

Errors that are generated when using default IBM MQ AUTHTYPE(IDPWOS), when a userid is longer than 12 characters in Linux

<https://www.ibm.com/support/pages/node/7025135>

Date last updated: 10-Aug-2023

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+++ Objective +++

You are using IBM MQ with the default CONNAUTH(SYSTEM.DEFAULT.AUTHINFO.IDPWOS) and the corresponding AUTHINFO has AUTHTYPE(IDPWOS), which means that the local userids and local groups are going to be used for the authentication for using IBM MQ.

When using local userids and groups, there is a limit that the userids CANNOT be longer than 12 characters. That is, 12 characters is the maximum.

You want to know what happens when using userids with more than 12 characters?

+++ Background +++

<https://www.ibm.com/docs/en/ibm-mq/9.3?topic=application-user-ids>

IBM MQ / 9.3

User IDs

When you create user IDs for client applications, the user IDs must not be longer than the maximum permitted length.

- On z/OS®, AIX® and Linux®, [the maximum length of a user ID is 12 characters.](#)
- On IBM i, [the maximum length of a user ID is 10 characters.](#)
- On Windows, if both the IBM MQ MQI client and the IBM MQ server are on Windows, and the server has access to the domain on which the client user ID is defined, the maximum length of a user ID is 20 characters.
 - However, if the IBM MQ server is not a Windows server, the user ID is truncated to 12 characters.

- If you use the MQCSP structure to pass credentials, the maximum length of a user ID is 1024 characters. [The MQCSP structure user ID cannot be used to circumvent the maximum userid length used by IBM MQ for authorization.](#)

For more information about the MQCSP structure, see:

https://www.ibm.com/docs/en/SSFKSJ_9.3.0/secure/q013310_.html

IBM MQ / 9.3

Identifying and authenticating users using the MQCSP structure.

+++ DETAILS +++

This techdoc explores several scenarios when trying to use a userid that is longer than 12 characters in Linux and the FDCs that are generated and the error entries in the error log of the queue manager.

The scenarios are:

Scenario 1: MQ Admin tries to use setmqaut -p with long userid

Scenario 2: Local long userid logs in and issues setmqenv

Scenario 3: Local Long userid logs in and issues dspmqver

Scenario 4: local long userid, amqsput (local bindings)

Scenario 5: Long userid from another host, using amqsputc (client connection), NOT using MQCSP

Scenario 6: Long userid from another host, using amqsputc (client connection), specifying MQSAMP_USER_ID to use MQCSP connection security parameters structure in MQCONN

++ Configuration

+ Two RHEL 8.8 VMs are used during the tests.

Linux Host of MQ client: suvereto1

MQ Version: 9.2.0.6

Red Hat Enterprise Linux release 8.6 (Ootpa)

Linux Host of queue manager: riggioni1

Red Hat Enterprise Linux release 8.6 (Ootpa)

MQ Version: 9.3.3.0

+ The Queue manager is created with the defaults

Queue manager name: QMTEST93, port 1416

export MQSERVER='SYSTEM.DEF.SVRCONN/TCP/riggioni1(1416)'

Default settings for the queue manager:

```
display qmgr connauth
```

```
AMQ8408I: Display Queue Manager details.
```

```
QMNAME(QMTEST93)
```

```
CONNAUTH(SYSTEM.DEFAULT.AUTHINFO.IDPWOS)
```

```
display authinfo(SYSTEM.DEFAULT.AUTHINFO.IDPWOS)
```

```
AMQ8566I: Display authentication information details.
```

```
AUTHINFO(SYSTEM.DEFAULT.AUTHINFO.IDPWOS)
```

```
AUTHTYPE(IDPWOS)
```

```
ADOPTCTX(YES)
```

```
DESCR( )
```

```
CHCKCLNT(REQDADM)
```

CHCKLOCL(OPTIONAL)
AUTHENMD(OS)

FAILDLAY(1)

Long Userid/password with 17 characters and a password of 15 characters.
User ONLY belongs to group "mquser"

```
12345678901234567  
longuserid17chars
```

```
123456789012345  
LongPassword15-
```

The command to create the userid was:

```
useradd -g mquser -s /bin/bash -d /home/longuserid17chars -m  
longuserid17chars
```

Login with long userid:

```
longuserid17chars@riggioni1.fyre.ibm.com: /home/longuserid17chars  
$ id  
uid=1034(longuserid17chars) gid=1005(mquser) groups=1005(mquser)
```

++ Scenario 1: MQ Admin tries to use setmqaut -p with long userid

Result: error message, no changes to the authorization, no FDCs, no entries in error log

```
mqm@riggioni1.fyre.ibm.com: /var/mqm/errors  
$ setmqaut -m QMTEST93 -t qmgr -p longuserid17chars +connect +inq +dsp  
AMQ7026E: A principal or group name was invalid.
```

No FDCs were generated.

