All About 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 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

- 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

- 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

Capitalware's MQ Technical Conference v2.0.1.5

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**

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

⌄                             Queue Manager Status                                  ▮▐▌☒

  Columns _2 to 11 of 24            ← | → | ↑ | ↓              Rows ____1 to ____9 of ____9

ΔQMgr  ← → ▯  Host  ← → ▯  ΔQMgr     ΔQueue    ΔChannel   ΔCurrent   QMgr      Channel     Command    Conn #   +DLQ
∇Name        ▯  Name       ∇Health   ∇Health   ∇Health    ∇MQEvents  Status    Initiator   Server              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**

Embedded Data from z/OS !

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*_

              File  Edit  View  Tools  Navigate  Help     05/20/2014 20:06:08
_                                                          Auto Update   : Off
Command ==>                                               Plex ID  :
KMQANODE                   Queue Manager Name List        Sys ID   :

⌄          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
```

Capitalware's MQ Technical Conference v2.0.1.5

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        ▐  User      Handle       Asynch       Open for     Open for    +Open
  Tag         ▐  ID        Status       State        Input        Output      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 !

```
                              File   Edit   View   Tools   Navigate   Help      05/20/2014  18:47:44
                                                                                Auto Update    :  Off
Command ==>                                                                     HostName  :  SP22
KMQAPQZD                              z/OS Application Details for Queue        QmgrName  :  Q721

☑                                     Queue ABCQ Appl CBANG721                            ■|■|☒

   Columns  _2  to  _7  of  15         ←  |  →  |  ↑  |  ↓       Rows        1  to        1  of        1

 ◇Appl            ▯  User          Handle        Asynch        Open for        Open for        +Open
  Tag             ▯  ID            Status        State         Input           Output          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          ← | →  | ΔQMgr ← | →  | Host ← | →  | ΔQueue   | Queue   | ΔCurrent | Input  | Output
▽Name                  | ▽Name         | Name         | ▽Type    | Usage   | ▽Depth   | Opens  | 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

- **The H option for History available from any list of queues allows going back in time to determine issues, like when a queue depth began to rise**

```
                       File   Edit   View   Tools   Navigate   Help    07/02/2014   15:12:56
_____                                                      Display   :  HISTORY
Command ==> _____         HostName  :  SYS
KMQQUELS                     Queue Statistics History                   QmgrName  :  Q7G4

⌄                            Queue APP2.IN.Q2                                          ■|▮|▨

  Columns _2 to _7 of 29      ←  |  →  | ↑ | ↓       Rows _____1 to _____8 of _____8

◇Recording     ▯ Current    Input       Output      Get         Put         +Trigger
 Time          ▯ Depth      Opens       Opens       Status      Status      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
```

- **If needed, the history timespan can be changed from the 2 hour default using a View menu option**

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

                                        OK    CANCEL
```

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

Capitalware's MQ Technical Conference v2.0.1.5

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 attributes are summarized over the historical interval**

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**

Capitalware's MQ Technical Conference v2.0.1.5

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 channel issue may also have been caught due to the rising depth of the transmission queue associated with the sending side

Channels continued

- Selecting the transmission queue for details, the channel status of running for the sender channel does not explain the rising queue depth problem, but….

```
                    File   Edit   View   Tools   Navigate   Help    08/28/2014 22:32:31
 _____                                                    Auto Update    : Off
 Command ==> _____     HostName  : SYS_____
 KMQQXMTD                    Transmission Queue Status Details      QmgrName  : Q7G1____

   Status     Parameters

 ∨                          Xmit Queue APPG_XMIT                                 ■|■|✕

   Current Depth.............      627    Short Term Queue Time.....    193619K
   Input Opens...............        1    Long Term Queue Time......    191462K
   Output Opens..............        2    Oldest Msg Age............        209
   Last Get Date............. 14/08/28    Last Put Date............. 14/08/28
   Last Get Time............. 22:32:17    Last Put Time............. 22:32:30


