STC07313
Step Name..... Q722CHIN
Proc Step..... PROCSTEP
IO per Second..... 0.0
CPU Percent..... 0.0
IFA Percent..... 0.0
SRB Percent..... 0.0
TCB Percent..... 0.0
zIIP Percent..... 0.0
CPU Percent Excluding Home SRB Time..... 0.0
IFA on CP Percent..... 0.0
zIIP on CP Percent..... 0.0
IFA Percent With Enclave Home SRB Time..... 0.0
zIIP Percent With Enclave Home SRB Time..... 0.0
Job CPU Percent..... 0.1
Job SRB Percent..... 0.1
Job TCB Percent..... 0.1
Job CPU Time..... 5.02
Job SRB Time..... 0.99
Job TCB Time..... 4.03
Job Preemptable Home SRB Service Time..... 0.00
Job Preemptable Home SRB Service Percent..... 0.0
Job Additional SRB Service Time..... 0.00
    
```

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”

```
Command ==> find qmgr Q7*_
KMQRST007
```



05/20/2014 20:06:08
Auto Update : Off
Plex ID :
Sys ID :

Command ==>
KMQANODE Queue Manager Name List

Queue Manager Managed Systems Matching Q7*

Columns 2 to 2 of 2 Rows 1 to 11 of 11

Managed System Name	Status
Q7G1:SYS:MQESA	*ONLINE
Q7G2:SYS:MQESA	*ONLINE
Q7G3:SYS:MQESA	*ONLINE
Q7G4:SYS:MQESA	*ONLINE
Q7G5:SYS:MQESA	*ONLINE
Q7G6:SYS:MQESA	*ONLINE
Q721:SP22:MQESA	*ONLINE
Q722:SP22:MQESA	*ONLINE
Q723:SP22:MQESA	*ONLINE
Q7L1:SYSL:MQESA	*OFFLINE
Q741:SP14:MQESA	*OFFLINE

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

The screenshot displays the Queue Manager Status interface. On the left is a tree view showing the hierarchy of monitoring data, with 'Queue Manager Status' selected. The main area contains two bar charts and a data table.

Queue Summary Chart: Shows the total count for various queue types. The Y-axis is 'Total Count' (0 to 60). The X-axis is 'Q722'. The legend includes: DLQ Depth (yellow), Monitored Queues (blue), Local Queues (red), Remote Queues (green), Alias Queues (cyan), Transmit Queues (orange), Predefined Queues (purple), Permanent Dynamic Queues (dark blue), Temporary Dynamic Queues (light green), Open Queues (magenta), Number Queues with High Depth (red), Number of Queues Put-Inhibited (dark red), and Number of Queues Get-Inhibited (teal).

Channel Summary Chart: Shows the number of channels for various states. The Y-axis is 'Number of Channels' (0 to 12). The X-axis is 'Q722'. The legend includes: Active Channels (yellow), Inactive Channels (blue), Indoubt Channels (red), Active Sender Channels (green), Inactive Sender Channels (cyan), Active Server Channels (orange), Inactive Server Channels (purple), Active Receiver Channels (dark blue), Inactive Receiver Channels (light green), Current Requesters (magenta), Inactive Requesters (red), and Server Connections (dark red).

Queue Manager Status Table:

QMGr Name	Host Name	QMGr Subsys	Host Jobname	Start Date & Time	QMGr Status	QMGr Type	DLQ Depth	DLQ Maximum	Monitored Queues	Local Queues	Remote Queues	Alias Queues	Transmit Queues	Predefined Queues	Dynamic Perm Qs	Dynamic Temp Qs	Open Queues	# Qs With High Depth	% Qs With High Depth	# of Qs Put-Inhib	# of Qs Get-Inhib
Q722	SP22	Q722	Q722MSTR	08/25/14 12:44:52	Active	MVS	0	999999999	48	42	3	2	3	42	0	0	18	0	0.0	1	0

At the bottom, the interface shows 'Q722:SP22:MQESA', 'Hub Time: Thu, 08/28/2014 05:31 PM', 'Server Available', and 'Queue Manager Status - t5063.tvlab.raleigh.ibm.com - SYSADMIN'.

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

File Edit View Tools Navigate Help 05/20/2014 18:40:14
 Auto Update : Off
 Command ==> KMQQUEHS Queue High Depth Summary HostName : SP22
 QmgrName : Q721

Queues with High Depth

Columns 2 to 6 of 9 Rows 1 to 5 of 5

ΔQueue ▽Name	ΔCurrent ▽Depth	Input Opens	Output Opens	Get Status	+Put Status
— TUNGW.QUEUE	50	0	0	Enabled	Enabl
— ITML3TEST006	30	0	0	Enabled	Enabl
— ITML3TEST005	30	0	0	Enabled	Enabl
— ITML3TEST002	27	0	0	Enabled	Enabl
— ITML3TEST008	25	0	0	Enabled	Enabl

Queues with Depth > 0

Columns 2 to 6 of 9 Rows 1 to 16 of 16

ΔQueue ▽Name	ΔCurrent ▽Depth	Input Opens	Output Opens	Get Status	+Put Status
s ABCQ	13868	1	1	Enabled	Enabl
— TUNGW.QUEUE	50	0	0	Enabled	Enabl
— ITML3TEST006	30	0	0	Enabled	Enabl
— ITML3TEST005	30	0	0	Enabled	Enabl
— ITML3TEST002	27	0	0	Enabled	Enabl
— ITML3TEST008	25	0	0	Enabled	Enabl
— ITML3TEST003	19	0	0	Enabled	Enabl
— ITML3TEST009	14	0	0	Enabled	Enabl
— ITML3TEST001	10	0	0	Enabled	Enabl
— ITML3TEST007	6	0	0	Enabled	Enabl
— SYSTEM.CHANNEL.SYNCQ	4	0	0	Enabled	Enabl
— ITML3TEST004	3	0	0	Enabled	Enabl
— SYSTEM.HIERARCHY.STA	2	0	0	Enabled	Enabl
— SYSTEM.DURABLE.SUBSC	2	0	0	Enabled	Enabl
— SYSTEM.CLUSTER.REPOS	2	1	1	Enabled	Enabl
— SYSTEM.RETAINED.PUB.	1	0	0	Enabled	Enabl

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

The screenshot shows the IBM MQ Queue Status Details window for queue ABCQ. The window title is 'Queue Status Details' and the command is 'KMQQUESD'. The status is 'Queue ABCQ'. The 'Statistics' tab is selected, showing the following data:

Current Depth.....	14030	Queue Monitoring.....	Medium
Uncommitted Msgs.....	Yes	Short Term Queue Time.....	976562K
Output Opens.....	1	Long Term Queue Time.....	976562K
Input Opens.....	1	Oldest Msg Age.....	102527
Last Put Date.....	14/05/20	Last Get Date.....	14/05/20
Last Put Time.....	18:41:32	Last Get Time.....	18:41:32

The 'Parameters' tab is also visible, showing the following data:

Queue Usage.....	Normal	Definition Type.....	Predefin
% Full.....	0.0	Max Depth.....	976562K
Get Status.....	Enabled	Trigger Control.....	Off
Put Status.....	Enabled	Trigger Type.....	First
Default Persist.....	No	Trigger Priority.....	0
Default Priority.....	0	Trigger Depth.....	1
Creation Date.....	12/05/14	Alter Date.....	12/05/14
Creation Time.....	19:37:15	Alter Time.....	19:37:15

The 'Applications with Open Handle for Queue' window is also visible, showing the following data:

ΔAppl ▽Tag	ΔAppl ▽Type	ΔASID ▽	ΔUser ▽ID	Open for Input	Open for Output	+Open Brow
CBANG721	BATCH	003F	CBANG	No	Yes	No
CICSDE03	CICS	0122	TDUSER	Exclusive	No	No

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 ==>
KMQPQCD CICS Application Details for Queue HostName : SP22
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

```

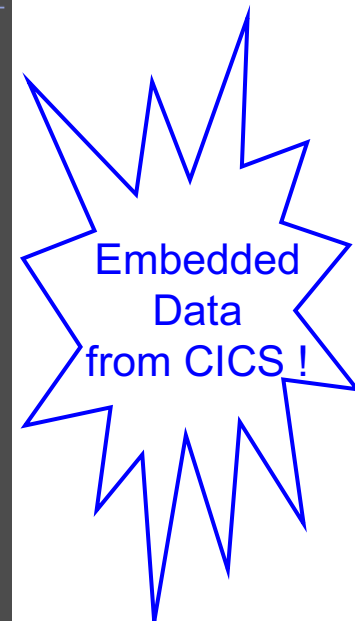
CICS Region Name.....	CICSDE03	User ID.....	TDUSER
Transaction ID.....	MBM3	Task Number.....	02002
Terminal ID.....	0343	Task State.....	Suspend
Elapsed Time.....	3m 08s	Wait Type.....	Interval
Duration of Suspend.....	0.000s	Resource Type.....	ICWAIT
CPU Time.....	0.037s	Resource Name.....	0343
Current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

```

CICS Region Summary for CICSDE03

```

CICS Region Name.....	CICSDE03	CICS SYSIDNT.....	DE03
Transaction Rate.....	07/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



