

Migrating from WebSphere MQ 7.0 to a later version

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Agenda

- Overview
- Migration paths for MQ 5.3 and 6.0
- End of Support of MQ 7.0: 30-Sep-2015
- To which version to upgrade? 7.1, 7.5 and 8.0
- 2 options to install new version:
 - Keeping only one installation (replace 7.0)
 - Coexisting 7.0 with 7.1 or later
- Tutorials
- Workarounds and recommendations

Objective

- This WSTE presents procedures, considerations and guidelines for migrating from IBM WebSphere MQ 7.0
- on distributed platforms
- (AIX[®], HP-UX[®], Linux[®], Solaris[™] and Windows[®])
- to a later release such as
- 7.1, 7.5 or 8.0



MQ 5.3 and 6.0

- MQ 5.3 and MQ 6.0 are out of support.
- From **MQ 5.3** you can migrate to **6.0 and 7.0.0**
- **You cannot migrate** to 7.0.1, 7.1, 7.5, 8.0
- From **MQ 6.0** you can migrate to **7.0.x, 7.1, and 7.5**
- **You cannot migrate** to 8.0
- Thus, to migrate from MQ 5.3 or MQ 6.0
- to MQ 8.0 you must do it in 2 stages.

End of Support of MQ 7.0

- The technote 1674407 has comprehensive details on the End of Support for MQ 7.0
- <http://www.ibm.com/support/docview.wss?uid=swg21674407>
- Announcement: End of Support (EOS) for WebSphere MQ and WebSphere MQ File Transfer Edition V7.0.0 and V7.0.1
- Highlights:
 - EOS is 30-Sep-2015
 - All components (server, client) and platforms

Notes:

notes

- The table of contents for the technote 1674407 is:
- What are the end of support dates for Websphere MQ and WebSphere MQ File Transfer Edition V7.0.0 and V7.0.1?
- Are WebSphere MQ Advanced Message Security V7.0.1 and WebSphere MQ Hypervisor Edition V7.0.1 still supported?
- What replacement products are available for WebSphere MQ and WebSphere MQ File Transfer Edition V7.0.0 and V7.0.1?
- How do I check which version of WebSphere MQ and WebSphere MQ File Transfer Edition I am currently running?
- Is any information available to help me upgrade to a later version?
- How do I purchase a support extension for my current version?
- When the WebSphere MQ server product goes out of support, does the client also go out of support?
- Are WebSphere MQ V7.0.0 or V7.0.1 still supported when they are bundled with another product?
- Is WebSphere MQ and WebSphere MQ File Transfer Edition V7.0.0 and V7.0.1 documentation still available?
- How do I obtain V7.0.0 and V7.0.1 installation images if I still need them?
- Is there an IBM MQ V8.0.0 trial version available for download?

Notes:

notes

- Answers for selected questions from the technote 1674407:
- Q: Are WebSphere MQ V7.0.0 or V7.0.1 still supported when they are bundled with another product?
- Answer: Yes, support is available for all bundled IBM components until the product you purchased is withdrawn from support. However, WebSphere MQ is supported only when used by the bundled product; unrelated usage is not supported
- Q: How do I obtain V7.0.0 and V7.0.1 installation images if I still need them?
- Answer: You can download the code from IBM Passport Advantage®

*** **ADDITIONAL information:** ***

It is more efficient to search for "Part Number" in IBM Passport Advantage. The following technote has the mapping of the Part Number for the specific downloadable images for MQ 7.0.1.3

Technote: 4031912

<http://www.ibm.com/support/docview.wss?uid=swg24031912>

**7.0.1.3 Downloading WebSphere MQ Version 7.0.1 from IBM Passport Advantage
Rebased: Base 7.0.0.0 + all Fix Packs up to 7.0.1.3**

Which next version to use? EOS

- The End of Support (EOS) dates for MQ 7.1, 7.5 or 8.0 have not been announced yet.
- However, based on the IBM support model of 5 years of normal support after the general availability (GA) of the product, then these are the most likely EOS dates:
 - MQ 7.1 => GA 11 Nov 2011 => EOS Sep-2016 ?
 - MQ 7.5 => GA 06 Jul 2012 => EOS Sep-2017 ?
 - MQ 8.0 => GA Jun 2014 => EOS Sep-2019 ?

Which next version to use?