   Queue Usage...............    XmitQ    Definition Type........... Predefin
   Get Status................  Enabled    Trigger Control...........       On
   Put Status................  Enabled    Trigger Type..............    First
   Default Persist...........       No    Trigger Priority..........        0
   Default Priority..........        0    Trigger Depth.............        1
   Creation Date............. 14/07/07    Alter Date................ 14/08/27
   Creation Time............. 21:35:16    Alter Time................ 22:21:16
   Max Depth.................  976562K

 ∨             Channel Status for Xmit Q Channel                                 ■|■|✕

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

  ◇Channel               ▯ Connection      ← | →     Channel          +In-Doubt
   Name                  ▯ Name                      Status           Status
                         ▯
  _ Q7G1.TO.Q7G4         ▯ 9.42.46.25               Running          Not In-Doub

 ∨          Applications with Open Handle for Queue                             ■|■|✕

   Columns  2 to  7 of  20     ← | → | ↑ | ↓    Rows _____1 to _____2 of _____2

  △Appl  ← | → ▯△Appl          △ASID   △User ← | →   Open for        Open for    +Open
  ▽Tag         ▯▽Type          ▽       ▽ID           Input           Output      Brow
              ▯
  _ APPGP      ▯ BATCH          004A    KMAGG        No              Yes         No
```

Channels continued

- **Selecting the channel for more details shows that the receiving side queue manager seems healthy, but the receiver channel is paused so messages remain on the xmit queue**

Channels continued

- **Looking for health issues on the receiving queue manager, there is a queue with high depth; select it to see that the channel initiator is trying to put messages on it, but it is full or near full, causing the channel to pause each time it is full – the receiving application is too far behind in processing**
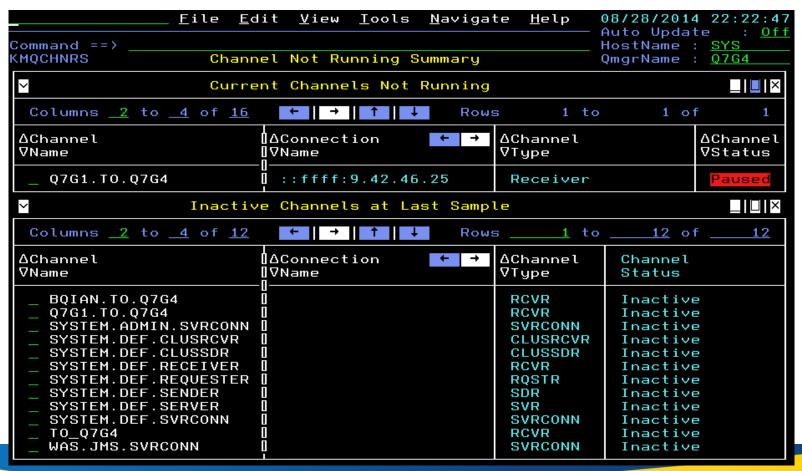
Channels continued

- **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**
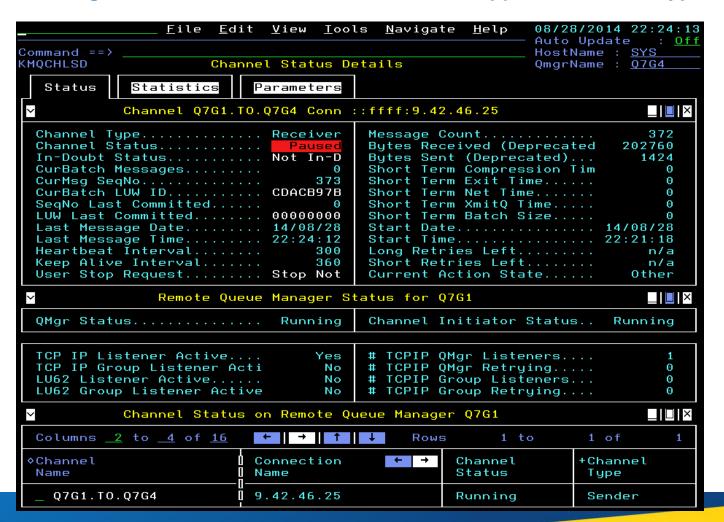
MQ Events

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

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

  ▼          Current Events Not Yet Reset              ▉▐▌▐✕

  Columns  2 to  3 of  8   ◄  ►  ↑  ↓    Rows _____1 to _____3 of ____3

  ΔEvent                 ▐ Event                  Resource       ◄  ►
  ▽Date & Time           ▐                        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   ◄  ►  ↑  ↓

  ΔEvent                 ▐ Event
  ▽Date & Time           ▐
                         ▐
   _ 12/08/30 22:02:50 ▐ Channel Stopped
   _ 12/08/30 22:23:49 ▐ Channel Stopped
   _ 12/08/30 22:44:48 ▐ Channel Stopped
```

```
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
```

