

## Installing WebSphere MQ 7.5 to coexist with MQ 7.0.1 and MQ 7.1 in Linux, and installing Fix Pack 7.5.0.3

IBM Techdoc: 7036779

<http://www.ibm.com/support/docview.wss?rs=171&uid=swg27036779>

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### +++ Objective

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.

In Feb-2014 the new Chapter 7 was added to describe the process for applying Fix Pack 7.5.0.3.

This technote builds on top of the following document:

<http://www.ibm.com/support/docview.wss?rs=171&uid=swg27023934>

Installing WebSphere MQ 7.1 to coexist with MQ 7.0.1.7 in Linux + applying fix pack 7.1.0.1

IBM Techdoc: 7023934

MQ 7.5 includes also Advanced Messaging Security (AMS) and Managed File Transfer. This document does NOT cover their installation. The scope is only for the MQ Server, MQ Explorer, JMS, Development toolkit and GSKit.

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 overall instructions apply also to other UNIX distributions: AIX, HP-UX and Solaris.

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

The equivalent document for Windows is:

<http://www.ibm.com/support/docview.wss?rs=171&uid=swg27036780>

Installing WebSphere MQ 7.5 to coexist with MQ 7.0.1 and MQ 7.1 in Windows

IBM Techdoc: 7036780

+++ Hardware and software

Linux SLES 11, on x86-32-bit, running with WebSphere MQ 7.0.1.9 and MQ 7.1.0.2

Queue Managers: QM\_701 => Created with MQ 7.0.1.9. To remain at 7.0.1.9  
QM\_MIG => Created with MQ 7.0.1.9. To be migrated to 7.5.0.0  
QM\_71 => Created with MQ 7.1.0.2. To remain at 7.1.0.2  
QM\_75 => Created with MQ 7.5.0.0

+++++  
+++ Chapter 1: Installing MQ 7.5 side-by-side to MQ 7.0.1.9  
+++++

++ Downloading the MQ 7.5 code

Download the code from IBM Passport Advantage.  
Consult the following technote for the Part Numbers that you can use to quickly identify the MQ 7.5 downloadable components for installation:

<http://www.ibm.com/support/docview.wss?uid=swg24032734>

Downloading WebSphere MQ Version 7.5 from the Passport Advantage Web site

For this techdoc, the following files were downloaded:

CI79HML      WebSphere MQ V7.5 for Linux on x86 32-bit Multilingual

Downloaded file renamed to: MQ-V7.5-Linux-x86-32bit-CI79HML.tar.gz

++ MQ 7.5.0.2 was rebased in 2013:

Rebased: Base 7.5.0.0 + Fix pack 7.5.0.1 + Fix pack 7.5.0.2

<http://www.ibm.com/support/docview.wss?uid=swg24036405>

Downloading WebSphere MQ Version 7.5.0.2 from the Passport Advantage Web site

++ Current setup of MQ 7.0.1.9

MQ 7.0.1.9 already installed in the default location:  
    /opt/mqm

The data for the queue managers is stored in:  
    /var/mqm

++ Current setup of MQ 7.1.0.2

MQ 7.1.0.2 already installed in the default location:  
    /opt/mqm71

The data for the queue managers is stored in:  
    /var/mqm

++ Installing MQ 7.5 into /opt/mqm75

Login as userid root, in order to install the code.

To be installed in:  
/opt/mqm75

The downloaded code from Passport Advantage into a temporary directory, such as:  
/downloads/mq/75

Unzip the downloaded file:  
# cd /downloads/mq/75  
# tar -zxvf MQ-V7.5-Linux-x86-32bit-CI79HML.tar.gz

Accept the license:  
# ./mqlicense.sh -accept  
...  
Agreement accepted: Proceed with install.

The installation instructions indicate that the utilities "pax" and "rpmbuild" must be installed, in order to run the crtmqpkg which is needed when installing the code in a directory other than /opt/mqm.

In this system, pax is located in:  
# which pax  
/usr/bin/pax

... and it is provided by the following rpm. The following command displays the name of the RPM package that installed a file. The full path of the file needs to be provided.

```
# rpm -qf /usr/bin/pax  
pax-3.4-135.21
```

And rpmbuild is located in:  
# which rpmbuild  
/usr/bin/rpmbuild

... and it is provided in the rpm ...  
# rpm -qf /usr/bin/rpmbuild  
rpm-4.4.2.3-37.18.1

## NOTES!

- Because this installation is not the first installation on the system, then new MQ 7.1 command "crtmqpkg" must be used to create a unique set of packages to install on the system.
- It will take few minutes for the utility to finish. It will display a set of # characters to indicate the progress.
- Once it finishes, it will display a completion message.

The input argument "2" is a qualifier and it will be appended to the appropriate file names as "\_2".

```
./crtmqpkg 2
```

```
Repackaging WebSphere MQ for "i386" using suffix "2"
```

```
# ← This is NOT the system prompt!! It is just a progress indicator!!
```

After few minutes you may notice that there are more marks, indicating that the task is progressing:

```
Repackaging WebSphere MQ for "i386" using suffix "2"
```

```
#####
```

**Wait several minutes** and you will see the information message that the Repackaging has completed.

```
Repackaging WebSphere MQ for "i386" using suffix "2"
```

```
#####
```

```
Repackaging complete - rpms are at "/var/tmp/mq_rpms/2/i386"
```

Now cd to the directory mentioned in the output from crtmqpkg, in this case:

```
# cd /var/tmp/mq_rpms/2/i386
```

This is the list of the rpms:

```
# ls *.rpm
```

```
MQSeriesAMS_2-7.5.0-0.i386.rpm      MQSeriesMsg_de_2-7.5.0-0.i386.rpm
MQSeriesClient_2-7.5.0-0.i386.rpm  MQSeriesMsg_es_2-7.5.0-0.i386.rpm
MQSeriesExplorer_2-7.5.0-0.i386.rpm MQSeriesMsg_fr_2-7.5.0-0.i386.rpm
MQSeriesFTAgent_2-7.5.0-0.i386.rpm  MQSeriesMsg_hu_2-7.5.0-0.i386.rpm
MQSeriesFTBase_2-7.5.0-0.i386.rpm   MQSeriesMsg_it_2-7.5.0-0.i386.rpm
MQSeriesFTLogger_2-7.5.0-0.i386.rpm MQSeriesMsg_ja_2-7.5.0-0.i386.rpm
MQSeriesFTService_2-7.5.0-0.i386.rpm MQSeriesMsg_ko_2-7.5.0-0.i386.rpm
MQSeriesFTTools_2-7.5.0-0.i386.rpm  MQSeriesMsg_pl_2-7.5.0-0.i386.rpm
MQSeriesGSKit_2-7.5.0-0.i386.rpm    MQSeriesMsg_pt_2-7.5.0-0.i386.rpm
MQSeriesJRE_2-7.5.0-0.i386.rpm      MQSeriesMsg_ru_2-7.5.0-0.i386.rpm
MQSeriesJava_2-7.5.0-0.i386.rpm     MQSeriesRuntime_2-7.5.0-0.i386.rpm
```

MQSeriesMan\_2-7.5.0-0.i386.rpm MQSeriesSDK\_2-7.5.0-0.i386.rpm  
MQSeriesMsg\_Zh\_CN\_2-7.5.0-0.i386.rpm MQSeriesSamples\_2-7.5.0-0.i386.rpm  
MQSeriesMsg\_Zh\_TW\_2-7.5.0-0.i386.rpm MQSeriesServer\_2-7.5.0-0.i386.rpm  
MQSeriesMsg\_cs\_2-7.5.0-0.i386.rpm

Perform the installation of the rpm's, not including the message catalog files (MQSeriesMsg\*). Specify the location via the --prefix parameter: /opt/mqm75

Note: It is recommended that you invoke the "rpm" command with all the filesets that you want to install, instead of invoking "rpm" separately for each fileset, in that way, you avoid the need to specify the strict order to install the filesets, because some are pre-requisites for others. When you include all the filesets at once, the "rpm" command finds out which is the proper order of installation and proceeds to execute the installation in the precise order.

