

# ***Websphere MQ Convert MQMD and DATA***

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# **The question**

***To investigate the character data conversion process in WMQ we set-up a configuration of three Queue Managers with three different QM CCSIDs.***

***We send messages from a QM to the other two.***

***The same values are put in several MQMD fields and in the message data buffer.***

***We check the values sent and received.***

***In order to do this we will take some unusual (and ill-advised) actions.***

***We will use only standard software components : MO71 support pac, Mqexplorer and amqsbcg sample program.***



# Setup

# Setup: QMs.

**3 systems :**

*Windows 7 (laptop)*

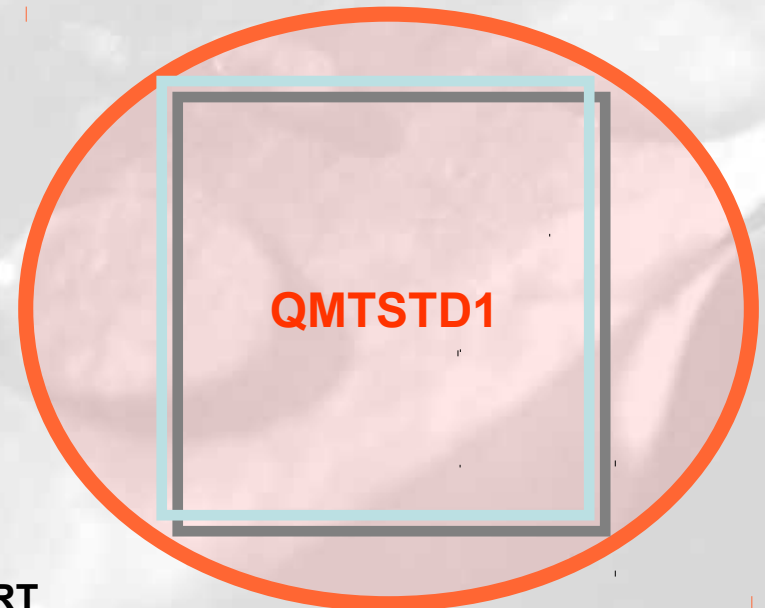
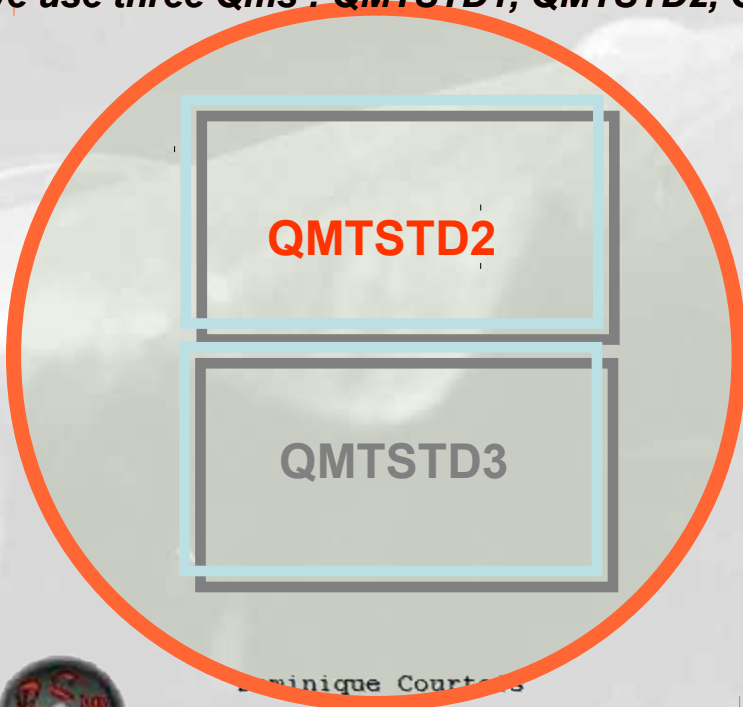
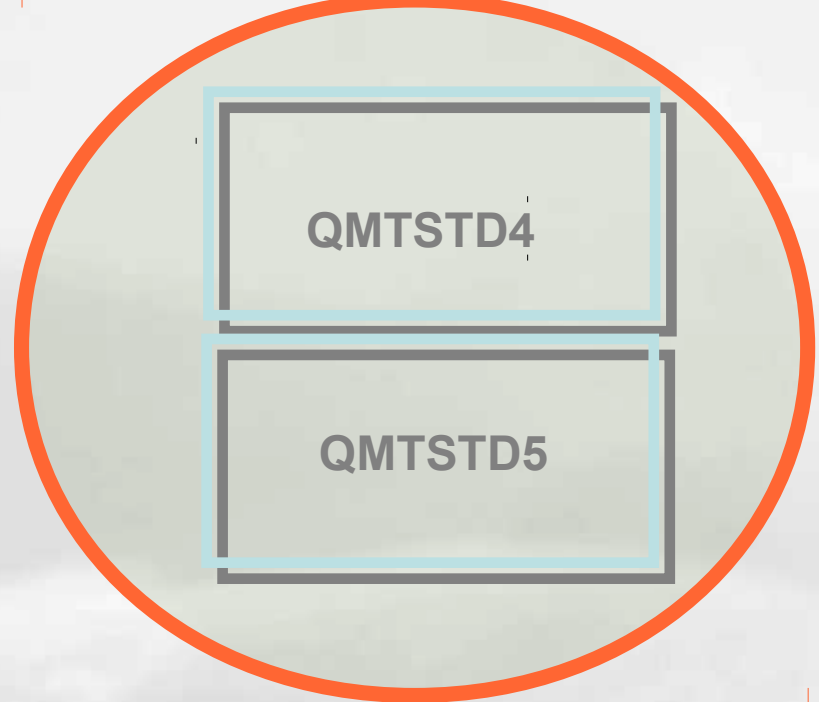
*CentOS 6 (2 hosted CentOS VM)*

