Uninstalling only 1 fix pack for MQ in AIX and leaving behind other previous fix packs

https://www.ibm.com/support/pages/node/6464857

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+++ Objective

To provide the instructions for uninstalling only 1 fix pack for MQ on AIX.

As of 17-Jun-2021, our online manual for MQ provides a short AIX command and short usage of smitty, that will uninstall at the same time ALL the fix packs for MQ applied in that server.

https://www.ibm.com/docs/en/ibm-mq/9.1?topic=linux-reverting-previous-maintenance-level-aix
IBM MQ / 9.1 /
Reverting to the previous maintenance level on AIX

The instructions do not address the removal of ONLY ONE (which needs to be the LATEST) of the fix pack and leaving behind any other fix packs.

The purpose for this document is to provide the procedure for addressing this scenario, using installp.
Note: I could not find a way to do it via smitty. Perhaps there is a way, but it was not clear to me how to do it.

For example, customer has installed in AIX:
MQ 9.1.0.0 base
MQ 9.1.0.7 fix pack
MQ 9.1.0.8 fix pack

The instructions in the manual for MQ are simple and address the uninstallation of BOTH 9.1.0.7 and 9.1.0.8:

```
installp -r "mqm*"
```

The result is:
MQ 9.1.0.0 base

Notice that no fix packs are left behind.
Some customers want to be more selective on the uninstallation of the fix packs and uninstall one fix pack at a time.
For example, the fix pack 9.1.0.8 should be uninstalled, but fix pack 9.1.0.7 should be left behind:
MQ 9.1.0.0 base
MQ 9.1.0.7 fix pack

+++ AIX Manual

Let's start by looking at the AIX online manual for the "installp" command:

https://www.ibm.com/docs/en/aix/7.2?topic=i-installp-command
AIX / 7.2 / installp Command

For the description of the -r flag for installp, this is the one that "rejects" fix packs (that is the AIX term for uninstalling fix packs)

-r Rejects all specified software updates that are currently applied but not committed.

The easiest way to invoke it, is the one shown in our online manual for MQ, which means, uninstall ALL the Fix Packs! It is a "brute force" approach and it works fine if there is only 1 fix pack, or if the customer wants to remove all the fix packs at once.

```
installp -r "mqm*"
```

The AIX manual has the following full listing for the -r option:

To Reject Applied Updates
installp [-R path] -r [-eLogFile] [-VNumber] [-b] [-g] [-p] [-v] [-X] [-O { [r] [s] [u] }] [-w] { FilesetName [Level]... | -f ListFile }

I noticed that the LAST parameter is something that could be helpful:

-f ListFile Reads the names of the software products from ListFile.
If ListFile is a - (dash), it reads the list of names from the standard input.
Software fileset names, optionally followed by a level, should be one per line of text, and any text following the second set of white spaces or tabs on a line is ignored.
Output from the installp -l command is suitable for input to this flag.

It seems that we need to get a text file that is generated by "installp -l". But how?

The AIX manual shows the invocation for installp -l

To List All Installable Software on Media
installp { -l | -L } [-eLogFile] [-d Device] [-B] [-I] [-q] [-E] [-zBlockSize] [-O { [s] [u] }]

I gave it a try and the following procedure was successful in removing ONLY the LATEST fix pack (9.1.0.8), and leaving intact the previous fix pack (9.1.0.7) and the base (9.1.0.0).

Of course, the principles apply to USIL (by using the -R usil-directory) and to other MQ version.release.fixpacks.

+++ Steps

1) Use "lslpp" to find out the base and fix packs (AIX terminology: "updates") that have been installed for MQ 9.1. Notice that there are 3 levels:
  9.1.0.0 (which is the base)
  9.1.0.7 (which is the 1st fix pack applied)
  9.1.0.8 (which is the 2nd fix pack applied)

lslpp -la "mqm*"

```
+-----------------------------------------------------------------------------+
INSTALL ROOT PATH  = /
+-----------------------------------------------------------------------------+

  Fileset                  Level  State      Description
  ----------------------------------------------------------------------------
Path: /usr/lib/objrepos
  mqm.amqp.rte             9.1.0.0  COMMITTED  IBM MQ AMQP Service
                     9.1.0.7  APPLIED    IBM MQ AMQP Service
                     9.1.0.8  APPLIED    IBM MQ AMQP Service
  mqm.ams.rte              9.1.0.0  COMMITTED  IBM MQ Advanced - Advanced
                                       Message Security
                     9.1.0.7  APPLIED    IBM MQ Advanced - Advanced
                                       Message Security
                     9.1.0.8  APPLIED    IBM MQ Advanced - Advanced
                                       Message Security
  mqm.base.runtime         9.1.0.0  COMMITTED  IBM MQ Runtime for Client and
                                       Server
                     9.1.0.7  APPLIED    IBM MQ Runtime for Client and
                                       Server
                     9.1.0.8  APPLIED    IBM MQ Runtime for Client and
                                       Server
```

2) Go to the original directory where the MQ AIX tar.Z file with the fix pack code that was downloaded from IBM Passport Advantage was stored in the machine and unpacked.