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

```
File Edit View Tools Navigate Help 05/20/2014 18:47:44
Auto Update : Off
HostName : SP22
QmgrName : Q721

Command ==>
KMQAPQZD z/OS Application Details for Queue

Queue ABCQ Appl CBANG721
Columns 2 to 7 of 15 Rows 1 to 1 of 1
┌───┬───┬───┬───┬───┬───┬───┐
│Appl Tag│ User ID│ Handle Status│ Asynch State│ Open for Input│ Open for Output│ +Open Brows│
├───┬───┬───┬───┬───┬───┬───┤
│ CBANG721│ CBANG│ Inactive│ None│ No│ Yes│ No│
└───┬───┬───┬───┬───┬───┬───┘

z/OS Address Space CPU Details for CBANG721 0x003F
Job Name..... CBANG721
ASID..... 003F
Type..... Batch
JESJOBID..... JOB08371
Step Name..... PUT
Proc Step.....
IO per Second..... 0.0
CPU Percent..... 0.0
IFA Percent..... 0.0
SRB Percent..... 0.0
TCB Percent..... 0.0
zIIP Percent..... 0.0
CPU Percent Excluding Home SRB Time..... 0.0

IFA on CP Percent..... 0.0
zIIP on CP Percent..... 0.0
IFA Percent With Enclave Home SRB Time..... 0.0
zIIP Percent With Enclave Home SRB Time..... 0.0
Job CPU Percent..... 0.1
Job SRB Percent..... 0.0
Job TCB Percent..... 0.1
Job CPU Time..... 0.47
Job SRB Time..... 0.01
Job TCB Time..... 0.46
Job Preemptable Home SRB Service Time..... 0.00
Job Preemptable Home SRB Service Percent..... 0.0
```



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	n/a
— APPG.OUT.Q2	Q7G1	SYS	Remote	n/a	n/a	n/a	n/a	n/a
— APP2.OUT.Q2	Q722	SP22	Remote	n/a	n/a	n/a	n/a	n/a
— APP1.OUT.Q1	Q7G4	SYS	Local	Normal	3701	0	0	0
— APPG.IN.Q2	Q7G4	SYS	Local	Normal	1000	0	0	0
— APP7.OUT.Q1	Q723	SP22	Local	Normal	0	0	0	0
— APP2.XMIT	Q721	SP22	Local	XmitQ	0	0	0	0
— APPQ1	Q721	SP22	Local	Normal	0	0	0	0
— APP2.IN.Q2	Q7G1	SYS	Local	Normal	0	0	0	0
— APP1.OUT.Q1	Q7G1	SYS	Local	Normal	0	0	0	0
— APP5TEST	Q7G1	SYS	Local	Normal	0	0	0	0
— APP5.LOOP.Q1	Q7G1	SYS	Local	Normal	0	0	0	0
— APP2.Q7G4.XMITQ	Q722	SP22	Local	XmitQ	0	0	0	0
— APP2.OUT.Q2	Q7G4	SYS	Local	Normal	0	0	0	0
— APP2.IN.Q2	Q7G4	SYS	Local	Normal	0	0	0	0
— APPG.XMIT	Q7G1	SYS	Local	XmitQ	0	0	0	0
— APPG_LOCAL	Q7G4	SYS	Local	Normal	0	0	0	0
— APP2.OUT.Q2	Q7G1	SYS	Local	Normal	0	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

```

File Edit View Tools Navigate Help 08/28/2014 20:59:11
Auto Update : Off
Command ==>
KMQQXMTS Transmission Queue Summary HostName : SP22
QmgrName : Q722
    
```

Transmission Queues

Columns 2 to 6 of 9 Rows 1 to 3 of 3

ΔQueue ▽Name	ΔCurrent ▽Depth	Input Opens	Output Opens	Get Status	+Put Status
SYSTEM.CLUSTER.TRANS	5	1	1	Enabled	Enabl
Q722.DEFXMIT.QUEUE	0	0	0	Enabled	Enabl
APP2.Q7G4.XMITQ	0	0	0	Enabled	Enabl

Applications with Queues Opened for Output

Columns 2 to 6 of 16 Rows 1 to 8 of 8

ΔApp1 ▽Tag	ΔApp1 ▽Type	ΔASID ▽	ΔUser ▽ID	Queue Name	+Chann Name
Q722CHIN	CHINIT	0141	DCUSER	SYSTEM.BROKER.ADMIN.	
Q722CHIN	CHINIT	0141	DCUSER	SYSTEM.CLUSTER.REPOS	
Q722CHIN	CHINIT	0141	DCUSER	SYSTEM.CLUSTER.TRANS	
\$22KMQ	BATCH	0105	DCUSER	SYSTEM.COMMAND.INPUT	
L3IAMQWD	BATCH	017F	TDUSER	SYSTEM.COMMAND.INPUT	
OMD1MQ	BATCH	004A	TDUSER	SYSTEM.COMMAND.INPUT	
TSS1MQ	BATCH	018A	TSUSER	SYSTEM.COMMAND.INPUT	
Q722CHIN	CHINIT	0141	DCUSER	SYSTEM.INTER.QMGR.FA	

Queues continued

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

```

File Edit View Tools Navigate Help 08/28/2014 21:04:15
Auto Update : Off
Command ==>
KMQQXMTD Transmission Queue Status Details HostName : SP22
QmgrName : Q722

```

Status
Parameters

Xmit Queue SYSTEM.CLUSTER.TRANSMIT.QUEUE
▢ ▢ ▢ ▢

Current Depth.....	5	Short Term Queue Time.....	n/a
Input Opens.....	1	Long Term Queue Time.....	n/a
Output Opens.....	1	Oldest Msg Age.....	n/a
Last Get Date.....	n/a	Last Put Date.....	n/a
Last Get Time.....	n/a	Last Put Time.....	n/a

Queue Usage.....	XmitQ	Definition Type.....	Predefin
Get Status.....	Enabled	Trigger Control.....	On
Put Status.....	Enabled	Trigger Type.....	First
Default Persist.....	Yes	Trigger Priority.....	0
Default Priority.....	5	Trigger Depth.....	1
Creation Date.....	12/07/09	Alter Date.....	12/07/09
Creation Time.....	14:21:48	Alter Time.....	14:21:48
Max Depth.....	976562K		

Channel Status for Xmit Q Channel
▢ ▢ ▢ ▢

Columns 2 to 4 of 16
Rows 1 to 1 of 1

Channel Name	Connection Name	Channel Status	+In-Doubt Status
<u>_</u> T0.Q7G5	WLAG(21434)	Retrying	Not In-Doubt

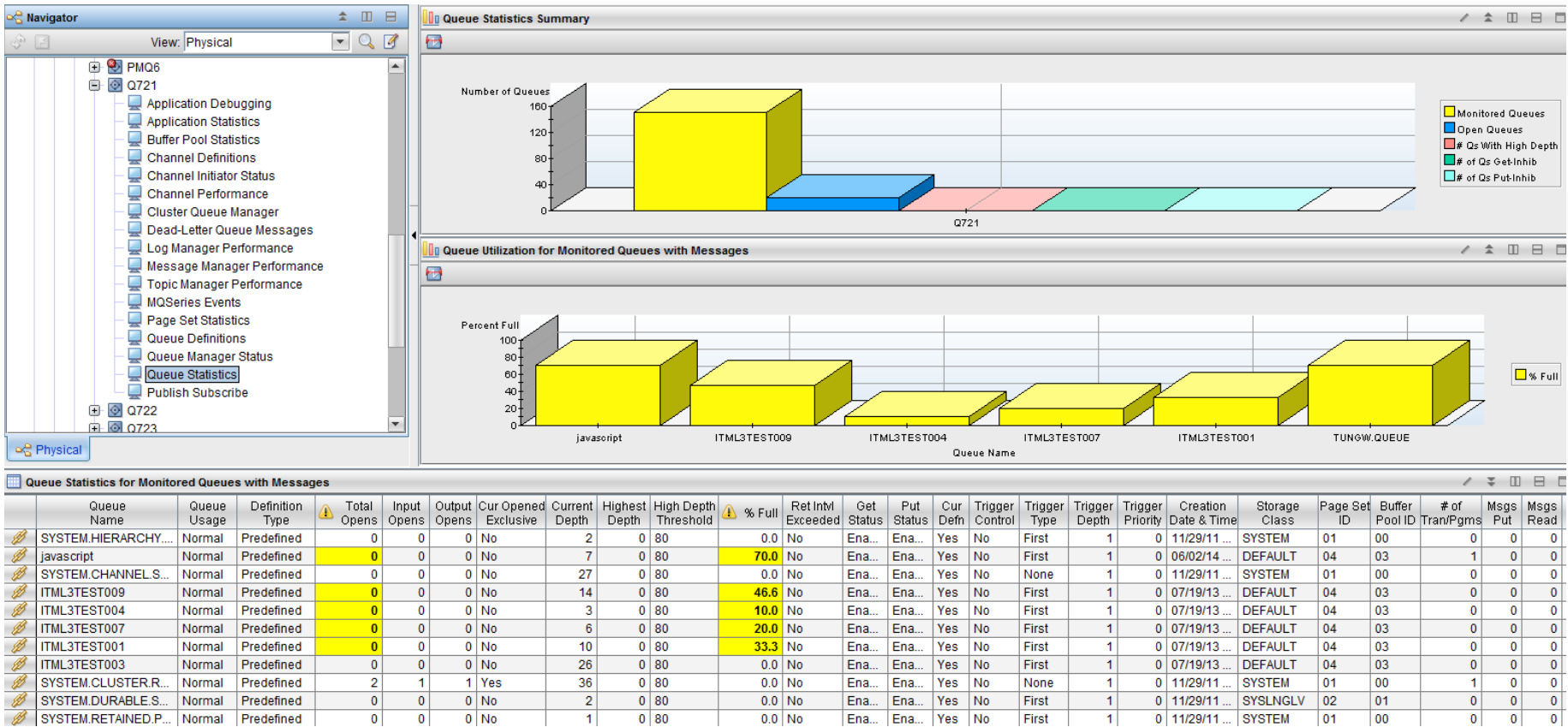
Applications with Open Handle for Queue
▢ ▢ ▢ ▢

