ASF 3.3 with CICS
Document Connect for ASF

Installation on AIX Server
Setup Server-to-Host Connection Using
WebSphere MQ

Edition: 1.0

Nov. 19, 2004

1 MQ Definitions under AIX

1.1 Define the MQ Objects

First create and start a queue manager (for example PASF33Q) using the following commands:

```
crtmqm PASF33Q
strmqm PASF33Q
```

Use the following MQSC commands to define a sender, a receiver channel, two local queues, one remote queue and a process for each connection.

```
DEFINE CHANNEL(ASF33DB2.ORX64A.TCP) CHLTYPE(SDR) CONNAME('9.152.87.231(1415)') TRPTYPE(TCP)
XMITQ(ASF33DB2)  DISCINT(0)
DEFINE CHANNEL(ORX64A.ASF33DB2.TCP) CHLTYPE(RCVR) TRPTYPE(TCP)
DEFINE QLOCAL(REPLY.ASF33DB2) PUT(ENABLED) GET(ENABLED) USAGE(NORMAL)
DEFINE QLOCAL(ASF33DB2) PUT(ENABLED) GET(ENABLED) USAGE(XMITQ) PROCESS(PROC.QE71)
DEFINE QREMOTE(ASF33DB2.ALIAS) PUT(ENABLED) RNAME(QUERY.ORX64A.ASF33DB2) RQMNAME(QE71)
XMITQ(ASF33DB2)
DEFINE PROCESS(PROC.QE71) APPLTYPE(UNIX)
```

The MQSC commands can be defined in a file with a name of your choice, for example MQDefinition.txt. They can be executed with the following command:

```
rummgsc PASF33Q </MQDefinition.txt
```

Note: PASF33Q is the name of the AIX queue manager as defined above.

1.2 Define a TCP/IP connection

The "inetd" daemon on the server must be configured to start the MQI channels. To procede log on as root and configure the following files:

1. Add a line in the /etc/services file:

   ```
   MQSeries        1414/tcp
   ```

   where 1414 is the port number required.

   Note: 1414 is the default value of the port number.

   Alternatively, you can use a different port number, for example 1415. To do so add the line:

   ```
   MQSeries        1415/tcp
   ```

2. Add a line in the file inetd.conf to call the program `amqcrsta`:

```
MQSeries stream tcp nowait root /mqmtop/bin/amqcrsta amqcrsta
[-m PASF33Q]
  PASF33Q is the queue manager name
  mqmtop is the installation directory

Note:
Your input is case sensitive.
```

3. The updates are active after you issue the following command from the root user ID:

```
refresh -s inetd
```

1.3 Run the MQ Listener and start the Sender channel

To run the listener supplied with MQSeries use the RUNMQLSR command:

```
runmqlsr –t tcp -m PASF33Q –p 1415
```

```
-m PASF33Q   is the queue manager
-p 1415      is the port
```

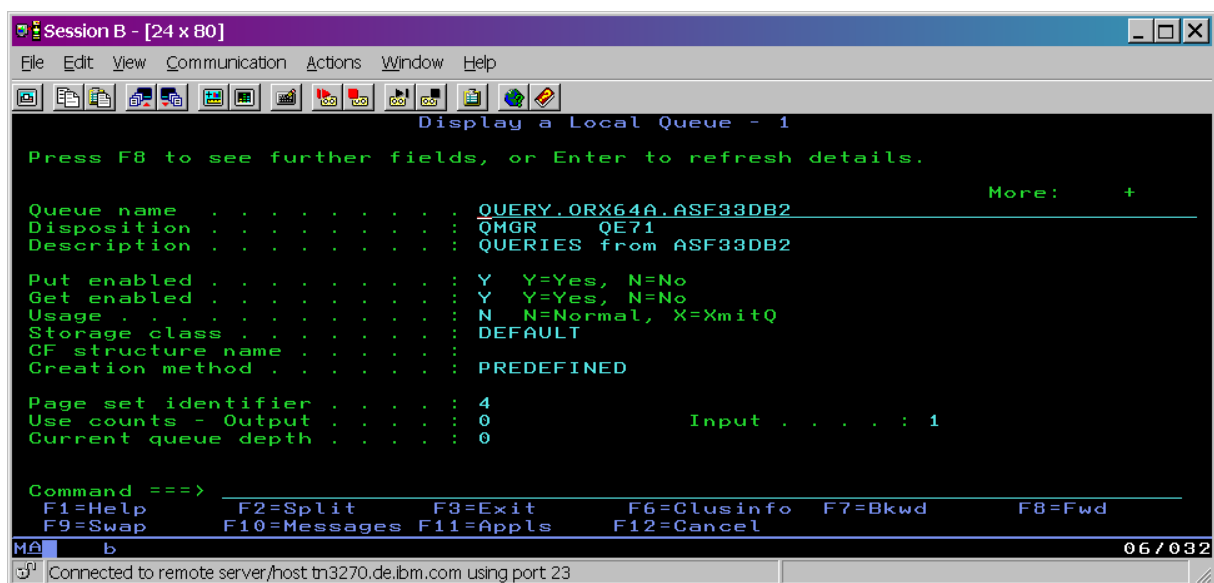To start the sender channel use the RUNMQCHL command:

```
runmqchl –c ASF33I7.ORX64A.TCP –m PASF33Q
```