In my test, I went to:
  cd /downloads/mq9108

which is where I downloaded the file for MQ 9.1.0.8
  9.1.0-IBM-MQ-AixPPC64-FP0008.tar.Z

```
+++ROOT+++ aglet: /downloads/mq9108
# ls
.toc                            mqm.msg.Zh_CN.9.1.0.8.U202341
9.1.0-IBM-MQ-AixPPC64-FP0008.tar    mqm.msg.Zh_TW.9.1.0.8.U202343
mq9108.installpl.txt                mqm.msg.cs_CZ.9.1.0.8.U202327
mqm.amqp.rte.9.1.0.8.U202313        mqm.msg.de_DE.9.1.0.8.U202328
mqm.ams.rte.9.1.0.8.U202312         mqm.msg.en_US.9.1.0.8.U202329
mqm.base.runtime.9.1.0.8.U202314    mqm.msg.es_ES.9.1.0.8.U202330
mqm.base.samples.9.1.0.8.U202315    mqm.msg.fr_FR.9.1.0.8.U202331
mqm.base.sdk.9.1.0.8.U202316        mqm.msg.hu_HU.9.1.0.8.U202332
mqm.client.rte.9.1.0.8.U202317      mqm.msg.it_IT.9.1.0.8.U202333
```

```
mqm.ft.agent.9.1.0.8.U202318        mqm.msg.ja_JP.9.1.0.8.U202334
mqm.ft.base.9.1.0.8.U202319         mqm.msg.ko_KR.9.1.0.8.U202336
mqm.ft.logger.9.1.0.8.U202320       mqm.msg.pl_PL.9.1.0.8.U202337
mqm.ft.service.9.1.0.8.U202321      mqm.msg.pt_BR.9.1.0.8.U202338
mqm.ft.tools.9.1.0.8.U202322        mqm.msg.ru_RU.9.1.0.8.U202339
mqm.gskit.rte.9.1.0.8.U202323       mqm.msg.zh_CN.9.1.0.8.U202340
mqm.java.rte.9.1.0.8.U202324        mqm.msg.zh_TW.9.1.0.8.U202342
mqm.jre.rte.9.1.0.8.U202325         mqm.server.rte.9.1.0.8.U202344
mqm.man.en_US.data.9.1.0.8.U202326  mqm.web.rte.9.1.0.8.U202346
mqm.msg.Ja_JP.9.1.0.8.U202335       mqm.xr.service.9.1.0.8.U202345
```

3) Issue the following command to get a text file that will be used later in the procedure.

```
# installp -l -d /downloads/mq9108 > mq9108.installpl.txt
```

The output text file will look like the following (showing only the first 10 lines)

```
  Fileset Name                 Level                      I/U Q Content
  ============================================================================
  mqm.amqp.rte                 9.1.0.8                     S  N usr      (R)
#   IBM MQ AMQP Service

  mqm.ams.rte                  9.1.0.8                     S  N usr      (R)
#   IBM MQ Advanced - Advanced Message Security

  mqm.base.runtime             9.1.0.8                     S  N usr,root (R)
#   IBM MQ Runtime for Client and Server

  mqm.base.samples             9.1.0.8                     S  N usr      (R)
#   IBM MQ Samples
```

4) Use the output file obtained from step 3 as input to installp -r
Notice that there will be around 30-40 blank lines following "Verifying selections..." and it took awhile. This confused me, but I waited patiently and installp started to produce something a bit more meaningful.

```
# installp -r -f mq9108.installpl.txt
+-----------------------------------------------------------------------------+
                        Pre-reject Verification...
+-----------------------------------------------------------------------------+
Verifying selections...

(there are many blank lines that do not show data in my test, and which were confusing)

done
Verifying requisites...done
Results...

SUCCESSES
---------
  Filesets listed in this section passed pre-reject verification
  and will be rejected.

  Selected Filesets
  -----------------
```

```
  mqm.amqp.rte 9.1.0.8                      # IBM MQ AMQP Service
  mqm.ams.rte 9.1.0.8                       # IBM MQ Advanced - Advanced M...
  mqm.base.runtime 9.1.0.8                  # IBM MQ Runtime for Client an...

... (Skipping a lot of lines and only showing few lines of the final summary at the end)
    (Notice that the result column says SUCCESS)

+-----------------------------------------------------------------------------+

Installation Summary
--------------------
Name                        Level           Part        Event       Result
-------------------------------------------------------------------------------
mqm.amqp.rte                9.1.0.8         USR         REJECT      SUCCESS
mqm.ams.rte                 9.1.0.8         USR         REJECT      SUCCESS
mqm.base.runtime            9.1.0.8         ROOT        REJECT      SUCCESS
```

5) List again the installed MQ filesets and notice that the ones for MQ 9.1.0.8 are no longer included!

```
# lslpp -la "mqm*"
  Fileset                      Level  State      Description
  ----------------------------------------------------------------------------
Path: /usr/lib/objrepos
  mqm.amqp.rte               9.1.0.0  COMMITTED  IBM MQ AMQP Service
                             9.1.0.7  APPLIED    IBM MQ AMQP Service
  mqm.ams.rte                9.1.0.0  COMMITTED  IBM MQ Advanced - Advanced
                                                 Message Security
                             9.1.0.7  APPLIED    IBM MQ Advanced - Advanced
                                                 Message Security
  mqm.base.runtime           9.1.0.0  COMMITTED  IBM MQ Runtime for Client and
                                                 Server
                             9.1.0.7  APPLIED    IBM MQ Runtime for Client and
                                                 Server
```

+++ end