NOTE: In this techdoc, the AMS and Managed File Transfer components (MQSeriesFT\*) will NOT be installed.

```
# rpm --prefix /opt/mqm75 -ivh MQSeriesClient_2-7.5.0-0.i386.rpm  
MQSeriesExplorer_2-7.5.0-0.i386.rpm MQSeriesGSKit_2-7.5.0-0.i386.rpm  
MQSeriesJRE_2-7.5.0-0.i386.rpm MQSeriesJava_2-7.5.0-0.i386.rpm  
MQSeriesMan_2-7.5.0-0.i386.rpm MQSeriesRuntime_2-7.5.0-0.i386.rpm  
MQSeriesSDK_2-7.5.0-0.i386.rpm MQSeriesSamples_2-7.5.0-0.i386.rpm  
MQSeriesServer_2-7.5.0-0.i386.rpm
```

```
Preparing... ##### [100%]  
 1:MQSeriesRuntime_2 ##### [ 10%]  
 2:MQSeriesJRE_2 ##### [ 20%]  
 3:MQSeriesClient_2 ##### [ 30%]  
 4:MQSeriesExplorer_2 ##### [ 40%]  
 5:MQSeriesGSKit_2 ##### [ 50%]  
 6:MQSeriesJava_2 ##### [ 60%]  
 7:MQSeriesMan_2 ##### [ 70%]  
 8:MQSeriesSDK_2 ##### [ 80%]  
 9:MQSeriesSamples_2 ##### [ 90%]  
10:MQSeriesServer_2 ##### [100%]
```

Notice that in previous versions there was a rpm fileset for the Extended Transactional Client: MQSeriesTXClient

However, starting with MQ 7.5, this Extended Transactional Client is now included with the MQSeriesClient fileset.

```
+++++
+++ Chapter 2: Need to run setmqenv to use MQ 7.5 commands
+++++
```

Now that we have finished with the root activities, we can login as an MQ administrator.

You can verify that you have 3 directories that have MQ code:

```
$ cd /opt
$ ls -dl mqm mqm71 mqm75
dr-xr-xr-x 16 mqm mqm 4096 Sep  8 12:46 mqm           → For 7.0.1.9
dr-xr-xr-x 16 mqm mqm 4096 Nov 30 18:04 mqm71        → For 7.1.0.2
dr-xr-xr-x 16 mqm mqm 4096 2012-11-27 15:39 mqm75    → For 7.5.0.0
```

There is a global file in /etc (new for MQ 7.1) which provides information on the **additional** installations of MQ in the machine:

```
/etc/opt/mqm/mqinst.ini
```

Let's display the contents of the file:

```
$ cat /etc/opt/mqm/mqinst.ini
```

Installation:

```
Name=Installation1
Description=
Identifier=1
FilePath=/opt/mqm71
```

Installation:

```
Name=Installation2
Description=
Identifier=2
FilePath=/opt/mqm75
```

Notice that the name "Installation1" refers to MQ 7.1.

Notice that the name "Installation2" refers to MQ 7.5.

By default, "Installation0" is NOT shown in the file, but it refers to whatever version was available in /opt/mqm, in this case, MQ 7.0.1.9.

However, you can use the following new MQ 7.1 command to display all the available installations. Notice that in this case there are 2 installations:

**\$ dspmqinst**

```
InstName:  Installation0
InstDesc:  IBM WebSphere MQ Installation
Identifier: 0
InstPath:  /opt/mqm
Version:   7.0.1.9
Primary:   Yes
State:     Available
```

```
InstName:  Installation1
InstDesc:
Identifier: 1
InstPath:  /opt/mqm71
Version:   7.1.0.2
Primary:   No
State:     Available
```

```
InstName:  Installation2
InstDesc:
Identifier: 2
InstPath:  /opt/mqm75
Version:   7.5.0.0
Primary:   No
State:     Available
```

Now, let's display the version of MQ using the default (or primary) installation:

**\$ dspmqver**

```
Name:      WebSphere MQ
Version:   7.0.1.9
CMVC level: p701-109-120718
BuildType: IKAP - (Production)
```

Notice that it is the older version and that has a symbolic link in `/usr/bin/dspmqver`

**\$ which dspmqver**

```
/usr/bin/dspmqver
```

**\$ ls -l /usr/bin/dspmqver**

```
lrwxrwxrwx 1 root root 21 Sep  8 /usr/bin/dspmqver -> /opt/mqm/bin/dspmqver
```



++ Question: How can we display the version of the new installation for MQ 7.5?  
Answer: You need to run the new "setmqenv" command and specify Installation2.

**Attempt 1: INCORRECT (the full path was not provided)**

Notice that setmqenv does not have a symbolic link in /usr/bin and at this moment it is not in our PATH.

```
$ setmqenv -n Installation2
```

If 'setmqenv' is not a typo you can run the following command to lookup the package that contains the binary:

```
command-not-found setmqenv  
-bash: setmqenv: command not found
```

**Attempt 2: INCORRECT (the leading dot and space were not used)**

You will need to specify the full path for setmqenv. In this case, you need to include the new directory for MQ 7.5:

```
$ /opt/mqm75/bin/setmqenv -n Installation2
```

AMQ8595: The setmqenv command was not preceded by the source command.

Let's try again to display the version:

```
$ dspmqver
```

```
Name:      WebSphere MQ  
Version:   7.0.1.9  
CMVC level: p701-109-120718  
BuildType: IKAP - (Production)
```

Notice that it is still the old one!

**Attempt 3: CORRECT (full path and specifying leading dot and space)**

What went wrong?

You need to "source" (run "inline") the utility setmqenv by specifying a leading . (dot) and a blank:

```
$ . /opt/mqm75/bin/setmqenv -n Installation2  
| |  
| +--- blank  
+--- dot
```

Note: The . character used at the beginning of each command makes the setmqenv script run in the current shell. Therefore, the environment changes made by the setmqenv script are applied to the current shell. Without the . character, the environment variables are changed in another shell, and the changes are not applied to the shell from which the command is issued.

Now that we issued the correct setmqenv, let's try again to display the version:

```
$ dspmqver
Name:      WebSphere MQ
Version:   7.5.0.0
Level:    p000-L120604
BuildType: IKAP - (Production)
Platform:  WebSphere MQ for Linux (x86 platform)
Mode:     32-bit
O/S:     Linux 2.6.27.54-0.2-pae
InstName: Installation2
InstDesc:
InstPath:  /opt/mqm75
DataPath:  /var/mqm
Primary:   No
MaxCmdLevel: 750
Note there are a number (2) of other installations, use the '-i' parameter to display them.
```

Before running "setmqenv", the following command did not return any entries for environment variables that have "MQ" or "mq" in the names:

```
$ set | grep -i mq
(no items returned)
```

After running "/opt/mqm75/bin/setmqenv -n Installation2", now the above command shows the environment for using the MQ 7.5 code:

```
$ set | grep -i mq
CLASSPATH=/opt/mqm75/java/lib/com.ibm.mq.jar:/opt/mqm75/java/lib/com.ibm.mqjms.jar:/opt/mqm75/samp/wmqjava/samples:/opt/mqm75/samp/jms/samples
MANPATH=/opt/mqm75/man:/usr/local/man:/usr/share/man:/usr/man:/usr/man
MQ_DATA_PATH=/var/mqm
MQ_ENV_MODE=32
MQ_INSTALLATION_NAME=Installation2
MQ_INSTALLATION_PATH=/opt/mqm75
```

```

MQ_JAVA_DATA_PATH=/var/mqm
MQ_JAVA_INSTALL_PATH=/opt/mqm75/java
MQ_JAVA_LIB_PATH=/opt/mqm75/java/lib
MQ_JRE_PATH=/opt/mqm75/java/jre
MQ_RETVAL=0
PATH=/opt/mqm75/bin:...

```

+ Hint:

You can create a script that will run the setmqenv command with the specified syntax.

In the same manner which the script \$HOME/bin/set-mq-71.ksh was created in the related techdoc 7023934 to facilitate the environment configuration to use MQ 7.5, the script \$HOME/bin/set-mq-75.ksh can be created with the contents:

```

$ mkdir $HOME/bin
$ cd $HOME/bin
$ vi set-mq-75.ksh

```

Notice that the installation name is: installation2

```

===== begin script
#!/usr/bin/ksh
# Name: set-mq-75.ksh
# Purpose: to setup the environment to run MQ 7.5
. /opt/mqm75/bin/setmqenv -n Installation2
# Additional MQ 7 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

```

Notice that additional directories are included in the PATH. This is going to be explained later. The setmqenv will setup the proper directory for MQ\_INSTALLATION\_PATH.