**5 Queue managers :**

*Windows : 1*

*CentOS : 2 + 2*

**We use three Qms : QMTSTD1, QMTSTD2, QMTSTD3.**



# Setup: QMs.

**QMTSTD1 :**

**CCSID : 850 (Windows 7 QM)**

**Command level : 800**

**QMTSTD2:**

**CHANNEL**

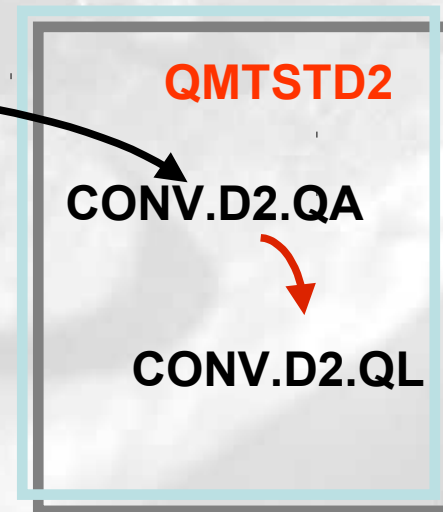
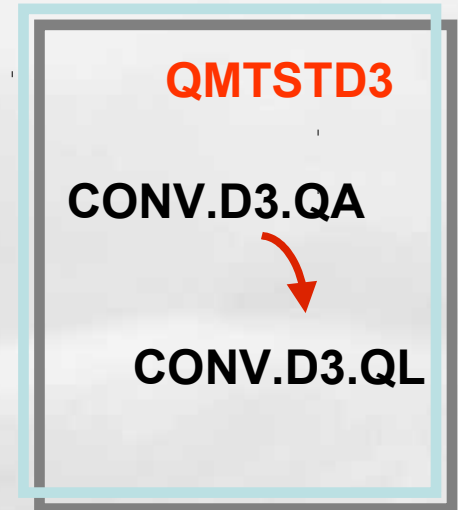
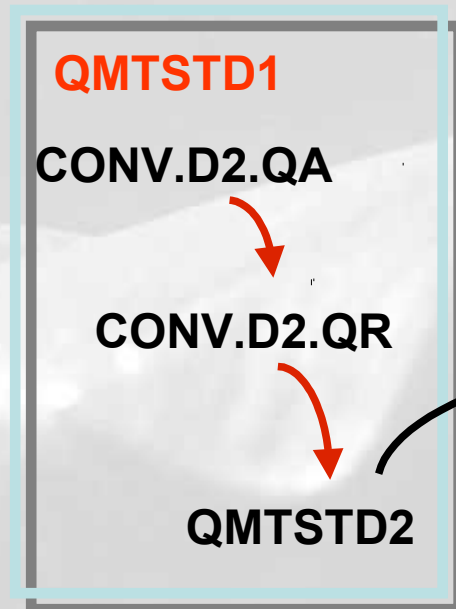
**CCSID : 1208 (UTF-8)**