Columns 2 to 7 of 20
Rows 1 to 1 of 1

ΔAppl ▽Tag	ΔAppl ▽Type	ΔASID ▽	ΔUser ▽ID	Open for Input	Open for Output	+Open Brow
<u>_</u> Q722CHIN	CHINIT	0141	DCUSER	Shared	Yes	Yes

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



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

```

File Edit View Tools Navigate Help 08/28/2014 22:22:47
Auto Update : Off
Command ==>
MQMCHNRS Channel Not Running Summary HostName : SYS
QmgrName : Q7G4
  
```

Current Channels Not Running ■|■|■|X

Columns 2 to 4 of 16 ← | → | ↑ | ↓ Rows 1 to 1 of 1

ΔChannel ▽Name	ΔConnection ▽Name	ΔChannel ▽Type	ΔChannel ▽Status
Q7G1.TO.Q7G4	::ffff:9.42.46.25	Receiver	Paused

Inactive Channels at Last Sample ■|■|■|X

Columns 2 to 4 of 12 ← | → | ↑ | ↓ Rows 1 to 12 of 12

ΔChannel ▽Name	ΔConnection ▽Name	ΔChannel ▽Type	Channel Status
— BQIAN.TO.Q7G4		RCVR	Inactive
— Q7G1.TO.Q7G4		RCVR	Inactive
— SYSTEM.ADMIN.SVRCONN		SVRCONN	Inactive
— SYSTEM.DEF.CLUSRCVR		CLUSRCVR	Inactive
— SYSTEM.DEF.CLUSSDR		CLUSSDR	Inactive
— SYSTEM.DEF.RECEIVER		RCVR	Inactive
— SYSTEM.DEF.REQUESTER		RQSTR	Inactive
— SYSTEM.DEF.SENDER		SDR	Inactive
— SYSTEM.DEF.SERVER		SVR	Inactive
— SYSTEM.DEF.SVRCONN		SVRCONN	Inactive
— TO_Q7G4		RCVR	Inactive
— WAS.JMS.SVRCONN		SVRCONN	Inactive

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

```

File Edit View Tools Navigate Help 08/28/2014 22:24:13
Auto Update : Off
Command ==>
KMQLCHLSD Channel Status Details
HostName : SYS
QmgrName : Q7G4

```

Status	Statistics	Parameters
--------	------------	------------

Channel Q7G1.TO.Q7G4 Conn ::ffff:9.42.46.25

Channel Type.....	Receiver	Message Count.....	372
Channel Status.....	Paused	Bytes Received (Deprecated)	202760
In-Doubt Status.....	Not In-D	Bytes Sent (Deprecated)...	1424
CurBatch Messages.....	0	Short Term Compression Tim	0
CurMsg SeqNo.....	373	Short Term Exit Time.....	0
CurBatch LUW ID.....	CDACB97B	Short Term Net Time.....	0
SeqNo Last Committed.....	0	Short Term XmitQ Time.....	0
LUW Last Committed.....	00000000	Short Term Batch Size.....	0
Last Message Date.....	14/08/28	Start Date.....	14/08/28
Last Message Time.....	22:24:12	Start Time.....	22:21:18
Heartbeat Interval.....	300	Long Retries Left.....	n/a
Keep Alive Interval.....	360	Short Retries Left.....	n/a
User Stop Request.....	Stop Not	Current Action State.....	Other

Remote Queue Manager Status for Q7G1

QMgr Status.....	Running	Channel Initiator Status..	Running
------------------	---------	----------------------------	---------

TCP IP Listener Active....	Yes	# TCPIP QMgr Listeners....	1
TCP IP Group Listener Acti	No	# TCPIP QMgr Retrying.....	0
LU62 Listener Active.....	No	# TCPIP Group Listeners...	0
LU62 Group Listener Active	No	# TCPIP Group Retrying....	0

Channel Status on Remote Queue Manager Q7G1

Columns <u>2</u> to <u>4</u> of <u>16</u>	← → ↑ ↓	Rows 1 to 1 of 1	
Channel Name	Connection Name	Channel Status	+Channel Type
_ Q7G1.TO.Q7G4	9.42.46.25	Running	Sender

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

File Edit View Tools Navigate Help 07/02/2014 16:34:09
 Command ==> Display : HISTORY
 KMQCHLHS HostName : SP22
 Channel Statistics History QmgrName : Q722

Channel TO_Q7G4 Conn 9.42.46.25

Columns 2 to 5 of 26 Rows 1 to 8 of 8

Recording Time	Channel Status	In-Doubt Status	User Stop Request	+Current Action State
16:30:00	Retrying	No	Stop Not Requested	Other
16:15:00	Retrying	No	Stop Not Requested	Other
s 16:00:00	Retrying	No	Stop Not Requested	Other
15:45:00	Running	No	Stop Not Requested	MQGet
15:30:00	Running	No	Stop Not Requested	MQGet
15:15:00	Running	No	Stop Not Requested	MQGet
15:00:00	Running	No	Stop Not Requested	MQGet
14:45:00	Running	No	Stop Not Requested	MQGet

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

```

KOBHIST      History Selection
Select an action and then press ENTER

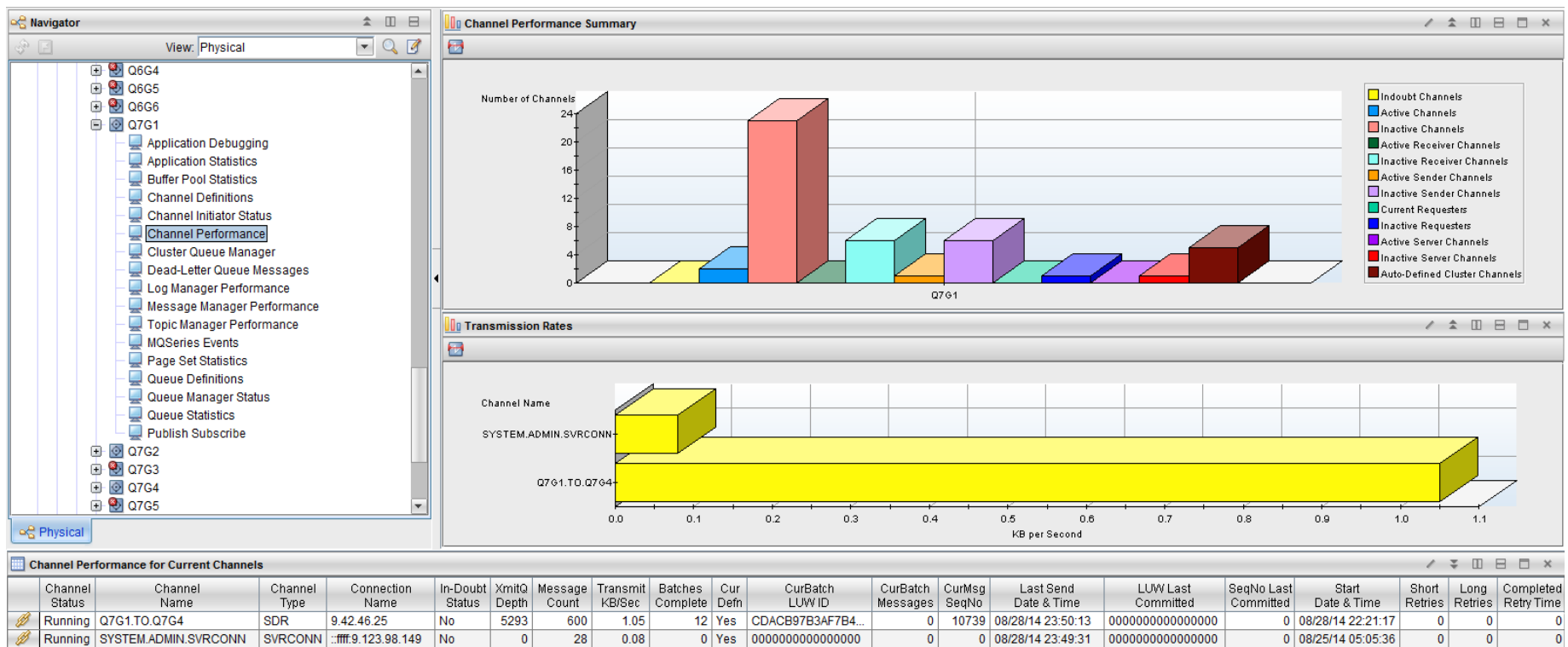
2  1. M Historical Last 030 Minute(s)
   2. H Historical Last 002 Hour(s)
   3. T Historical Time Range

      Time      Date      (MM/DD/YYYY)
Start  17:50:29  08/28/2014
End    19:50:29  08/28/2014

      OK      CANCEL
  