You will need to specify the script as executable:

```

$ chmod 755 $HOME/bin/set-mq-75.ksh

```

You will need to add \$HOME/bin in the PATH in your .bashrc or .profile:

```
PATH=$PATH:$HOME/bin:
export PATH
```

You will need to invoke the script with the leading dot!

```
$ .    set-mq-75.ksh
  |  |
  | +--- blank
  +--- dot
```

+++ Hint for your bashrc or profile

To help you remember which command to execute to set the desired MQ environment, you can add the following lines into your bashrc or profile:

```
# MQ 7.0, 7.1 and 7.5
echo "For MQ 7.0 run:  . set-mq-70.ksh"
echo "For MQ 7.1 run:  . set-mq-71.ksh"
echo "For MQ 7.5 run:  . set-mq-75.ksh"
```

In that way, when you login via local terminal or via telnet/ssh, you will be reminded of the commands and the syntax (especially for the leading dot), such as:

```
For MQ 7.0 run:  . set-mq-70.ksh
For MQ 7.1 run:  . set-mq-71.ksh
For MQ 7.5 run:  . set-mq-75.ksh
rivera@veracruz: /home/rivera
$
```

```

+++++
+++ Chapter 3: Creating a queue manager under 7.5
+++++

```

Before we create a queue manager under 7.5, let's show the current queue managers created under MQ 7.0 and 7.1

Ensure to use the MQ 7.5.0.0 code:

```
$ . set-mq-75.ksh
```

Display the status of the queue managers:

```

$ dspmq
QMNAME(QM_701)          STATUS(Ended immediately)
QMNAME(QM_MIG)         STATUS(Ended immediately)
QMNAME(QM_71)          STATUS(Ended immediately)

```

The following invocation shows additional information for the queue managers:

- the installation name: INSTNAME(Installation0)
- the path of the MQ 7.0 code: INSTPATH(/opt/mqm)
- and the version: INSTVER(7.0.1.9)

```

$ dspmq -o installation
QMNAME(QM_701) INSTNAME(Installation0) INSTPATH(/opt/mqm) INSTVER(7.0.1.9)
QMNAME(QM_MIG) INSTNAME(Installation0) INSTPATH(/opt/mqm) INSTVER(7.0.1.9)
QMNAME(QM_71)  INSTNAME(Installation1) INSTPATH(/opt/mqm71) INSTVER(7.1.0.2)

```

Let's create a new queue manager. Notice the new line shown in bold font that indicates that Installation2 is used:

```

$ crtmqm -u SYSTEM.DEAD.LETTER.QUEUE QM_75
WebSphere MQ queue manager created.
Directory '/var/mqm/qmgrs/QM_75' created.
The queue manager is associated with installation 'Installation2'.
Creating or replacing default objects for queue manager 'QM_75'.
Default objects statistics : 74 created. 0 replaced. 0 failed.
Completing setup.
Setup completed.

```

Then start the queue manager. Notice the lines that indicate the installation and the version under which the queue manager is running:

```
$ strmqm QM_75
```

```
WebSphere MQ queue manager 'QM_75' starting.
```

```
The queue manager is associated with installation 'Installation2'.
```

```
5 log records accessed on queue manager 'QM_75' during the log replay phase.
```

```
Log replay for queue manager 'QM_75' complete.
```

```
Transaction manager state recovered for queue manager 'QM_75'.
```

```
WebSphere MQ queue manager 'QM_75' started using V7.5.0.0.
```

Let's display again the installed queue managers and showing the installation, code path and version. Notice the values for the new queue manager, which reflect the association with the MQ 7.5 installation.

```
$ dspmq -o installation
```

```
QMNAME(QM_701) INSTNAME(Installation0) INSTPATH(/opt/mqm) INSTVER(7.0.1.9)
```

```
QMNAME(QM_MIG) INSTNAME(Installation0) INSTPATH(/opt/mqm) INSTVER(7.0.1.9)
```

```
QMNAME(QM_71) INSTNAME(Installation1) INSTPATH(/opt/mqm71) INSTVER(7.1.0.2)
```

```
QMNAME(QM_75) INSTNAME(Installation2) INSTPATH(/opt/mqm75) INSTVER(7.5.0.0)
```

```
++ Cannot use MQ 7.5 administrative commands to run an MQ 7.0 queue manager
```

You cannot use MQ 7.5 administrative commands to run an MQ 7.0 queue manager

Corollary: And vice versa, you cannot use MQ 7.0 administrative commands to run an MQ 7.5 queue manager.

Just for the sake of illustrating that each queue manager needs to be run with the proper level of the code, the following shows the error message when trying to use the MQ 7.5 endmqm command on a queue manager that was started with MQ 7.0:

Right now, the environment has been set to use MQ 7.5 commands.

```
$ endmqm QM_701
```

```
AMQ5691: Queue manager 'QM_701' is associated with a different installation ('Installation0').
```

Similarly, if we enable now the MQ 7.0 commands ...

```
$ . set-mq-70.ksh
```

... and then try to use the MQ 7.0 endmqm command to stop the queue manager recently created with MQ 7.5, we get the following error:

```
$ endmqm QM_75  
AMQ5691: Queue manager 'QM_75' is associated with a different installation.
```

Notice also that the MQ 7.0 dspmq command does not recognize the status of the MQ 7.1 and 7.5 queue managers:

```
$ dspmq  
QMNAME(QM_MIG)           STATUS(Running)  
QMNAME(QM_701)           STATUS(Running)  
QMNAME(QM_71)            STATUS(Status not available)  
QMNAME(QM_75)            STATUS(Status not available)
```

```
+++++
+++ Chapter 4: Remote access to the new MQ 7.5 queue manager
+++++
```

Let's customize the queue manager to allow it to be monitored remotely by the MQ Explorer and to create a local queue Q1 for initial testing:

```
$ runmqsc QM_75
define listener(TCP.LISTENER) trptype(tcp) control(qmgr) port(1430)
start listener(TCP.LISTENER)
define channel(SYSTEM.ADMIN.SVRCONN) chltype(SVRCONN)
define ql(Q1)
end
```

Now you start the MQ Explorer from a remote host, using a userid that is an MQ Administrator in the host that has the newly created queue manager.

You use the MQ Explorer to remotely access the 7.1 or 7.5 queue managers and get the following errors:

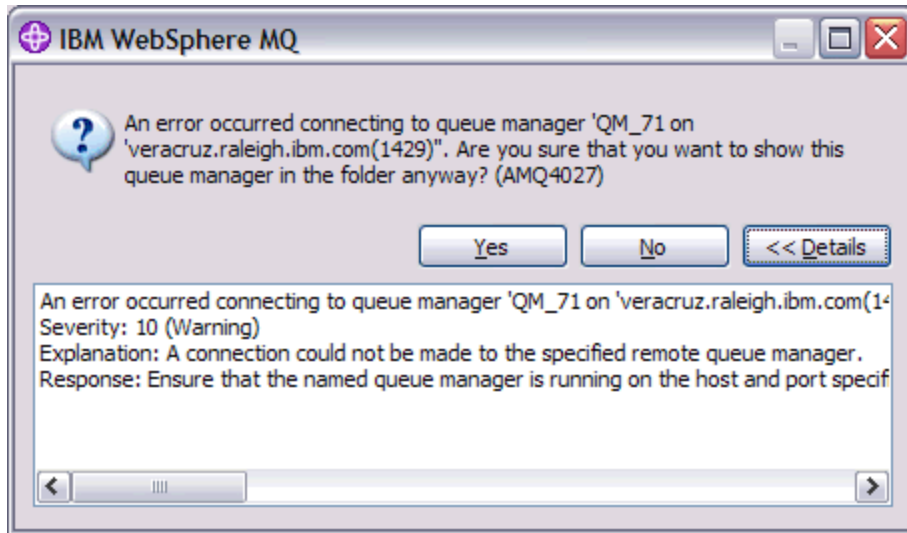


Text inside the dialog box:

```
Access not permitted. You are not authorized to perform this operation. (AMQ4036)
Severity: 10 (Warning)
Explanation: The queue manager security mechanism has indicated that the userid
associated with this request is not authorized to access the object.
```



After closing the above dialog, the next one appears:



Text inside the dialog box:

An error occurred connecting to queue manager 'QM\_71 on 'host.x.com(14xx)". Are you sure that you want to show this queue manager in the folder anyway? (AMQ4027)

Severity: 10 (Warning)

Explanation: A connection could not be made to the specified remote queue manager.

Response: Ensure that the named queue manager is running on the host and port specified, and has a channel corresponding to the specified name. Ensure that you have the authority to connect to the remote queue manager, and ensure that the network is running. Select Yes if you believe that the problem can be resolved later. Select No if you want to correct the problem now and try again.