**Command Level : 750**

**QMTSTD3:**

**CCSID : 819 (Iso-latin 1)**

**Command Level : 750**



# Setup: QMs.

**QMTSTD1 :**

**CCSID : 850 (Windows 7 QM)**

**Command level : 800**

**QMTSTD2:**

**CHANNEL**

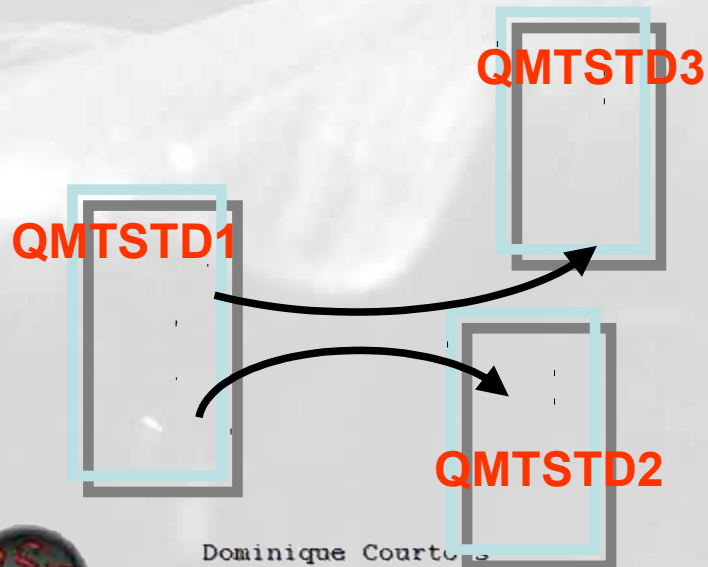
**CCSID : 1208 (UTF-8)**

**Command Level : 750**

**QMTSTD3:**

**CCSID : 819 (Iso-latin 1)**

**Command Level : 750**



**QMTSTD1 :**

**Used as the test driver to send messages. Messages data is coded in CCSID 819.**

**QMTSTD2:**

**Used as a 1208 target.**

**QMTSTD3:**

**Used as a 819 target.**

# Setup: Queues.

**QMTSTD1 :**

**CONV.D2.QA :** Alias Q for PUT (DEFPSIST(YES))

**CONV.D2.QR :** Remote Q for QMTSTD2 target

**QMTSTD2 :** Xmit Q

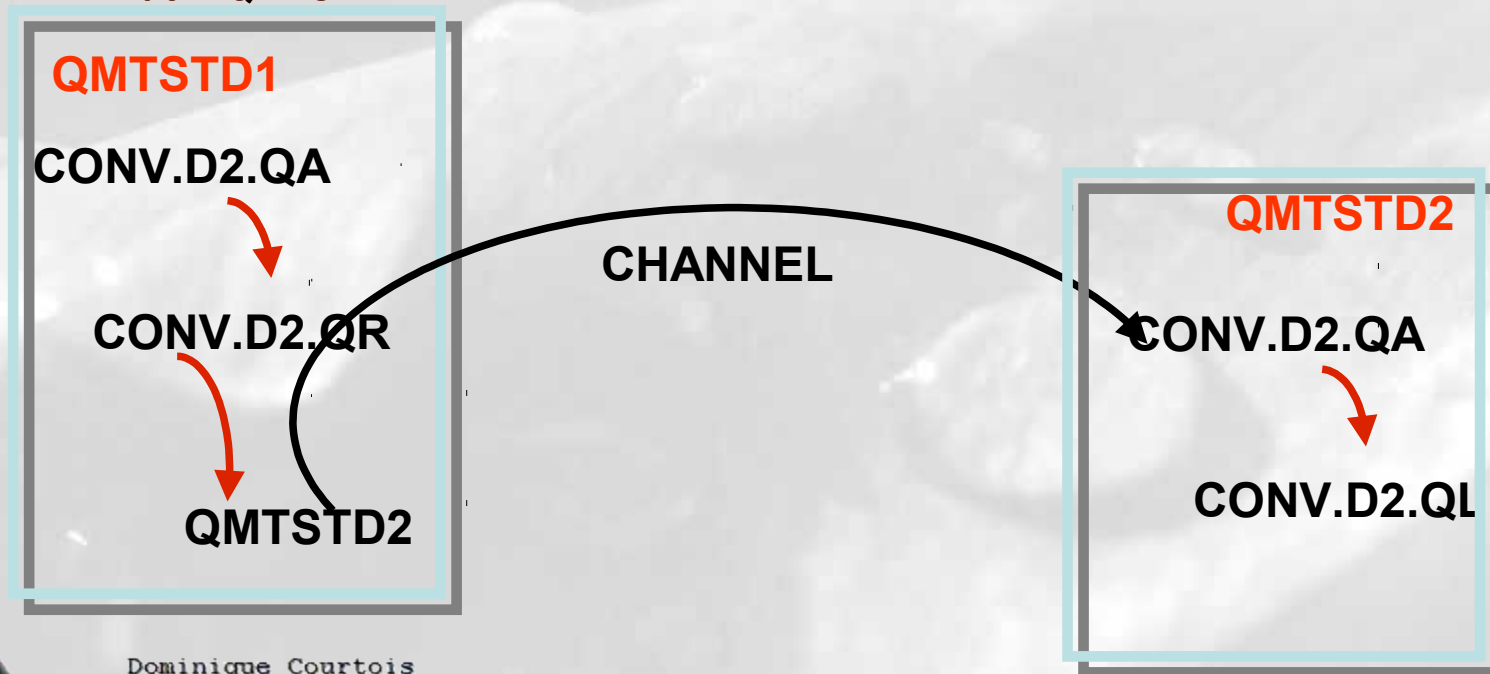
**QMTSTD2 :**

**CONV.D2.QA :** Alias Q for CHL RECEIVE

**CONV.D2.QL :** Target Local Q

**QMTSTD3 :**

*Idem QMTSTD2.*

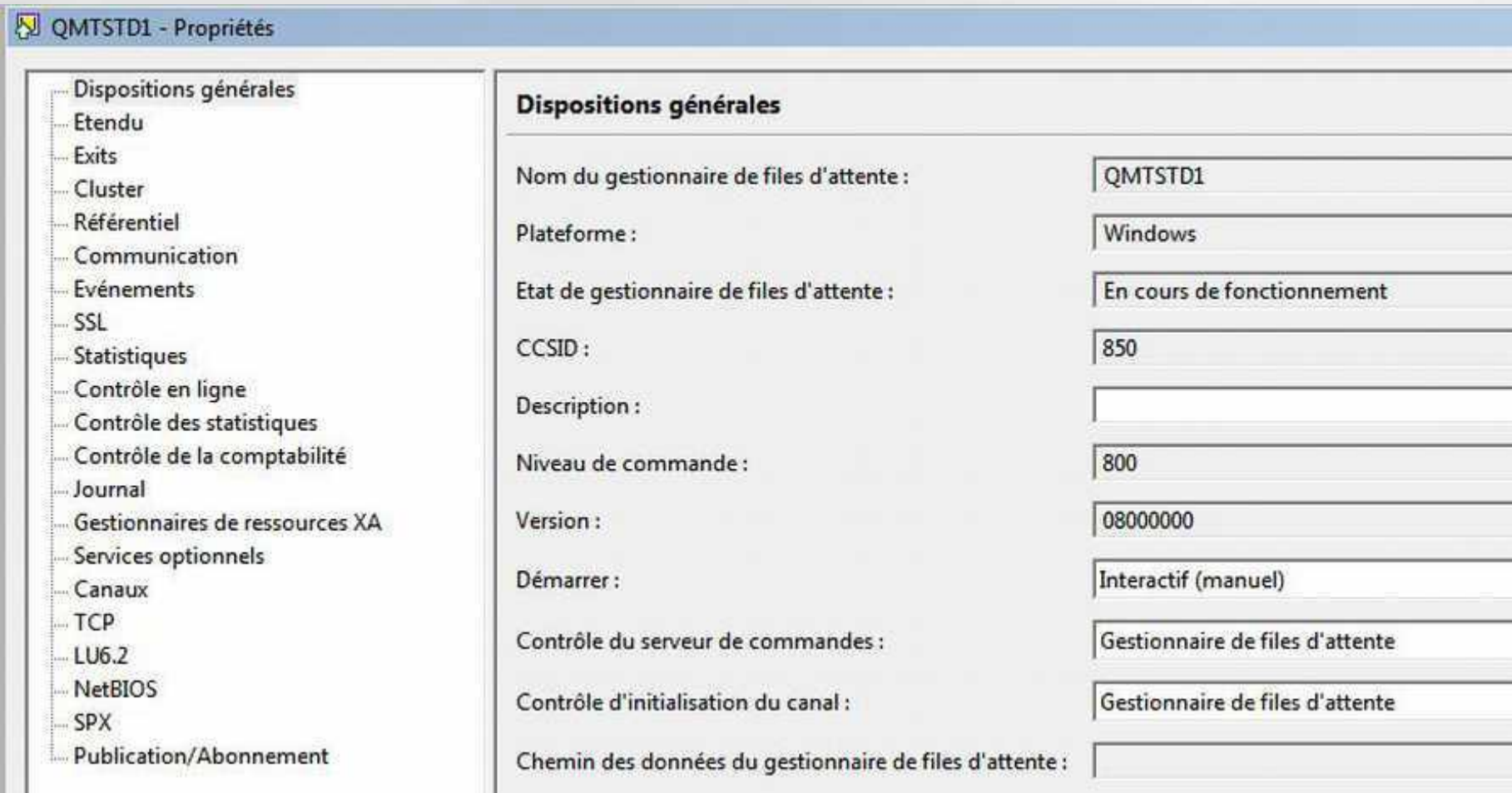


**QMTSTD1 :**

**CCSID : 850 (Windows 7 QM)**

**Command level : 800**

# QMTSTD1



**QMTSTD1 - Propriétés**

**Dispositions générales**

Nom du gestionnaire de files d'attente :	QMTSTD1
Plateforme :	Windows
Etat de gestionnaire de files d'attente :	En cours de fonctionnement
CCSID :	850
Description :	
Niveau de commande :	800
Version :	08000000
Démarrer :	Interactif (manuel)
Contrôle du serveur de commandes :	Gestionnaire de files d'attente
Contrôle d'initialisation du canal :	Gestionnaire de files d'attente
Chemin des données du gestionnaire de files d'attente :	





**QMTSTD2 :**

**CCSID : 1208 (CentOS 7 QM)**

**Command level : 750**

# QMTSTD2

QMTSTD2 - Propriétés

Dispositions générales	<b>Dispositions générales</b>
Etendu	
Cluster	
Référentiel	
Communication	
Evénements	
SSL	
Statistiques	
Contrôle en ligne	
Contrôle des statistiques	
Contrôle de la comptabilité	
Publication/Abonnement	

Nom du gestionnaire de files d'attente :	QMTSTD2
Plateforme :	Unix
Etat de gestionnaire de files d'attente :	En cours de fonctionnement
CCSID :	1208
Description :	
Niveau de commande :	750
Version :	07050002
Contrôle du serveur de commandes :	Gestionnaire de files d'attente
Contrôle d'initialisation du canal :	Gestionnaire de files d'attente



**QMTSTD2 :**

**CCSID : 819 (CentOS 7 QM)**

**Command level : 750**

# QMTSTD3

QMTSTD3 - Propriétés

- Dispositions générales
- Etendu
- Cluster
- Référentiel
- Communication
- Evénements
- SSL
- Statistiques
- Contrôle en ligne
- Contrôle des statistiques
- Contrôle de la comptabilité
- Publication/Abonnement

### Dispositions générales

Nom du gestionnaire de files d'attente :	QMTSTD3
Plateforme :	Unix
Etat de gestionnaire de files d'attente :	En cours de fonctionnement
CCSID :	819
Description :	
Niveau de commande :	750
Version :	07050002
Contrôle du serveur de commandes :	Gestionnaire de files d'attente
Contrôle d'initialisation du canal :	Gestionnaire de files d'attente



