MQ for z/OS – Introduction to the MQ Web Console

Essential JCL


```
  .   .   .   .   .   .   .   .   .   .   .
 Menu  Functions  Confirm  Utilities
_____
EDIT                ZQS1.MQ.WEB.JCL
            Name        Prompt        Size
_____    CRTMQWEB  *Edited           21
_____    MQANGEL                     12
_____    MQWEBS                      26
_____    RACF                       140
_____    XMQWEBS                      4
_____    ZLSOF                       21
            **End**
```

CRTMQWEB – Executes command to create web server

MQANGEL - Start the Liberty angel process for MQ

MQWEBS -

Sample code with MQ installation

```
 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
  File   Edit   Edit_Settings   Menu   Utilities   Compilers   Test   Help
─────────────────────────────────────────────────────────────────────────────
EDIT        ZQS1.SCSQPROC(CSQ4WEBS) - 01.00            Columns 00001 00072
****** ********************************* Top of Data ***********************
==MSG> -Warning- The UNDO command is not available until you change
==MSG>          your edit profile using the command RECOVERY ON.
000001 //*************************************************************
000002 //*                                                          *
000003 //* <copyright                                               *
000004 //* notice="lm-source"                                       *
000005 //* pids="5655-MQ9"                                          *
000006 //* years="2016,2022"                                        *
000007 //* crc="544194289" >                                        *
000008 //* Licensed Materials - Property of IBM                     *
000009 //*                                                          *
000010 //* 5655-MQ9                                                 *
000011 //*                                                          *
000012 //* (C) Copyright IBM Corp. 2016, 2022 All Rights Reserved.  *
000013 //* </copyright>                                             *
000014 //*                                                          *
Command ===> ___                           Scroll ===> CSR
```

```
   File   Edit   Edit_Settings   Menu   Utilities   Compilers   Test   Help
───────────────────────────────────────────────────────────────────────────────
EDIT        ZQS1.MQ.WEB.JCL(CRTMQWEB) - 01.08           Columns 00001 00072
****** **************************** Top of Data ***************************
==MSG> -Warning- The UNDO command is not available until you change
==MSG>           your edit profile using the command RECOVERY ON.
000001 //CRTMQWEB JOB 'MQ WEB',CLASS=A,REGION=0M,MSGCLASS=H,
000002 // NOTIFY=&SYSUID
000003 //************************************************************************
000004 //*   SET SYMBOLS
000005 //************************************************************************
000006 //EXPORT EXPORT SYMLIST=(*)
000007 // SET JAVAHOME='/usr/lpp/java/J8.0_64'
000008 // SET MQPATH='/usr/lpp/mqm/V9RXMX'
000009 // SET WLPUSER='/var/mqm'
000010 //************************************************************************
000011 //*   Step crtmqweb - Use the crtmqweb command
000012 //************************************************************************
000013 //CRTMQWEB EXEC PGM=IKJEFT01,REGION=0M
000014 //SYSTSPRT DD SYSOUT=*
Command ===>                                          Scroll ===> CSR
```

```
BROWSE            ZQS1.MQ.WEB.JCL                    Row 0000001 of 0000006
            Name      Prompt        Size    Created          Changed          ID
_____  CRTMQWEB                 21    2024/01/08  2024/04/19 13:16:08 DQUINCY
_____  MQANGEL                  12    2024/01/08  2024/05/07 16:03:52 DQUINCY
_____  MQWEBS                   24    2024/01/08  2024/05/14 13:10:32 DQUINCY
_____  RACF                    140    2024/01/08  2024/04/19 13:32:08 DQUINCY
_____  XMQWEBS                   4    2024/01/08  2024/04/19 12:56:08 DQUINCY
_____  ZLSOF                    21    2024/02/18  2024/04/19 12:56:37 DQUINCY
             **End**
```

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crtmqweb

```
**************************** Top of Data ******************************
//CRTMQWEB JOB 'MQ WEB',CLASS=A,REGION=0M,MSGCLASS=H,
//  NOTIFY=&SYSUID
//*********************************************************************
//*    SET SYMBOLS
//*********************************************************************
//EXPORT EXPORT SYMLIST=(*)
//  SET JAVAHOME='/usr/lpp/java/J8.0_64'
//  SET MQPATH='/usr/lpp/mqm/V9RXMX'
//  SET WLPUSER='/var/mqm'
//*********************************************************************
//*    Step crtmqweb - Use the crtmqweb command
//*********************************************************************
//CRTMQWEB EXEC PGM=IKJEFT01,REGION=0M
//SYSTSPRT DD SYSOUT=*
//SYSERR   DD SYSOUT=*
//STDOUT   DD SYSOUT=*
//SYSTSIN  DD *,SYMBOLS=EXECSYS

BPXBATCH SH +
export JAVA_HOME=&JAVAHOME; +
export WLP_USER_DIR=&WLPUSER; +
&MQPATH/bin/crtmqweb &WLPUSER -p MQ
**************************** Bottom of Data ****************************
```

