

**Broker\_IIB00provision1562312310954****Description :** Provision an IBM Integration Broker instance. Build for FTM. Based on Message Broker v9.**Status:** Complete**Steps complete:** 27 of 27**Owner:** greefni**Export time:** 2019-07-05 09:44:23**System:** XAT.XAT1 (XAT1)**Version:** HSMA237;PH04817P;2018-12-01T00:17:16**Filters :**

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Step 1 : Specify IIB parameters

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workf low:
Complete	greefni	greefni	noFeedback	IIB administration	No

Description:

Sets the parameters required for the IIB.

Instructions:

Specify the parameters required for IIB.

Step 2 : DeriveVariables

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workf low:
Complete	greefni	greefni	noFeedback		No

Description:

This step derives values for variables from the values of the variables provided on the workflow instantiation.Aim is to make the workflow more readable by creating specific variables once and use these in the steps instead of using more complex expressions of multiple variables.

Instructions:

Generated instruction text for step: DisplayVariablesUpdate this field with your own text

Template Content:

```

//GENER EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
GENERATE
LABELS DATA=ALL
/*
//SYSUT1 DD *
/* Rexx */
l = 'abcdefghijklmnopqrstuvwxyz'
u = 'ABCDEFGHIJKLMNOPQRSTUVWXYZ'

lpar = substr("XAT1",1,4)
phase = substr("X2",1,1)
select
when phase = "X" then do
    db2subsys = "DBXC"
    db2port = 10446
end
when phase = "O" then do
    db2subsys = "DBOF"
    db2port = 16446
end
when phase = "T" then do
    db2subsys = "DBTF"
    db2port = 17446
end
when phase = "A" then do
    db2subsys = "DBFZ"
    db2port = 10447
end
when phase = "F" then do
    db2subsys = "DBFF"
    db2port = 1446
end
when phase = "P" then do
    db2subsys = "DBEF"
    db2port = 1446
end
otherwise do
    db2subsys = "UNKNOWN"
    db2port = "ERROR"
    Say "DB2 subsystem for environment could not be determined"
    Exit 999
end

end

brokername = "IBX2"substr(lpar,4,1)"1"
brokernamelc = translate(brokername,l,u)

data.1 = "IIB_STCUSER = "brokername"U"
data.2 = "IIB_TIV_USER_LC = tivmanu"
data.3 = "IIB_HOME_DIR = /u/miscuser/"brokernamelc"u"
data.4 = "IIB_WORK_DIR = /var/mqsi/brokers/"brokernamelc
data.5 = "IIB_RUNASUSER = "brokername"U"
data.6 = "IIB_EXG_NAMEBASE = IMX2"substr(lpar,length(lpar),1)"10"
data.7 = "IIB_DSNAOINI = BIPDSNX2"
data.8 = "IIB_CURRENTSQLID = T5X2DBA"
data.9 = "IIB_BROKER_NAME = "brokername
data.10 = "IIB_BROKER_NAME_LC = "brokernamelc
data.11 = "IIB_WORK_DIR_SYMLINK = /var/mqsi/brokers/"brokernamelc
data.12 = "IIB_ODBC_HOME_DIR = /u/miscuser/db01tt5x"
data.13 = "IIB_WAS_HOME_DIR = /u/miscuser/db02tt5x"
data.14 = "IIB_PLEX = "substr(lpar,1,3)
data.15 = "IIB_DB2_DS_SUBSYS_PREFIX = SYS3."db2subsys
data.16 = "IIB_LPAR_NAME = "lpar
data.17 = "IIB_DBSRV_NAME = "db2subsys
data.18 = "IIB_JDBC_PORTNR = "db2port

```

```
data.19 = "RABO_INSTANCEID = "brokername

data.0 = 19

ADDRESS SYSCALL "WRITEFILE $_output 777 data."
rcw = rc
sleep 2

Exit rcw
/*
//SYSUT2 DD DSN=DS1(CMD),DISP=(NEW,PASS),
// UNIT=SYSDA,SPACE=(TRK,(5,,2))
//*
//RDWRJ EXEC PGM=IKJEFT01
//SYSPRINT DD SYSOUT=*
//SYSPROC DD DISP=SHR,DSN=DS1
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
CMD
/*
//
```



Step 3 : DisplayVariables

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workf low:
Complete	greefni	greefni	noFeedback		No

Description:

Displays variable values to make debugging of the workflow easier.