# QMTSTD1 - QMTSTD2 : Queues

QMTSTD1

- Files d'attente
- Rubriques
- Abonnements
- Canaux
- Télémetrie
- Programmes d'écol
- Services
- Définitions de proce
- Listes de noms
- Informations d'auth
- Informations de cor
- Règles de sécurité

Nom de file d'attente	L...	N.	N.	Insérer...	Contrôle du...	Extract...	File d'attente éloignée	Gestion...
CONV.D2.QA				Autorisé		Autorisé		
CONV.D2.QR				Autorisé			CONV.D2.QA	QMTSTD2
CONV.D3.QA				Autorisé		Autorisé		
CONV.D3.QR				Autorisé			CONV.D3.QA	QMTSTD3

QMTSTD2 sur 'localhos'

- Files d'attente
- Rubriques
- Abonnements
- Canaux
- Programmes d'écol
- Services
- Définitions de proce
- Listes de noms
- Informations d'auth

Nom de file d'attente
CONV.D2.QA
CONV.D2.QL

QMTSTD3 sur 'localhos'

- Files d'attente
- Rubriques
- Abonnements
- Canaux
- Programmes d'écol
- Services
- Définitions de proce
- Listes de noms

Nom de file d'attente
CONV.D2.QA
CONV.D2.QL



# QMTSTD1 – Alias Queue

CONV.D2.QA - Propriétés

Dispositions générales  
Etendu  
Cluster  
Statistiques

**Dispositions générales**

Nom de file d'attente : CONV.D2.QA

Type de file d'attente : Alias

Description :

Insérer des messages : Autorisé

Extraction de messages : Autorisé

Priorité par défaut : 0

Persistence par défaut : Persistant

Portée : Gestionnaire de files d'attente

Objet de base : CONV.D2.QR

Type de base : File d'attente



# QMTSTD1 – Remote Queue

CONV.D3.QR - Propriétés

Dispositions générales  
Etendu  
Cluster  
Statistiques

**Dispositions générales**

Nom de file d'attente : CONV.D3.QR

Type de file d'attente : Distant

Description :

Insérer des messages : Autorisé

Priorité par défaut : 0

Persistence par défaut : Non persistant

Portée : Gestionnaire de files d'attente

File d'attente éloignée : CONV.D3.QA

Gestionnaire de files d'attente éloigné : QMTSTD3

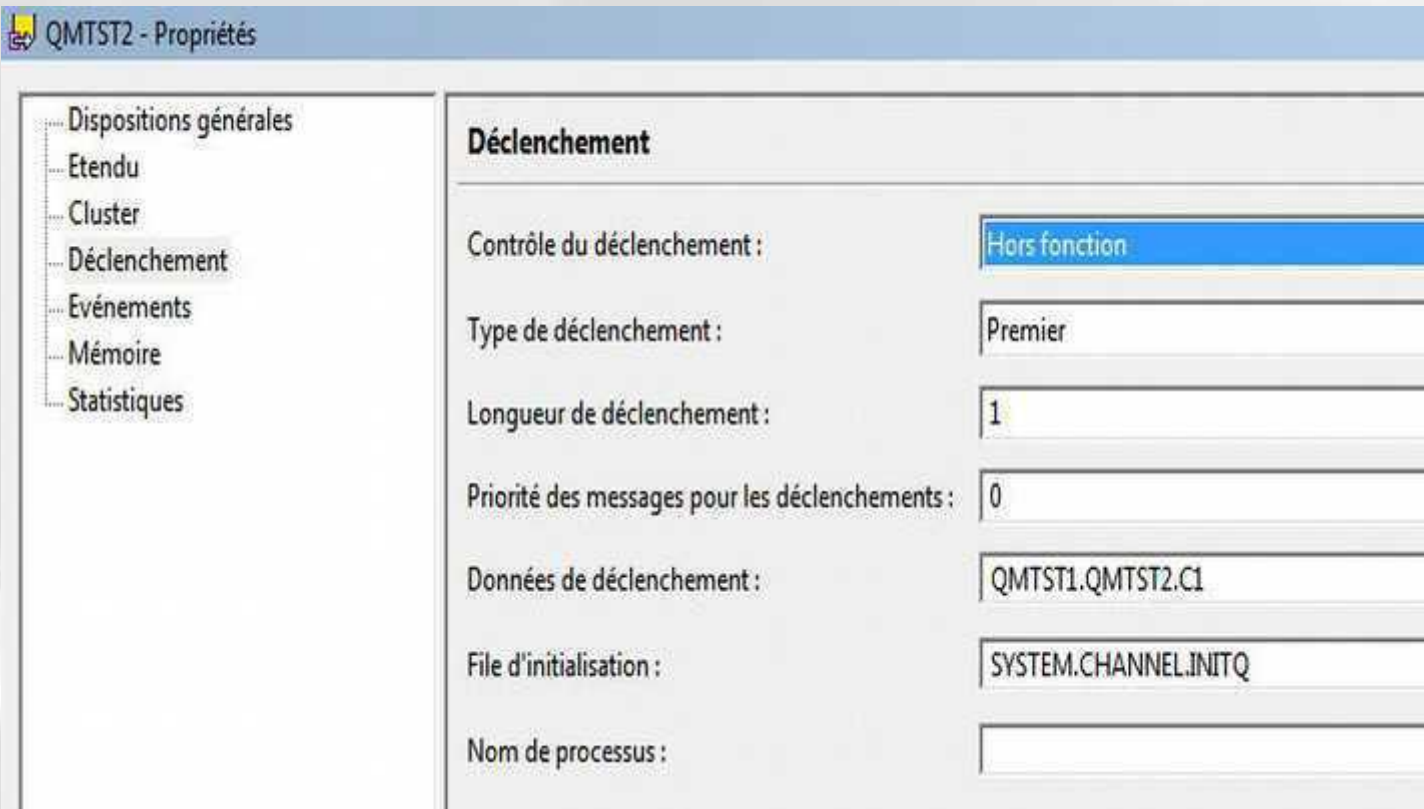
File de transmission : Sélectionner...