2 MQ Definitions under z/OS

The MQ definitions are done within queue manager QE71 listening to port 1415.
For each connection the following is needed:

- a sender
- a receiver
- two local queues
- one remote queue
- a process.

2.1 Define a Local (Query) Queue (from AIX)

Press F8.

Press F8.

Press F8.

The process name CICWEB1C is described in „Define a Process". The initiation queue ASF33DB2.INITQ is described in „Define a Initiation Queue" and „MQ and CICS Bridge".

Press F8.

```
                    Display a Local Queue - 5
Press F7 or F8 to see other fields, or Enter to refresh details.
                                                   More:   - +
Queue name . . . . . . . . : QUERY.ORX64A.ASF33DB2
Disposition . . . . . . . . : QMGR     QE71

Event Control

   Queue full . . . . . . . : E   E=Enabled, D=Disabled

   Upper queue depth  . . . : D   E=Enabled, D=Disabled
   Threshold  . . . . . . . : 80   0 - 100 %

   Lower queue depth  . . . : D   E=Enabled, D=Disabled
   Threshold  . . . . . . . : 40   0 - 100 %

   Service interval . . . . : N   H=High, O=OK, N=None
   Interval . . . . . . . . : 999999999  0 - 999999999 milliseconds

Command ===>
 F1=Help       F2=Split     F3=Exit      F6=Clusinfo  F7=Bkwd      F8=Fwd
 F9=Swap       F10=Messages F11=Appls    F12=Cancel
```

Press F8.

```
                    Display a Local Queue - 6
Press F7 to see previous fields, or Enter to refresh details.
                                                   More:   -
Queue name . . . . . . . . : QUERY.ORX64A.ASF33DB2
Disposition . . . . . . . . : QMGR     QE71

Backout Reporting

   Backout threshold  . . . : 0           0 - 999999999

   Harden backout counter . : N   Y=Yes, N=No
   Backout requeue name . . :

Retention interval . . . . : 999999999  0 - 999999999 hours

Creation time . . . . . . . : 2004-09-28 11.15.06
Last alteration time . . . : 2004-09-28 11.15.06


Command ===>
 F1=Help       F2=Split     F3=Exit      F6=Clusinfo  F7=Bkwd      F8=Fwd
 F9=Swap       F10=Messages F11=Appls    F12=Cancel
```
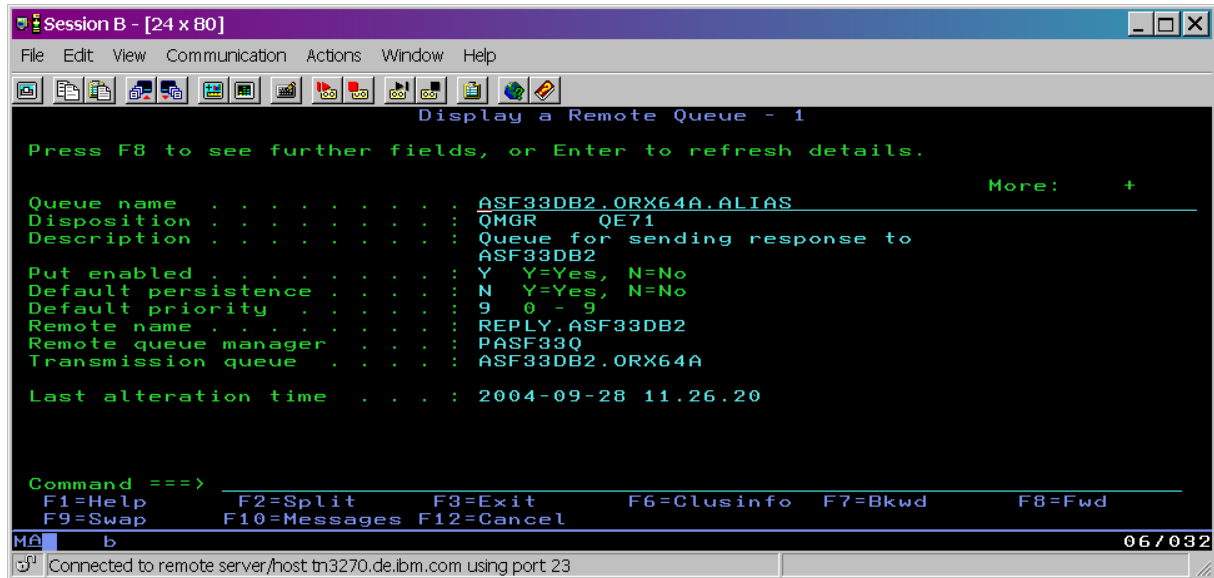
2.2 Define a Remote Queue (to AIX)

```
Session B - [24 x 80]                                              _ □ X
File  Edit  View  Communication  Actions  Window  Help

                        Display a Remote Queue - 1
 Press F8 to see further fields, or Enter to refresh details.
                                                        More:     +
 Queue name  . . . . . . . . .   ASF33DB2.ORX64A.ALIAS
 Disposition . . . . . . . . :   QMGR     QE71
 Description . . . . . . . . :   Queue for sending response to
                                 ASF33DB2
 Put enabled . . . . . . . . :   Y  Y=Yes, N=No
 Default persistence . . . . :   N  Y=Yes, N=No
 Default priority  . . . . . :   9  0 - 9
 Remote name . . . . . . . . :   REPLY.ASF33DB2
 Remote queue manager  . . . :   PASF33Q
 Transmission queue  . . . . :   ASF33DB2.ORX64A

 Last alteration time  . . . :   2004-09-28 11.26.20


 Command ===>
  F1=Help      F2=Split     F3=Exit      F6=Clusinfo  F7=Bkwd      F8=Fwd
  F9=Swap      F10=Messages F12=Cancel
MA     b                                                        06/032
   Connected to remote server/host tn3270.de.ibm.com using port 23
```