Instructions:

Generated instruction text for step: DisplayVariablesUpdate this field with your own text

Template Content:

```
//GENER EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
  GENERATE
  LABELS DATA=ALL
/*
//SYSUT1 DD *
/* Rexx */
Say "IIB_STCUSER = IBX211U"
Say "IIB_TIV_USER_LC = tivmanu"
Say "IIB_HOME_DIR = /u/miscuser/ibx211u"
Say "IIB_WORK_DIR = /var/mqsi/brokers/ibx211"
Say "IIB_RUNASUSER = IBX211U"
Say "IIB_EXG_NAMEBASE = IMX2110"
Say "IIB_DSNAOINI = BIPDSNX2"
Say "IIB_CURRENTSQLID = T5X2DBA"
Say "IIB_BROKER_NAME_LC = ibx211"
Say "IIB_WORK_DIR = /var/mqsi/brokers/ibx211"
Say "IIB_ODBC_HOME_DIR = /var/mqsi/brokers/ibx211"
Say "IIB_XDBC_USER = DB01TT5X"
Say "IIB_WAS_USER = DB02TT5X "
Say "IIB_WASUSER_UID = 98765 "
Say "_workflow-tenantID = X1100"
Say "_workflow-domainID = X11"
Say "_workflow-templateName = IIB"

Say "Rexx ran ok"
Exit 0
/*
//SYSUT2 DD DSNAME=&&DS1(CMD),DISP=(NEW,PASS),
//      UNIT=SYSDA,SPACE=(TRK,(5,,2))
//*
//RDWRJ EXEC PGM=IKJEFT01
//SYSPRINT DD SYSOUT=*
//SYSPROC DD DISP=SHR,DSN=&&DS1
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
  CMD
/*
//
```

---



## Step 4 : Obtain TCP port for Broker

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB	No

### Description:

Obtain a TCP port for the broker web admin UI. The port comes from the pool defined in the z/OSMF resources.

### Instructions:

Generated instruction text for step: obtainPortUpdate this field with your own text

### Restful Request Information:

POST /zosmf/resource-mgmt/rest/1.0/rdp/network/port/actions/obtain

#### Expected Status Code

200

#### RequestBody

```
{
  "template-name" : "${_workflow-templateName}",
  "tenant-id"      : "${_workflow-tenantID}",
  "network-parms" :
  {
    "name"          : "${instance-IIB_BROKER_NAME_LC}_${_workflow-
softwareServiceInstanceName}_brokerport",
    "intent"        : "exclusive",
    "transport"     : "TCP",
    "job-name"      : "${instance-IIB_BROKER_NAME_LC}S",
    "system-name"   : "${_workflow-systemName}"
  }
}
```

## Step 5 : DefineandAuthorizeUsers

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workf low:
Complete	greefni	greefni	noFeedback	IIB	No

### Description:

Define and Authorize Broker User and database access users.Groups and profiles required are assumed a prer eq to this workflow. Improvement: better error handling. Probably needs a rexx to fire commands and catch resut s of commands.

### Instructions:

Generated instruction text for step: AuthorizeRunAsUserUpdate this field with your own text