Running the crtmqweb…

```
                        z/OS UNIX Directory List            Row 1 to 10 of 10

Pathname . : /MQS1/var/mqm/servers/mqweb
EUID . . . : 91
Command   Filename         Message            Type Permission Audit   Ext   Fmat
---------------------------------------------------------------------------------
_____   .                                   Dir  rwxrwxrwx  fff---        ----
_____   ..               Added in           Dir  rwxrwxrwx  fff---        ----
_____   apps                                Dir  rwxrwxrwx  fff---        ----
_____   basic_registry.                     File rw-r--r--  fff--- --s- ----
_____   dropins                             Dir  rwxrwxrwx  fff---        ----
_____   jvm.options                         File rw-r--r--  fff--- --s- ----
_____   lib                                 Dir  rwxrwxrwx  fff---        ----
_____   mqwebuser.xml                       File rw-r--r--  fff--- --s- ----
_____   server.env                          File rw-r--r--  fff--- --s- ----
_____   server.xml                          File rw-r--r--  fff--- --s- ----
***************************** Bottom of data ***************************************
```

mqwebuser.xml

```xml
<featureManager>
    <feature>appSecurity-2.0</feature>
    <feature>zosSecurity-1.0</feature>
    <feature>basicAuthenticationMQ-1.0</feature>
    <feature>apiDiscovery-1.0</feature>
</featureManager>
<basicRegistry id="basic" realm="defaultRealm">
    <user name="mqadmin" password="mqadmin"/>
    <group name="MQWebAdminGroup">
        <member name="mqadmin"/>
    </group>
</basicRegistry>
<logging traceSpecification=
"*=info:com.ibm.mq*=all:com.ibm.mq.rest*=all:js.mq*=all"/>
<enterpriseApplication id="com.ibm.mq.console"/>
<enterpriseApplication id="com.ibm.mq.rest"/>
<safAuthorization racRouteLog="ASIS"/>
<safRegistry id="saf"/>
```

Continued…

```
<safAuthorization id="saf"
    reportAuthorizationCheckDetails="true" />
<safCredentials profilePrefix="MQWEB" unauthenticatedUser="WSGUEST"/
<webAppSecurity allowFailOverToBasicAuth="true />
<variable name="httpsPort" value="9443"/>
<variable name="httpHost" value="-1"/>
<variable name="mqRestMessagingEnabled" value="true"/>
<httpEndpoint host="*" httpPort="-1" httpsPost="9443'
    id="defaultHttpEndpoint"/>
</server>
```

server.xml

```xml
<server>
    <include location="${wlp.install.dir}/mq/etc/mqweb.xml"/>
    <include location="mqwebuser.xml"/>
    <include location="basic_registry.xml"/>
</server>
```

Add MQWEB to started procedure

```
EDIT          SYS1.PROCLIB(MQWEBS) - 01.05              Columns 00001 00072
****** ******************************** Top of Data ***************************
==MSG> -Warning- The UNDO command is not available until you change
==MSG>           your edit profile using the command RECOVERY ON.
000001 //MQWEBS PROC PARMS='mqweb --clean'
000002 //*
000003 //    SET INSTDIR='/usr/lpp/mqm/V9RXMX/web'
000004 //    SET USERDIR='/var/mqweb'
000005 //*
000006 //MQCONSOL EXEC PGM=BPXBATSL,REGION=0M,TIME=NOLIMIT,
000007 //    PARM='PGM &INSTDIR./lib/native/zos/s390x/bbgzsrv &PARMS.'
000008 //WLPUDIR   DD  PATH='&USERDIR.'
000009 //STEPLIB   DD  DSN=MQ935CD.SCSQANLE,DISP=SHR
000010 //         DD  DSN=MQ935CD.SCSQAUTH,DISP=SHR
000011 //STDOUT    DD  SYSOUT=*
000012 //STDERR    DD  SYSOUT=*
000013 //STDIN     DD  DUMMY
000014 //STDENV    DD  *
000015 JAVA_HOME=/usr/lpp/java/J8.0_64
Command ===> _                                         Scroll ===> CSR
 F1=Help      F2=Split      F3=Exit      F4=Expand     F5=Rfind      F6=Rchange
 F7=Up        F8=Down       F9=Swap      F10=Left      F11=Right     F12=Cancel
 A    A                                                              22/015
```

Continued…

```
EDIT          SYS1.PROCLIB(MQWEBS) - 01.05          Columns 00001 00072
000016 WLP_USER_DIR=/var/mqm/servers/mqweb
000017 PATH=/usr/lpp/mqm/V9RXMX/web/bin:/bin:/usr/bin
000018 LIBPATH=/usr/lpp/java/J8.0_64/lib
000019 //ZTDENV    DD  *
000020 JAVA_HOME=/usr/lpp/java/J8.0_64
000021 WLP_USER_DIR=/var/mqm/servers/mqweb
000022 PATH=/usr/lpp/mqm/V9RXMX/web/bin:/bin:/usr/bin
000023 LIBPATH=/usr/lpp/java/J8.0_64/lib
000024 IBM_JAVA_OPTIONS=-Dcom.ibm.ws.zos.core.angelName=MQANGEL
****** *********************** Bottom of Data ************************
```

Add MQANGEL JCL to the started procedure

```
BROWSE          SYS1.PROCLIB(MQANGEL) - 01.04              Line 000000000 Col 001 080
******************************** Top of Data ********************************
//MQANGEL PROC PARMS='',COLD=N,NAME='MQANGEL',SAFLOG=Y
//*----------------------------------------------------------------------
//   SET ROOT='/usr/lpp/mqm/V9RXMX/web'
//*  SET ROOT='/usr/lpp/mqm/V9R3M4/web'
//*----------------------------------------------------------------------
//* Start the Liberty angel process for MQ
//*----------------------------------------------------------------------
//STEP1    EXEC PGM=BPXBATA2,REGION=0M,TIME=NOLIMIT,
//         PARM='PGM &ROOT./lib/native/zos/s390x/bbgzangl COLD=&COLD NAME=X
//               &NAME &PARMS SAFLOG=&SAFLOG'
//STDOUT    DD SYSOUT=*
//STDERR    DD SYSOUT=*
******************************* Bottom of Data ******************************
```