**QMTSTD1 :**

*To prevent from starting channel and allow to check the Xmit queue file content. After dumping the file we set the file back to TRIGGER.*

# **QMTSTD1 – Disable Chl autostart**



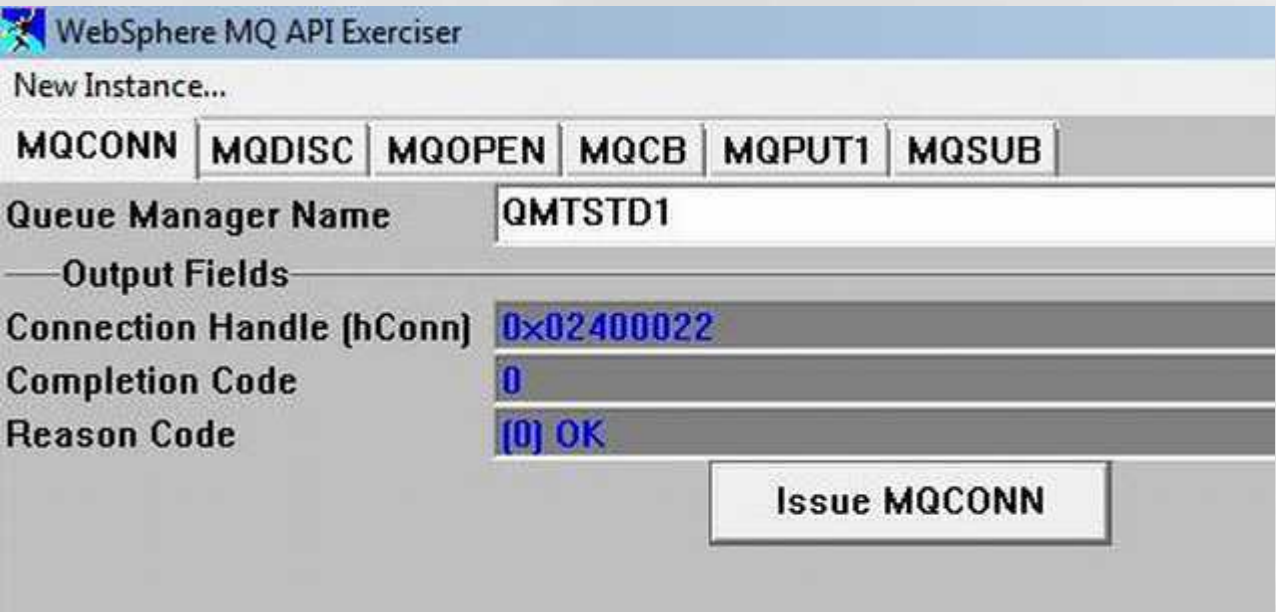
The screenshot shows a window titled "QMTSTD2 - Propriétés" with a sidebar on the left containing the following menu items: Dispositions générales, Etendu, Cluster, Déclenchement (highlighted), Événements, Mémoire, and Statistiques. The main area is titled "Déclenchement" and contains the following fields:

Contrôle du déclenchement :	Hors fonction
Type de déclenchement :	Premier
Longueur de déclenchement :	1
Priorité des messages pour les déclenchements :	0
Données de déclenchement :	QMTST1.QMTST2.C1
File d'initialisation :	SYSTEM.CHANNEL.INITQ
Nom de processus :	



# ***Scenario***

# MQCONN Using MO71 Support Pac



The screenshot shows the 'WebSphere MQ API Exerciser' window. At the top, it says 'New Instance...'. Below that is a tabbed interface with tabs for 'MQCONN', 'MQDISC', 'MQOPEN', 'MQCB', 'MQPUT1', and 'MQSUB'. The 'MQCONN' tab is selected. The 'Queue Manager Name' field contains 'QMTSTD1'. Under the 'Output Fields' section, the 'Connection Handle (hConn)' is '0x02400022', the 'Completion Code' is '0', and the 'Reason Code' is '[0] OK'. At the bottom of the window is a button labeled 'Issue MQCONN'.

**QMTSTD1 :**  
**Connect to sender QM**





# OPENING the sender queue Using MO71

WebSphere MQ API Exerciser

New Instance...

MQCONN | MQDISC | **MQOPEN** | MQCB | MQPUT1 | MQSUB

Parameters | **MQOD** | MQOR

Object Descriptor (MQOD)

Reset MQOD to default

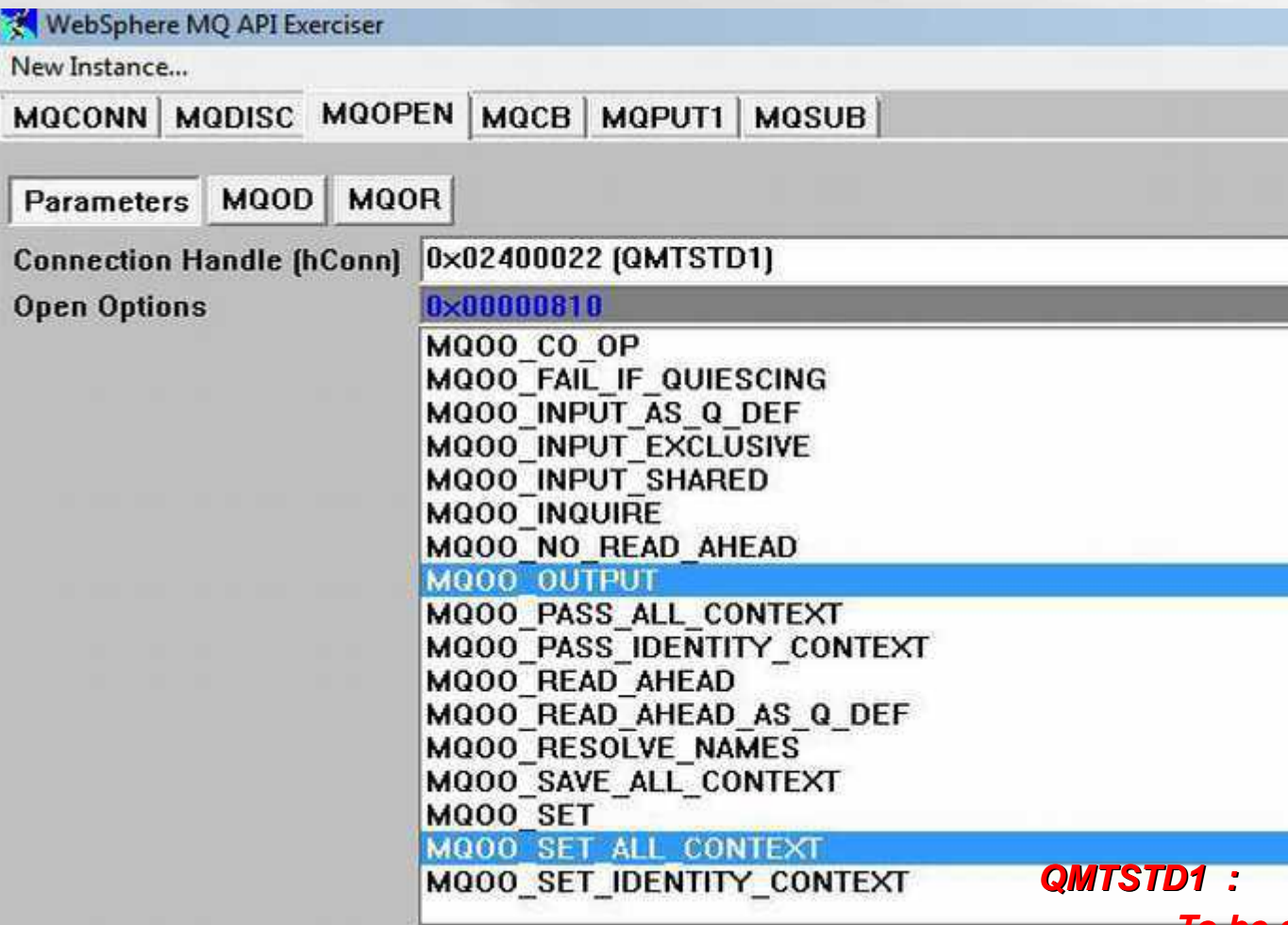
Version 1 Fields

Structure Identifier	<b>OD</b>	Structure Version	1
Object Type	MQOT_Q		
Object Name	CONV.D1.QA		
Object QMgr Name			
Dynamic Queue Name	AMQ.*		
Alternate User ID			

