How to look at the MQ scripts used by rpm during installation (if the script creates the user mqm the home directory is /var/mqm)

https://www.ibm.com/support/pages/node/6569933

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+++ Objective

To provide the steps to look at the MQ scripts that are provided with the MQ *.rpm files that are used by the Linux administration tool “rpm” during installation or uninstallation.

One common question is the following:
If the user “mqm” and group “mqm” do not exist in the server, then the installation of the MQ filesets will automatically create them: what are the Linux administration commands that are used? What is the “home directory” of the newly created user “mqm”?

A Best Practice with MQ is for the superuser “root” to create the group “mqm” and user “mqm” with the same characteristics (number id) across all the servers in the enterprise. For example, the userid for mqm could be 501 and the groupid for mqm could be 500. This will facilitate the use of MQ “multi-instance” because it is required that the SAME userid/groupid across the servers used for this feature.

However, if the group “mqm” and user “mqm” do NOT exist, then at the time of installing MQ, the installation scripts will notice the absence of these ids, and will ask the operating system to create them using some defaults, and the next available numeric id. Thus, you will not be able to ensure the desired groupid and userid.

The script from MQSeriesRuntime that handles the creation (if needed) of the group and user is:

```
runtime_preinstall.sh
```

Here are the commands:

```
  groupadd mqm
  useradd -r -d /var/mqm -g mqm mqm
  usermod -G mqm mqm
```

Notice that the Home Directory is: /var/mqm

Here are the flags used by useradd:

```
-r, --system
           Create a system account.-d home Directory

-d, --home-dir HOME_DIR
           The new user will be created using HOME_DIR as the value for the
           user's login directory. The default is to append the LOGIN name to
           BASE_DIR and use that as the login directory name.

-g, --gid GROUP
           The group name or number of the user's initial login group.
```

Here is the flag used by usermod:

```
-G, --groups GROUP1[,GROUP2,...[,GROUPN]]]
           A list of supplementary groups which the user is also a member of.
```

+++ Details

The first MQ fileset that must be installed (and the last to be uninstalled) is:
MQSeriesRuntime

Let's use the example for MQ 9.2.5 CD to provide concrete examples.

Step 1: Extract the scripts

Go to the directory where the MQ tar.gz installation file was downloaded from IBM Passport Advantage.

```
ROOT+++ aztlan1.fyre.ibm.com: /
# cd /downloads/mq925
```

Unpack the tar.gz file:

```
ROOT+++ aztlan1.fyre.ibm.com: /
# tar -zxvf IBM_MQ_9.2.5_LINUX_X86-64.tar.gz
```

The unpacked files will be extracted into a new subdirectory: MQServer
Go inside that new directory.

```
ROOT+++ aztlan1.fyre.ibm.com: /downloads/mq925
# cd MQServer

The file of interest is the one for the Runtime:

ROOT+++ aztlan1.fyre.ibm.com: /downloads/mq925/MQServer
# ls -l MQSeriesRuntime*
-r--r--r-- 1 bin bin 15180244 Feb  7 11:14 MQSeriesRuntime-9.2.5-0.x86_64.rpm

The following Linux rpm command will extract the scripts that are embedded/shipped with
the MQ rpm file.
The scripts will be stored in a target file.

# rpm -qp --scripts MQSeriesRuntime-9.2.5-0.x86_64.rpm > scripts.runtime.mq925.txt
warning: MQSeriesRuntime-9.2.5-0.x86_64.rpm: Header V3 RSA/SHA256 Signature, key ID
0209b828: NOKEY
```

Step 2: Take a look at the scripts

The single text file obtained from Step 1 will show the following sections:

preinstall scriptlet (using /bin/sh):
preinstall.sh
Common Preinstallation script for all packages
Check that this package is not being installed to a location where
a different VR exists

runtime_preinstall.sh
Preinstallation script for MQSeriesRuntime package
Check for mqm group and user
Set up environment variables

runtime_postinstall.sh
Postinstallation script for MQ
Create the top-level data files / directories required for MQ

check_acceptance.sh
Checks to see if the license agreement has been accepted and
display a message if it hasn't telling the customer to view the license.

uninstall_servercheck.sh
Pre-uninstallation script
Checks for already running Q Managers, and if it finds one, stops the
uninstall.
If amqiclen exists (should do during uninstall) then run it to clean up
IPCC resources. If amqiclen returns an error then a queue manager is still
running so stop the uninstall.

uninstall_fixpack_check.sh
Pre-uninstallation check script for all components
A check is performed to see if there are any fixpack filesets applied to
the base component which is currently being uninstalled. If the fixpack
has been applied, the uninstallation of this component is aborted to prevent
the situation where the base fileset has been uninstalled leaving an
uninstallable fixpack.

runtime_preuninstall.sh
Pre uninstallation script

postuninstall scriptlet (using /bin/sh):
runtime_postuninstall.sh
Post uninstallation script

Step 3: Linux “userAdd” is used to create, if needed, the user “mqm”

The script that creates, if needed, the group “mqm” and user “mqm” is:

runtime_preinstall.sh

Here is the excerpt:

```
create_mqm_group()
{
  echo "Creating group mqm"
  ErrorText=`groupadd mqm 2>&1`
  RC=$?
  if [ $RC -ne 0 ]; then
    echo "ERROR:  Failed to add 'mqm' group:" >&2
    echo $ErrorText >&2
    exit $RC
  fi
}

# Determine if the user id "mqm" exists, and is in the group mqm
ErrorText=`id -u mqm 2>&1`
RC=$?
if [ $RC -ne 0 ]; then
  echo "Creating user mqm"
  ErrorText=`useradd -r -d /var/mqm -g mqm mqm 2>&1`
  RC=$?
  if [ $RC -ne 0 ]; then
    echo "ERROR:  Failed to add 'mqm' user:" >&2
    echo $ErrorText >&2
    exit $RC
  fi
else    # Check the user mqm is in the group mqm
  ErrorText=`id -Gn mqm | grep -w mqm 2>&1`
  if [ $? -ne 0 ]; then
    ErrorText=`usermod -G mqm mqm 2>&1`
    if [ $RC -ne 0 ]; then
      echo "ERROR:  Failed to add user mqm to group mqm:" >&2
      echo $ErrorText >&1
      echo $RC
    fi
```

+++ end