The remote name must match the queue name defined on AIX and the name of the remote
queue manager must match name of the AIX queue manager. The name of the transmission
queue must match the name of the remote queue manager. If this is not the case, there must
exist a transmission queue with the name of the remote queue manager (PASF33Q).
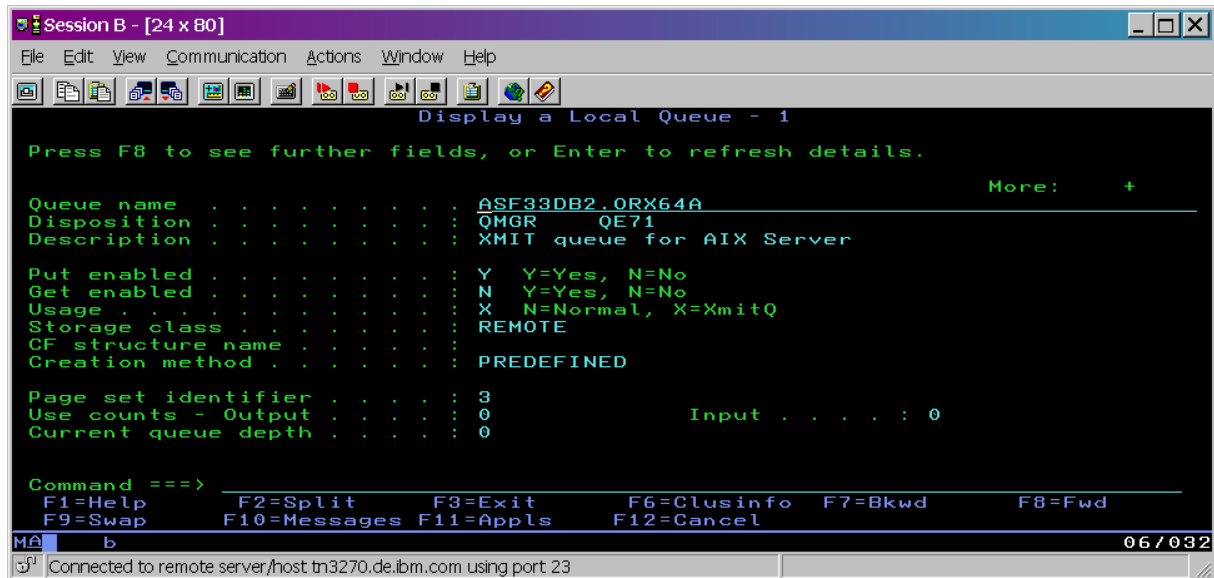
Press F8.

```
Session B - [24 x 80]                                              _ □ X
File  Edit  View  Communication  Actions  Window  Help

                        Display a Remote Queue - 2
 Press F7 to see previous fields, or Enter to refresh details.
                                                        More:    -
 Queue name  . . . . . . . . :   ASF33DB2.ORX64A.ALIAS
 Disposition . . . . . . . . :   QMGR     QE71

 Cluster name  . . . . . . . :
 Cluster namelist name . . . :
 Default bind  . . . . . . . :   O  O=Open, N=Notfixed




 Command ===>
  F1=Help      F2=Split     F3=Exit      F6=Clusinfo  F7=Bkwd      F8=Fwd
  F9=Swap      F10=Messages F12=Cancel
MA     b                                                        22/015
   Connected to remote server/host tn3270.de.ibm.com using port 23
```