### Template Content:

```
//RACFDEFS EXEC PGM=IKJEFT01,REGION=0M
/* Group definitions are prereq to this workflow
//SYSTSPRT DD SYSOUT=*
/* The following definitions must be made
//SYSTSIN DD *

adduser IBX211U owner(USSDBMT5) dfltgrp(USSDBMT5)
altuser IBX211U name('STC-USER TBV BROKER')
altuser IBX211U nopassword nooidcard
connect IBX211U group(FUSTCBRK) owner(FUSTCBRK) -
  auth(USE) uacc(NONE)
connect IBX211U group(OMEGAMON) owner(OMEGAMON) -
  auth(USE) uacc(NONE)

altuser IBX211U omvs(home('/u/miscuser/ibx211u'))
altuser IBX211U omvs(program('/bin/sh'))
altuser IBX211U -
  omvs(uid(70617) shared)

connect IBX211U group(FUSTCBRK)

connect IBX211U group(ZOSWFXR)

rdefine STARTED IBX211.** owner(GRZOS) -
  audit(failures(READ)) uacc(NONE)
ralter STARTED IBX211.** -
  stdata(user(IBX211U))
setropts refresh raclist(STARTED)

rdefine STARTED IBX211J.** owner(GRZOS) -
  audit(failures(READ)) uacc(NONE)
ralter STARTED IBX211J.** -
  stdata(user(IBX211U))
setropts refresh raclist(STARTED)
/*
//RACFAU EXEC PGM=IKJEFT01,DYNAMNBR=20,COND=(EVEN)
//SYSTSPRT DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SYSTSIN DD *

PE ZOSWFX1.ZOSMF.TEMPLATE.RUNASUSERS.X11.IIB -
  CLASS(ZMFCLLOUD) ID(IBX211U) ACCESS(READ)
PE Q%Q0.BATCH CL(MQCONN) ID(TW4#) ACCESS(READ)
PE *.DELETE.QLOCAL CL(MQCMLS) ID(IBX211U) ACCESS(ALTER)

PE IEFUSI.PLUS256 CLASS(FACILITY) ID(IBX211U) ACCESS(READ)
PE IEFUSI.PLUS256 CLASS(FACILITY) ID(TW4#) ACCESS(READ)

SETROPTS RACLIST(ZMFCLLOUD) REFRESH
SETROPTS RACLIST(FACILITY) REFRESH

/*
//RACFDEFS EXEC PGM=IKJEFT01,REGION=0M
/* Group definitions are prereq to this workflow
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
adduser DB01TT5X owner(USSDBMT5) -
  dfltgrp(USSDBMT5)
altuser DB01TT5X name('FTM USER TBV Broker ODBC') -
  PASSWORD(ftmxxusr)

connect DB01TT5X group(USSDBMT5) -
  owner(USSDBMT5) auth(USE) uacc(NONE)
altuser DB01TT5X omvs(home('/u/miscuser/db01tt5x'))
altuser DB01TT5X omvs(program('/bin/sh'))
altuser DB01TT5X omvs(uid(98765) shared)

adduser DB02TT5X owner(USSDBMT5) dfltgrp(USSDBMT5)
```

```
altuser DB02TT5X name('FTM USER TBV WAS JDBC') PASSWORD(${instance-WAS_PW})

connect DB02TT5X group(USSDBMT5) -
  owner(USSDBMT5) auth(USE) uacc(NONE)
altuser DB02TT5X omvs(home('${instance-IIB_WAS_HOME_DIR}'))
altuser DB02TT5X omvs(program('/bin/sh'))
altuser DB02TT5X omvs(uid(98765) shared)
/*
```



## Step 6 : Update parmlib

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Creates a DB2 configuration member DSNAOINI for the ODBC connection with Db2. COULD be in any PDS reference in the broker's ENVFILE.

### Instructions:

Run job UPDPRML.jcl.

### Template Content:

```
;*****  
;*          IBM Integration Bus          *  
;*          *                          *  
;* Dsnaoini for an integration node.    *  
;*          *                          *  
;*****  
ÝCOMMON`  
APPLTRACE=0  
APPLTRACEfilename="DD:APPLTRC"  
TRACETIMESTAMP=3  
TRACEPIDTID=1  
CONNECTTYPE=2  
DIAGTRACE=0  
DIAGTRACE_NO_WRAP=0  
MAXCONN=0  
MULTICONTEXT=0  
MVSDEFAULTSSID=DBXC  
  
; SUBSYSTEM  
ÝDBXC`  
MVSATTACHTYPE=RRSAF  
PLANNAME=DSNACLI  
  
; DATASOURCES  
ÝDBXC`  
CURRENTSQLID=T5X2DBA  
AUTOCOMMIT=0  
CONNECTTYPE=2  
CURRENTAPPENSCH=UNICODE  
MULTICONTEXT=0  
MVSATTACHTYPE=RRSAF  
PLANNAME=DSNACLI  
TXNISOLATION=2
```

---

## Step 7 : Update STCproc

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Add an procedure to a proclib library to start broker.We have a dedicated proclib for z/OSMF managed procedures, SYS3..STCPROC.

### Instructions:

Run job UPDSTC.jcl.