In the error log for the queue manager you see the errors AMQ9776 and AMQ9999

AMQ9776: Channel was blocked by userid

EXPLANATION:

The inbound channel 'SYSTEM.ADMIN.SVRCONN' was blocked from address '9.49.x.x' because the active values of the channel were mapped to a userid which should be blocked. The active values of the channel were 'MCAUSER(rivera) CLNTUSER(rivera)'.

ACTION:

Contact the systems administrator, who should examine the channel authentication records to ensure that the correct settings have been configured. The ALTER QMGR CHLAUTH switch is used to control whether channel authentication records are used. The command DISPLAY CHLAUTH can be used to query the channel authentication records.

AMQ9999: Channel 'SYSTEM.ADMIN.SVRCONN' to host 'x (9.49.x.x)' ended abnormally.

In MQ 7.1 and 7.5, as part of the improved security measures, by default an MQ Administrator CANNOT use the MQ Explorer to remotely access a queue manager. The new feature of "channel authentication records" blocks the remote access via channels for any MQ Administrator. There are 3 such records in a newly created queue manager:

```
display chlauth(*)
```

```
5 : display chlauth(*)
```

```
AMQ8878: Display channel authentication record details.
```

```
CHLAUTH(SYSTEM.ADMIN.SVRCONN)      TYPE(ADDRESSMAP)
ADDRESS(*)                           USERSRC(CHANNEL)
```

```
AMQ8878: Display channel authentication record details.
```

```
CHLAUTH(SYSTEM.*)                   TYPE(ADDRESSMAP)
ADDRESS(*)                           USERSRC(NOACCESS)
```

```
AMQ8878: Display channel authentication record details.
```

```
CHLAUTH(*)                           TYPE(BLOCKUSER)
USERLIST(*MQADMIN)
```

If you want an MQ Administrator to be able to remotely control a queue manager via the MQ Explorer, then refer to the following technote:

<http://www.ibm.com/support/docview.wss?uid=swg21577137>

MQ 7.1 and 7.5 queue manager - RC 2035 MQRC\_NOT\_AUTHORIZED when using client connection as an MQ Administrator

This technote refers to Page 10 from the following presentation:

[http://www.websphereusergroup.org/go/article/view/251913/whats\\_new\\_in\\_websphere\\_mq\\_v7.1\\_security](http://www.websphereusergroup.org/go/article/view/251913/whats_new_in_websphere_mq_v7.1_security)

What's new in WebSphere MQ v7.1 Security: A deeper dive

T.Rob Wyatt

Here is the summary for the article from T.Rob:

Use runmqsc to implement the following 2 rules for the Channel Access Records (new feature in MQ 7.1).

The first rule blocks administrative users and the MCAUSER "nobody" (which prevents someone from creating a user ID "nobody" and putting it into an authorized group.

The second rule provides a reduced blacklist for SYSTEM.ADMIN channels that allows administrators to use these. It is assumed here that some other CHLAUTH rule such as an SSLPEERMAP has validated the administrator's connection or than an exit has done so.

```
SET CHLAUTH(*) TYPE(BLOCKUSER) USERLIST('nobody','*MQADMIN')
SET CHLAUTH(SYSTEM.ADMIN.*) TYPE(BLOCKUSER) USERLIST('nobody')
```

Notice that the new set of expanded records is:

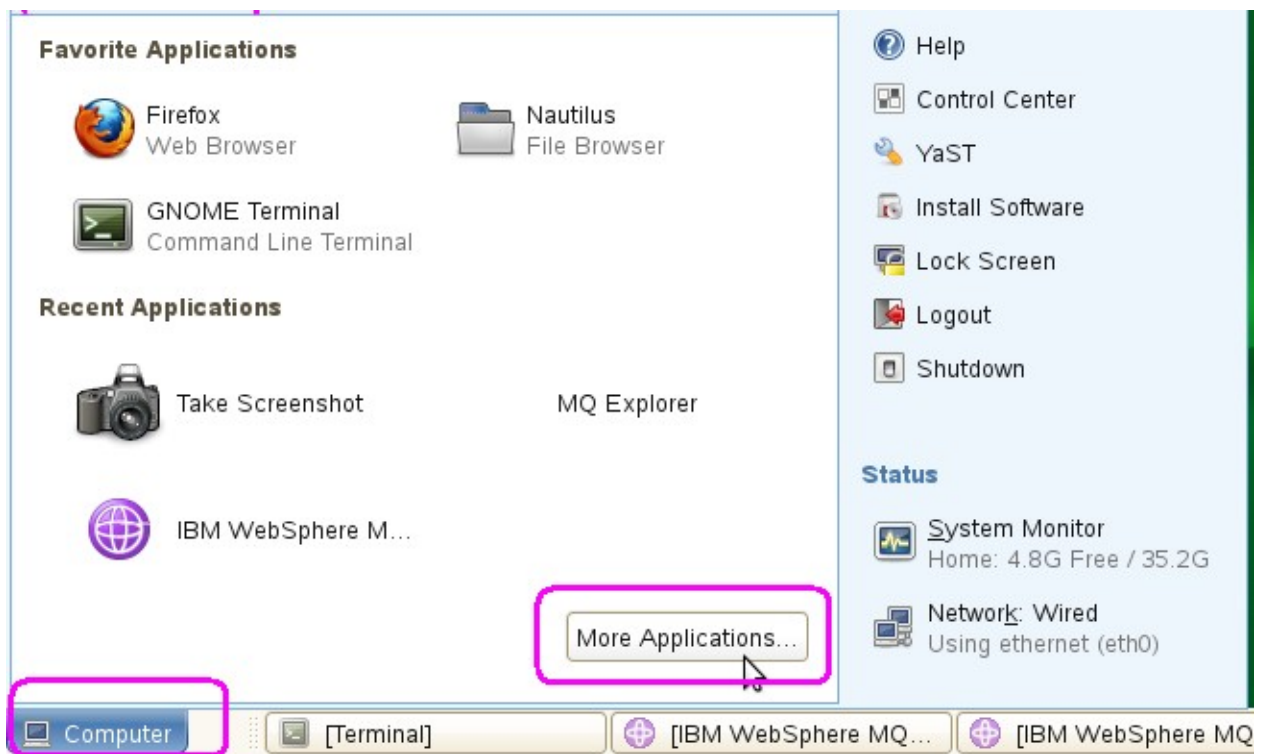
```
display chlauth(*)
  3 : display chlauth(*)
AMQ8878: Display channel authentication record details.
  CHLAUTH(SYSTEM.ADMIN.SVRCONN)      TYPE(ADDRESSMAP)
  ADDRESS(*)                          USERSRC(CHANNEL)
AMQ8878: Display channel authentication record details.
  CHLAUTH(SYSTEM.ADMIN.*)             TYPE(BLOCKUSER)
  USERLIST(nobody)
AMQ8878: Display channel authentication record details.
  CHLAUTH(SYSTEM.*)                   TYPE(ADDRESSMAP)
  ADDRESS(*)                          USERSRC(NOACCESS)
AMQ8878: Display channel authentication record details.
  CHLAUTH(*)                           TYPE(BLOCKUSER)
  USERLIST(nobody
    ,*MQADMIN)
```

Now you can successfully add the newly created queue manager into the remote MQ Explorer.

+++++ Chapter 5: Using MQ Explorer 7.5 +++++

Note: The MQ Explorer GUI is ONLY available for Linux Intel (32-bit and 64-bit). If you are using AIX, HP-UX, or Solaris, then skip this chapter.

When you install MQ 7.5 in Linux Intel (x86), there is an entry for MQ Explorer under the "Application Browser". To show the "Application Browser" you need to click on Computer on the bottom left corner, and then click on "More Applications" in the lower right.