2.3 Define a Xmit Queue

```
┌─ Session B - [24 x 80] ──────────────────────────────────── _ □ ✕ ┐
│ File  Edit  View  Communication  Actions  Window  Help            │
│ [toolbar icons]                                                   │
│                  Display a Local Queue - 1                        │
│ Press F8 to see further fields, or Enter to refresh details.      │
│                                                                   │
│                                                 More:      +      │
│ Queue name  . . . . . . . . . ASF33DB2.ORX64A                     │
│ Disposition . . . . . . . . : QMGR     QE71                       │
│ Description  . . . . . . . . : XMIT queue for AIX Server          │
│                                                                   │
│ Put enabled . . . . . . . . : Y  Y=Yes, N=No                      │
│ Get enabled . . . . . . . . : N  Y=Yes, N=No                      │
│ Usage . . . . . . . . . . . : X  N=Normal, X=XmitQ                │
│ Storage class . . . . . . . : REMOTE                              │
│ CF structure name . . . . . :                                     │
│ Creation method . . . . . . : PREDEFINED                          │
│                                                                   │
│ Page set identifier . . . . : 3                                   │
│ Use counts - Output . . . . : 0              Input . . . . : 0    │
│ Current queue depth . . . . : 0                                   │
│                                                                   │
│                                                                   │
│ Command ===>                                                      │
│  F1=Help      F2=Split     F3=Exit     F6=Clusinfo  F7=Bkwd    F8=Fwd │
│  F9=Swap      F10=Messages F11=Appls    F12=Cancel                │
│ MA   b                                                   06/032   │
│ 🖳 Connected to remote server/host tn3270.de.ibm.com using port 23 │
└───────────────────────────────────────────────────────────────────┘
```
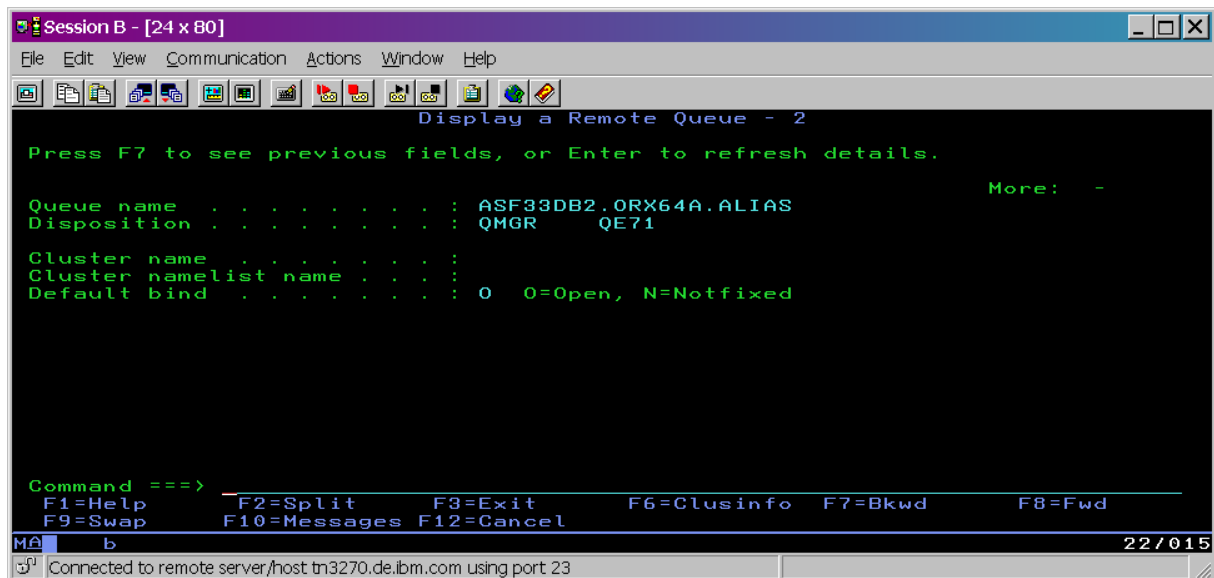
If there is more than one sender channel (systems), there must be a separate xmit queue for each channel. The name of one xmit queue must match the name of the AIX queue manager (PASF33Q).