**QMTSTD1 :**  
*Opening the Queue.*



# PUT a message Using MO71



The screenshot shows the 'WebSphere MQ API Exerciser' interface. The 'MQPUT1' tab is selected. Under the 'Parameters' section, the 'MQOR' sub-tab is active. The 'Open Options' field is set to '0x00000810'. A list of MQOR options is displayed, with 'MQ00 SET ALL CONTEXT' highlighted in blue. Other options include MQ00\_CO\_OP, MQ00\_FAIL\_IF QUIESCING, MQ00\_INPUT\_AS\_Q\_DEF, MQ00\_INPUT\_EXCLUSIVE, MQ00\_INPUT\_SHARED, MQ00\_INQUIRE, MQ00\_NO\_READ\_AHEAD, MQ00\_OUTPUT, MQ00\_PASS\_ALL\_CONTEXT, MQ00\_PASS\_IDENTITY\_CONTEXT, MQ00\_READ\_AHEAD, MQ00\_READ\_AHEAD\_AS\_Q\_DEF, MQ00\_RESOLVE\_NAMES, MQ00\_SAVE\_ALL\_CONTEXT, and MQ00\_SET.

**QMTSTD1 :**

**To be able to set the UserIdentifier we must use the SET CONTEXT option.**



# PUT a message Using MO71

WebSphere MQ API Exerciser

New Instance...

MQGET	MQCMIT	MQBACK	MQCTL	MQINQ	MQSTAT	MQSUB
MQCONN	MQDISC	MQOPEN	MQCLOSE	MQCB	Callback	MQPUT

Parameters | MQMD | MQPMO | Buffer

MQPut Options (MQPMO)

Reset MQPMO to default

Version 1 Fields

Structure Identifier	PMO	Structure Version	1
Options	0x00000800		
	MQPMO_PASS_ALL_CONTEXT		
	MQPMO_SET_IDENTITY_CONTEXT		
	MQPMO_SET_ALL_CONTEXT		
	MQPMO_ALTERNATE_USER_AUTHORITY		
	MQPMO_FAIL_IF QUIESCING		

Context

**QMTSTD1 :**

**To be able to set the UserIdentifier we must use the SET CONTEXT option.**



**QMTSTD1 :**

**PUTting to the Queue**

**Data = AÚÛÛÛÛÛÛÛÛÛÛ, 8 bytes if CCSID 819,  
0x41 DA DB D9 DC DA DB 42.**

# PUT a message Using MQ071

WebSphere MQ API Exerciser

New Instance...

MQGET MQCMIT MQBACK MQCTL MQINQ MQSTAT MQSUB MQSUBRC  
MQCONN MQDISC MQOPEN MQCLOSE MQCB Callback MQPUT MQPUT

Parameters MQMD MQPMO Buffer

Message Type: MQRO\_EXCEPTION, MQRO\_EXCEPTION\_WITH\_DATA, MQRO\_EXCEPTION\_WITH\_FULL\_DATA, MQRO\_EXPIRATION, MQRO\_EXPIRATION WITH DATA, MQMT\_DATAGRAM (selected), Expiry (1/10 s) -1

Feedback or reason code: MQFB\_NONE

Encoding: 546, CCSID 819

Format name: MQFMT\_STRING

Message Priority: -1

Message Persistence: MQPER\_PERSISTENCE\_AS\_Q\_DEF

Message Identifier: 414D5120514D54535444312020202020DA18DA5420008504

Correlation Identifier: 00

Backout counter: 0

Reply Queue: APP2D1.REC

Reply Queue Manager: QMTSTD1

User Identifier: AÚÛÛÛÛÛÛÛÛÛÛ

Accounting Token: 00

Application Identity Data: AÚÛÛÛÛÛÛÛÛÛÛ

Put Application Type: MQAT\_NO\_CONTEXT

Put Application Name: files [x86]\MQ071\mqmonntp.exe

Put Date: 20150210, Put Time: 13561061

Application Origin Data: AÚÛÛÛÛÛÛÛÛÛÛ

Output Fields

Completion Code: 0

Reason Code: [0] OK

Issue MQPUT

Data CCSID

UserIdentifier

OriginData

# PUT a message Using MO71

WebSphere MQ API Exerciser

New Instance...

MQGET	MQCMIT	MQBACK	MQCTL
MQCONN	MQDISC	MQOPEN	MQCLOS

Parameters MQMD MQPMO Buffer

Buffer Length: 12

Buffer: AÚÔÛÜBÚÔÛÜCZ

Message Data  
AÚÔÛÜBÚÔÛÜCZ  
If CCSID 819  
0x41 DA DB D9 DC 42 DA DB D9 DC 43 5A



# Messages Used

**Four different messages are sent on the two alias queues (CONV.D2.QA and CONV.D3.QA). The injected data is coded with CP 819.**

**1 Data = AÚÛÜÛB**

**2 Data = AÚÛÜÛÚÛB**

**3 Data = AÚÛÜÛBCZ**

**4 Data = AÚÛÜÛBCDZ**

**Before Transmitting over the CHANNEL, i.e. in the Xmit Queue, the UserIdentifier will stay unconverted.**

**So we look at the QMTSTD2 Xmit Queue file on QMTSTD1 with an hex dump utility. This is the only way we know to check for sure the values of the MQMD fields when the message is sent. Then we start the CHANNEL. And we check the content of the receiving QUEUE file before GETting the messages.**



# Messages Used

*Hexadecimal values of the characters used in the messages according to the various CCSIDs. When converting from any single byte CCSID to 1208 (UTF-8) the physical string length changes for Ú, Û, Ù and Ü. What will happen if a fixed length buffer is too small ?*

CCSID	850	819	1208	1252
Char				
A	41	41	41	41
B	42	42	42	42
C	43	43	43	43
D	44	44	44	44
Z	5A	5A	5A	5A
Ú	E9	DA	C39A	DA
Û	EA	DB	C39B	DB
Ù	EB	D9	C399	D9
Ü	9A	DC	C39C	DC



# Scenario

- 1- **Setup : Create Qms, Queues, Channels, NOTRIGGER on Wmit Q, etc ..**
- 2- **Prépare MQPUT – PUT message - string field in MQMD (UserIdentifier) with « strange » character in it.**
- 3- **Look at Message in Xmit Q file.**
- 4- **Start Channel : the messages go to QMTSTD2 and QMTSTD3**
- 5- **Look at message in CONV.D2.QL on QMTSTD2 and CONV.D3.QL on QMTSTD3 files**
- 6- **Browse message on receiving local queues - No Convert in amqsbcg.**