- If the probable EOS for MQ 7.1 is Sep-2016, then ask yourself: is it worth for you to upgrade to 7.1 in 2015 and then to 7.5 or 8.0 in Sep 2016?
- Ideally you do not want to perform 2 upgrades in 2 consecutive years, thus, it might be best for you to upgrade now to MQ 7.5 or MQ 8.0
- For more information on the actual EOS see:
 - <http://www.ibm.com/software/websphere/support/lifecycle/index.html>
 - IBM Software Product Support Lifecycle: Product Listings

Is MQ 7.1 or MQ 7.5 just a fix pack for 7.0?

- Just by the version number, MQ 8.0 is a different version than 7.0.
- This means that 8.0 requires a separate license than the one for 7.0
- But how about MQ 7.1 or 7.5: are they just fix packs for 7.0?
- Answer: NO! They are not fix packs of 7.0.
- They are separate versions and each requires a separate license.



Can the upgrade be directly to 8.0?

- Can the upgrade from MQ 7.0 be directly done to MQ 8.0?
- Or should the upgrade be done first to 7.1 then to 7.5 and then to 8.0?
- Answer:
- From **MQ 7.0.0.x you cannot upgrade to 8.0.**
- You will need to upgrade to 7.0.1, 7.1 or 7.5, and then to 8.0.
- From **MQ 7.0.1 you can upgrade to 8.0** without upgrading first 7.1 or 7.5.

Notes: What is new in MQ 7.1

notes

- [http://www.ibm.com/support/knowledgecenter/SSFKSJ_7.1.0/com.ibm.mq.doc/mq50090 .htm](http://www.ibm.com/support/knowledgecenter/SSFKSJ_7.1.0/com.ibm.mq.doc/mq50090.htm)
- WebSphere MQ 7.1.0 > WebSphere MQ > Product overview >
- What's new in WebSphere MQ Version 7.1
- .
- Some highlights are:
 - - **Channel access control = new security feature "channel authentication records" (CHLAUTH)**
 - - **Relocatable Installations = installing the product in another directory**
 - - **Coexistence on UNIX, Linux, and Windows systems = multiple installations of MQ in the same machine**
 - - Dump MQ Configuration = new function dmpmqcfg (based on SupportPac MS03 saveqmgr)
 - - WebSphere MQ Telemetry (requires its own license)
- **Licensing**: 2 licenses are required to exploit all functions:
 - - 1 for the queue manager
 - - 1 for MQ Telemetry
 - If you are not planning to purchase the corresponding license for Telemetry then do not install it.

Notes: What is new in MQ 7.5

notes

- http://www.ibm.com/support/knowledgecenter/SSFKSJ_7.5.0/com.ibm.mq.pro.doc/q001050_.htm
- WebSphere MQ 7.5.0>WebSphere MQ>Product overview>What's new in WebSphere MQ 7.5

The main changes are related to packaging and integration:

- - Integration of the following standalone products (now they are shipped with MQ 7.5)
 - - WebSphere MQ Managed File Transfer (MFT) - successor of MQ FTE (requires its own license)
 - - WebSphere MQ Advanced Message Security (AMS) (requires its own license)
- Additional changes:
 - - Message Channel Agent (MCA) interception.
 - - Multiple cluster transmission queues.
 - - Extended transactional functionality is now a part of the core client.
 - - Identifying a connection to a queue manager by setting an application name.
 - - Certificate validation policies.
- **Licensing:** 4 licenses are required to exploit all functions:
 - 1 for the queue manager , 1 for MQ Telemetry, 1 for AMS, 1 for MFT
 - If you are not planning to purchase the corresponding license for Telemetry, AMS or MFT, then do not install them.

Notes: What is new in MQ 8.0

notes

- http://www.ibm.com/support/knowledgecenter/SSFKSJ_8.0.0/com.ibm.mq.pro.doc/q113110_.htm?lang=en
- WebSphere MQ 8.0.0 > IBM MQ > Product overview >
- What's new in IBM MQ Version 8.0
- **Note for Linux x86:** queue manager code for Linux x86 32-bit is no longer shipped.
- This means that if you have a queue manager in a host that is Linux x86 32-bit, then you will need to recreate the queue manager in a host that uses Linux x86 64-bit.
- - Simpler and more flexible security administration
- - The ability to integrate with existing identity repositories, enabling consistency across a solution and reducing security administration -for solutions with many users
- - More flexible administration of client connection information
- - Customizable publication-routing for more efficiency in large scale clusters
- - Improved efficiency and more linear scaling through refinements to locking and optimization of codepaths
- - Full 64-bit queue manager implementation on Windows and support for SSL in managed .NET applications
- - Support for the JMS™ 2.0 version of the JMS standard, including deferred message delivery, shared subscriptions and asynchronous send operation
- **Licensing:** 4 licenses are required to exploit all functions:
 - 1 for the queue manager , 1 for MQ Telemetry, 1 for AMS, 1 for MFT