- **The agent automatically monito[r]s 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**

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                         ■|■|X

     # 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                                    ■|■|X

    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 ==>                                                              HostName : SYS
KMQPGSTD                          Page Set Statistics                    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      │ 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**

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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 ==>                                                          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      ▌ Zero Bufr  │ Arch Log  │ % Rd Log  │ Read Log   │ Write Log
  ∇Time        ▌ Waits      │ Read %    │ Delayed   │ Per Min    │ 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
                        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
```
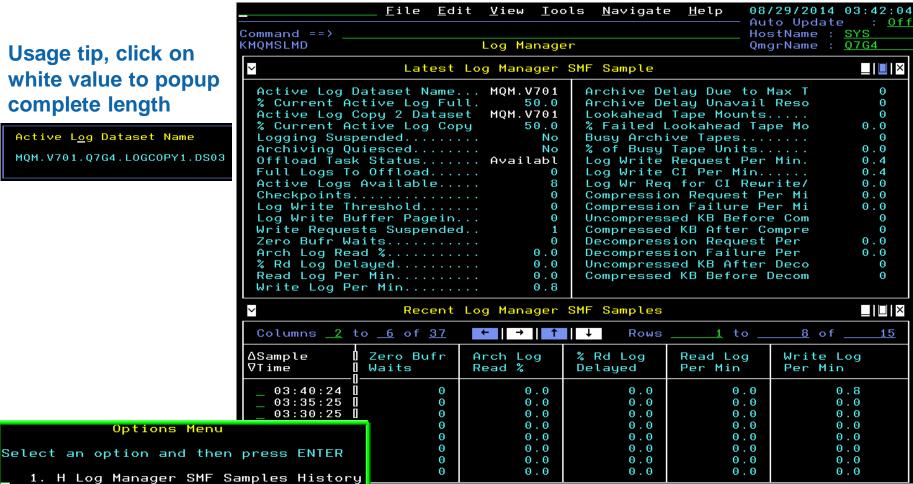
```
        Options Menu