No entries in the error log of the qmgr

++ Scenario 2: Local long userid logs in and issues setmqenv

Result: setmqenv completes fine, but 3 FDCs are generated.

Same behavior in both hosts: the host that has the queue manager and the host for the remote MQ client.

```
longuserid17chars@riggioni1.fyre.ibm.com: /home/longuserid17chars
$ . /opt/mqm/bin/setmqenv -n Installation1
```

The command is successful: the MQ environment variables are set.

But there are 3 FDCs with same probeid:

Notice that the FDC for the MQ command executed by the long userid is owned by the long userid.

```
$ ls -lt
```

```
-rw-r----- 1 longuserid17chars mqm 68974 Aug 10 05:51 AMQ136629.0.FDC
-rw-rw-r-- 1 mqm          mqm 537605 Aug 10 05:51 AMQERR01.LOG
-rw-r----- 1 mqm          mqm 58823 Aug 10 05:51 AMQ136632.0.FDC
-rw-r----- 1 mqm          mqm 58590 Aug 10 05:51 AMQ136631.0.FDC
```

```
AMQ136631.0.FDC 2023/08/10 05:51:15.216496-7 9.3.3.0 Installation1 amqxmsg0 136631
ProcessInit XY051169 InitPrivateServices xecI_S_NOT_AUTHORIZED OK
AMQ136632.0.FDC 2023/08/10 05:51:15.243682-7 9.3.3.0 Installation1 amqxmsg0 136632
ProcessInit XY051169 InitPrivateServices xecI_S_NOT_AUTHORIZED OK
AMQ136629.0.FDC 2023/08/10 05:51:15.261883-7 9.3.3.0 Installation1 crtmqenv 136629 1
ProcessInit XY051169 InitPrivateServices xecI_S_NOT_AUTHORIZED OK
```

```
| Probe Id      :- XY051169
| Component     :- InitPrivateServices
| Effective UserID :- 0 ()
| Real UserID   :- 0 ()
| Program Name  :- crtmqenv
| Arguments     :- -z -n Installation1
| Thread Name   :- ProcessInit
| Major Errorcode :- xecI_S_NOT_AUTHORIZED
| Minor Errorcode :- OK
| Probe Type    :- INCORROUT
| Probe Severity :- 1
| Probe Description :- AMQ6125E: An internal IBM MQ error has occurred.
| FDCSequenceNumber :- 0
| Arith1        :- 2 (0x2)
| Comment1      :- xcsGetpwuid got password entry with user name too long |
| (more than 13 characters).
```

```
| Comment2      :- Details: getuid() returned 1034; getpwuid_r(1034) |
| found user name "longuserid17chars".                               |
| Comment3      :- A user name of "UNKNOWN" will be used, which will |
| likely cause later authorisation failures. Note this FFST can be turned |
| off by exporting env var AMQ_NOFFST_PROCESS_UID.                   |
```

++ Scenario 3: Local long userid logs in and issues dspmqver

Same behavior as in:

Scenario 2: Local Long userid logs in and issues setmqenv

Result: dspmqver completes fine, but 3 FDCs are generated.

Same behavior in both hosts: the host that has the queue manager and the host for the remote MQ client.

```
longuserid17chars@riggioni1.fyre.ibm.com: /home/longuserid17chars
$ dspmqver
Name:      IBM MQ
Version:   9.3.3.0
Level:     p933-L230531
BuildType: IKAP - (Production)
Platform:  IBM MQ for Linux (x86-64 platform)
...
```

The command is successful.