Notes: Changes to queues, attributes

notes

- The following technotes contain the list of new objects, new SYSTEM queues and new attributes in MQ 7.1, 7.5 and 8.0
- <http://www.ibm.com/support/docview.wss?uid=swg21620936>
- New objects and new attributes for objects in WebSphere MQ 7.1, 7.5 and 8.0
- <http://www.ibm.com/support/docview.wss?uid=swg21608033>
- New SYSTEM queues added in WebSphere MQ 7.1, 7.5 and 8.0
- <http://www.ibm.com/support/docview.wss?uid=swg21578742>
- New MQ 7.1, 7.5 and 8.0 attributes in DISPLAY QMGR for new or migrated queue managers

Downloading full installation code for MQ 7.1

- It is recommended that you search for a Part Number in the IBM Passport Advantage site
- The following technotes have the complete list of Part Numbers for MQ.
- <http://www.ibm.com/support/docview.wss?uid=swg24036432>
- Downloading WebSphere MQ Version 7.1.0.3 from the Passport Advantage Web site
- Rebased: Base 7.1.0.0 + Fix Pack 7.1.0.1 + Fix Pack 7.1.0.2 + Fix Pack 7.1.0.3



Downloading full installation code for MQ 7.5

- <http://www.ibm.com/support/docview.wss?uid=swg24036405>
- Downloading WebSphere MQ Version 7.5.0.2 from the Passport Advantage Web site
- Tab: MQ 7.5.0.2
- Rebased: Base 7.5.0.0 + Fix pack 7.5.0.1 + Fix pack 7.5.0.2

- Tab: MQ V7.5 IFR2 (V7.5.0.5)
- Rebased: Base 7.5.0.0 + Fix pack 7.5.0.1 + Fix pack 7.5.0.2 + ... + Fix Pack 7.5.0.5
- "MQ V7.5 IFR2" is synonym of "MQ 7.5.0.5"

Downloading full installation code for MQ 8.0

- <http://www.ibm.com/support/docview.wss?uid=swg24037501>
- Downloading WebSphere MQ Version 8.0 from the Passport Advantage Web Site
- Tabs: "MQ V8.0.0.2" and "MQ V8.0 IFR1 (V8.0.0.2)"
- Rebased: Base 8.0.0.0 + Fix Pack 8.0.0.1 + Fix Pack 8.0.0.2
- As of Jul-2015, the Tab labeled "MQ V8.0.0.3" has filesets for 8.0.0.2, not for 8.0.0.3.

Downloading Fix Packs

- It is recommended that you download the latest fix pack for the version of MQ that you plan to use:
- The MQ Fix Packs are available from IBM Fix Central:
- <http://www.ibm.com/support/docview.wss?uid=swg27006037>
- Recommended Fixes for WebSphere MQ

Notes: Compatibility

notes

- The newer version of the code (queue manager / client) knows how to interact with previous versions and it will pretend to be at the same version of the other party. The older party thinks that it is interacting with a component at the same version.
- The MQ 7.5 client (for example), when communicating with a queue manager at 7.1, it will pretend to be a 7.1 client and thus, the 7.1 queue manager thinks that it is interacting with a 7.1 client.
- The MQ 7.5 queue manager (for example), when communicating with a client at 7.1, it will pretend to be a 7.1 queue manager, and thus, the 7.1 client thinks that it is interacting with a 7.1 queue manager.
- .
- <http://www.ibm.com/support/docview.wss?uid=swg21312967>
- MQ 7.x and MQ 8.0 compatibility with previous versions - including usage of CCDT files

Notes: Downloading standalone MQ Explorer

notes

- If you want to download the standalone MQ Explorer, notice that you can only download the latest fix pack for MQ version 8.0:
- <http://www.ibm.com/support/docview.wss?uid=swg24021041>
- MS0T: WebSphere MQ Explorer
- .
- Because MQ Explorer 8 is backward compatible with 7.0, 7.1 and 7.5, only Version 8 is provided in this SupportPac.
- The latest version of the Support Pac can be used to connect to remote queue managers from any currently supported version of IBM WebSphere MQ.
- This SupportPac ONLY provides the latest version/fixpack, which is 8.0.0.3 (as of Jun-2015).
- That is, it does not provide 7.1, 7.5 or 8.0.0.0.
- Linux: There are no rpm filesets, instead there is an executable file called "setup.bin". Follow the instructions from the Readme.txt file.