The Application Browser shows the entries for the MQ Explorer 7.1 and MQ Explorer 7.5 in the "Development" section:

IBM WebSphere MQ Explorer (Installation1)

IBM WebSphere MQ Explorer (Installation2)

Notice that the title is truncated and only when you hover the cursor the full title is shown. The truncated title is:

IBM WebSphere MQ Expl

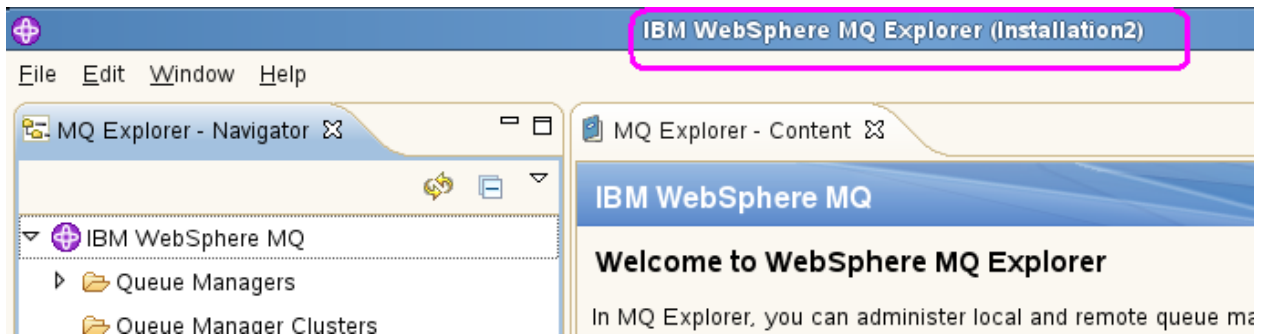
For MQ 7.1:



For MQ 7.5:



If you start the MQ Explorer 7.5, you will see that the title indicates that it is from "Installation2":



+ Note: You can run the MQ Explorer 7.0 and 7.5 at the same time:

You can also start the MQ Explorer 7.0 while MQ Explorer 7.5 is running:  
`/opt/mqm/bin/strmqcfg`

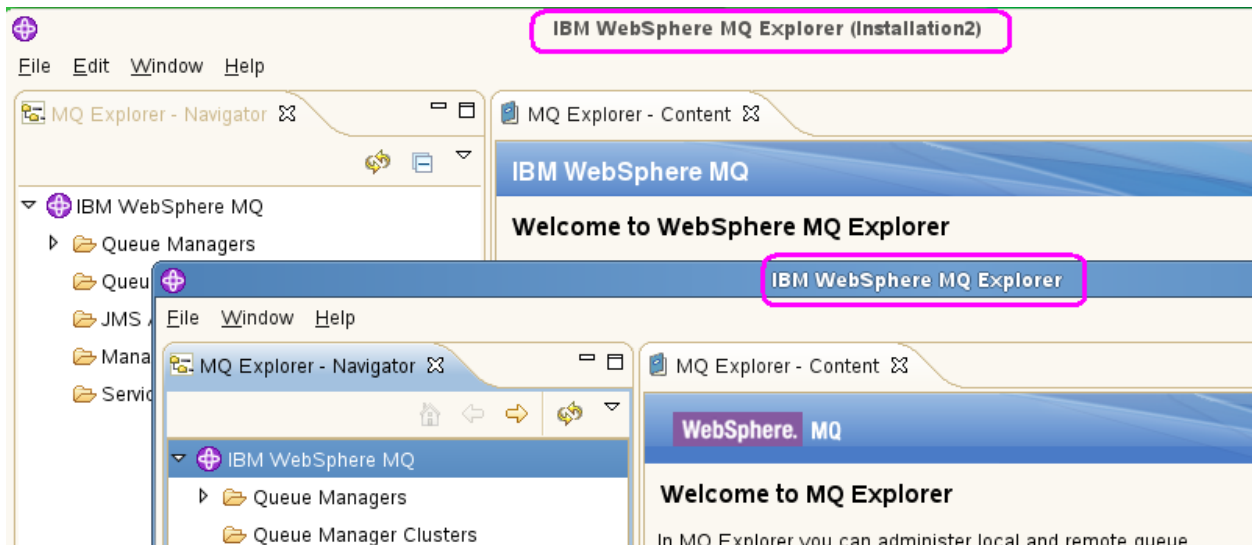
You will see both MQ Explorers:

+ MQ 7.5 will be identified as: IBM WebSphere MQ Explorer (Installation2)

+ MQ 7.0 will be identified as: IBM WebSphere MQ Explorer

Notice that the title for the MQ Explorer 7.0 does not say anything about the installation, but it is implicit that is "Installation0".

The following picture shows the 2 MQ Explorers: 7.0 is in the foreground and 7.5 is in the background.



+++++  
+++ Chapter 6: Migrating an MQ 7.0 queue manager to MQ 7.5  
+++++

After installing MQ 7.5, you now want to migrate/upgrade an MQ 7.0 queue manager to be used with MQ 7.5.

+ Take a backup of the queue manager:

Once a queue manager has been migrated to MQ 7.5, it is no longer possible to use it with WebSphere MQ 5.3, MQ 6.0 or MQ 7.0. The migration process changes a number of files and definitions, and it is not possible to go back.

If you are running 7.0 and you want to upgrade to 7.5, then you must do a backup before upgrading to 7.5. When you run the queue manager at version 7.5 it will change the formats of certain MQ object files and this cannot be reversed.

Use the `saveqmgr` command to capture the object definitions and authorities. This utility is provided with the following supportpac:

<http://www-1.ibm.com/support/docview.wss?rs=171&uid=swg24000673>

MS03: WebSphere MQ - Save Queue Manager object definitions using PCFs

Example: The following saves both the objects and the authority records (each in one single line):

UNIX:

```
saveqmgr -m QMgr -f /tmp/mq/qm_data.mqs -z /tmp/mq/qm_auth.sh
```

Windows:

```
saveqmgr.exe -m QMgr -f C:\temp\mq\qm_data.mqs -z C:\temp\mq\qm_auth.bat
```

+ Note on new feature in MQ 7.1: `dmpmqcfg`

The `dmpmqcfg` tool is new in MQ 7.1 and it is an alternative to the SupportPac MS03. Here are the main references from the MQ 7.1 Information Center.

<http://publib.boulder.ibm.com/infocenter/wmqv7/v7r1/index.jsp?topic=%2Fcom.ibm.mq.doc%2Ffa22720.htm>

WebSphere MQ > Reference > Administration reference > WebSphere MQ control commands > The control commands  
`dmpmqcfg`

<http://publib.boulder.ibm.com/infocenter/wmqv7/v7r1/topic/com.ibm.mq.doc/fa70251.htm>

WebSphere MQ > Configuring > Availability, recovery and restart > Backing up and restoring WebSphere MQ queue manager data  
Backing up queue manager configuration

+ Because the queue manager to be migrated is at MQ 7.0.x, you need to run the script that sets the running environment to MQ 7.0:

```
$ . set-mq-70.ksh
```

```
$ dspmqver
```

```
Name:    WebSphere MQ
Version: 7.0.1.9
```

+ Notice that the CMDLEVEL for the qmgr is 701:

```
$ runmqsc QM_MIG
```

```
display qmgr cmdlevel
```

```
1 : display qmgr cmdlevel
```

```
AMQ8408: Display Queue Manager details.
```

```
QMNAME(QM_MIG)          CMDLEVEL(701)
```

+ Notice that the qmstatus.ini has a short amount of information for QM\_MIG in the stanza " QueueManagerStatus":

```
$ cat /var/mqm/qmgrs/QM_MIG/qmstatus.ini
```

```
AuthorityData:
```

```
  Creator=mqm
```

```
QueueManagerStatus:
```

```
  CurrentStatus=Running
```

```
...
```

+ Stop the queue manager

```
$ endmqm -i QM_MIG
```

```
WebSphere MQ queue manager 'QM_MIG' ending.
```

```
WebSphere MQ queue manager 'QM_MIG' ended.
```



+ Issue dspmq and notice that the MQ 7.0 is recognizing this queue manager at a 7.0 level. Notice also that the queue managers at MQ 7.1 and 7.5 are not recognized "(Status not available)":

```

$ dspmq
QMNAME(QM_MIG)           STATUS(Ended immediately)
QMNAME(QM_701)           STATUS(Running)
QMNAME(QM_71)            STATUS(Status not available)
QMNAME(QM_75)            STATUS(Status not available)

```

+ Change the environment to run the MQ 7.5 commands

```
$ . set-mq-75.ksh
```

```

$ dspmqver
Name:      WebSphere MQ
Version:   7.5.0.0
Level:     p000-L120604
BuildType: IKAP - (Production)
Platform:  WebSphere MQ for Linux (x86 platform)
Mode:      32-bit
O/S:       Linux 2.6.27.54-0.2-pae
InstName:  Installation2
InstDesc:
InstPath:  /opt/mqm75
DataPath:  /var/mqm
Primary:   No
MaxCmdLevel: 750

```

- Display the status of the queue managers. Notice that the MQ 7.5 code is able to determine the status of the MQ 7.0 queue managers:

```

$ which dspmq
/opt/mqm75/bin/dspmq

```

```

$ dspmq
QMNAME(QM_MIG)           STATUS(Ended immediately)
QMNAME(QM_701)           STATUS(Running)
QMNAME(QM_71)            STATUS(Running)
QMNAME(QM_75)            STATUS(Running)

```

- Try to use the normal way to upgrade the queue manager to the most recent version:

```
$ strmqm QM_MIG
```

AMQ5691: Queue manager 'QM\_MIG' is associated with a different installation ('Installation0').