But there are 3 FDCs with same probeid:

```
AMQ136724.0.FDC 2023/08/10 05:54:29.662223-7 9.3.3.0 Installation1 amqxmsg0 136724
ProcessInit XY051169 InitPrivateServices xecI_S_NOT_AUTHORIZED OK
AMQ136725.0.FDC 2023/08/10 05:54:29.688775-7 9.3.3.0 Installation1 amqxmsg0 136725
ProcessInit XY051169 InitPrivateServices xecI_S_NOT_AUTHORIZED OK
AMQ136723.0.FDC 2023/08/10 05:54:29.707517-7 9.3.3.0 Installation1 dspmqver 136723 1
ProcessInit XY051169 InitPrivateServices xecI_S_NOT_AUTHORIZED OK
```

+ Scenario 4: local long userid, amqsput (local bindings)

In the host of the queue manager, login as the long user id and execute amqsput (local bindings)

```
longuserid17chars@riggioni1.fyre.ibm.com: /home/longuserid17chars
$ amqsput Q1 QMTEST93
Sample AMQSPUTO start
MQCONN ended with reason code 2035
```

```
mqm@riggioni1.fyre.ibm.com: /var/mqm/qmgrs/QMTEST93/errors
$ ls
AMQERR01.LOG
```

No entries in the error log for the queue manager.

But in /var/mqm/errors we got 3 FDCs, the last one for amqsput

```
AMQ136951.0.FDC 2023/08/10 07:02:55.855713-7 9.3.3.0 Installation1 amqxmsg0 136951
ProcessInit XY051169 InitPrivateServices xecI_S_NOT_AUTHORIZED OK
AMQ136952.0.FDC 2023/08/10 07:02:55.884032-7 9.3.3.0 Installation1 amqxmsg0 136952
ProcessInit XY051169 InitPrivateServices xecI_S_NOT_AUTHORIZED OK
AMQ136950.0.FDC 2023/08/10 07:02:55.904853-7 9.3.3.0 Installation1 amqsput 136950 1
ProcessInit XY051169 InitPrivateServices xecI_S_NOT_AUTHORIZED OK
```

+ Scenario 5: Long userid from another host, using amqsputc (client connection), NOT using MQCSP

```
export MQSERVER='SYSTEM.DEF.SVRCONN/TCP/riggioni1(1416)'
```

```
longuserid17chars@suvereto1.fyre.ibm.com: /home/longuserid17chars
$ amqsputc Q1 QMTEST93
Sample AMQSPUT0 start
MQCONN ended with reason code 2035
```

Client Host: suvereto1
(Same trio of FDCs)

```
AMQ152289.0.FDC 2023/08/10 07:06:53.640989-7 Installation1 amqxmsg0 152289
XY051169 InitPrivateServices xec1_S_NOT_AUTHORIZED OK
AMQ152290.0.FDC 2023/08/10 07:06:53.666091-7 Installation1 amqxmsg0 152290
XY051169 InitPrivateServices xec1_S_NOT_AUTHORIZED OK
AMQ152288.0.FDC 2023/08/10 07:06:53.682742-7 Installation1 amqsputc 152288 1
XY051169 InitPrivateServices xec1_S_NOT_AUTHORIZED OK
```

Qmgr Host: riggioni1
No new FDCs.

The error log of the queue manager shows that the userid "UNKNOWN" was sent by the MQ shared libraries from the Client host 'suvereto1'. This particular userid is the one mentioned by the FDC with probeid XY051169:

Comment3 :- A user name of "UNKNOWN" will be used, which will |
| likely cause later authorisation failures.

The errors are:

```
08/10/2023 07:06:53 AM - Process(136963.3) User(mqm) Program(amqrmppa)
Host(riggioni1.fyre.ibm.com) Installation(Installation1)
VRMF(9.3.3.0) QMgr(QMTEST93)
Time(2023-08-10T14:06:53.758Z)
RemoteHost(9.46.77.193)
CommentInsert1(SYSTEM.DEF.SVRCONN)
CommentInsert2(suvereto1 (9.46.77.193))
CommentInsert3(CLNTUSER(UNKNOWN) ADDRESS(suvereto1))
```

AMQ9777E: Channel was blocked

EXPLANATION:

The inbound channel 'SYSTEM.DEF.SVRCONN' was blocked from address 'suvereto1 (9.46.77.193)' because the active values of the channel matched a record configured with USERSRC(NOACCESS). The active values of the channel were '**CLNTUSER(UNKNOWN) ADDRESS(suvereto1)**'.

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.