Notes: System Requirements

notes

- It is important that you check for the system requirements for the newer versions of MQ.
- <http://www.ibm.com/support/docview.wss?uid=swg27006467>
- System Requirements for WebSphere MQ
- This check could avoid delays in your migration.
- An example for Linux;
- You might be using Red Hat Enterprise Linux (RHEL) V5 in MQ 7.0 and you want to upgrade to MQ 8.0.
- .
- MQ 8.0 does not support RHEL V5. The minimum is RHEL V6
- .
- However, the minimum version of RHEL supported in MQ 7.5 is RHEL V5.
- .
- Thus, if staying at RHEL V5 is important to you, you can upgrade to MQ 7.5, but not to MQ 8.0.
- If upgrading to MQ 8.0 is more important than remaining at RHEL V5, then you will need to upgrade RHEL from V5 to V6 before you upgrade to MQ 8.0.

The data is not altered by install activities

- The data and the recovery logs of the queue manager are NOT altered by the uninstallation and installation of the MQ code.
- For example, if MQ 7.0 in Linux is uninstalled from /opt/mqm, then the data and the recovery logs of the queue manager in /var/mqm are left untouched.
- Similarly, if MQ 7.5 in Linux is installed in
- /opt/mqm, then the contents in /var/mqm will remain untouched.



Backup queue managers before migration

- After the data of the queue manager is upgraded to a higher version, this upgrade is NOT reversible: there are no utilities to revert back the data of the queue manager to a lower version.
- Therefore, it is very important that you do a backup of the queue manager before you upgrade it.
- The upgrade occurs only when the strmqm command is explicitly executed by the MQ administrator.
- The strmqm step is NOT part of the installation or uninstallation procedure.



Backup queue managers before migration

- In MQ 7.0, use the "saveqmgr" command to capture the object definitions and the authority records.
- This utility is provided with the SupportPac:
 - <http://www.ibm.com/support/docview.wss?uid=swg24000673>
 - MS03: WebSphere MQ - Save Queue Manager object definitions using PCFs
- The dmpmqcfg tool is new in MQ 7.1 and replaces saveqmgr.



Notes: using saveqmgr

notes

- You can run the saveqmgr to create 2 output files:
- - one with the object definitions (using option -f) and
- - the other with the authority records (using option -z which generates entries for setmqaut):
- .
- Unix:
- `saveqmgr -m QMGR -f /tmp/mq/qmgr_data.mqsc -z /tmp/mq/qmgr_auth.sh`
- .
- Windows:
- `saveqmgr.exe -m QMGR -f C:\temp\mq\qmgr_data.mqsc -z C:\temp\mq\qmgr_auth.bat`
- .
- Both output files are text and they can be edited.
- .
- The file `qmgr_data.mqsc` can be run as follows when trying to restore the contents into a new queue manager:
- `runmqsc TEST < qmgr_data.mqsc`

Notes: using saveqmgr

notes

- The file `qmgr_auth.bat` (in Windows) or `qmgr_auth.sh` (in Unix) has standalone entries that invoke the `setmqaut` command with the proper parameter for each authority record. This batch/script file will need to be executed in order to restore the authority records.
- Unix: `chmod u+x qmgr_auth.sh`
- `./qmgr_auth.sh`
- Windows: `qmgr_auth.bat`

Notes: using dmpmqcfg (new in MQ 7.1)

notes

- Example of using dmpmqcfg
- .
- Step 1: Get the object definitions (this does NOT include the security authorization in the form of setmqaut commands, for this task see Step 2):
- .
- 1.a) Default - only attributes that are different than the default (except setmqaut, which are not included in the output)
- `dmpmqcfg -m QMgr > dmpmqcfg.out.mqsc`
- .
- 1.b) Specify all attributes, including default ones (except setmqaut, which are not included in the output)
- `dmpmqcfg -m QMgr -a > dmpmqcfg.out.all.mqsc`
- .
- Step 2: Capture the authentication records in setmqaut format
- .
- Windows: `dmpmqcfg -m QMgr -o setmqaut > dmpmqcfg.setmqaut.bat`
- Unix: `dmpmqcfg -m QMgr -o setmqaut > dmpmqcfg.setmqaut.sh`