### Template Content:



```

//IBX211 PROC COMPK='IBX211',
//      INSTP='/usr/lpp/mqsi/V9R0M0',
//      MAINP='bipimain',
//      SRVMP='bipservice',
//      COMDS='SYS2.ZOSWFX1.PARMLIB',
//      STRTP='AUTO',
//*      COMPDIR='/var/mqsi/brokers/ibx211',
//      SE='',
//      SH='',
//      HOME='/u/miscuser/ibx211u',
//      E='',
//      DB2HLQ='SYS3.DBXC',
//      WMQHLQ='SYS3'
//*
//*
//* *****
//* Test to see if the ENVFILE exists.
//* The base ENVFILE called ENVFILE should exist.
//* Integration server specific ENVFILES (ENVFILE.) may
//* exist if specified. If not then use the base ENVFILE.
//* Should return RC=0 if an integration server specific ENVFILE
//* exists, otherwise RC=256 (use the base ENVFILE).
//* *****
//*
//CHECKENV EXEC PGM=BPXBATSL,REGION=0M,TIME=NOLIMIT,
//          PARM='PGM /bin/test -e &HOME./ENVFILE.&E.'
//STDOUT   DD SYSOUT=*
//STDERR   DD SYSOUT=*
//*
//* *****
//* Copy ENVFILE to SYSOUT
//* *****
//*
//      IF (CHECKENV.RC EQ 0) THEN
//COPYENV1 EXEC PGM=IKJEFT01,
//          PARM='OCOPY INDD(BIPFROM) OUTDD(ENVFILE)'
//SYSTSPRT DD DUMMY
//BIPFROM  DD PATHOPTS=(ORDONLY),
//          PATH='&HOME./ENVFILE.&E.'
//ENVFILE  DD SYSOUT=*,DCB=(RECFM=V,LRECL=8192)
//SYSTSIN  DD DUMMY
//          ELSE
//COPYENV2 EXEC PGM=IKJEFT01,
//          PARM='OCOPY INDD(BIPFROM) OUTDD(ENVFILE)'
//SYSTSPRT DD DUMMY
//BIPFROM  DD PATHOPTS=(ORDONLY),
//          PATH='&HOME./ENVFILE'
//ENVFILE  DD SYSOUT=*,DCB=(RECFM=V,LRECL=8192)
//SYSTSIN  DD DUMMY
//          ENDIF
//*
//* *****
//* Copy DSNAOINI to SYSOUT
//* *****
//*
//COPYDSN EXEC PGM=IKJEFT01,
//          PARM='OCOPY INDD(BIPFROM) OUTDD(DSNAOINI)'
//SYSTSPRT DD DUMMY
//BIPFROM  DD DISP=SHR,DSN=&COMDS.(BIPDSNX2)
//DSNAOINI DD SYSOUT=*,DCB=(RECFM=V,LRECL=256)
//SYSTSIN  DD DUMMY
//*
//* *****
//* Test to see if starting an integration server address space.
//* Should return RC=0 if starting a Control address space or
//* RC=12 if starting an integration server address space.
//* *****
//*

```

```

//CHECKDFE EXEC PGM=IKJEFT01,
//          PARM='LISTDS ''&COMDS.&SE.'''
//SYSTSIN DD DUMMY
//SYSTSPRT DD DUMMY
//*
//          IF (CHECKDFE.RC=0) THEN
//*
//* *****
//* Integration node MQ and environment verification
//* *****
//*
//VERIFY EXEC PGM=BPXBATSL,REGION=0M,TIME=NOLIMIT,
//          PARM='PGM &INSTP./bin/mqsicvp IBX211'
//* MQSeries Runtime Libraries
//STEPLIB DD DSN=&WMQHLQ..SCSQANLE,DISP=SHR
//          DD DSN=&WMQHLQ..SCSQAUTH,DISP=SHR
//          DD DSN=&WMQHLQ..SCSQLOAD,DISP=SHR
//STDENV DD PATH='&HOME./ENVFILE'
//STDOUT DD SYSOUT=*
//STDERR DD SYSOUT=*
//*
//* *****
//* Step to delete residual locks
//* (this is only needed if the integration node is ARM enabled)
//* *****
//*
//*RMLOCKS EXEC PGM=BPXBATCH,REGION=0M,TIME=NOLIMIT,
//*          PARM='SH rm -f &COMPDIR./common/locks/*'
//*
//          ENDIF
//*
//* *****
//* Check RCs from previous steps and call correct program
//* with the correct ENVFILE
//* *****
//*
//          IF (CHECKDFE.RC EQ 0) AND (VERIFY.RC EQ 0) THEN
//*
//* *****
//* Start Control Address Space with base ENVFILE
//* (bipimain, bipservice and bipbroker)
//* *****
//*
//BROKER EXEC PGM=BPXBATA8,REGION=0M,TIME=NOLIMIT,
//          PARM='PGM &INSTP./bin/&MAINP. &SRVMP. &COMPK. &STRTP.'
//* MQSeries Runtime Libraries
//STEPLIB DD DSN=&WMQHLQ..SCSQANLE,DISP=SHR
//          DD DSN=&WMQHLQ..SCSQAUTH,DISP=SHR
//          DD DSN=&WMQHLQ..SCSQLOAD,DISP=SHR
//STDENV DD PATH='&HOME./ENVFILE'
//STDOUT DD SYSOUT=*
//STDERR DD SYSOUT=*
//*
//          ELSE
//          IF (CHECKENV.RC EQ 0) AND (CHECKDFE.RC NE 0) THEN
//*
//* *****
//* Start an integration server address space with specific ENVFILE
//* (bipimain and DataFlowEngine)
//* *****
//*
//EGENV EXEC PGM=BPXBATA8,REGION=0M,TIME=NOLIMIT,
//          PARM='PGM &INSTP./bin/&MAINP. &SRVMP. &SE. &SH. &COMPK.
//          &STRTP.'
//* MQSeries Runtime Libraries
//STEPLIB DD DSN=&WMQHLQ..SCSQANLE,DISP=SHR
//          DD DSN=&WMQHLQ..SCSQAUTH,DISP=SHR
//          DD DSN=&WMQHLQ..SCSQLOAD,DISP=SHR
//* DB2 Runtime Libraries