```

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



MQ Events

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

Command ==> _____ HostName : Z014
 KMQMMQES IBM MQ Events QmgrName : M70A

Current Events Not Yet Reset

Columns 2 to 3 of 8 Rows 1 to 3 of 3

Event	Date & Time	Event	Resource Name
s	12/08/29 05:08:03	Channel Stopped	TO.M70A
-	12/08/25 22:06:49	Channel Stopped	TO.M70A
-	12/08/25 08:07:41	Channel Stopped	TO.M70A

Recent Events In The Last Hour

Columns 2 to 3 of 8 Rows

Event	Date & Time	Event
-	12/08/30 22:02:50	Channel Stopped
-	12/08/30 22:23:49	Channel Stopped
-	12/08/30 22:44:48	Channel Stopped

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

Command ==> _____ HostName : Z014
 KMQCHLS2 Channel Status Details QmgrName : M70A

Channel TO.M70A

Channel Type.....	Sender	Message Count.....	0
Channel Status.....	Retrying	Bytes Received.....	0
In-Doubt Status.....	Not In-D	Bytes Sent.....	0
CurBatch Messages.....	0	Short Term Compression Tim	0
CurMsg SeqNo.....	0	Short Term Exit Time.....	0
CurBatch LUW ID.....	00000000	Short Term Net Time.....	0
SeqNo Last Committed.....	0	Short Term XmitQ Time.....	0
LUW Last Committed.....	00000000	Short Term Batch Size.....	0
Last Message Date.....	n/a	Start Date.....	12/08/30
Last Message Time.....	n/a	Start Time.....	22:44:48
Heartbeat Interval.....	300	Long Retries Left.....	976558K
Keep Alive Interval.....	0	Short Retries Left.....	0
User Stop Request.....	Stop Not	Current Action State.....	n/a

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

The screenshot displays the IBM MQ console interface. On the left, the Navigator pane shows a tree view of the queue manager structure, with 'MQSeries Events' selected under 'QM1'. The main Message Log pane shows a table of events with columns for Status, ID, Display Item, Origin Node, Global Timestamp, Local Timestamp, Node, and Type. A context menu is open over the Message Log, with 'Model Situation...' and 'Export ...' highlighted in green. Below the Message Log is the Event Archive pane, which contains a table of recorded events. The table has columns for Recording Time, Event Date & Time, Event, Event Q, Name, Resource Name, and XML Event Details. The table shows several configuration-related events, including 'Configuration Create Object' and 'Configuration Change Object'.

Status	ID	Display Item	Origin Node	Global Timestamp	Local Timestamp	Node	Type
Open	MS_Offline		QMB::MQ	08/27/12 08:37:39	08/27/12 08:37:39	TE...	Sampled
Open	MS_Offline		QMA::MQ	08/27/12 08:37:39	08/27/12 08:37:39	TE...	Sampled
Open	MS_Offline		tivp003::RCACFG	08/20/12 02:53:39	08/20/12 02:53:39	TE...	Sampled

Recording Time	Event Date & Time	Event	Event Q	Name	Resource Name	XML Event Details
08/27/12 08:40:00	08/27/12 08:40:46	Configuration Create Object	n/a		QA	<Param Event="Configuration Create
08/27/12 08:40:00	08/27/12 08:40:46	Configuration Create Object	n/a	QM1	QA	itionType="Predefined" Qtype="Local"
08/27/12 08:40:00	08/27/12 08:40:46	Command MQSC	Create Queue	QM1	QA	<Param Event="Command MQSC" Ev
08/27/12 08:41:00	08/27/12 08:41:02	Command MQSC	Inquire Queue	QM1	QA	<Param Event="Command MQSC" Ev
08/27/12 08:41:00	08/27/12 08:41:28	Configuration Change Object	Attributes Before Change	QM1	QA	<Param Event="Configuration Chang
08/27/12 08:41:00	08/27/12 08:41:28	Configuration Change Object	Attributes Before Change	QM1	QA	ropertyControl="Compatibility" Definiti
08/27/12 08:41:00	08/27/12 08:41:28	Configuration Change Object	Attributes After Change	QM1	QA	<Param Event="Configuration Chang
08/27/12 08:41:00	08/27/12 08:41:28	Configuration Change Object	Attributes After Change	QM1	QA	ropertyControl="Compatibility" Definiti

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 screenshot shows a dialog box titled "Event Archive by Search". It has a "Conditions" section with four rows of search criteria. The first row is checked and set to "Event" with the operator "Equal" and the value "Configuration Create Object". The other three rows are unchecked. Below the conditions is a "Search Option" section with a checked "Last" checkbox, a text box containing "1", and a dropdown menu set to "Hour". At the bottom right are "Search" and "Cancel" buttons.

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

The screenshot shows a table titled "Event Archive" with the following columns: Recording Time, Event Date & Time, Event, Event Qualifier, Event MQ Manager Name, Resource Name, XML Event Details, Sequence ID, Appl Type, Appl ID, and Host Name. The table contains two rows of data for "Configuration Create Object" events.

Recording Time	Event Date & Time	Event	Event Qualifier	Event MQ Manager Name	Resource Name	XML Event Details	Sequence ID	Appl Type	Appl ID	Host Name
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

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

The screenshot displays the IBM MQ Queue Manager Status interface. On the left is the 'Navigator' pane with a tree view of system components. The main area shows the 'Application Topology' workspace, which is a network diagram of the queue manager's internal structure. A tooltip for the 'APPG.IN.Q2' queue is visible, indicating its status as 'Critical' and that it is full. At the bottom, the 'Application Connections' table provides a detailed list of active connections.

Conn ID Suffix (CONN)	Conn ID Prefix (EXTCONN)	Application Tag	Appl Type	User ID	Process ID	Thread ID	Ad % Full	Space ID	name	name	State	Log start	UOW Log Start Date & Time	UOW Start Date & Time	QMGr Unit of Recovery ID	External Unit of Recovery ID	External Unit of Recovery Type	Origin Name	Origir UOW I
CD49C03FB73CU001	C3E2D8C3D8F7C7F44040404040404040	Q7G4CHIN	CHINIT	DCUSER	n/a	n/a	017E				None		n/a	n/a			QMGr		CDAC
CDABA4894DC20001	C3E2D8C3D8F7C7F44040404040404040	OMD1MQ	BATCH	TDUSER	n/a	n/a	0151				None		n/a	n/a			QMGr		
CDABF6D2157E0001	C3E2D8C3D8F7C7F44040404040404040	Q7G4CHIN	CHINIT	DCUSER	n/a	n/a	017E	Q7G1...	ffff:9.42.46.25		None		n/a	n/a			QMGr		CDAC
CDACB9700B670001	C3E2D8C3D8F7C7F44040404040404040	APPGG	BATCH	KMAGG	n/a	n/a	0049				None		n/a	n/a			QMGr		

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

The screenshot displays the IBM MQ Explorer interface. The Navigator pane on the left shows a tree view of the queue manager's structure, with 'Queue Manager Status' selected. The main pane shows the 'Application Topology' for the selected queue, 'APPG.IN.Q2'. The topology diagram includes nodes for 'APPGG' and 'Q7G4CHIN', both connected to 'APPG.IN.Q2'. Below the diagram is a table of Application Connections.