Notes: using dmpmqcfg (new in MQ 7.1)

notes

- Note: The output file that has the setmqaut commands, includes the name of the queue manager in each command. Thus, if you want to restore the commands into a different queue manager, you will need to edit the file and specify the desired queue manager name
- .
- Step 3: To restore - play back the commands for runmqsc:
 - .
 - `runmqsc Qmgr < dmpmqcfg.out.mqsc`
 - or
 - `runmqsc Qmgr < dmpmqcfg.out.all.mqsc`
 - .
 - .
- Step 4: To restore the setmqaut commands:
 - .
 - Windows: `dmpmqcfg.setmqaut.bat`
 - Unix: `chmod 755 dmpmqcfg.setmqaut.sh`
 - `./dmpmqcfg.setmqaut.sh.`

New 7.1: channel authentication records

- Starting with MQ 7.1, a new security feature was introduced: **channel authentication records**.
- The default behavior is that MQ administrators are blocked from doing a remote access.
- For more information on the errors and the workarounds see:
- <http://www.ibm.com/support/docview.wss?uid=swg21577137>
- WMQ 7.1, 7.5, 8.0 queue manager RC 2035 MQRC_NOT_AUTHORIZED or AMQ4036 when using client connection as an MQ Administrator



New 8.0: passwords are required by admins

- Starting with MQ 8.0, a new security feature was introduced: **passwords are required when MQ administrator try to do a remote access.**
- For more information on the errors and the workarounds see:
- See the following technote for the new errors that are generated and some workarounds:
- <http://www.ibm.com/support/docview.wss?uid=swg21680930>
- MQ 8.0: errors AMQ5540 and AMQ5541, application did not supply a user ID and password, 2035 MQRC_NOT_AUTHORIZED

From 7.0: Upgrade or exploit multi-version

- OK, now that all the preliminaries have been presented, let's discuss the 2 options:
 - Upgrade
 - Or
 - Exploit multi-version

- The DATA and RECOVERY LOGS for the queue managers are NOT affected by either of these methods.

From 7.0: Upgrade or exploit multi-version

- Starting with MQ 7.1, it is possible to have multiple versions of MQ installed in the same machine.
- Thus, there are 2 main choices to proceed:
 - 1: Upgrade:
 - uninstall MQ 7.0, and install new version
 - 2: Exploit multi-version:
 - keep MQ 7.0 and install new version



Upgrade (only one version in the box)

- The simplest option is just to upgrade to a newer version.
- This is like previous upgrades with MQ (such as from MQ 6.0 to MQ 7.0)
- It is necessary to uninstall the currently installed version of MQ, and
- then install the new version.

- For example, in Linux:
- the old code was in /opt/mqm, and
- the new code will be also in /opt/mqm

Upgrade (only one version in the box)

- In Linux, HP-UX and Solaris, you must uninstall MQ 7.0 and then install the new version.
- In AIX and in Windows, you have the option to not uninstall MQ 7.0, and when the new version of MQ is installed, then a backup copy of the old code will be made, and the new version will overwrite the old one.
- However, it is recommended that you uninstall MQ 7.0 and then install the new version.

Upgrade (only one version in the box)

- AIX: Before: MQ 7.0 on /usr/mqm
- After: MQ 7.1, or 7.5 or 8.0 on /usr/mqm

- Linux, HP-UX, Solaris:
 - Before: MQ 7.0 on /opt/mqm
 - After: MQ 7.1, or 7.5 or 8.0 on /opt/mqm

- Windows:
 - Before: MQ 7.0 on C:\Program Files (x86)\IBM\WebSphere MQ
 - After: 7.1 or 7.5 on C:\Program Files (x86)\IBM\WebSphere MQ
 - After: MQ 8.0 on C:\Program Files\IBM\WebSphere MQ

Upgrade tutorials

- Upgrading from WebSphere MQ 7.0 to MQ 7.5 or MQ 8.0 in Windows
 - IBM Techdoc: 7046134
 - <http://www.ibm.com/support/docview.wss?uid=swg27046134>
- Upgrading WebSphere MQ 7.0.1 to MQ 7.5 and MQ 8.0 in Linux
 - IBM Techdoc: 7036692
 - <http://www.ibm.com/support/docview.wss?uid=swg27036692>



Notes: Tutorial for upgrade in Windows

notes

- These instructions apply also when upgrading to MQ 7.1 or to MQ 7.5
- The chapters are:
- Chapter 1: Uninstalling MQ 7.0
- Chapter 2: Installing MQ 8.0
- Chapter 3: Running setmqinst to designate the Primary installation
- Chapter 4: Running setmqenv to use MQ 8.0 commands
- Chapter 5: Creating a queue manager under 8.0
- Chapter 6: Remote access to the new MQ 8.0 queue manager
- Chapter 7: Using MQ Explorer 8.0
- Chapter 8: Migrating an MQ 7.0 queue manager to MQ 8.0