```

```

/*      Database nodes require DB2 to connect to a datasource.
/*      Note:
/*      DB2 must be included in the STEPLIB if database
/*      nodes are deployed to the Integration node.
/* Also change EGNOENV.
/*      DD DISP=SHR,DSN=&DB2HLQ..SDSNEXIT
/*      DD DISP=SHR,DSN=&DB2HLQ..SDSNLOAD
/*      DD DISP=SHR,DSN=&DB2HLQ..SDSNLOD2
/*      APF Authorized Library of Integration Bus
/*      Required if using Event Notification
/*      (All librarys in concatenation
/*      need to be APF authorized)
/*      DD DISP=SHR,DSN=++WMBHLQ++.SBIPAUTH
//STDENV  DD PATH='&HOME./ENVFILE.&E.'
//STDOUT  DD SYSOUT=*
//STDERR  DD SYSOUT=*
/* DD to enable DB2 ODBC trace for each integration server
/*APPLTRC DD PATHOPTS=(OWRONLY,OCREAT,OAPPEND),
/*      PATHMODE=(SIRWXU,SIRWGX),
/*      PATH='&COMPDIR./output/db2appltrace.&SE..&E.'
/*
//      ELSE
//      IF (CHECKDFE.RC NE 0) THEN
/*
/* *****
/* Start an integration server address space with base ENVFILE
/* (bipimain and DataFlowEngine)
/* *****
/*
//EGNOENV EXEC PGM=BPXBATA8,REGION=0M,TIME=NOLIMIT,
//      PARM='PGM &INSTP./bin/&MAINP. &SRVMP. &SE. &SH. &COMPK.
//      &STRTP.'
/*      MQSeries Runtime Libraries
//STEPLIB DD DSN=&WMQHLQ..SCSQANLE,DISP=SHR
//      DD DSN=&WMQHLQ..SCSQAUTH,DISP=SHR
//      DD DSN=&WMQHLQ..SCSQLOAD,DISP=SHR
/*      DB2 Runtime Libraries
/*      Database nodes require DB2 to connect to a datasource.
/*      Note:
/*      DB2 must be included in the STEPLIB if database
/*      nodes are deployed to the Integration node.
/* Also change EGENV.
//      DD DISP=SHR,DSN=&DB2HLQ..SDSNEXIT
//      DD DISP=SHR,DSN=&DB2HLQ..SDSNLOAD
//      DD DISP=SHR,DSN=&DB2HLQ..SDSNLOD2
/*      APF Authorized Library of Integration Bus
/*      Required if using Event Notification
/*      (All librarys in concatenation
/*      need to be APF authorized)
/*      DD DISP=SHR,DSN=++WMBHLQ++.SBIPAUTH
//STDENV  DD PATH='&HOME./ENVFILE'
//STDOUT  DD SYSOUT=*
//STDERR  DD SYSOUT=*
/* DD to enable DB2 ODBC trace for each integration server
/*APPLTRC DD PATHOPTS=(OWRONLY,OCREAT,OAPPEND),
/*      PATHMODE=(SIRWXU,SIRWGX),
/*      PATH='&COMPDIR./output/db2appltrace.&SE..&E.'
/*
//      ENDIF
//      ENDIF
//      ENDIF
/*
/*-----
//      PEND
/*-----
/*
//