+ Notice that in the mqs.ini file, this queue manager QM\_MIG is NOT explicitly associated with an Installation. However, it is implicitly associated with Installation0. This is the complete stanzas for the queue managers in the /var/mqm/mqs.ini file:

QueueManager:

```
Name=QM_MIG
Prefix=/var/mqm
Directory=QM_MIG
```

QueueManager:

```
Name=QM_701
Prefix=/var/mqm
Directory=QM_701
```

QueueManager:

```
Name=QM_71
Prefix=/var/mqm
Directory=QM_71
InstallationName=Installation1
```

QueueManager:

```
Name=QM_75
Prefix=/var/mqm
Directory=QM_75
InstallationName=Installation2
```

+ Question:

What action needs to be done to associate the desired queue manager to the installation for MQ 7.5?

Answer:

Need to specify the new MQ 7.1 command "setmqm".

For more information see:

[http://publib.boulder.ibm.com/infocenter/wmqv7/v7r1/index.jsp?topic=%2Fcom.ibm.mq.doc%2Ffa16045 .htm](http://publib.boulder.ibm.com/infocenter/wmqv7/v7r1/index.jsp?topic=%2Fcom.ibm.mq.doc%2Ffa16045.htm)

WebSphere MQ > Reference > Administration reference > WebSphere MQ control commands > The control commands

Setmqm - Set the associated installation of a queue manager.

In this case, the command `setmqm` associates the desired queue manager (created under 7.0.1.9) with the MQ 7.5 installation:

```
$ /opt/mqm75/bin/setmqm -m QM_MIG -n Installation2
```

The `setmqm` command completed successfully.

- Next, trying to start the queue manager. Because this is the first time that the `strmqm` version 7.5 is being issued on a queue manager that a prior use with an older release (7.0.1.9), then it will do a migration:

```
$ strmqm QM_MIG
```

WebSphere MQ queue manager 'QM\_MIG' starting.

**The queue manager is associated with installation 'Installation2'.**

5 log records accessed on queue manager 'QM\_MIG' during the log replay phase.

Log replay for queue manager 'QM\_MIG' complete.

Transaction manager state recovered for queue manager 'QM\_MIG'.

Migrating objects for queue manager 'QM\_MIG'.

Default objects statistics : 9 created. 0 replaced. 0 failed.

**WebSphere MQ queue manager 'QM\_MIG' started using V7.5.0.0.**

- Notice that in the `/var/mqm/mqs.ini` file, the corresponding stanza for this queue manager `QM_MIG` has been updated to reflect the associated installation of MQ:

QueueManager:

Name=QM\_MIG

Prefix=/var/mqm

Directory=QM\_MIG

**InstallationName=Installation2**

- Notice the extra information in the `qmstatus.ini`

```
cat /var/mqm/qmgrs/QM_MIG/qmstatus.ini
```

AuthorityData:

Creator=mqm

QueueManagerStatus:

CurrentStatus=Running

PermitStandby=No

PermitFailover=Yes

PlatformSignature=20496

PlatformString=Linux 2.6.27.54-0.2-pae

**Version=7.5.0.0**

**MinimumRequiredVersion=7.5.0.0**

- Now display the attributes for the queue manager using runmqsc. Notice the CMDLEVEL and the new VERSION fields:

```
$ runmqsc QM_MIG
display qmgr cmdlevel version
1 : display qmgr cmdlevel version
AMQ8408: Display Queue Manager details.
QMNAME(QM_MIG)          CMDLEVEL(750)
VERSION(07050000)
```

- Notice also that a migrated queue manager will have the following new attributes under "DISPLAY QMGR":

```
ACTVCONO(DISABLED)    < - - New in 7.1
ACTVTRC(OFF)          < - - New in 7.1
CERTVPOL(ANY)         < - - New in 7.1
CHLAUTH(DISABLED)    < - - New in 7.1 feature is DISABLED for migrated Queue Mgr
                        But it is ENABLED for new Queue Managers
CUSTOM( )             < - - New in 7.1
DEFCLXQ(SCTQ)         < - - New in 7.5
PSCLUS(ENABLED)      < - - New in 7.1
SPLCAP(DISABLED)     < - - New in 7.5
SUITEB(NONE)         < - - New in 7.1
VERSION(07050000)    < - - New in 7.1
XRCAP(NO)            < - - New in 7.1
```

Note that a new queue manager created under MQ 7.1 or later will have:  
CHLAUTH(ENABLED)

For more information on the new attributes and queues, see the following technotes:

<http://www.ibm.com/support/docview.wss?rs=171&uid=swg21578742>

New MQ 7.1 and 7.5 attributes in DISPLAY QMGR for new or migrated queue managers

<http://www-01.ibm.com/support/docview.wss?uid=swg21608033>

New SYSTEM queues added in WebSphere MQ 7.1 and 7.5

```

+++++
+++ Chapter 7: Installing fix pack MQ 7.5.0.3
+++++

```

Note: Chapter added on February 2014.

This chapter describes the steps to install the fix pack 7.5.0.3 on top of the base 7.5.0.0 on a system that has multi-version installations of MQ.

For this scenario, there are other installed versions (7.0.1.x and 7.1.0.x) and the queue managers running under those other versions will NOT be stopped in order to demonstrate that you can continue using those other versions while performing maintenance activities for 7.5.x.x.

### ++ Need to stop the MQ 7.5 processes before installing the fix pack

The following section of the MQ 7.5 Information Center describes the steps to stop the MQ processes prior to performing maintenance to the MQ code (such as applying a fix pack).

[http://pic.dhe.ibm.com/infocenter/wmqv7/v7r5/index.jsp?topic=%2Fcom.ibm.mq.mig.doc%2Fq008050\\_.htm](http://pic.dhe.ibm.com/infocenter/wmqv7/v7r5/index.jsp?topic=%2Fcom.ibm.mq.mig.doc%2Fq008050_.htm)

WebSphere MQ > Migrating and upgrading > Maintenance tasks > Applying and removing maintenance level upgrades by platform  
 IBM WebSphere MQ information center, Version 7.5 Operating Systems: UNIX, Linux, Windows  
 Linux: Applying maintenance level updates on WebSphere MQ version 7.5

The first 3 steps describe the procedure for ending all MQ processes. Additional comments are included.

1. Log in as a user in group mqm.

1.a) If you created the shell script "set-mq-71.ksh" mentioned earlier in this document, then issue it:

```
. set-mq-75.ksh
```

b) If you did not create the script, then issue the following command:

```
. /opt/mqm75/bin/setmqenv -n Installation2
```

2. Stop all applications using the WebSphere MQ installation for 7.5.x
3. End all the activity of queue managers associated with the WebSphere MQ installation.
  - 3.a) Run the dspmq command to list the state of all the queue managers on the system.

```
$ dspmq
```

- 3.b) Run the MQSC command, DISPLAY LSSTATUS(\*) STATUS to list the status of listeners associated with a queue manager.

```
$ echo "DISPLAY LSSTATUS(*) STATUS" | runmqsc QmgrName
```

- 3.c) Run the endmqm command to stop each running queue manager associated with this installation.