Notes: Tutorial for upgrade in Linux

notes

- Only Chapters 1 and 2 are exclusively for Linux. But the rest of the chapters apply also to other UNIX distributions: AIX, HP-UX and Solaris.
- These instructions apply also when upgrading to MQ 7.1 or to MQ 8.0.
- Only the first 2 chapters are specific to Linux. The rest of these chapters apply to Linux, AIX, HP-UX and Solaris
- You can upgrade from MQ 7.0 to MQ 7.5 or MQ 8.0, without first going through MQ 7.1.
- The chapters are:
 - Chapter 1: Uninstalling MQ 7.0 (only for Linux)
 - Chapter 2: Installing MQ 7.5 (only for Linux)
 - The rest of these chapters apply to all.
 - Chapter 3: Running setmqinst to designate the Primary installation
 - Chapter 4: Running setmqenv to use MQ 7.5 commands
 - Chapter 5: Creating a queue manager under 7.5
 - Chapter 6: Remote access to the new MQ 7.5 queue manager
 - Chapter 7: Using MQ Explorer 7.5
 - Chapter 8: Migrating an MQ 7.0 queue manager to MQ 7.5

As root, set primary installation: setmqinst

- After you have installed MQ 7.1 or 7.5 or 8.0, and
- if you are planning to have ONLY ONE installation of MQ, then you will need to take an extra step:
- You need to set the current installation as the primary installation.
- In Unix, the userid 'root' must issue the command.
- For example, in Linux:
- `/opt/mqm/bin/setmqinst -i -p /opt/mqm`

Effects of setmqinst in Unix:

- 1: Symbolic links:
 - The installer of MQ 7.1 or later, does NOT add symbolic links to system directories.
 - But the new utility 'setmqinst' will create those symbolic links
- 2: The Installation configuration file will be update to reflect which installation is the primary one.
- Location: /etc/opt/mqm/mqinst.ini



Notes: symbolic links

notes

- OK, you have installed MQ 7.1 or later, and you proceed to issue MQ commands.
- You login as an MQ Administrator and try to run an MQ command, such as:
 - `dspmq`
- You expect the list of queue managers, but instead, you get an error message!
- If 'dspmq' is not a typo you can run the following command to lookup the package that contains the binary:
 - `command-not-found dspmq`
 - `-bash: dspmq: command not found`
- You try another command:
 - `dspmqver`
 - And instead of getting the version of MQ, you get another error message:
 - `AMQ8594: WebSphere MQ commands are no longer available in /usr/bin.`
- You issue the following to check for the symbolic link:
 - `ls -l /usr/bin/dspmq`
 - `ls: cannot access /usr/bin/dspmq No such file or directory`
- What is going on?

Notes: symbolic links

notes

- At this point, you have only 1 installation of MQ in the box.
- If you have only 1 installation of MQ in the system, why the MQ installation utilities do not assign it to be the Primary? Why do you have to be bothered to take one more step in order to manually designate it as Primary?
- One reason is that the installation utilities do not know if your intention is to install in the same day 2 different versions of MQ in the same machine. A Primary installation is not chosen (even if it is the only installation) just in case that you want to exploit the multi-version feature later on and this early decision of not designating a Primary will save you confusion and frustration later on.
- On UNIX and Linux systems, if you set an installation as the Primary installation, symbolic links to the external libraries and control commands of that installation are added into /usr/lib, and /usr/bin.
- If you do not have a primary installation, the symbolic links are not created.
- You issue the following to confirm that there are now symbolic links:
 - `ls -l /usr/bin/dspmq`
 - `lrwxrwxrwx 1 root root 18 Nov 15 16:02 /usr/bin/dspmq -> /opt/mqm/bin/dspmq`

Notes: installation configuration file

notes

- In Unix, the installation configuration file has the list of the MQ installations in the box (only for version MQ 7.1 or later).
- `cd /etc/opt/mqm`
- `cat mqinst.ini`
- Installation:
 - `Name=Installation1`
 - `Description=`
 - `Identifier=1`
 - `FilePath=/opt/mqm`
- Primary:
 - `Name=Installation1`