Select an option and then press ENTER

_    1. H Log Manager SMF Samples History
```
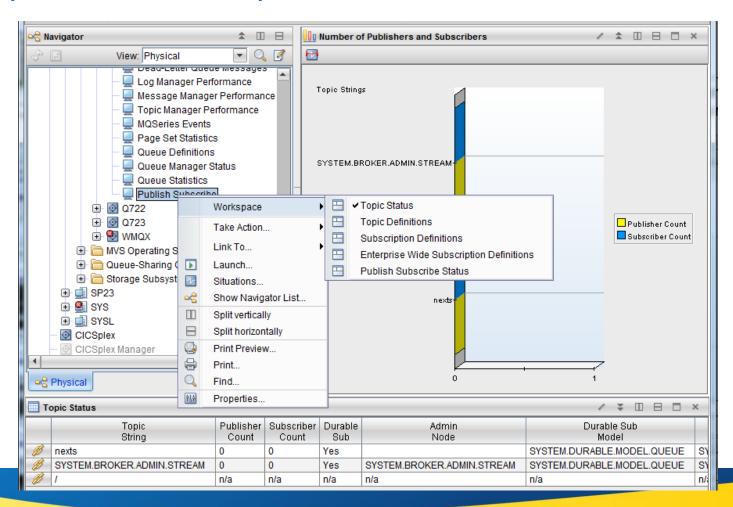
Topic Manager

- **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**
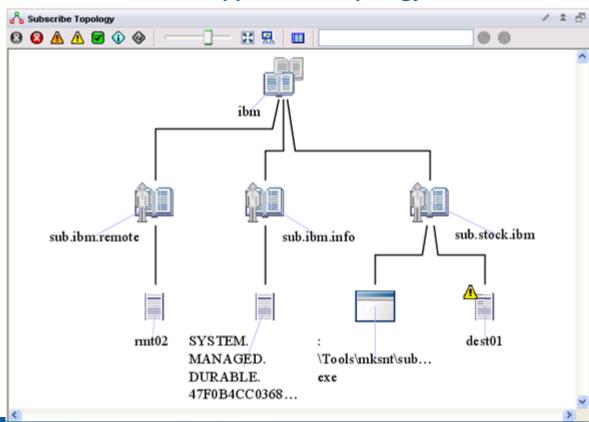
Publish Subscribe continued

- **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
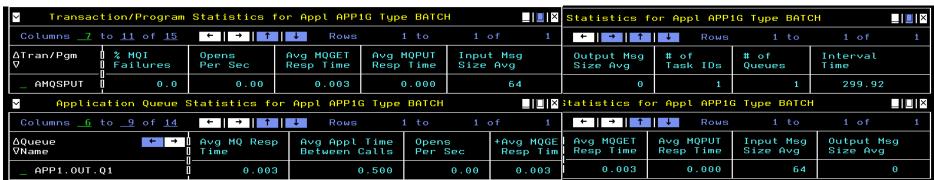
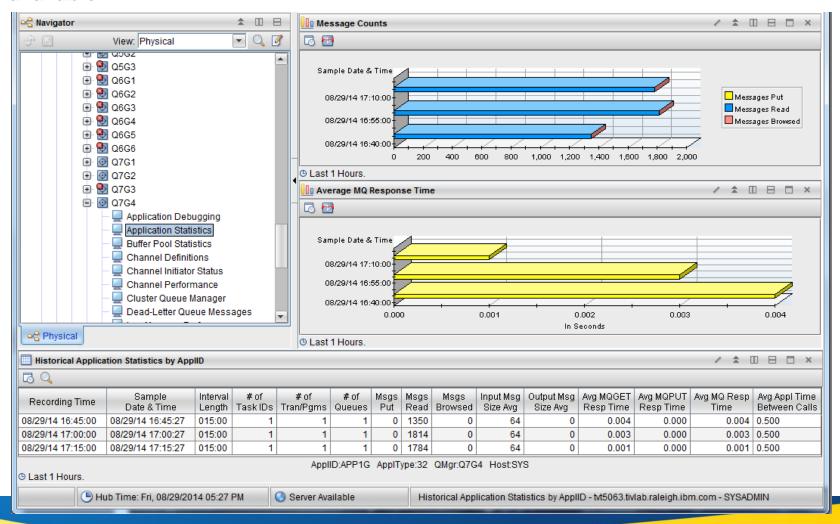- **Each level reports similar statistics, relative to the application, transaction/program within application, or queue in use by application**
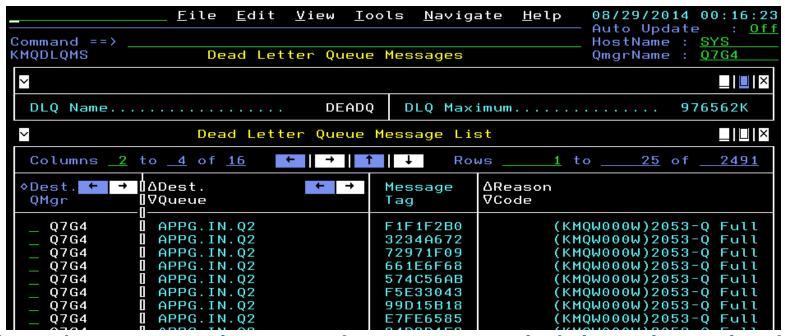
Capitalware's MQ Technical Conference v2.0.1.5

Application Statistics continued

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

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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 ==> _____                           HostName :  SYS
KMQDLQMS                 Dead Letter Queue Messages                    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. ←  │  →  ║△Dest.          ←  │  →  │ Message    △Reason                  │
│  QMgr           ║▽Queue                    │ Tag        ▽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   │
```

