WebSphere MQ for z/OS V7.1.0

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Agenda

- This presentation is based on technotes:
  1596103 - WebSphere MQ for z/OS V7.1.0 migration and installation--important information including highlights of new function
  1596102 - Problems and solutions when migrating to WebSphere MQ for z/OS V7.1.0

- Information Sources
- Maintenance
- Installation
- Migration
- Configuration
- New Function
- Common problems
Information Sources

- **WebSphere MQ Support Portal**
  http://www.ibm.com/support/entry/portal/Overview/Software/WebSphere/WebSphere_MQ

- **WebSphere MQ on-line Information Center**

- The Information Center has been reorganized with task-oriented topics
- There are new options to "search selected topic" or "search selected topic and all subtopics"
- There are no PDF or BOOKMGR formats
Maintenance

- Techdoc **7006519** lists migration-related maintenance for fallback and coexistence. There are fixes for the release being migrated from and migrated to.

- Technote **1577300** contains a list of closed APARs for WMQ for z/OS 7.1.0

- The **PSP bucket** includes cross-product dependencies
Installation

- Review Installing the WebSphere MQ for z/OS product including System Requirements

- Use the WebSphere MQ for z/OS Version 7.1.0 Program Directory (GI13-0572-00)

- Perform tasks in the Configuring z/OS topic
Migration

- See the Migrating and Upgrading topic in the Information Center
  - Coexistence
  - Migrations paths
  - Migrating clusters and Queue Sharing Groups (QSGs)
  - OPMODE and backward migration (see upcoming slides)
Migration

- **Object sizes**
  - Starting with 7.1.0, the queue manager will automatically resize objects definitions the first time the queue manager starts at a new release. If there are thousands of objects, there could be a slight delay.
  - SupportPac **MP1H** documents the increase in object sizes and the effect on PSID(0) and extended private storage.
Migration

- **OPMODE**
  - Controls availability of new functions, such as Shared Message Data Set (SMDS) support and toleration of a loss of connectivity to the CF structure
  - OPMODE=(COMPAT,710) is default and is created when CSQ6SYSP is compiled and linked using the V710 libraries
  - You can not migrate back to a previous version after using OPMODE=(NEWFUNC,710), although you can return to COMPAT mode
Migration

- Backward migration (1)
  - Apply the coexistence and backward migration PTFs to the Version 6.0.0 or 7.0.1 code
  - Restart queue managers with this updated code
  - Install Version 7.1.0 early code
  - Start the queue manager with Version 7.1.0 code
  - Can fall back to Version 6.0.0 or 7.0.1 if OPMODE=NEWFUNC was not used
Migration

- Backward migration (2)
  - Can not backward migrate a queue manager newly created at Version 7.1.0 to a prior version
  - After a forwards migration path from V7.0.1 to V7.1.0, it will not be possible to backwards migrate to V6 directly
  - An alternate fallback method is to restore backups of page sets, BSDSs, and logs taken while the V6/V7.0.1 queue manager was down.
Migration

- Backward migration (3)
  - Some connection types (IMS, batch and RRSBATCH) allow an application to connect to multiple queue managers concurrently. These queue managers can be running different levels of WMQ code. The adapter code must be running from the highest level. In a backward migration scenario, it is possible to just restart the queue manager with the back level code and not change the connecting jobs.
Configuration

- Review the topic **Customizing your queue managers**.

- If migrating from V6:
  - Order the CSQINP2 data sets as shown in CSQ4MSTR of SCSQPROC. CSQ4INYS and CSQ4INSG moved, and CSQ4INSR is new.
  - Be sure **MEMLIMIT** is set to exploit 64-bit storage
  - Review the **PSMODE** setting to select the Publish/Subscribe engine
New Function – 7.0.0 recap

- Technote 1312983
- Publish/Subscribe (Pub/Sub)
- WebSphere MQ client enhancements
- JMS enhancements (Resource Adapter)
- RACF mixed case support
- Client attachment feature: 5 free client connections for administration (MQ Explorer) or a broker
- MQ Explorer enhancements for administration of z/OS queue managers
New Function – 7.0.1 recap

- Technote 1406779 and Webcast 7019916
- Use of 64-bit storage for some internal control blocks
- Log compression
- OPMODE property to control availability of new functions
- Admin structure recovery
- Generic Application Structure Backup (wildcard)
- Transaction recovery within a queue-sharing group (GROUPUR)
New Function – 7.1.0

- Channel access control (CHLAUTH)
  - Provides more control over the access granted to connecting systems at a channel level
  - Removes the need to use a channel security exit to block access to clients with blank MCAUSER or to map a channel's user ID to a valid user ID
  - Blocks or maps IP addresses, user IDs, queue manager names, and SSL or TLS DNs
  - Has sample definitions in CSQ4INSA
New Function – 7.1.0