This installation has a name: Installation1

- If you install another version of MQ, then it will be called: Installation2

Use "setmqenv" when initiating a session

- Starting with MQ 7.1, when you initiate a session with the operating system (command prompt), you will need to issue the following MQ command:
 - **setmqenv -n Installation1**
- order to setup the MQ environment variables, such as:
 - MQ_FILE_PATH=C:\Program Files (x86)\IBM\WebSphere MQ
 - MQ_INSTALLATION_NAME=Installation1
 - MQ_INSTALLATION_PATH=C:\Program Files (x86)\IBM\WebSphere MQ
 - MQ_JAVA_INSTALL_PATH=C:\Program Files (x86)\IBM\WebSphere MQ\java
 - MQ_JAVA_LIB_PATH=C:\Program Files (x86)\IBM\WebSphere MQ\java\lib64
 - MQ_JRE_PATH=C:\Program Files (x86)\IBM\WebSphere MQ\java\jre

Notes: setmqenv in Windows

notes

- In Windows, the installer will update some environment variables related to MQ.
- But in order to setup the full environment variables for MQ, it is recommended to always use "setmqenv" when you start a session with a command prompt.
- One way to do it by is creating a batch file, such as "set-mq-71.bat" which will point to the installation directory of MQ 7.1 and then set the environment for the corresponding installation, such as Installation1. Store this file in a directory that is in your PATH.
- + begin file
- REM Setup the environment to run MQ 7.1
- CALL "C:\Program Files (x86)\IBM\WebSphere MQ\bin\setmqenv" -n Installation1
- REM Adding Samples to the path
- SET PATH=%PATH%;%MQ_FILE_PATH%\tools\c\Samples\Bin
- dspmqver -f 2
- + end file
- Example:
- C:\Users\IBM_ADMIN>set-mq-71
- C:\Users\IBM_ADMIN>CALL "C:\Program Files (x86)\IBM\WebSphere MQ_1\bin\setmqenv" -n Installation1
- Version: 7.1.0.6

Notes: setmqenv in Unix

notes

- In Unix, you need to always use "setmqenv" when you start a session with a command prompt. You could add setmqenv in your .profile or .bashrc
- You need to "source" (run "inline") the utility setmqenv by specifying a leading . (dot) and a blank, otherwise, the MQ environment variables will NOT be set.
 - `. /opt/mqm/bin/setmqenv -n Installation1`
 - `| |`
 - `| +--- blank`
 - `+--- dot`
- Instead of typing the whole command every time, you could save time by creating a shell script file, such as "set-mq-71" which will point to the installation directory of MQ 7.1 and then set the environment for the corresponding installation, such as Installation1.
- Store this file in a directory that is in your PATH.

Notes: setmqenv in Unix

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- Keep in mind that you will need to use the dot and the space also!

- `. set-mq-71`
- `| |`
- `| +--- blank`
- `+--- dot`

- Example of the script:

- ===== begin script

```
#!/usr/bin/ksh
```

```
# Name: set-mq-71
```

```
# Purpose: to setup the environment to run MQ 7.1
```

```
. /opt/mqm/bin/setmqenv -n Installation1
```

```
# Additional MQ 7.1 directories for the PATH
```

```
export
```

```
  PATH=$PATH:$MQ_INSTALLATION_PATH/bin:$MQ_INSTALLATION_PATH/java/bin:$MQ_
  INSTALLATION_PATH/samp/bin:$MQ_INSTALLATION_PATH/samp/jms/samples:
```

```
# Add local directory for running Java/JMS programs
```

```
export CLASSPATH=$CLASSPATH:.
```

```
# end
```

- ===== end of script

Exploiting multi-version (coexisting)

- Starting with MQ 7.1, you can have multiple installations of MQ in the same box.
- One of the reasons for adding this feature is to facilitate a staged upgrade of the queue managers in a box from an older version to a newer version.
- This means that some queue managers in the box could be running at MQ 7.0 while others have been upgraded and running at MQ 7.5 (for example).
- **Note: Minimum level of 7.0 should be 7.0.1.6**
- **Recommended to use latest: 7.0.1.12 (Jul 2015)**

Coexisting - example of 7.0 and 7.5 in Linux

- Example for Linux:
- Before: MQ 7.0 on /opt/mqm
- After:
 - Installation0: MQ 7.0 on /opt/mqm
 - Installation1: MQ 7.5 on /opt/mqm75
- Note: Installation0 is ONLY used for MQ 7.0.



Coexisting - example of 7.0, 7.5 in Windows

- Example for Windows:
- Before: MQ 7.0 on C:\Program Files (x86)\IBM\WebSphere MQ
- After:
- Installation0:
- MQ 7.0 on C:\Program Files (x86)\IBM\WebSphere MQ
- Installation1:
- MQ 7.5 on C:\Program Files (x86)\IBM\WebSphere MQ_1
- Note: Installation0 is ONLY used for MQ 7.0.