In this case, the queue manager is stopped with the "immediate" flag

```
$ endmqm -i QmgrName
```

- 3.d) Stop any listeners associated with the queue managers, using the command:

```
$ endmqslr -m QMgrName
```

## ++ Downloading the fix pack

The following technote announces the fix pack 7.1.0.1 and provides links to the IBM Fix Central to download the appropriate filesets:

<http://www.ibm.com/support/docview.wss?rs=171&uid=swg27006037>

Recommended Fixes for WebSphere MQ

In particular for MQ 7.5.0.3, the link is:

<http://www-01.ibm.com/support/docview.wss?rs=171&uid=swg24036808>

WebSphere MQ V7.5 Fix Pack 7.5.0.3

In this scenario, the file set for 7.5.0.3 for Linux x86 32-bit was downloaded into the following directory:

```
rivera@veracruz: /downloads/mq/7.5.0.3
```

```
$ ls
```

```
7.5.0-WS-MQ-LinuxIA32-FP0003.tar.gz
```

You can issue the following command to extract the files:

```
tar -zxvf 7.5.0-WS-MQ-LinuxIA32-FP0003.tar.gz
```

Another choice is:

```
gunzip -c 7.5.0-WS-MQ-LinuxIA32-FP0003.tar.gz | tar -xvf -
```

You will see many files that are extracted:

```
MQSeriesAMS-U200440-7.5.0-3.i386.rpm
MQSeriesClient-U200440-7.5.0-3.i386.rpm
MQSeriesExplorer-U200440-7.5.0-3.i386.rpm
MQSeriesFTAgent-U200440-7.5.0-3.i386.rpm
MQSeriesFTBase-U200440-7.5.0-3.i386.rpm
MQSeriesFTLogger-U200440-7.5.0-3.i386.rpm
MQSeriesFTService-U200440-7.5.0-3.i386.rpm
MQSeriesFTTools-U200440-7.5.0-3.i386.rpm
MQSeriesGSKit-U200440-7.5.0-3.i386.rpm
MQSeriesJRE-U200440-7.5.0-3.i386.rpm
MQSeriesJava-U200440-7.5.0-3.i386.rpm
MQSeriesMan-U200440-7.5.0-3.i386.rpm
MQSeriesMsg_XXXX-U200440-7.5.0-3.i386.rpm (several filesets for message catalogs)
MQSeriesRuntime-U200440-7.5.0-3.i386.rpm
MQSeriesSDK-U200440-7.5.0-3.i386.rpm
MQSeriesSamples-U200440-7.5.0-3.i386.rpm
MQSeriesServer-U200440-7.5.0-3.i386.rpm
crtmqfp
readme
repackage
```

The following technote has links to different technotes that list the fixes addressed in a given fix pack.

<http://www.ibm.com/support/docview.wss?rs=171&uid=swg21254675>

Fixes by version for WebSphere MQ

The overall instructions are listed in the following web page from the MQ 7.5 Information Center:

[http://pic.dhe.ibm.com/infocenter/wmqv7/v7r5/index.jsp?topic=%2Fcom.ibm.mq.mig.doc%2Fq008050\\_.htm](http://pic.dhe.ibm.com/infocenter/wmqv7/v7r5/index.jsp?topic=%2Fcom.ibm.mq.mig.doc%2Fq008050_.htm)

WebSphere MQ > Migrating and upgrading > Maintenance tasks > Applying and removing maintenance level upgrades by platform  
IBM WebSphere MQ information center, Version 7.5 Operating Systems: UNIX, Linux, Windows

Linux: Applying maintenance level updates on WebSphere MQ version 7.5

The following is a summary of the steps:

1. Log in as root.
2. To find out which packages are installed on your machine, enter the following:

Notice that the list includes filesets for all versions and fix packs:

```
# rpm -qa | grep -i mq
MQSeriesJava-7.0.1-3
MQSeriesKeyMan-U849725-7.0.1-9
MQSeriesSDK_1-7.1.0-0
MQSeriesGSKit_1-U853049-7.1.0-2
MQSeriesJRE_2-7.5.0-0
MQSeriesFTLogger_2-7.5.0-0
MQSeriesJRE_2-U200355-7.5.0-1
MQSeriesFTService_2-U200355-7.5.0-1
MQSeriesSDK-U853084-7.0.1-10
MQSeriesServer_2-U200398-7.5.0-2
MQSeriesGSKit_2-U200398-7.5.0-2
MQSeriesGSKit_1-U855937-7.1.0-3
...
```

To filter the list for the MQ 7.5.0.x filesets, an extended command is used. The string to search for is "\_2" (underscore 2), because the number "2" was used originally when the MQ 7.5 "crtmqpkg 2" command was issued to indicate that the suffix for the MQ 7.5 files will be "\_2".

```
# rpm -qa | grep -i mq | grep _2
MQSeriesJRE_2-7.5.0-0
MQSeriesFTLogger_2-7.5.0-0
```



```
MQSeriesJRE_2-U200355-7.5.0-1
MQSeriesFTService_2-U200355-7.5.0-1
MQSeriesServer_2-U200398-7.5.0-2
MQSeriesGSKit_2-U200398-7.5.0-2
...
```

In this test scenario, the list from the previous command was still large and we need to narrow it down to a list of unique components. We can observe that the highest version.release.maintenance.level is 7.5.0.2, and thus, let's use this filter:

```
# rpm -qa | grep -i mq | grep "7.5.0.2"
MQSeriesServer_2-U200398-7.5.0-2
MQSeriesGSKit_2-U200398-7.5.0-2
MQSeriesJRE_2-U200398-7.5.0-2
MQSeriesFTLogger_2-U200398-7.5.0-2
MQSeriesJava_2-U200398-7.5.0-2
MQSeriesAMS_2-U200398-7.5.0-2
MQSeriesFTService_2-U200398-7.5.0-2
MQSeriesSDK_2-U200398-7.5.0-2
MQSeriesFTBase_2-U200398-7.5.0-2
MQSeriesClient_2-U200398-7.5.0-2
MQSeriesFTTools_2-U200398-7.5.0-2
MQSeriesSamples_2-U200398-7.5.0-2
MQSeriesRuntime_2-U200398-7.5.0-2
MQSeriesExplorer_2-U200398-7.5.0-2
MQSeriesFTAgent_2-U200398-7.5.0-2
MQSeriesMan_2-U200398-7.5.0-2
```

3. If this fixpack is to be upgraded on a installation which is not the first installation on the system, run the **crtmqfp** (not the **crtmqpkg**) command to create and use a unique set of packages to install on the system.

In order for the **crtmqfp** command to run on Linux, the **pax** command must be installed.

a) Enter the command “**crtmqfp suffix**” where suffix should be same as the suffix used during renaming of base level WebSphere MQ installation.

Note: In this case, the suffix is “2”:

Change to the directory where the MQ 7.5.0.3 tar.gz file was downloaded and extracted:

```
# cd /downloads/mq/7.5.0.3
```

Run the `crtmqfp` command.

**Note!!:** It will take few minutes for the utility to finish. It will display a set of # characters to indicate the progress.

Once it is finished, it will display a completion message.

```
+++ROOT+++ veracruz: /downloads/mq/7.5.0.3
# ./crtmqfp 2
Repackaging WebSphere MQ for "i386" using suffix "2"
#
```

**Wait several minutes** and you will see the information message “Repackaging complete”.

```
+++ROOT+++ veracruz: /downloads/mq/7101
# ./crtmqfp 2
Repackaging WebSphere MQ for "i386" using suffix "2"
#####
Repackaging complete - rpms are at "/var/tmp/mq_rpms/2/i386"
```

b) Set your current directory to the location specified when the `crtmqfp` command completes. This directory is a subdirectory of `/var/tmp/mq_rpms`, in which the unique set of packages is created. The packages have the suffix value contained within the filename.

```
# cd /var/tmp/mq_rpms/2/i386
```

Note that the list includes all other filesets for MQ 7.5 that were created by `crtmqfp`.

```
# ls
MQSeriesAMS_2-7.5.0-0.i386.rpm
MQSeriesAMS_2-U200440-7.5.0-3.i386.rpm
MQSeriesClient_2-7.5.0-0.i386.rpm
MQSeriesClient_2-U200440-7.5.0-3.i386.rpm
MQSeriesExplorer_2-7.5.0-0.i386.rpm
... (and many more)
```

It is necessary to narrow down the list for 7.5.0.3 and to eliminate the additional Message Catalog filesets, which are not installed in this exercise. The “-v” option for `grep` can be used to not include those entries that have “Msg” in the file name.

```
$ ls | grep "7.5.0.3" | grep -v "Msg"
MQSeriesAMS_2-U200440-7.5.0-3.i386.rpm
MQSeriesClient_2-U200440-7.5.0-3.i386.rpm
```

```
MQSeriesExplorer_2-U200440-7.5.0-3.i386.rpm
MQSeriesFTAgent_2-U200440-7.5.0-3.i386.rpm
MQSeriesFTBase_2-U200440-7.5.0-3.i386.rpm
MQSeriesFTLogger_2-U200440-7.5.0-3.i386.rpm
MQSeriesFTService_2-U200440-7.5.0-3.i386.rpm
MQSeriesFTTools_2-U200440-7.5.0-3.i386.rpm
MQSeriesGSKit_2-U200440-7.5.0-3.i386.rpm
MQSeriesJRE_2-U200440-7.5.0-3.i386.rpm
MQSeriesJava_2-U200440-7.5.0-3.i386.rpm
MQSeriesMan_2-U200440-7.5.0-3.i386.rpm
MQSeriesRuntime_2-U200440-7.5.0-3.i386.rpm
MQSeriesSDK_2-U200440-7.5.0-3.i386.rpm
MQSeriesSamples_2-U200440-7.5.0-3.i386.rpm
MQSeriesServer_2-U200440-7.5.0-3.i386.rpm
```