- **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

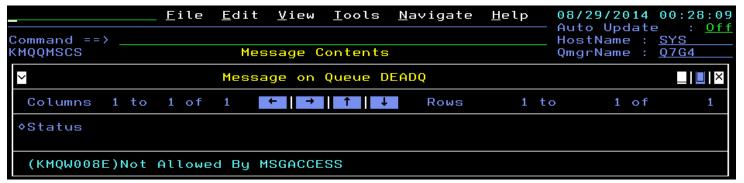- **Deleting a message requires a confirmation**

```
                    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 ==>                                                  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**

```
                                              Auto Update   :  Off
Command ==>                                   HostName  :  Z014
KMQQMSGS            Message Descriptor List   QmgrName  :  M71A

                        Queue APP3.IN.Q1                      ▐ ▌ ▌ ▌▨

 Columns  2 to  6 of 14    ← │ → │ ↑ │ ↓    Rows      1 to      11 of     11

◇Message  ▌ Msg       △Put Date & Time  △Appl ← │ →│△Appl          +Msg
 Tag      ▌ Type      ▽                  ▽ID          ▽Type         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
```

```
                                              Auto Update   :  Off
Command ==>                                   HostName  :  Z014
KMQQMSCS            Message Contents          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
```
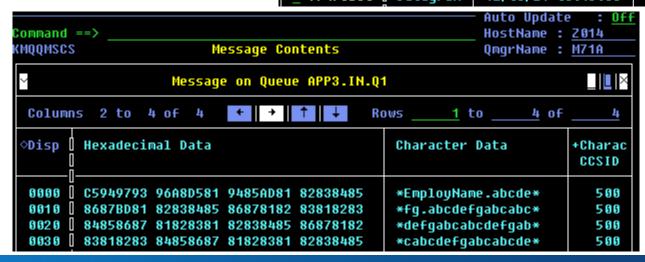
Message Manipulation continued

- **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**

- **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**

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

┌☑─────── QSG Q7G2 Coupling Facility Structure APPLICATION1 ────────────────── ■|▣|☒ ┐
│  Struct Status............    Active │ CF Struct Type...........      Appl          │
│  Recovery Supported........       No │ Struct Level..............        3          │
│  Failure Date..............      n/a │ Alter Date............... 12/08/14          │
│  Failure Time..............      n/a │ Alter Time............... 11:40:05          │
│  % Stor Used...............      1.0 │ Max Stor.................    32768          │
│  % Entries Used............      0.3 │ Max Entries..............     9895          │
│  Used Entries..............       33 │                                             │
└─────────────────────────────────────┴─────────────────────────────────────────────┘
┌☑───────── 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      │
└─────────────────────────────────────────────────────────────────────────────────┘
```
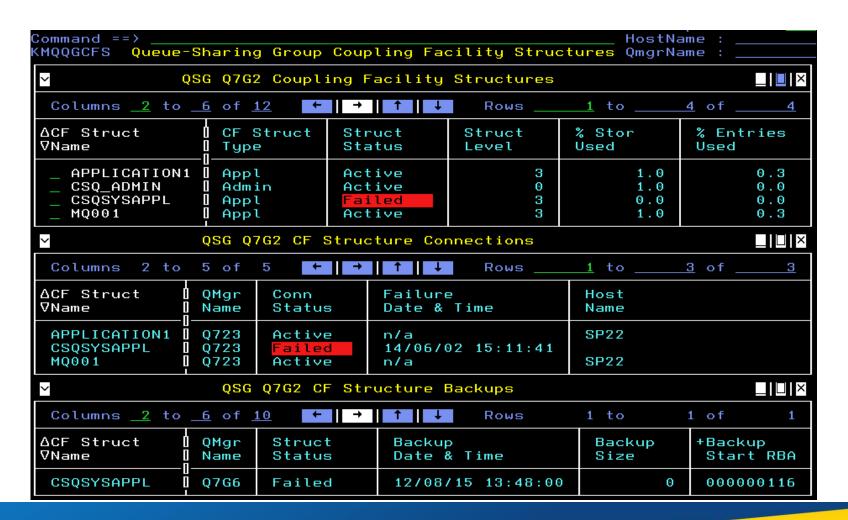
```
KM5MQCFZ Navigation Options for CF Structure Q7G2APPLICATION1

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
```
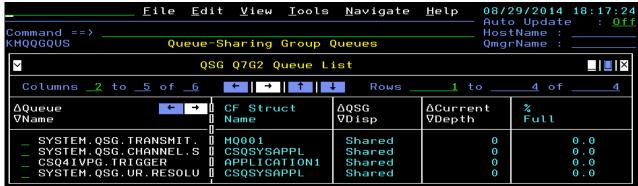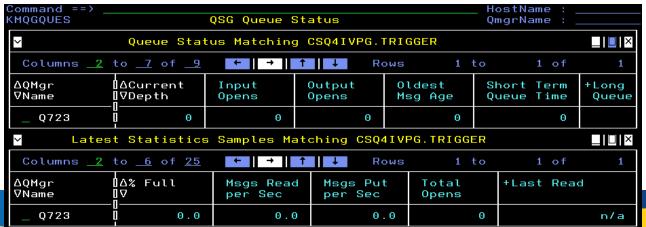
- **Options from zoom on CF Name**