Tutorials

- The following tutorials can be useful:
- <http://www.ibm.com/support/docview.wss?uid=swg27036780>
- Installing WebSphere MQ 7.5 to coexist with MQ 7.0.1 and MQ 7.1 in Windows
- <http://www.ibm.com/support/docview.wss?uid=swg27036779>
- Installing WebSphere MQ 7.5 to coexist with MQ 7.0.1 and MQ 7.1 in Linux



Notes: tutorial for Windows

notes

- <http://www.ibm.com/support/docview.wss?uid=swg27036780>
- Installing WebSphere MQ 7.5 to coexist with MQ 7.0.1 and MQ 7.1 in Windows
- This technote builds on top of the following document:
- The minimum version of MQ 7.0 that allows coexistence is 7.0.1.6. Because, at the time of writing this techdoc, the latest Fix Pack was 7.0.1.9, then 7.0.1.9 is used in this document.
- The "primary" installation will be MQ 7.0.1.9 and this techdoc shows you how to setup the environment in order to use MQ 7.0, MQ 7.1 and MQ 7.5.
- .
- The chapters are:
 - Chapter 1: Installing MQ 7.5 side-by-side to MQ 7.0.1.9
 - Chapter 2: Need to run setmqenv to use MQ 7.5 commands
 - Chapter 3: Creating a queue manager under 7.5
 - Chapter 4: Remote access to the new MQ 7.5 queue manager
 - Chapter 5: Using MQ Explorer 7.5
 - Chapter 6: Migrating an MQ 7.0 queue manager to MQ 7.5

Notes: tutorial for Linux

notes

- <http://www.ibm.com/support/docview.wss?uid=swg27036779>
- Installing WebSphere MQ 7.5 to coexist with MQ 7.0.1 and MQ 7.1 in Linux
- This techdoc shows all the steps to install WebSphere MQ 7.5 in Linux, while co-existing ("side-by-side") with MQ 7.0.1 and MQ 7.1.
- Only the first chapter is exclusive to Linux.
- The other chapters apply to all Unix.
- The minimum version of MQ 7.0 that allows coexistence is 7.0.1.6. Because at the time of writing this techdoc the latest Fix Pack was 7.0.1.9, then 7.0.1.9 is used in this document.
- The "primary" installation will be MQ 7.0.1.9 and this techdoc shows you how to setup the environment in order to use MQ 7.0, MQ 7.1 and MQ 7.5.
- The chapters are:
 - Chapter 1: Installing MQ 7.5 side-by-side to MQ 7.0.1.9 and 7.1
 - Chapter 2: Need to run setmqenv to use MQ 7.5 commands
 - Chapter 3: Creating a queue manager under 7.5
 - Chapter 4: Remote access to the new MQ 7.5 queue manager
 - Chapter 5: Using MQ Explorer 7.5
 - Chapter 6: Migrating an MQ 7.0 queue manager to MQ 7.5
 - Chapter 7: Installing fix pack MQ 7.5.0.3 (New chapter, added in Feb 2014)

Notes: customizing the environment

notes

- To facilitate the handling of multiple versions during routine operations, you could create 2 batch files for Windows (see page 46):
- Assuming that Installation1 is MQ 7.5:
- .
- "set-mq-70.bat"
- CALL "C:\Program Files (x86)\IBM\WebSphere MQ_1\bin\setmqenv" -n Installation0
- "set-mq-75.bat"
- CALL "C:\Program Files (x86)\IBM\WebSphere MQ_1\bin\setmqenv" -n Installation1
- For Unix (see pages 47 and 48)
- "set-mq-70"
- . /opt/mqm75/bin/setmqenv -n Installation0
- "set-mq-75"
- . /opt/mqm75/bin/setmqenv -n Installation1

References

- <http://www.ibm.com/support/docview.wss?uid=swg27024140>
- Knowledge Collection: Install/Migration for MQ
- http://www.ibm.com/support/knowledgecenter/SSFKSJ_7.1.0/com.ibm.mq.help.home.v71.doc/WelcomePagev7r1.htm
- MQ 7.1: Knowledge Center
- http://www.ibm.com/support/knowledgecenter/SSFKSJ_7.5.0/com.ibm.mq.help.home.v75.doc/WelcomePagev7r5.htm
- MQ 7.5: Knowledge Center
- http://www.ibm.com/support/knowledgecenter/SSFKSJ_8.0.0/com.ibm.mq.help.home.v80.doc/WelcomePagev8r0.htm
- MQ 8.0: Knowledge Center



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