Press F8.

```
┌─ Session B - [24 x 80] ──────────────────────────────────── _ □ ✕ ┐
│ File  Edit  View  Communication  Actions  Window  Help            │
│ [toolbar icons]                                                   │
│                  Display a Local Queue - 2                        │
│ Press F7 or F8 to see other fields, or Enter to refresh details.  │
│                                                                   │
│                                                 More:   - +       │
│ Queue name  . . . . . . . . : ASF33DB2.ORX64A                     │
│ Disposition . . . . . . . . : QMGR     QE71                       │
│                                                                   │
│ Cluster name  . . . . . . . :                                     │
│ Cluster namelist name . . . :                                     │
│ Default bind  . . . . . . . : O  O=Open, N=Notfixed               │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│ Command ===>                                                      │
│  F1=Help      F2=Split     F3=Exit     F6=Clusinfo  F7=Bkwd    F8=Fwd │
│  F9=Swap      F10=Messages F11=Appls    F12=Cancel                │
│ MA   b                                                   22/015   │
│ 🖳 Connected to remote server/host tn3270.de.ibm.com using port 23 │
└───────────────────────────────────────────────────────────────────┘
```
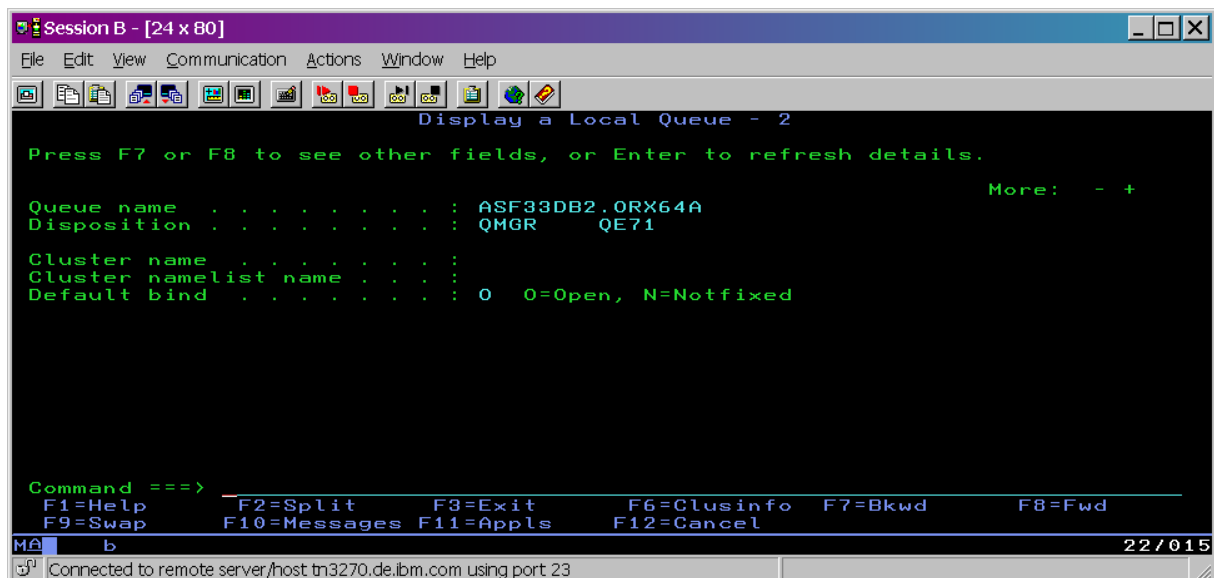
Press F8.

Press F8.

Press F8.