----- cmqxrmsa.c : 1246 -----

08/10/2023 07:06:53 AM - Process(136963.3) User(mqm) Program(amqrmppa)

Host(riggioni1.fyre.ibm.com) Installation(Installation1)

VRMF(9.3.3.0) QMgr(QMTEST93)

Time(2023-08-10T14:06:53.758Z)

CommentInsert1(SYSTEM.DEF.SVRCONN)

CommentInsert2(136963)

CommentInsert3(9.46.77.193)

AMQ9999E: Channel 'SYSTEM.DEF.SVRCONN' to host '9.46.77.193' ended abnormally.

+ Scenario 6: Long userid from another host, using amqsputc (client connection), specifying MQSAMP_USER_ID to use MQCSP connection security parameters structure in MQCONN

Client host: suvereto1

Excerpt from the C-source code file for the MQ sample amqspu0.c

```
/* Environment variable MQSAMP_USER_ID can be set to authenticate */
/* application. If it is set, a password must also be entered at */
/* the prompt. */
...
UserId = getenv("MQSAMP_USER_ID");
if (UserId != NULL)
{
    /******
    /* Set the connection options to use the security structure and */
    /* set version information to ensure the structure is processed.*/
    /******
    cno.SecurityParmsPtr = &csp;
    cno.Version = MQCNO_VERSION_5;
    csp.AuthenticationType = MQCSP_AUTH_USER_ID_AND_PWD;
```

Setup the following environment variables:

```
export MQSAMP_USER_ID=longuserid17chars
export MQSERVER='SYSTEM.DEF.SVRCONN/TCP/riggioni1(1416)'
```

Notice that you will need to provide the password!

```
longuserid17chars@riggioni1.fyre.ibm.com: /home/longuserid17chars
$ amqsputc Q1 QMTEST93
Sample AMQSPU0 start
Enter password: *****
MQCONN ended with reason code 2035
```

Client Host: suvereto1
(Same trio of FDCs)

```
AMQ152289.0.FDC 2023/08/10 07:06:53.640989-7 Installation1 amqxmsg0 152289
XY051169 InitPrivateServices xec1_S_NOT_AUTHORIZED OK
AMQ152290.0.FDC 2023/08/10 07:06:53.666091-7 Installation1 amqxmsg0 152290
XY051169 InitPrivateServices xec1_S_NOT_AUTHORIZED OK
AMQ152288.0.FDC 2023/08/10 07:06:53.682742-7 Installation1 amqsputc 152288 1
XY051169 InitPrivateServices xec1_S_NOT_AUTHORIZED OK
```

Qmgr Host: riggioni1

No new FDCs.

The error log of the queue manager shows that the userid "UNKNOWN" was sent by the MQ shared libraries from the Client host 'suvereto1'.

This userid [longuserid17](#) is the one that was inside the MQCSP structure!

```
08/10/2023 07:20:31 AM - Process(136963.4) User(mqm) Program(amqrmppa)
      Host(riggioni1.fyre.ibm.com) Installation(Installation1)
      VRMF(9.3.3.0) QMgr(QMTEST93)
      Time(2023-08-10T14:20:31.532Z)
      RemoteHost(9.46.77.193)
      CommentInsert1(SYSTEM.DEF.SVRCONN)
      CommentInsert2(suvereto1 (9.46.77.193))
      CommentInsert3(CLNTUSER\(longuserid17\) ADDRESS\(suvereto1\))
```

AMQ9777E: Channel was blocked

EXPLANATION:

The inbound channel 'SYSTEM.DEF.SVRCONN' was blocked from address 'suvereto1 (9.46.77.193)' because the active values of the channel matched a record configured with USERSRC(NOACCESS). The active values of the channel were '[CLNTUSER\(longuserid17\) ADDRESS\(suvereto1\)](#)'.

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.

----- cmqxrmsa.c : 1246 -----

```
08/10/2023 07:20:31 AM - Process(136963.4) User(mqm) Program(amqrmppa)
      Host(riggioni1.fyre.ibm.com) Installation(Installation1)
      VRMF(9.3.3.0) QMgr(QMTEST93)
      Time(2023-08-10T14:20:31.532Z)
      CommentInsert1(SYSTEM.DEF.SVRCONN)
      CommentInsert2(136963)
      CommentInsert3(9.46.77.193)
```

AMQ9999E: Channel 'SYSTEM.DEF.SVRCONN' to host '9.46.77.193' ended abnormally.

+++ end +++