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**

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

 ▼                              QSG Q7G2 Queue List                              ▉|▊|▨

    Columns  2 to  5 of  6      ← | → | ↑ | ↓       Rows _____1 to _____4 of _____4

 ΔQueue                ← | →  ▯ CF Struct      ΔQSG         ΔCurrent       %
 ▽Name                        ▯ Name           ▽Disp        ▽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
```
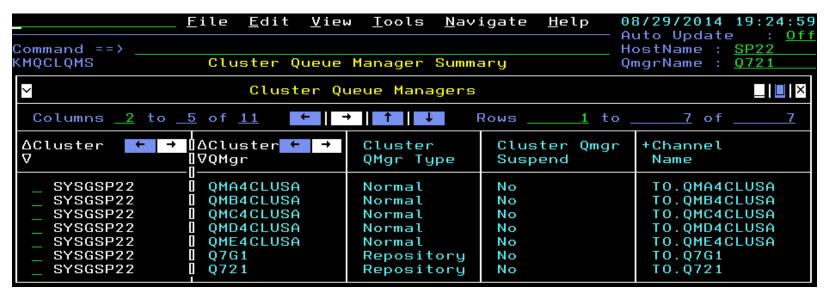
- **Select a queue to see queue status and statistics from each queue manager with the queue (here only one queue manager shows, but there typically would be multiple)**

```
Command ==> _____              HostName  : _____
KMQGQUES                      QSG Queue Status                QmgrName  : _____

 ▼              Queue Status Matching CSQ4IVPG.TRIGGER                           ▉|▊|▨

    Columns  2 to  7 of  9      ← | → | ↑ | ↓       Rows      1 to       1 of       1

 ΔQMgr            ▯ΔCurrent      Input        Output       Oldest       Short Term    +Long
 ▽Name            ▯▽Depth        Opens        Opens        Msg Age      Queue Time    Queue
                  ▯
    _  Q723       ▯           0            0            0            0             0

 ▼         Latest Statistics Samples Matching CSQ4IVPG.TRIGGER                   ▉|▊|▨

    Columns  2 to  6 of 25      ← | → | ↑ | ↓       Rows      1 to       1 of       1

 ΔQMgr            ▯Δ% Full       Msgs Read    Msgs Put     Total        +Last Read
 ▽Name            ▯▽             per Sec      per Sec      Opens
                  ▯
    _  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)**