## Objective :

**Show that a QMGR CCSID of 1208 can give improper results in the MQMD.**

## Remarks :

**The experiment : put in a field of type STRING in the MQMD a value which will be expanded from single byte characters to multiple bytes characters in the conversion process. We chose the MQMD.UserIdentifier field for various reason (short, not limited to a small set of single byte characters). We put the same value in MQMD.ApplIdentityData, MQMD.ApplOriginData and in the message data buffer.**

**We will do something forbidden or at least ill-advised : look at the content of some queue files in order to check the actual stored values.**

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WMQ - CONVERT





# In the Xmit Queue QMTSTD2

message is AÚÛÜÜB

MQMD Ver. 1

```

00000a20:          - 4d 44 20 20 01 00 00 00  MD.....
00000a30: 00 00 00 00 08 00 00 00 - ff ff ff ff 00 00 00 00  ....
00000a40: 22 02 00 00 33 03 00 00 - 4d 51 53 54 52 20 20 20  ....3... MQSTR.....
00000a50: 00 00 00 00 01 00 00 00 - 41 4d 51 20 51 4d 54 53  .... AMQ QMTS
00000a60: 54 44 31 20 20 20 20 20 - da 18 da 54 20 01 96 04  TD1.....
00000a70: 00 00 00 00 00 00 00 00 - 00 00 00 00 00 00 00 00  ....
00000a80: 00 00 00 00 00 00 00 00 - 00 00 00 00 20 20 20 20  ....
00000a90: 20 20 20 20 20 20 20 20 - 20 20 20 20 20 20 20 20  ....
00000aa0: 20 20 20 20 20 20 20 20 - 20 20 20 20 20 20 20 20  ....
00000ab0: 20 20 20 20 20 20 20 20 - 20 20 20 20 51 4d 54 53  .... QMTS
00000ac0: 54 44 31 20 20 20 20 20 - 20 20 20 20 20 20 20 20  TD1.....
00000ad0: 20 20 20 20 20 20 20 20 - 20 20 20 20 20 20 20 20  ....
00000ae0: 20 20 20 20 20 20 20 20 - 20 20 20 20 41 da db d9  .... A...
00000af0: dc 42 20 20 20 20 20 20 - 00 00 00 00 00 00 00 00  .B.....
00000b00: 00 00 00 00 00 00 00 00 - 00 00 00 00 00 00 00 00  ....
00000b10: 00 00 00 00 00 00 00 00 - 41 da db d9 dc 42 20 20  .... A...B..
00000b20: 20 20 20 20 20 20 20 20 - 20 20 20 20 20 20 20 20  ....
00000b30: 20 20 20 20 20 20 20 20 - 00 00 00 00 69 6c 65 73  .... files
00000b40: 20 28 78 38 36 29 5c 4d - 4f 37 31 5c 6d 71 6d 6f  ..x86..M O71.mqmo
00000b50: 6e 6e 74 70 2e 65 78 65 - 32 30 31 35 30 32 31 30  nntp.exe 20150210
00000b60: 32 31 35 34 32 38 36 33 - 41 da db d9 41 da db d9  21542863 A...A...
00000b70: dc 42 00 00 00 00 00 00 - 00 00 00 00 00 00 00 00  .B.....

```

UserIdentifier

Nothing converted

UserOriginData

DATA



# In the Receive Queue CONV.D2.QL on QMTSTD2

message is AÚÛÜÜB

```

000008a0 4d 44 20 20 01 00 00 00 00 00 00 00 08 00 00 00 |MD .....|
000008b0 00 00 00 00 22 02 00 00 33 03 00 00 4d 51 53 54 |...."....3...MQST|
000008c0 52 20 20 20 00 00 00 00 01 00 00 00 41 50 50 32 |R .....APP2|
000008d0 44 31 2e 52 45 43 20 20 20 20 20 20 20 20 20 20 |D1.REC|
000008e0 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 |
000008f0 20 20 20 20 20 20 20 20 20 20 20 20 51 4d 54 53 | QMTS|
00000900 54 44 31 20 20 20 20 20 20 20 20 20 20 20 20 20 |TD1|
00000910 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 |
00000920 20 20 20 20 20 20 20 20 20 20 20 20 61 c3 9a c3 | a...|
00000930 9b c3 99 c3 9c 62 20 20 00 00 00 00 00 00 00 00 |.....b .....|
00000940 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 |.....|
00000950 00 00 00 00 00 00 00 00 41 c3 9a c3 9b c3 99 c3 |.....A.....|
00000960 9c 42 20 20 20 20 20 20 20 20 20 20 20 20 20 20 |.B|
00000970 20 20 20 20 20 20 20 20 00 00 00 00 69 6c 65 73 | ....files|
00000980 20 28 78 38 36 29 5c 4d 4f 37 31 5c 6d 71 6d 6f | (x86)\MO71\mqmo|
00000990 6e 6e 74 70 2e 65 78 65 32 30 31 35 30 32 31 30 |nntp.exe20150210|
000009a0 31 35 35 36 31 30 36 31 41 c3 9a d9 00 00 00 00 |15561061A.....|
000009b0 00 00 00 00 00 00 00 00 00 00 00 00 ff ff 00 00 |.....|
000009c0 41 da db d9 dc 42 00 00 00 00 00 00 00 00 00 00 |A....B.....|
*

```

UserIdentifier

Userld converted by channel

DATA not converted





# In the Xmit Queue QMTSTD2

message is AÚÛÜÜÚÛÛÛ

MQMD Ver. 1

```

00000a20:          - 4d 44 20 20 01 00 00 00  MD.....
00000a30: 00 00 00 00 08 00 00 00 - ff ff ff ff 00 00 00 00  ....
00000a40: 22 02 00 00 33 03 00 00 - 4d 51 53 54 52 20 20 20  ....3... MQSTR.....
00000a50: 00 00 00 00 01 00 00 00 - 41 4d 51 20 51 4d 54 53  .... AMQ QMTS
00000a60: 54 44 31 20 20 20 20 20 - da 18 da 54 20 01 96 04  TD1.....
00000a70: 00 00 00 00 00 00 00 00 - 00 00 00 00 00 00 00 00  ....
00000a80: 00 00 00 00 00 00 00 00 - 00 00 00 00 20 20 20 20  ....
00000a90: 20 20 20 20 20 20 20 20 - 20 20 20 20 20 20 20 20  ....
00000aa0: 20 20 20 20 20 20 20 20 - 20 20 20 20 20 20 20 20  ....
00000ab0: 20 20 20 20 20 20 20 20 - 20 20 20 20 51 4d 54 53  .... QMTS
00000ac0: 54 44 31 20 20 20 20 20 - 20 20 20 20 20 20 20 20  TD1.....
00000ad0: 20 20 20 20 20 20 20 20 - 20 20 20 20 20 20 20 20  ....
00000ae0: 20 20 20 20 20 20 20 20 - 20 20 20 20 41 da db d9  .... A...
00000af0: dc 42 20 20 20 20 20 20 - 00 00 00 00 00 00 00 00  .B.....
00000b00: 00 00 00 00 00 00 00 00 - 00 00 00 00 00 00 00 00  ....
00000b10: 00 00 00 00 00 00 00 00 - 41 da db d9 dc 42 20 20  .... A...B..
00000b20: 20 20 20 20 20 20 20 20 - 20 20 20 20 20 20 20 20  ....
00000b30: 20 20 20 20 20 20 20 20 - 00 00 00 00 69 6c 65 73  .... files
00000b40: 20 28 78 38 36 29 5c 4d - 4f 37 31 5c 6d 71 6d 6f  ..x86..M O71.mqmo
00000b50: 6e 6e 74 70 2e 65 78 65 - 32 30 31 35 30 32 31 30  nntp.exe 20150210
00000b60: 32 31 35 34 32 38 36 33 - 41 da db d9 41 da db d9  21542863 A...A...
00000b70: dc 42 00 00 00 00 00 00 - 00 00 00 00 00 00 00 00  .B.....
    
```