2.4 Define a Sender Channel

```
Session B - [24 x 80]                                                    _ □ X
File  Edit  View  Communication  Actions  Window  Help

□ □□ □□□ □□ □□ □□ □ □ □□ □ □□ □ □□ □ □□ □□ □ □ □
                      Display a Sender Channel - 1
Press F8 to see further fields, or Enter to refresh details.
                                                         More:     +
Channel name  . . . . . . . : ORX64A.ASF33DB2.TCP
Disposition . . . . . . . . : QMGR     QE71
Description . . . . . . . . : Channel for Sending Messages to
                              AIX
Transport type  . . . . . . : T   L=LU6.2, T=TCP/IP
Connection name . . . . . . : 9.152.92.39(1415)
Local address . . . . . . . :
LU6.2 mode name . . . . . . :
LU6.2 TP name . . . . . . . :

Transmission queue  . . . . : ASF33DB2.ORX64A



Command ===>
  F1=Help      F2=Split     F3=Exit      F7=Bkwd      F8=Fwd      F9=Swap
 F10=Messages F11=Status    F12=Cancel
MA      b                                                         06/032
□ Connected to remote server/host tn3270.de.ibm.com using port 23
```

The sender channel name must match the receiver channel name in AIX. The connection
name is the TCP/IP name of the AIX server plus the AIX port on which the AIX queue
manager (PASF33Q) is listening.
The transmission queue name is the same as described in "Define a Xmit Queue".

Press F8.

```
Session B - [24 x 80]                                                    _ □ X
File  Edit  View  Communication  Actions  Window  Help

□ □□ □□□ □□ □□ □□ □ □ □□ □ □□ □ □□ □ □□ □□ □ □ □
                      Display a Sender Channel - 2
Press F7 or F8 to see other fields, or Enter to refresh details.
                                                         More:  - +
Channel name  . . . . . . . : ORX64A.ASF33DB2.TCP
Disposition . . . . . . . . : QMGR     QE71

Disconnect interval . . . . : 0              0 - 999999 seconds
Batch interval  . . . . . . : 0              0 - 999999999 milliseconds
Batch heartbeat interval  . : 0              0 - 999999 milliseconds
Short retry interval  . . . : 60             0 - 999999999 seconds
Short retry count . . . . . : 10             0 - 999999999
Long retry interval . . . . : 1200           0 - 999999999 seconds
Long retry count  . . . . . : 999999999      0 - 999999999

Conversion by sender  . . . : N   Y=Yes, N=No



Command ===>
  F1=Help      F2=Split     F3=Exit      F7=Bkwd      F8=Fwd      F9=Swap
 F10=Messages F11=Status    F12=Cancel
MA      b                                                         22/015
□ Connected to remote server/host tn3270.de.ibm.com using port 23
```

Press F8.

```
Session B - [24 x 80]
File  Edit  View  Communication  Actions  Window  Help

              Display a Sender Channel - 3
Press F7 or F8 to see other fields, or Enter to refresh details.

                                                            More:   - +
Channel name  . . . . . . . :  ORX64A.ASF33DB2.TCP
Disposition . . . . . . . . :  QMGR     QE71

MCA user ID . . . . . . . . :
Nonpersistent messages  . . :  F   F=Fast, N=Normal
Maximum message length  . . :  4194304      0 - 104857600
Batch size  . . . . . . . . :  50           1 - 9999
Sequence number wrap  . . . :  999999999    100 - 999999999
Heartbeat interval  . . . . :  300          0 - 999999 seconds
Keep alive interval . . . . :  AUTO         0 - 99999 seconds or AUTO
Security exit name  . . . . :
    User data . . . . . . . :

Last alteration time  . . . :  2004-09-28 11.32.03


Command ===> _____
 F1=Help       F2=Split      F3=Exit      F7=Bkwd      F8=Fwd      F9=Swap
F10=Messages F11=Status    F12=Cancel
MA    b                                                          22/015
```
Connected to remote server/host tn3270.de.ibm.com using port 23

2.5 Define a Receiver Channel


```
Session B - [24 x 80]
File  Edit  View  Communication  Actions  Window  Help

              Display a Receiver Channel - 1
Press F8 to see further fields, or Enter to refresh details.

                                                            More:     +
Channel name  . . . . . . . .  ASF33DB2.ORX64A.TCP
Disposition . . . . . . . . :  QMGR     QE71
Description . . . . . . . . :  Channel for Receiving Messages f
                               or AIX



Put authority . . . . . . . :  D   D=Default, C=Context, O=OnlyMCA, A=AltMCA







Command ===> _____
 F1=Help       F2=Split      F3=Exit      F7=Bkwd      F8=Fwd      F9=Swap
F10=Messages F11=Status    F12=Cancel
MA    b                                                          06/032
```
Connected to remote server/host tn3270.de.ibm.com using port 23

The receiver channel name must match the name of the sender channel in AIX.