MQ Clusters continued

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

```
Command ==>                                          HostName : SYS
KMQCLCHS                  Cluster Channels            QmgrName : Q721
┌─────────────────────────────────────────────────────────────────────┐
│▼      Cluster SYSGSP22 Qmgr Q721 Channel List                  ■|▊|⊠ │
├─────────────────────────────────────────────────────────────────────┤
│  Columns  2  to  5  of  8    ←│ → │ ↑ │ ↓    Rows ____1 to ____2 of __2│
├──────────────────┬─────────────┬──────────┬──────────────────┬────────┤
│ΔChannel          │ ▋ΔQMgr ← │ → │ΔChannel  │Connection    ← │ → │+Tran │
│▼Name             │ ▋▼Name      │▼Type     │Name              │  Type  │
├──────────────────┼─────────────┼──────────┼──────────────────┼────────┤
│ _  TO.Q7G1       │ ▋ Q721      │ CLUSSDR  │9.42.46.25(21426) │   TCP  │
│ _  TO.Q721       │ ▋ Q721      │ CLUSRCVR │9.42.46.22(21426) │   TCP  │
└──────────────────┴─────────────┴──────────┴──────────────────┴────────┘
```
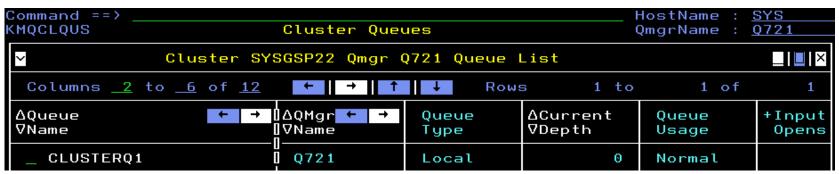
- **Select channel for convenient display of status and statistics from each queue manager in the cluster (more options available for data from particular queue manager, like historical)**

```
Command ==>                                          HostName :
KMQCHLCS              Cluster Channel Status          QmgrName :
┌─────────────────────────────────────────────────────────────────────┐
│▶      Current Channel Status Matching TO.Q7G1          No Data ■|▊|⊠ │
├─────────────────────────────────────────────────────────────────────┤
│▼      Latest Statistics Samples Matching TO.Q7G1              ■|▊|⊠ │
├─────────────────────────────────────────────────────────────────────┤
│  Columns  2  to  5  of 15    ←│ → │ ↑ │ ↓    Rows ____1 to ____7 of __7│
├──────────────────┬─────────────────────┬──────────┬──────────┬────────┤
│ΔQMgr   ← │ → │▋ΔConnection  ← │ → │ΔChannel  │Channel   │In-Doubt│
│▼Name             │▋▼Name               │▼Type     │Status    │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  _2  to  _6  of  12      ←  |  →  |  ↑  |  ↓     Rows        1 to        1 of        1
ΔQueue        ←   →  ‖ΔQMgr  ←   →   Queue      ΔCurrent     Queue      +Input
▽Name              ‖▽Name           Type       ▽Depth       Usage      Opens
_  CLUSTERQ1      ‖ Q721           Local              0     Normal
```
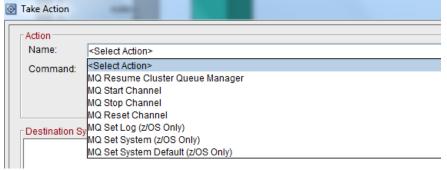
- **Select a queue for convenient display of status and statistics from each queue manager hosting it in the cluster (more options available for data from particular queue manager)**

```
Command ==>  _____    HostName : _____
KMQQUECS                 Cluster  Queue  Status           QmgrName : _____
⌄              Queue  Status  Matching  CLUSTERQ1                     ■|■|⌧
  Columns  _2  to  _7  of  _9      ←  |  →  |  ↑  |  ↓     Rows        1 to        1 of        1
ΔQMgr   ←   →  ‖ΔCurrent    Input      Output     Oldest      Short  Term   +Long
▽Name          ‖▽Depth      Opens      Opens      Msg Age     Queue  Time    Queue
_  Q721        ‖      0          0          0          0                0
⌄         Latest  Statistics  Samples  Matching  CLUSTERQ1              ■|■|⌧
  Columns  _2  to  _6  of  25      ←  |  →  |  ↑  |  ↓     Rows        1 to        1 of        1
ΔQMgr   ←   →  ‖Δ% Full     Msgs  Read   Msgs  Put    Total       +Last Read
▽Name          ‖▽           per  Sec     per  Sec     Opens
_  Q721        ‖    0.0         0.0         0.0          0           n/a
```

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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
               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.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
```

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Questions & Answers