Conn ID Suffix (CONN)	Conn ID Prefix (EXTCONN)	Application Tag	Appl Type	User ID	Process ID	Thread ID	Address Space ID	Channel Name	Connection Name	UOW State
CDABA4894DC20001	C3E2D8C3D8F7C7F44040404040404040	OMD1MQ	BATCH	TDUSER	n/a	n/a	0151			None
CDABF6D2157E0001	C3E2D8C3D8F7C7F44040404040404040	Q7G4CHIN	CHINIT	DCUSER	n/a	n/a	017E	Q7G1...	...:ffff.9.42.46.25	None
CDACB9700B670001	C3E2D8C3D8F7C7F44040404040404040	APPGG	BATCH	KMAGG	n/a	n/a	0049			None

Queue: APPG.IN.Q2 Topology Mode 4: Browse Mode for Connections to A Queue

Hub Time: Fri, 08/29/2014 02:11 AM Server Available Application Connections - tm5063.tivlab.raleigh.ibm.com - SYSADMIN

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 ==>
KMQMSBMD Buffer Manager HostName : SYS
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 Δ% of Bufrs Available Low # Zero Bufrs Page Sets +Queue
∇ID ∇Available Buffers Avail Count Assigned 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 ==>
KMQPSTD 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  Status  Δ% Pages  Allocated  Unused  Persistent  +Non
∇ID        ∇In Use   Data Pages  Pages      Pages    Pages      Pag
- 00      Available  20.8      1078      853      225      0
- 01      Available  1.3       1078      1063     15       0
- 02      Available  0.3       1078      1074     4        0
- 03      Available  0.0       1078      1077     0        0
- 04      Available  7.5      102052    94314    0        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 ==>
KMQMSSMD Message Manager HostName : SYS
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

Active Log Dataset Name
MQM.V701.Q7G4.LOGCOPY1.DS03

```

File Edit View Tools Navigate Help 08/29/2014 03:42:04
Auto Update : Off
Command ==>
KMQMSLMD Log Manager HostName : SYS
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
03:30:25	0	0.0	0.0	0.0	0.0
03:25:25	0	0.0	0.0	0.0	0.0
03:20:25	0	0.0	0.0	0.0	0.0
03:15:25	0	0.0	0.0	0.0	0.0
03:10:25	0	0.0	0.0	0.0	0.0
03:05:25	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