Press F8.

```
Session B - [24 x 80]
File  Edit  View  Communication  Actions  Window  Help

             Display a Receiver Channel - 2
Press F7 or F8 to see other fields, or Enter to refresh details.
                                                      More:   - +
Channel name  . . . . . . . : ASF33DB2.ORX64A.TCP
Disposition . . . . . . . . : QMGR      QE71

MCA user ID . . . . . . . . :
Nonpersistent messages  . . : F  F=Fast, N=Normal
Maximum message length  . . : 4194304       0 - 104857600
Batch size  . . . . . . . . : 50            1 - 9999
Sequence number wrap  . . . : 999999999   100 - 999999999
Heartbeat interval  . . . . : 300           0 - 999999 seconds
Keep alive interval . . . . : AUTO          0 - 99999 seconds or AUTO
Security exit name  . . . . :
   User data  . . . . . . . :

Last alteration time  . . . : 2004-09-28 11.33.11


Command ===>
 F1=Help      F2=Split      F3=Exit      F7=Bkwd      F8=Fwd      F9=Swap
F10=Messages F11=Status    F12=Cancel
MA    b                                                          22/015
Connected to remote server/host tn3270.de.ibm.com using port 23
```

2.6 Define a Process

```
Session B - [24 x 80]
File  Edit  View  Communication  Actions  Window  Help

             Display a Process - 1
Press F8 to see further fields, or Enter to refresh details.
                                                      More:     +
Process name  . . . . . . . : CICWEB1C
Disposition . . . . . . . . : QMGR      QE71
Description . . . . . . . . : PROCESS FOR CICS PROCESSING

Application type  . . . . . : CICS

Application
   ID . . . : CKBR








Command ===>
 F1=Help      F2=Split      F3=Exit      F7=Bkwd      F8=Fwd      F9=Swap
F10=Messages F12=Cancel
MA    b                                                          06/032
Connected to remote server/host tn3270.de.ibm.com using port 23
```

Press F8.

2.7 Define a Initiation Queue

Press F8.

```
Session B - [24 x 80]                                                    _ □ ×
File  Edit  View  Communication  Actions  Window  Help
[toolbar icons]
                      Display a Local Queue - 2
 Press F7 or F8 to see other fields, or Enter to refresh details.

                                                        More:   - +
 Queue name  . . . . . . . . . : ASF33DB2.INITQ
 Disposition . . . . . . . . . : QMGR     QE71

 Cluster name  . . . . . . . . :
 Cluster namelist name . . . . :
 Default bind  . . . . . . . . : O   O=Open,  N=Notfixed




 Command ===>
  F1=Help        F2=Split      F3=Exit      F6=Clusinfo  F7=Bkwd      F8=Fwd
  F9=Swap       F10=Messages F11=Appls      F12=Cancel
MA    b                                                              22/015
Connected to remote server/host tn3270.de.ibm.com using port 23
```

Press F8.


```
Session B - [24 x 80]                                                    _ □ ×
File  Edit  View  Communication  Actions  Window  Help
[toolbar icons]
                      Display a Local Queue - 3
 Press F7 or F8 to see other fields, or Enter to refresh details.

                                                        More:   - +
 Queue name  . . . . . . . . . : ASF33DB2.INITQ
 Disposition . . . . . . . . . : QMGR     QE71

 Default persistence . . . . . : Y   Y=Yes, N=No
 Default priority  . . . . . . : 5   0 - 9
 Message delivery sequence . : F   P=Priority, F=FIFO
 Permit shared access  . . . : Y   Y=Yes, N=No
 Default share option  . . . : E   E=Exclusive, S=Shared
 Index type  . . . . . . . . . : N   N=None, M=MsgId, C=CorrelId, G=GroupId,
                                     T=MsgToken

 Maximum queue depth . . . . : 100        0 - 999999999
 Maximum message length  . . : 4194304    0 - 104857600


 Command ===>
  F1=Help        F2=Split      F3=Exit      F6=Clusinfo  F7=Bkwd      F8=Fwd
  F9=Swap       F10=Messages F11=Appls      F12=Cancel
MA    b                                                              22/015
Connected to remote server/host tn3270.de.ibm.com using port 23
```

Press F8.

```
Session B - [24 x 80]                                                      _ □ ×
File  Edit  View  Communication  Actions  Window  Help

[toolbar icons]
                        Display  a  Local  Queue  -  4
Press F7 or F8 to see other fields, or Enter to refresh details.
                                                              More:   -  +
Queue name  . . . . . . . . :  ASF33DB2.INITQ
Disposition . . . . . . . . :  QMGR      QE71

Trigger Definition

    Trigger type  . . . . . :  N   F=First, E=Every, D=Depth, N=None
    Trigger set  . . . . . . :  N   Y=Yes, N=No

    Trigger message priority :  0   0 - 9
    Trigger depth  . . . . . :  1          1 - 999999999

    Initiation queue . . . . :
    Process name . . . . . . :
    Trigger data . . . . . . :


Command ===>
  F1=Help       F2=Split      F3=Exit       F6=Clusinfo  F7=Bkwd       F8=Fwd
  F9=Swap       F10=Messages  F11=Appls     F12=Cancel
MA     b                                                              22/015
[icon] Connected to remote server/host tn3270.de.ibm.com using port 23
```