- CFLEVEL(5) support for Coupling Facility structures
  - Controls 3 main new functions
    - Shared Message Data Set (SMDS) support
    - Toleration of a loss of connectivity to the CF structure (CFCONLOS and RECAUTO)
    - PROPCTL(V6COMPAT) for shared queues
  - Can only be set if all the queue managers in the queue-sharing group are at command level 710 or greater and have OPMODE set to NEWFUNC.
New Function – 7.1.0

- Shared message data set (SMDS) function and statistics
  - Off-load large messages for shared queues to a WMQ managed data set rather than to DB2
  - Gain performance improvements and cheaper storage for large messages (see MP1H)
  - Use new SMDS and SMDSCONN commands and DEFINE CFSTRUCT options
  - Find the new data definition for statistics in CSQDQESD and DD QESD in CSQ4SMFJ
New Function – 7.1.0

- Resilience to a coupling facility connectivity failure
  - CFCONLOS attribute: controls whether loss of connectivity to the administration structure or an application structure is tolerated.
  - RECAUTO attribute: controls whether coupling facility structures should be automatically recovered using logged data following total loss of connectivity.
  - RESET CFSTRUCT ACTION (FAIL): simulates a structure failure and sets the status of the application structure to FAILED.
New Function – 7.1.0

- Group unit of recovery support for CICS Transaction Server for z/OS (CICS TS) 4.2
  - Exploit group unit of recovery (GROUPUR)
  - Connect to any suitable queue manager in a queue sharing group (QSG) which is running on the same LPAR as that CICS region
  - Configure using RESYNCMEMBER(GROUPRESYNC) in the CICS MQCONN resource definition
New Function – 7.1.0

- Federal Information Processing Standards (FIPS) 140-2 compliance for z/OS
  - The SSLFIPS QMGR attribute specifies whether only FIPS-certified algorithms are to be used if cryptography is carried out in WebSphere MQ
  - New Cipher Specs are available for the SSLCIPPH channel attribute

- More information about the subject and issuer distinguished name -- Distinguished Encoding Rules (DER) -- attributes passed to security exit
New Function – 7.1.0

- OTMA Resource Monitoring
  - Message flood detection to throttle the rate at which messages are passed to IMS
  - Makes use of x'3C' OTMA protocol messages, which are available in IMS v10 or higher
  - Requires OPMODE=NEWFUNC
New Function – 7.1.0

- MQOO_BIND_ON_GROUP or DEFBIND(GROUP)
  - Allow an application to request that a group of messages are all allocated to the same destination instance of a cluster queue.

- Dead Letter Queue usage on channels and topics
  - USEDLQ attribute
New Function – 7.1.0

- Other new channel definition and status options
  - BATCHLIM on the channel definition -- limit in KB before batch commit
  - RPRODUCT and RVERSION on DISPLAY CHSTATUS
- SLOAD option for CSQUTIL
  - Selective load of a single queue from COPY/SCOPY output
New Function – 7.1.0

- CSQINPT initialization data set for Publish/Subscribe commands
  - Commands, e.g. to define subscriptions, are executed at the end of publish/subscribe initialization
  - DEFINE SUB for SYSTEM.DEFAULT.SUB is no longer permitted in CSQINP2
  - CSQ4INST and CSQ4INYT have sample definitions and commands
Common problems

- An ABEND5C6 with reason code 00C90D01 means one of:
  - The queue manager is being backward migrated and backward migration PTFs are not installed
  - The queue manager is being backward migrated but has previously been run in NEWFUNC mode at Version 7.1.0
  - A page set has not been formatted
Common problems

- Failure to apply the coexistence / backward migration PTFs to the prior release (see techdoc 7006519) before trying to fall back.

- **PM58871**: CSQ5PQSG MIGRATE DSG or QSG incorrectly reports that the Data Sharing Group is ready to be migrated. There should be an error if there are queue managers in the QSG that do not have the co-existence PTF applied to the prior release.
Common problems

- **PM63464**: ABEND 5C6-00C60006 is received when running an MQ utility program. Message table CSQFSTAB is missing from SCSQANLE. Do an APPLY REDO of the WebSphere MQ for z/OS base and features together to resolve the problem.

- **HIPER PM56193/UK77067**: WMQ 7.1.0 MSTR or CHIN ABEND with insufficient ECSA storage

- Review technote 1596102 for other tips
Summary

- Technotes 1596103 and 1596102 are a great place to start with WebSphere MQ for z/OS 7.1.0:
  - Information Sources
  - Maintenance
  - Installation
  - Migration
  - Configuration
  - New Function
- Avoid common problems that we covered
Additional WebSphere Product Resources

- Learn about upcoming WebSphere Support Technical Exchange webcasts, and access previously recorded presentations at: http://www.ibm.com/software/websphere/support/supp_tech.html

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