```

File Edit View Tools Navigate Help 02/14/2014 21:23:11
Auto Update : Off
Command ==>
KMQTOPIS Topic Manager HostName : Z028
QmgrName : M71B
  
```

Latest Topic Manager SMF Sample

ADMIN Sub High Water Mark.	1	ADMIN Pub Per Sec.....	0.0
ADMIN Sub Low Water Mark..	1	API Pub Per Sec.....	134.8
API Sub High Water Mark...	6	Durable Sub Per Sec.....	0.1
API Sub Low Water Mark....	1	Msg on Subscriber Queue Pe	134.8
Publish High Water Mark...	1	PROXY Pub Per Sec.....	0.0
Publish Low Water Mark....	1	Sub Per Sec.....	0.1
PROXY Sub High Water Mark.	0	Expired Sub.....	0
PROXY Sub Low Water Mark..	0	No Subscriber Publish Coun	605
Publish Elapsed Time High	26.87	Total Publish Time.....	33945.72
Single Pub Subscriber High	40446		

Recent Topic Manager Samples

Columns 12 to 15 of 21 Rows 1 to 15 of 15

ΔSample ▽Time	Single Pub Subscriber High Water Mark	API Pub Per Sec	ADMIN Pub Per Sec	PROXY Pub Per Sec
— 21:20:24	40446	0.1	0.0	0.0
— 21:15:24	40431	0.1	0.0	0.0
— 21:10:24	40416	0.1	0.0	0.0
— 21:05:24	40401	0.1	0.0	0.0
— 21:00:24	40386	0.0	0.0	0.0
— 20:55:24	40372	0.1	0.0	0.0
— 20:50:24	40357	0.1	0.0	0.0
— 20:45:24	40342	0.1	0.0	0.0
— 20:40:24	40327	0.1	0.0	0.0
	40312	0.1	0.0	0.0
	40297	0.1	0.0	0.0
	40282	0.0	0.0	0.0
	40268	0.1	0.0	0.0
	40253	0.1	0.0	0.0
	40238	0.1	0.0	0.0

Options Menu

Select an option and then press ENTER

1. H Topic Manager Samples History

Publish Subscribe

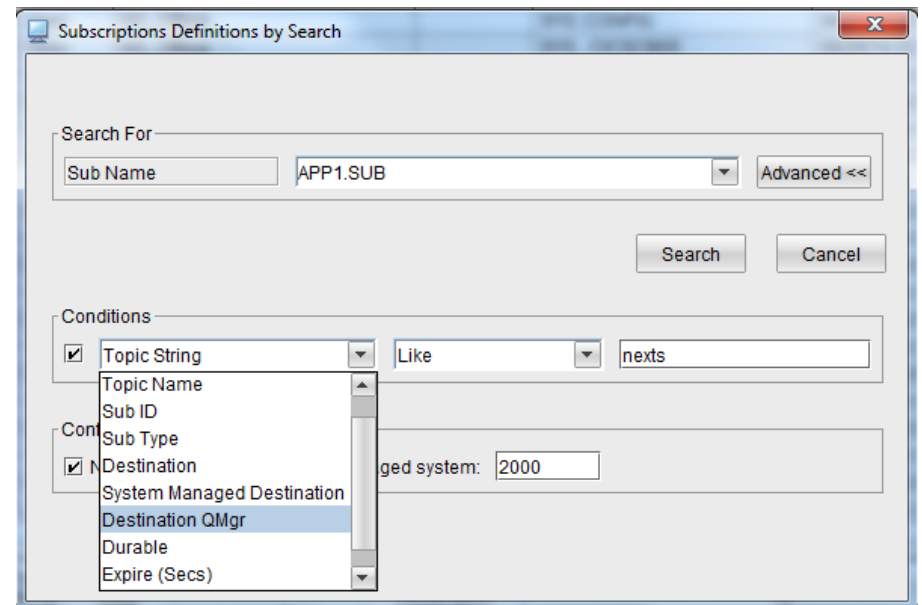
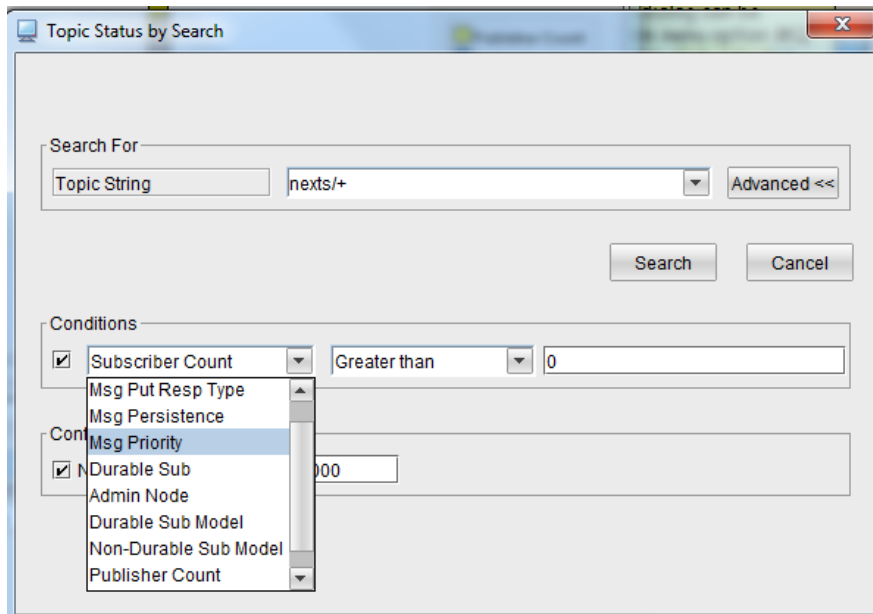
- The TEP Publish Subscribe navigator item contains several workspaces showing definitions of topics and subscriptions and their status, including topic status with respect to subscribers and publishers

The screenshot shows the IBM MQ Explorer interface. The 'Navigator' pane on the left shows the 'Publish Subscribe' item selected. The 'Topic Status' workspace is active, displaying a table of topic status and a bar chart titled 'Number of Publishers and Subscribers'. The bar chart shows 'nexts' with 0 publishers and 0 subscribers, and 'SYSTEM.BROKER.ADMIN.STREAM' with 0 publishers and 0 subscribers. A context menu is open over the 'nexts' bar, showing options like 'Topic Status', 'Topic Definitions', and 'Subscription Definitions'.

Topic String	Publisher Count	Subscriber Count	Durable Sub	Admin Node	Durable Sub Model	...
nexts	0	0	Yes		SYSTEM.DURABLE.MODEL.QUEUE	SY
SYSTEM.BROKER.ADMIN.STREAM	0	0	Yes	SYSTEM.BROKER.ADMIN.STREAM	SYSTEM.DURABLE.MODEL.QUEUE	SY
/	n/a	n/a	n/a	n/a	n/a	n/a

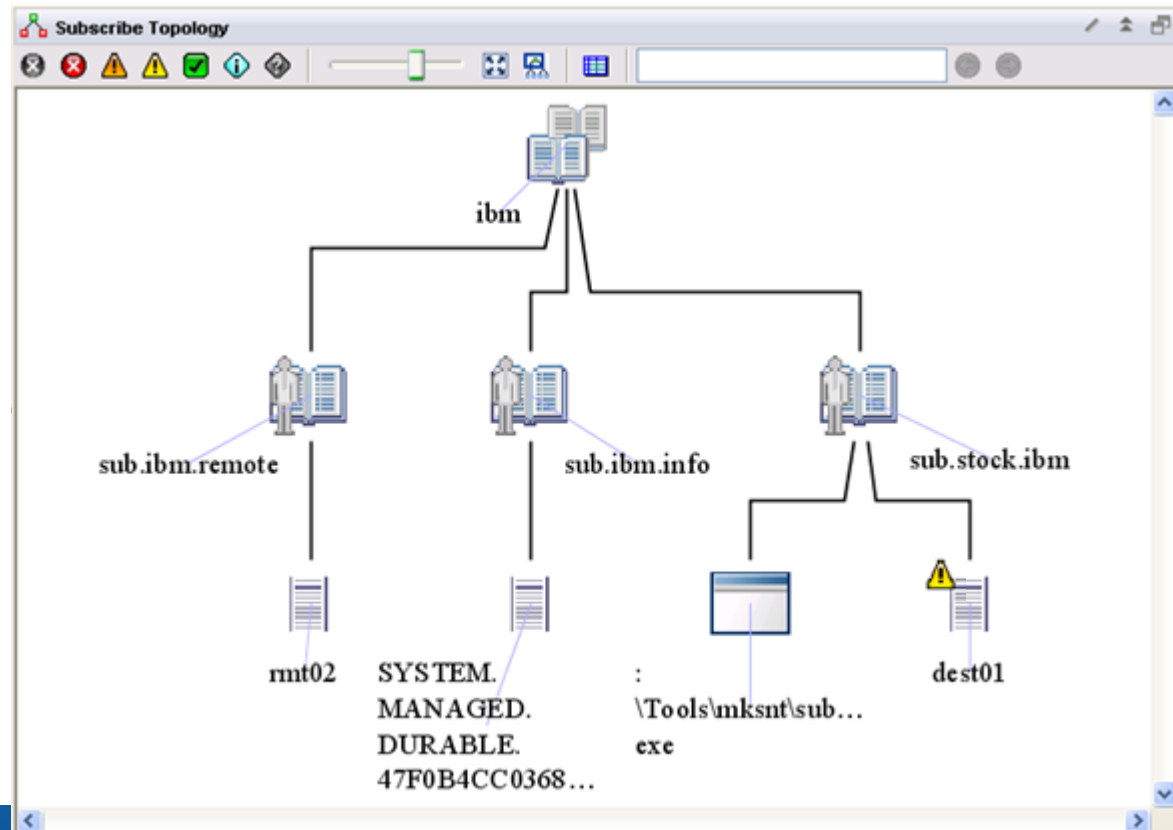
Publish Subscribe continued

- 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

Command ==> KMQAPPLS Application Summary Auto Update : OFF
 HostName : SYS
 QmgrName : Q7G4

Current Application Connections

Columns 2 to 6 of 27 Rows 1 to 16 of 46

ΔAppI ▽Tag	ΔAppI ▽Type	User ID	Conn ID Suffix (CONN)	UR Type	UOW State
— APP1G	BATCH	KMAGG	CDADADB3F6500001	QMgr	None
— APP1P	BATCH	KMAGG	CDADADB3F6350001	QMgr	None
— APPGG	BATCH	KMAGG	CDADAD9B77790001	QMgr	None
— \$GGKMQ	BATCH	DCUSER	CDA870EDA24D0001	QMgr	None
— OMD1MQ	BATCH	TDUSER	CDABA4894DC20001	QMgr	None
— S8AGTMQ	BATCH	TSUSER	CDA9C022E7490001	QMgr	None
— L3IAMQGD	BATCH	TDUSER	CDA9B9D8CB1B0001	QMgr	None
— OHPMMQ	BATCH	TDUSER	CDA870EDB0920001	QMgr	None
— Q7G4CHIN	CHINIT	DCUSER	CDA9C03FB73C0001	QMgr	None
— Q7G4CHIN	CHINIT	DCUSER	CDABF6D2157E0001	QMgr	None
— Q7G4CHIN	CHINIT	DCUSER	CDA88747BBB20001	QMgr	None
— Q7G4CHIN	CHINIT	DCUSER	CDA8720BBD330001	QMgr	None
— Q7G4CHIN	CHINIT	DCUSER	CDA8720BA3960001	QMgr	None
— Q7G4CHIN	CHINIT	DCUSER	CDA99927E6860001	QMgr	None
— Q7G4CHIN	CHINIT	DCUSER	CDA870960CCF0001	QMgr	None
— Q7G4CHIN	CHINIT	DCUSER	CDA870960CC40001	QMgr	None

Latest Application Statistics Sample

Columns 2 to 6 of 15 Rows 1 to 5 of 10

ΔAppI ▽ID	ΔAppI ▽Type	Msgs Put	Msgs Read	Msgs Browsed	Avg MQ Resp Time
— APP1G	BATCH	0	151	0	0.006
— APP1P	BATCH	228	0	0	0.000
— APPGG	BATCH	1	205	0	0.002
— Q7G4MSTR	SYSTEM	4850	77	0	0.000
— OMD1MQ	BATCH	17	1338	0	0.000

Application Statistics continued

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

File Edit View Tools Navigate Help 08/29/2014 17:00:22
 Auto Update : Off
 Command ==> HostName : SYS
 KMQAPTQS Latest Detail Statistics Sample for Application QmgrName : Q7G4

Transaction/Program Statistics for Appl APP1G Type BATCH

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

ΔTran/Pgm	Msgs Put	Msgs Read	Msgs Browsed	Avg MQ Resp Time	Avg Appl Time Between Calls
_ AMQSPUT	0	586	0	0.003	0.500

Application Queue Statistics for Appl APP1G Type BATCH

Columns 2 to 6 of 14 Rows 1 to 1 of 1

ΔQueue Name	ΔTran/Pgm	Msgs Put	Msgs Read	Msgs Browsed	+Avg MQ Time
_ APP1.OUT.Q1	AMQSPUT	0	586	0	0.003

Transaction/Program Statistics for Appl APP1G Type BATCH <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						Statistics for Appl APP1G Type BATCH <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
Columns <u>7</u> to <u>11</u> of <u>15</u> Rows 1 to 1 of 1						Columns <u>7</u> to <u>11</u> of <u>15</u> Rows 1 to 1 of 1			
ΔTran/Pgm	% MQI Failures	Opens Per Sec	Avg MQGET Resp Time	Avg MQPUT Resp Time	Input Msg Size Avg	Output Msg Size Avg	# of Task IDs	# of Queues	Interval Time
_ AMQSPUT	0.0	0.00	0.003	0.000	64	0	1	1	299.92

Application Queue Statistics for Appl APP1G Type BATCH <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>					Statistics for Appl APP1G Type BATCH <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
Columns <u>6</u> to <u>9</u> of <u>14</u> Rows 1 to 1 of 1					Columns <u>6</u> to <u>9</u> of <u>14</u> Rows 1 to 1 of 1				
ΔQueue Name	Avg MQ Resp Time	Avg Appl Time Between Calls	Opens Per Sec	+Avg MQGE Resp Tim	Avg MQGET Resp Time	Avg MQPUT Resp Time	Input Msg Size Avg	Output Msg Size Avg	
_ APP1.OUT.Q1	0.003	0.500	0.00	0.003	0.003	0.000	64	0	

Application Statistics continued

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

The screenshot displays the IBM Tivoli Enterprise Portal (TEP) interface for monitoring MQ application statistics. The left pane shows a tree view of the application hierarchy, with 'Application Statistics' selected. The main area contains three panels:

- Message Counts:** A 3D bar chart showing the number of messages put, read, and browsed at three different times on 08/29/14. The x-axis ranges from 0 to 2,000. The legend indicates: Messages Put (yellow), Messages Read (blue), and Messages Browsed (red).
- Average MQ Response Time:** A 3D bar chart showing the average response time in seconds at the same three times. The x-axis ranges from 0.000 to 0.004. The legend indicates: Messages Put (yellow).
- Historical Application Statistics by ApplID:** A table with 15 columns: Recording Time, Sample Date & Time, Interval Length, # of Task IDs, # of Tran/Pgms, # of Queues, Msgs Put, Msgs Read, Msgs Browsed, Input Msg Size Avg, Output Msg Size Avg, Avg MQGET Resp Time, Avg MQPUT Resp Time, Avg MQ Resp Time, and Avg Appl Time Between Calls. The table shows three rows of data for different recording times.

At the bottom, there is a status bar with the following information: ApplID:APP1G, ApplType:32, QMgr:Q7G4, Host:SYS. The status bar also includes a Hub Time (Fri, 08/29/2014 05:27 PM), a Server Available indicator, and the user name SYSADMIN.

Recording Time	Sample Date & Time	Interval Length	# of Task IDs	# of Tran/Pgms	# of Queues	Msgs Put	Msgs Read	Msgs Browsed	Input Msg Size Avg	Output Msg Size Avg	Avg MQGET Resp Time	Avg MQPUT Resp Time	Avg MQ Resp Time	Avg Appl Time Between Calls
08/29/14 16:45:00	08/29/14 16:45:27	015:00	1	1	1	0	1350	0	64	0	0.004	0.000	0.004	0.500
08/29/14 17:00:00	08/29/14 17:00:27	015:00	1	1	1	0	1814	0	64	0	0.003	0.000	0.003	0.500
08/29/14 17:15:00	08/29/14 17:15:27	015:00	1	1	1	0	1784	0	64	0	0.001	0.000	0.001	0.500

Dead Letter Queue

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

```

File Edit View Tools Navigate Help 08/29/2014 00:16:23
Auto Update : Off
Command ==>
KMQLQMS Dead Letter Queue Messages HostName : SYS
QmgrName : Q7G4