Press F8.


```
Session B - [24 x 80]                                                      _ □ ×
File  Edit  View  Communication  Actions  Window  Help

[toolbar icons]
                        Display  a  Local  Queue  -  5
Press F7 or F8 to see other fields, or Enter to refresh details.
                                                              More:   -  +
Queue name  . . . . . . . . :  ASF33DB2.INITQ
Disposition . . . . . . . . :  QMGR      QE71

Event Control

    Queue full . . . . . . . :  E   E=Enabled, D=Disabled

    Upper queue depth  . . . :  D   E=Enabled, D=Disabled
    Threshold  . . . . . . . :  80    0 - 100 %

    Lower queue depth  . . . :  D   E=Enabled, D=Disabled
    Threshold  . . . . . . . :  40    0 - 100 %

    Service interval . . . . :  N   H=High, O=OK, N=None
    Interval . . . . . . . . :  999999999  0 - 999999999 milliseconds

Command ===>
  F1=Help       F2=Split      F3=Exit       F6=Clusinfo  F7=Bkwd       F8=Fwd
  F9=Swap       F10=Messages  F11=Appls     F12=Cancel
MA     b                                                              22/015
[icon] Connected to remote server/host tn3270.de.ibm.com using port 23
```

Press F8.

3 CICS Definitions

3.1 The CICS Adapter (PLTPI program)

The CICS adapter must be installed and operational. For more information refer to „WebSphere MQ for z/OS System Setup Guide" SC34-6052 and „WebSphere MQ for z/OS System Administration Guide" SC34-6053. A CICS connection is started from a PLTPI program as follows:

```
    PRINT GEN
*
DFHPLTP1 DFHPLT TYPE=INITIAL,SUFFIX=P1
    DFHPLT TYPE=ENTRY,PROGRAM=DFHDELIM
    DFHPLT TYPE=ENTRY,PROGRAM=CSQCCODF
    DFHPLT TYPE=FINAL
*
    END
```

To activate the PLTPI program and the CICS Adapter the following SIT parameters are used:

```
INITPARM=(CSQCPARM='SN=QE71,TN=002,IQ=ASF33DB2.INITQ')
MQCONN=YES
PLTPI=P1
```

3.2 The CICS Bridge (Transaction CKBR)

The CICS Bridge must be installed and operational. For more information refer to „WebSphere MQ for z/OS System Setup Guide" SC34-6052 and „WebSphere MQ for z/OS System Administration Guide" SC34-6053.

3.3 MQ and CICS Bridge

The CICS bridge is started automatically during the first request via the CICS request queue (f.e. QUERY.ORX64A.ASF33DB2).

The request queue must have the following trigger definition:

```
Trigger Type       = F                      (first)
Initiation Queue   = ASF33DB2.INITQ         (CICS startup:
                                            INITPARM=(CSQCPARM='SN=QE71
                                            ,TN=002,IQ=ASF33DB2.INITQ')

Process name    = CICWEB1C
```

The process CICSWEB1C must have the following parameters:

```
Application ID = CKBR
User data      = AUTH=IDENTIFY,WAIT=20
```

Note: CKBR can be started from a CICS terminal by entering the command

```
CKBR Q=QUERY.ORX64A.ASF33DB2,AUTH=IDENTIFY,WAIT=20
```

The terminal will be locked.

4 WebSphere Application Server V5.1 Settings

Refer to the document "Installation on AIX Server using WebSphere Application Server V5.1, Server-to-Host connection using WebSphere MQ ".

5 Security Considerations

User Id and password as specified using the DocNetworkConfigServlet are passed to the CICS Bridge (user Id within the MQMD section and password within the CIH CICS Information Header). It depends on the CICS Bridge settings whether RACF is called to verify the user Id/password (AUTH keyword for transaction CKBR).

6 Problem Determination

For problem determination a server and a host trace have to be provided. Under CICS transaction CEDX can be used to debug problems:

1. Server trace on AIX (can be enabled in DocConfiguration.xml)
2. Host trace
3. CEDX CKBP (CICS Bridge Transaction)