4. To install on non-default location, use the “rpm --prefix” option and specify the location. In this case, the non-default location is /opt/mqm75.

```
# rpm --prefix /opt/mqm75 -ivh \
MQSeriesAMS_2-U200440-7.5.0-3.i386.rpm
MQSeriesClient_2-U200440-7.5.0-3.i386.rpm
MQSeriesExplorer_2-U200440-7.5.0-3.i386.rpm
MQSeriesFTAgent_2-U200440-7.5.0-3.i386.rpm
MQSeriesFTBase_2-U200440-7.5.0-3.i386.rpm
MQSeriesFTLogger_2-U200440-7.5.0-3.i386.rpm
MQSeriesFTService_2-U200440-7.5.0-3.i386.rpm
MQSeriesFTTools_2-U200440-7.5.0-3.i386.rpm
MQSeriesGSKit_2-U200440-7.5.0-3.i386.rpm
MQSeriesJRE_2-U200440-7.5.0-3.i386.rpm
MQSeriesJava_2-U200440-7.5.0-3.i386.rpm
MQSeriesMan_2-U200440-7.5.0-3.i386.rpm
MQSeriesRuntime_2-U200440-7.5.0-3.i386.rpm
MQSeriesSDK_2-U200440-7.5.0-3.i386.rpm
MQSeriesSamples_2-U200440-7.5.0-3.i386.rpm
MQSeriesServer_2-U200440-7.5.0-3.i386.rpm
```

Another version of the above command is to include all the filesets in a single line:

```
# rpm --prefix /opt/mqm75 -ivh MQSeriesAMS_2-U200440-7.5.0-3.i386.rpm
MQSeriesClient_2-U200440-7.5.0-3.i386.rpm MQSeriesExplorer_2-U200440-7.5.0-
3.i386.rpm MQSeriesFTAgent_2-U200440-7.5.0-3.i386.rpm MQSeriesFTBase_2-
U200440-7.5.0-3.i386.rpm MQSeriesFTLogger_2-U200440-7.5.0-3.i386.rpm
MQSeriesFTService_2-U200440-7.5.0-3.i386.rpm MQSeriesFTTools_2-U200440-
7.5.0-3.i386.rpm MQSeriesGSKit_2-U200440-7.5.0-3.i386.rpm MQSeriesJRE_2-
U200440-7.5.0-3.i386.rpm MQSeriesJava_2-U200440-7.5.0-3.i386.rpm
MQSeriesMan_2-U200440-7.5.0-3.i386.rpm MQSeriesRuntime_2-U200440-7.5.0-
3.i386.rpm MQSeriesSDK_2-U200440-7.5.0-3.i386.rpm MQSeriesSamples_2-
U200440-7.5.0-3.i386.rpm MQSeriesServer_2-U200440-7.5.0-3.i386.rpm
```

Notes:

- You must apply all packages in a maintenance update that correspond to those packages that are currently installed on your system.

You will see a similar output that shows the installation progress.

+ begin excerpt

```
Preparing... ##### [100%]
 1:MQSeriesRuntime_2-U2004##### [ 6%]
 2:MQSeriesJRE_2-U200440 ##### [ 13%]
 3:MQSeriesJava_2-U200440 ##### [ 19%]
 4:MQSeriesFTBase_2-U20044##### [ 25%]
 5:MQSeriesServer_2-U20044##### [ 31%]
```

After the installation of this fix pack has completed, run the '/opt/mqm75/bin/mqconfig' command, using the 'mqm' user ID.

For example, execute the following statement when running as the 'root' user:

```
su mqm -c "/opt/mqm75/bin/mqconfig"
```

The 'mqconfig' command validates that the system configuration satisfies the requirements for WebSphere MQ, and ensures that the settings for the 'mqm' user ID are suitably configured. Other WebSphere MQ administrators in the 'mqm' group can run this command to ensure their user limits are also properly configured to use WebSphere MQ.

If 'mqconfig' indicates that any of the requirements have not been met, consult the installation section within the WebSphere MQ Information Center

for details about how to configure the system and user limits.

```

6:MQSeriesFTAgent_2-U2004##### [ 38%]
7:MQSeriesAMS_2-U200440 ##### [ 44%]
8:MQSeriesClient_2-U20044##### [ 50%]
9:MQSeriesExplorer_2-U200##### [ 56%]
10:MQSeriesFTLogger_2-U200##### [ 63%]
11:MQSeriesFTService_2-U20##### [ 69%]
12:MQSeriesFTTools_2-U2004##### [ 75%]
13:MQSeriesGSKit_2-U200440##### [ 81%]
14:MQSeriesMan_2-U200440 ##### [ 88%]
15:MQSeriesSDK_2-U200440 ##### [ 94%]
16:MQSeriesSamples_2-U2004##### [100%]

```

+ end excerpt

6. Repeat step 2, and you will see that the Runtime, SDK and Server packages are now at level 7.5.0.3:

```

# rpm -qa | grep -i mq | grep "7.5.0.3"
MQSeriesJava_2-U200440-7.5.0-3
MQSeriesFTService_2-U200440-7.5.0-3
MQSeriesFTAgent_2-U200440-7.5.0-3
MQSeriesMan_2-U200440-7.5.0-3
MQSeriesRuntime_2-U200440-7.5.0-3
MQSeriesServer_2-U200440-7.5.0-3
MQSeriesExplorer_2-U200440-7.5.0-3
MQSeriesGSKit_2-U200440-7.5.0-3
MQSeriesFTBase_2-U200440-7.5.0-3
MQSeriesClient_2-U200440-7.5.0-3
MQSeriesFTTools_2-U200440-7.5.0-3
MQSeriesSamples_2-U200440-7.5.0-3
MQSeriesAMS_2-U200440-7.5.0-3
MQSeriesSDK_2-U200440-7.5.0-3
MQSeriesJRE_2-U200440-7.5.0-3
MQSeriesFTLogger_2-U200440-7.5.0-3

```

7. Logoff as root

**++ Upgrading a queue manager 7.5.0.0 to 7.5.0.3**

- Logon as an MQ administrator.
- Setup the MQ environment to the installation that corresponds to 7.5.0.0.

a) If you created the shell script "set-mq-75.ksh" mentioned earlier in this document, then issue it:

```
$ . set-mq-75.ksh
```

b) If you did not create the script, then issue the following command:

```
rivera@veracruz: /home/rivera
$ . /opt/mqm75/bin/setmqenv -n Installation2
```

- Verify that dspmqver shows that the level is fix pack 7.5.0.3:

```
$ dspmqver
Name:      WebSphere MQ
Version:   7.5.0.3
Level:     p750-003-140123
BuildType: IKAP - (Production)
Platform:  WebSphere MQ for Linux (x86 platform)
Mode:      32-bit
O/S:       Linux 2.6.27.54-0.2-pae
InstName:  Installation2
InstDesc:
Primary:   No
InstPath:  /opt/mqm75
DataPath:  /var/mqm
MaxCmdLevel: 750
LicenseType: Production
```

- Start the desired MQ 7.5 queue manager (created under 7.5.0.0). The first strmqm command after applying the fix pack will identify that the queue manager was most recently used with level 7.5.0.0 and the code will upgrade it to 7.5.0.3:

```
$ strmqm QM_75
```

```
WebSphere MQ queue manager 'QM_75' starting.
```

```
The queue manager is associated with installation 'Installation2'.
```

```
5 log records accessed on queue manager 'QM_75' during the log replay phase.
```

Log replay for queue manager 'QM\_75' complete.  
Transaction manager state recovered for queue manager 'QM\_75'.  
WebSphere MQ queue manager 'QM\_75' started using V7.5.0.3.

- Verify that the level of the queue manager is now 7.5.0.3:

```
$ runmqsc QM_75
display qmgr version
  2 : display qmgr version
AMQ8408: Display Queue Manager details.
  QMNAME(QM_75)                VERSION(07050003)
```

Notice that the value in the attribute VERSION needs to be interpreted as with dots separating every 2<sup>nd</sup> digit:

07.05.00.03

+++ end +++