DLQ Name..... DEADQ DLQ Maximum..... 976562K

Dead Letter Queue Message List
Columns 2 to 4 of 16 Rows 1 to 25 of 2491

```

Dest. QMgr	ΔDest. ▽Queue	Message Tag	ΔReason ▽Code
Q7G4	APPG.IN.Q2	F1F1F2B0	(KMQW000W)2053-Q Full
Q7G4	APPG.IN.Q2	3234A672	(KMQW000W)2053-Q Full
Q7G4	APPG.IN.Q2	72971F09	(KMQW000W)2053-Q Full
Q7G4	APPG.IN.Q2	661E6F68	(KMQW000W)2053-Q Full
Q7G4	APPG.IN.Q2	574C56AB	(KMQW000W)2053-Q Full
Q7G4	APPG.IN.Q2	F5E33043	(KMQW000W)2053-Q Full
Q7G4	APPG.IN.Q2	99D15B18	(KMQW000W)2053-Q Full
Q7G4	APPG.IN.Q2	E7FE6585	(KMQW000W)2053-Q Full
Q7G4	APPG.IN.Q2	94D9D158	(KMQW000W)2053-Q Full

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

```

Options Menu
Select an option and then press ENTER
- 1. ! Message Actions
  2. S Message Content

```

```

KMQQMSA Message Manipulation
Select an action and then press ENTER
- 1. D Delete Message
  2. F Forward Message

```

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 ==>
KMQQMCS      Message Contents
HostName : SYS
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

Command ==> _____ Auto Update : **Off**
 KMQQMSG S Message Descriptor List HostName : Z014
 QmgrName : M71A

Queue APP3.IN.Q1

Columns 2 to 6 of 14 Rows 1 to 11 of 11

Message Tag	Msg Type	Put Date & Time	App1 ID	App1 Type	+Msg Len
E7B723C6	Datagram	12/08/21 03:15:36	APP3P	MUS	
40D94D8A	Datagram	12/08/21 03:15:36	APP3P	MUS	
D9FCDEE0	Datagram	12/08/21 03:15:37	APP3P	MUS	
0D3144EF	Datagram	12/08/21 03:15:37	APP3P	MUS	
7DDB8015	Datagram	12/08/21 03:15:37	APP3P	MUS	
7F4F6BC0	Datagram	12/08/21 03:15:38	APP3P	MUS	

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

Command ==> _____ Auto Update : **Off**
 KMQQMSCS Message Contents HostName : Z014
 QmgrName : M71A

Message on Queue APP3.IN.Q1

Columns 2 to 4 of 4 Rows 1 to 4 of 4

Disp	Hexadecimal Data	Character Data	+Charac CCSID
0000	C5949793 96A8D581 9485AD81 82838485	*EmployName .abcde*	500
0010	8687BD81 82838485 86878182 83818283	*fg.abcdefgabcabc*	500
0020	84858687 81828381 82838485 86878182	*defgabcabcdefgab*	500
0030	83818283 84858687 81828381 82838485	*cabcdefgabcabcde*	500

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

```
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. M Message Descriptor List
   6. R Recent Queue Statistics
   7. S Queue Status Details
```

- **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

Queue-Sharing Group Nodes			
Columns	2 to 4 of 5	Rows	1 to 1 of 1
Managed System	Version	Host Address	+Host Info
Q7G2::MQQSG	07.30.00	ip.pipe:#9.42.46.22<NM>SP22</	z/OS~02.01.00

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

Queue-Sharing Group Queue Manager Status							
Columns	2 to 8 of 9	Rows	1 to 2 of 2				
ΔQSG ▽Name	ΔQMGr ▽Name	QMGr Status	DB2 Subsystem	DB2 Conn Status	# of DB2 Servers	DSG Name	+Host Name
Q7G2	Q7G6	Failed	DA1D	Inactive	0		
Q7G2	Q723	Active	DA1C	Active	4	DA1G	SP22

Queue-Sharing Groups continued

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

```
Command ==> _____ HostName : _____
KMQQGCFS Queue-Sharing Group Coupling Facility Structures QmgrName : _____
```

QSG Q7G2 Coupling Facility Structures					
Columns <u>2</u> to <u>6</u> of <u>12</u>		← → ↑ ↓		Rows <u>1</u> to <u>4</u> of <u>4</u>	
ΔCF Struct ▽Name	CF Struct Type	Struct Status	Struct Level	% Stor Used	% Entries Used
APPLICATION1	Appl	Active	3	1.0	0.3
CSQ_ADMIN	Admin	Active	0	1.0	0.0
CSQSYSAPPL	Appl	Failed	3	0.0	0.0
MQ001	Appl	Active	3	1.0	0.3

QSG Q7G2 CF Structure Connections				
Columns <u>2</u> to <u>5</u> of <u>5</u>		← → ↑ ↓		Rows <u>1</u> to <u>3</u> of <u>3</u>
ΔCF Struct ▽Name	QMgr Name	Conn Status	Failure Date & Time	Host Name
APPLICATION1	Q723	Active	n/a	SP22
CSQSYSAPPL	Q723	Failed	14/06/02 15:11:41	SP22
MQ001	Q723	Active	n/a	SP22

QSG Q7G2 CF Structure Backups					
Columns <u>2</u> to <u>6</u> of <u>10</u>		← → ↑ ↓		Rows <u>1</u> to <u>1</u> of <u>1</u>	
ΔCF Struct ▽Name	QMgr Name	Struct Status	Backup Date & Time	Backup Size	+Backup Start RBA
CSQSYSAPPL	Q7G6	Failed	12/08/15 13:48:00	0	000000116

Queue-Sharing Groups continued

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

```

File Edit View Tools Navigate Help 08/29/2014 18:04:57
Auto Update : Off
Command ==>
KMQQGCFD QSG Coupling Facility Structure Details
QmgrName :

QSG Q7G2 Coupling Facility Structure APPLICATION1
Struct Status..... Active
Recovery Supported..... No
Failure Date..... n/a
Failure Time..... n/a
% Stor Used..... 1.0
% Entries Used..... 0.3
Used Entries..... 33
CF Struct Type..... Appl
Struct Level..... 3
Alter Date..... 12/08/14
Alter Time..... 11:40:05
Max Stor..... 32768
Max Entries..... 9895

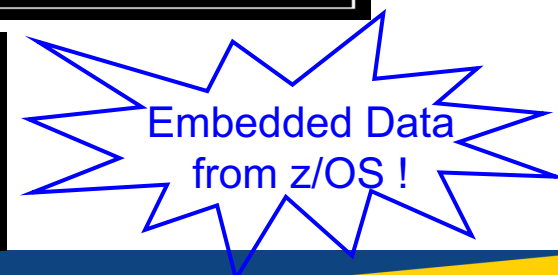
z/OS CF Structure Details for Q7G2APPLICATION1
CF Name..... CF01
Structure Status..... ActivePe
Structure Type..... List
Asynchronous Requests per minute..... 0.0
Synchronous Requests per minute..... 6.0
Maximum Users..... 32
Total Users..... 1
Problem Users..... 0
Storage Size..... 8192
Percent CF Storage Size..... 1.1
Element Count..... 9895
Duplex..... Unavaila
AutoAlter..... Unavaila
  
```

- Options from zoom on CF Name

```

KM5MQCFZ Navigation Options for CF Structure Q7G2APPLICATION1
Select an action and then press ENTER

1. C Statistics for CF Cache Structure
2. F Sysplexes Coupling Facility
3. L Statistics for CF List / Lock Structure
4. P Coupling Facility Policy
5. S MVS Systems for CF Structure
6. T Coupling Facility Structures
  
```



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

```

File Edit View Tools Navigate Help 08/29/2014 18:17:24
Auto Update : Off
HostName :
QmgrName :
Command ==>
KMQQGQUS Queue-Sharing Group Queues
    
```

QSG Q7G2 Queue List					
Columns <u>2</u> to <u>5</u> of <u>6</u>		Rows <u>1</u> to <u>4</u> of <u>4</u>			
ΔQueue ▽Name	CF Struct Name	ΔQSG ▽Disp	ΔCurrent ▽Depth	% Full	
SYSTEM.QSG.TRANSMIT.	MQ001	Shared	0	0.0	
SYSTEM.QSG.CHANNEL.S	CSQSYSAPPL	Shared	0	0.0	
CSQ4IVPG.TRIGGER	APPLICATION1	Shared	0	0.0	
SYSTEM.QSG.UR.RESOLU	CSQSYSAPPL	Shared	0	0.0	

- 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)

```

Command ==>
KMQQQUES Queue-Sharing Group Queues
    
```

Queue Status Matching CSQ4IVPG.TRIGGER						
Columns <u>2</u> to <u>7</u> of <u>9</u>		Rows 1 to 1 of 1				
ΔQMgr ▽Name	ΔCurrent ▽Depth	Input Opens	Output Opens	Oldest Msg Age	Short Term Queue Time	+Long Queue
Q723	0	0	0	0	0	

Latest Statistics Samples Matching CSQ4IVPG.TRIGGER					
Columns <u>2</u> to <u>6</u> of <u>25</u>		Rows 1 to 1 of 1			
ΔQMgr ▽Name	Δ% Full ▽	Msgs Read per Sec	Msgs Put per Sec	Total Opens	+Last Read
Q723	0.0	0.0	0.0	0	n/a

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)