UserIdentifier

Nothing converted

UserOriginData

DATA



# In the Receive Queue CONV.D2.QL on QMTSTD2

message is AÚÛÜÛÛÛÛÛ

```

000008a0 4d 44 20 20 01 00 00 00 00 00 00 00 08 00 00 00 |MD .....|
000008b0 00 00 00 00 22 02 00 00 33 03 00 00 4d 51 53 54 |...."....3...MQST|
000008c0 52 20 20 20 00 00 00 00 01 00 00 00 41 50 50 32 |R .....APP2|
000008d0 44 31 2e 52 45 43 20 20 20 20 20 20 20 20 20 20 |D1.REC|
000008e0 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 |
000008f0 20 20 20 20 20 20 20 20 20 20 20 20 51 4d 54 53 | QMTS|
00000900 54 44 31 20 20 20 20 20 20 20 20 20 20 20 20 20 |TD1|
00000910 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 |
00000920 20 20 20 20 20 20 20 20 20 20 20 20 61 c3 9a c3 | a...|
00000930 9b c3 99 c3 9c 62 20 20 00 00 00 00 00 00 00 00 |.....b .....|
00000940 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 |.....|
00000950 00 00 00 00 00 00 00 00 41 c3 9a c3 9b c3 99 c3 |.....A.....|
00000960 9c 42 20 20 20 20 20 20 20 20 20 20 20 20 20 20 |.B|
00000970 20 20 20 20 20 20 20 20 00 00 00 00 69 6c 65 73 | ....files|
00000980 20 28 78 38 36 29 5c 4d 4f 37 31 5c 6d 71 6d 6f | (x86)\MO71\mqmo|
00000990 6e 6e 74 70 2e 65 78 65 32 30 31 35 30 32 31 30 |nntp.exe20150210|
000009a0 31 35 35 36 31 30 36 31 41 c3 9a d9 00 00 00 00 |15561061A.....|
000009b0 00 00 00 00 00 00 00 00 00 00 00 00 ff ff 00 00 |.....|
000009c0 41 da db d9 dc 42 00 00 00 00 00 00 00 00 00 00 |A....B.....|
*

```

UserIdentifier

DATA not converted

Userld converted by channel





# What does happen when we start the Channel

*Before transmit the values stored in the queue for the character Ú is one byte : 0xDA.*

*The message is now transmitted from QMTSTD1 to QMTSTD2.*

*When we look at the QMSTD2 Xmit Queue file, the only way we know to check for sure the values of the MQMD fields, the UserIdentifier field is unchanged.*

*When we look at the reception queue file the value stored for the character Ú is two bytes long : 0xC3 94.*

*The UserIdentifier if fully converted should be :*

***41 C3 9A C3 9B C3 99 C3 9C C3 9A C3 9B 42** (14 bytes) but the MQMD.UserIdentifier is only 12 bytes long. So the UserIdentifier is now **truncated** to AÚÛÜÜ4 characters due the overall length of the field.*

*For some reason (?) when the channels convert the UserIdentifier to UTF-8 or CP819 the upper-case characters are turned to lower-case*

*No error is notified when the UserIdentifier is truncated.*

*The message data is of course transmitted unmodified. It can be converted if the application program MQGETs with the CONVERT option.*



# Summary of the results

	Sent UserId	Received UserId	DATA
	<b>QMTSTD1 Sender (819)</b>	<b>QMTSTD2 Receiver (1208)</b>	
	All numeric values in hex	Fixed size : 12 bytes	
AÚÛÜB	41 da db d9 dc 42	61 c3 9a c3 9b c3 99 c3 9c 62	41 da db d9 dc 42
AÚÛÜÜB	41 da db d9 dc da db 42	61 c3 9a c3 9b c3 99 c3 9c c3 9a 20	41 da db d9 dc da db 42
AÚÛÜBCZ	41 da db d9 dc 42 43 5A	61 c3 9a c3 9b c3 99 c3 9c 62 63 7A	41 da db d9 dc 42 43 5a
AÚÛÜBCDZ	41 da db d9 dc 42 43 44 5A	61 c3 9a c3 9b c3 99 c3 9c 62 63 64	41 da db d9 dc 42 43 44 5a
		<b>QMTSTD3 Receiver (819)</b>	
AÚÛÜB	41 da db d9 dc 42	61 da db d9 dc 62	41 da db d9 dc 42
AÚÛÜÜB	41 da db d9 dc da db 42	61 da db d9 dc da 62	41 da db d9 dc da 42
AÚÛÜBCZ	41 da db d9 dc 42 43 5A	61 da db d9 dc 62 63 7a	41 da db d9 dc 42 43 5a
AÚÛÜBCDZ	41 da db d9 dc 42 43 44 5A	61 da db d9 dc 62 63 64 7a	41 da db d9 dc 42 43 44 5a
	<b>QMTSTD1 Sender (850)</b>	<b>QMTSTD3 Receiver (819)</b>	
AÚÛÜB	41 da db d9 dc 42	61 92 8d 95 8c 62	41 da db d9 dc 42
AÚÛÜÜB	41 da db d9 dc da db 42	61 92 8d 95 8c 92 62	41 da db d9 dc da 42
AÚÛÜBCZ	41 da db d9 dc 42 43 5A	61 92 8d 95 8c 62 63 7a	41 da db d9 dc 42 43 5a
AÚÛÜBCDZ	41 da db d9 dc 42 43 44 5A	61 92 8d 95 8c 62 63 64 7a	41 da db d9 dc 42 43 44 5a

Seen in the file of the receiving queue (/var/mqm/qmgrs/QMTSTD3/queues/CONV!D3!QL).  
 In red the lowercase characters, only in MQMD.UserIdIdentifier, not in MQMD.ApplIdentityData or MQMD.ApplOriginData. The last test was to change the CCSID of QMTSTD1 to 850 and repeat.