```

File Edit View Tools Navigate Help 08/29/2014 19:24:59
Auto Update : Off
Command ==> HostName : SP22
KMQLQMS QmgrName : Q721
Cluster Queue Manager Summary

Cluster Queue Managers
Columns 2 to 5 of 11 Rows 1 to 7 of 7

```

ΔCluster ▽	ΔCluster ▽	Cluster QMgr Type	Cluster Qmgr Suspend	+Channel Name
— SYSGSP22	QMA4CLUSA	Normal	No	TO.QMA4CLUSA
— SYSGSP22	QMB4CLUSA	Normal	No	TO.QMB4CLUSA
— SYSGSP22	QMC4CLUSA	Normal	No	TO.QMC4CLUSA
— SYSGSP22	QMD4CLUSA	Normal	No	TO.QMD4CLUSA
— SYSGSP22	QME4CLUSA	Normal	No	TO.QME4CLUSA
— SYSGSP22	Q7G1	Repository	No	TO.Q7G1
— SYSGSP22	Q721	Repository	No	TO.Q721

Cluster Channel Definition Type	Cluster Date & Time	Connection Name
Automatic Cluste	14/08/25 04:17:02	9.123.98.149(4444)
Automatic Cluste	14/08/25 05:31:01	9.123.98.149(4445)
Automatic Cluste	14/08/25 04:18:37	9.123.98.149(4446)
Automatic Cluste	14/08/26 04:17:40	9.123.98.149(4447)
Automatic Cluste	14/08/26 04:21:10	9.123.98.149(4448)
Explicit/Auto Cl	14/08/18 06:39:49	9.42.46.25(21426)
Explicit Cluster	14/05/23 02:14:50	9.42.46.22(21426)

MQ Clusters continued

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

```
Command ==> _____ HostName : SYS
KMQLCHS      Cluster Channels      QmgrName : Q721
```

Cluster SYSGSP22 Qmgr Q721 Channel List				
Columns 2 to 5 of 8		Rows 1 to 2 of 2		
ΔChannel ▽Name	ΔQMGr ▽Name	ΔChannel ▽Type	Connection Name	+Tran Type
— TO.Q7G1	Q721	CLUSSDR	9.42.46.25(21426)	TCP
— TO.Q721	Q721	CLUSRCVR	9.42.46.22(21426)	TCP

- 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)

```
Command ==> _____ HostName : _____
KMQLCHS      Cluster Channel Status  QmgrName : _____
```

Current Channel Status Matching TO.Q7G1				
Latest Statistics Samples Matching TO.Q7G1				
Columns 2 to 5 of 15		Rows 1 to 7 of 7		
ΔQMGr ▽Name	ΔConnection ▽Name	ΔChannel ▽Type	Channel Status	In-Doubt Status
— Q7G1	9.42.46.25(21426)	CLUSRCVR	Inactive	n/a
— Q721	9.42.46.25(21426)	CLUSSDR	Inactive	n/a
— QMA4CLUS	9.42.46.25(21426)	CLUSSDR	Inactive	n/a
— QMB4CLUS	9.42.46.25(21426)	CLUSSDR	Inactive	n/a
— QMC4CLUS	9.42.46.25(21426)	CLUSSDR	Inactive	n/a
— QMD4CLUS	9.42.46.25(21426)	CLUSSDR	Inactive	n/a
— QME4CLUS	9.42.46.25(21426)	CLUSSDR	Inactive	n/a

MQ Clusters continued

- Use "Q" option for queues associated with the cluster related to the given queue manager

```
Command ==> _____ HostName : SYS
KMQCLQUS Cluster Queues QmgrName : Q721
```

Cluster SYSGSP22 Qmgr Q721 Queue List						
Columns <u>2</u> to <u>6</u> of <u>12</u>		Rows 1 to 1 of 1				
ΔQueue ▽Name	ΔQMgr ▽Name	Queue Type	ΔCurrent ▽Depth	Queue Usage	+Input Opens	
_ CLUSTERQ1	Q721	Local	0	Normal		

- 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)

```
Command ==> _____ HostName : _____
KMQQUECS Cluster Queue Status QmgrName : _____
```

Queue Status Matching CLUSTERQ1						
Columns <u>2</u> to <u>7</u> of <u>9</u>		Rows 1 to 1 of 1				
ΔQMgr ▽Name	ΔCurrent ▽Depth	Input Opens	Output Opens	Oldest Msg Age	Short Term Queue Time	+Long Queue
_ Q721	0	0	0	0	0	

Latest Statistics Samples Matching CLUSTERQ1					
Columns <u>2</u> to <u>6</u> of <u>25</u>		Rows 1 to 1 of 1			
ΔQMgr ▽Name	Δ% Full ▽	Msgs Read per Sec	Msgs Put per Sec	Total Opens	+Last Read
_ Q721	0.0	0.0	0.0	0	n/a

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

Command ==> _____ Display : HISTORY
 KMQACTLG MQ Action Log HostName : SYS
 QmgrName : Q7G4

Recent Take Action Commands and Message Manipulation Actions

Columns 2 to 4 of 12 Rows 1 to 5 of 5

Recording Time	User ID	Action Type	MQ Reason Code
20:47:00	KMAGG	MQ Command	MQ Command Successful
20:47:00	KMAGG	MQ Command	MQ Command Successful
20:46:00	KMAGG	Delete Message	
20:31:00	KMAGG	Retry Message	
19:30:00	KMAGG	MQ Command	MQ Command Successful

```
+Command
ALTER QLOCAL(APP2.IN.Q2) PUT(ENABLED)
ALTER QLOCAL(APP2.IN.Q2) GET(ENABLED)
ALTER QLOCAL(APP2.IN.Q2) MAXDEPTH(51)
```


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

```
Command ==> _____ HostName : SYS
KMQQUESP _____ QmgrName : Q7G1

Queue Parameters
[Status] [Statistics] [Parameters]

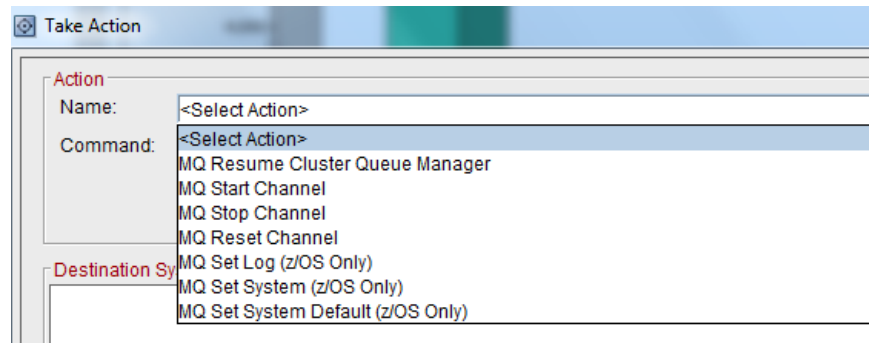
Queue ABCQ Parameters - Display Command Results
Rows 1 to 30 of 56

CSQN205I COUNT= 3, RETURN=00000000, REASON=00000000
CSQM401I >Q7G1 QUEUE(ABCQ)
TYPE(QLOCAL)
QSGDISP(QMGR)
STGCLASS(DEFAULT)
PSID( 4)
CFSTRUCT()
CLUSTER()
CLUSNL()
DESCR()
PUT(ENABLED)
DEFPRTY( 0)
DEFPSIST(NO)
OPPROCS( 0)
IPPROCS( 0)
CURDEPTH( 1)
MAXDEPTH( 999999999)
PROCESS()
NOTRIGGER MAXMSGL( 4194304)
BOTHRESH( 0)
BOQNAME()
INITQ()
USAGE(NORMAL)
NOSHARE DEFSOPT(EXCL)
MSGDLVSQ(PRIORITY)
RETINTVL( 999999999)
TRIGTYPE(FIRST)
TRIGDPHT( 1)
TRIGMPRI( 0)
TRIGDATA()

DEFTYPE(PREDEFINED)
NOHARDENBO CRDATE(2013-04-25)
CRTIME(08.24.24)
GET(ENABLED)
DEFREADA(NO)
DEFPRESP(SYNC)
PROPCTL(COMPAT)
QDEPTHHI( 80)
QDEPTHLO( 40)
QDPMAXEV(ENABLED)
QDPHIEV(DISABLED)
QDPLOEV(DISABLED)
QSVCINT( 999999999)
QSVCIIEV(NONE)
INDXTYPE(NONE)
ACCTQ(QMGR)
MONQ(QMGR)
NPMCLASS(NORMAL)
DEFBIND(OPEN)
CLWLRANK( 0)
CLWLPRTY( 0)
CLWLUSEQ(QMGR)
TPIPE()
ALTDATE(2013-04-25)
ALTTIME(08.24.24)
CSQ9022I >Q7G1 CSQMDRTS ' DIS QUEUE' NORMAL COMPLETION
```

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
    
```

```

KMQCHLAT      Take Actions for Channel
                T0.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.B1.MODEL
Select an action and then press ENTER
- 1. Z Issue MQSC 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
    
```

```

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
                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_ChIStart
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