```



## Step 8 : Create Mount Command

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB	No

### Description:

Create mount command file to ensure file system is remounted after IPL. Creates /var/zosmf/data/mountzfs\${instance-IIB\_BROKER\_NAME\_LC}.sh a command file in /

### Instructions:

Generated instruction text for step: CreateMountCommandUpdate this field with your own text

### Template Content:

```
#the mount, will fail if already mounted, or if mount point does not exist
#TODO: how to handle mount errors and percolate with /etc/rc?
#TODO: how to check if already mounted?
```

```
if mount -t ZFS -f SYSTEM.HFS.PLEX.VAR.MQSI.IBX211
    /plex/var/mqsi/brokers/ibx211
then # success
    echo "successfully mounted SYSTEM.HFS.PLEX.VAR.MQSI.IBX211
        /plex/var/mqsi/brokers/ibx211"
    retval="true"
else # failed ? kan ok zijn als ie al gemount is
    echo "mount failed from /etc/rc ! SYSTEM.HFS.PLEX.VAR.MQSI.IBX211
        /plex/var/mqsi/brokers/ibx211"
    retval="false"
fi

echo $retval
```

## Step 9 : CreateHomeDirectory

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Create home directory for the Broker and set ownership and permission bits..

### Instructions:

Run job createhomedir.jcl.

### Template Content:

```
//S1      EXEC OMVSBAT,SU=Y
//SYSIN   DD *
mkdir /u/miscuser/ibx211u
chmod 755 /u/miscuser/ibx211u
chown IBX211U:FUSTCBRK /u/miscuser/ibx211u
/*
//
```

## Step 10 : CreateBrokerWorkFilesystem

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Create global Broker Work filesystem (/var/mqsi/...) and format.

### Instructions:

Run job createworkfs.jcl.

### Template Content:

```
//DEFINE EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
DELETE SYSTEM.HFS.PLEX.VAR.MQSI.IBX211
SET MAXCC=0
DEFINE CLUSTER (NAME(SYSTEM.HFS.PLEX.VAR.MQSI.IBX211) -
  LINEAR CYL(7500 1500) DATACLASS (DCEXTADR) SHAREOPTIONS(3))
/*
/* -----
//S1      EXEC OMVSBAT,SU=Y
//STDOUT  DD SYSOUT=*
//STDERR  DD SYSOUT=*
//SYSIN   DD *
zfsadm format -aggregate SYSTEM.HFS.PLEX.VAR.MQSI.IBX211 \
  -owner IBX211U \
  -group FUSTCBRK \
  -perms o755
/*
```

## Step 11 : Create mountpoint for the broker work file system

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workf low:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Create Broker file system mount point and mount file system at global mountpoint: /plex/var/mqsi/brokers/Will be linked to via symlinks, see next steps.

### Instructions:

Run job createmountpt.jcl.

### Template Content:

```
//S1      EXEC USSBATCH,SU=Y
//STDOUT  DD SYSOUT=*
//STDERR  DD SYSOUT=*
//SYSIN   DD *
mkdir /plex/var/mqsi/brokers/ibx211
/*
//MOUNT    EXEC PGM=IKJEFT1B
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
MOUNT FILESYSTEM('SYSTEM.HFS.PLEX.VAR.MQSI.IBX211') +
TYPE(ZFS) MOUNTPOINT('/plex/var/mqsi/brokers/ibx211') +
MODE(RDWR)
/*
//
```



## Step 12 : CreateSymlinksforBrokerFS-NOT-for-XAT

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workf low:
Complete (Override)	greefni	greefni	noFeedback		No

### Description:

Create symlinks for broker file system://var/mqsi/brokers/ points to /plex/var/mqsi/berokers/.This step is for all syplexes but XAT.

### Instructions:

Generated instruction text for step: CreateSymlinksforBrokerFSUpdate this field with your own text

### Template Content:

```
//S1      EXEC USSBATCH,SU=Y
//STDOUT  DD SYSOUT=*
//STDERR  DD SYSOUT=*
/* create directories if they do not yet exist
/* then create symbolic link
//SYSIN   DD *
mkdir -p /XAT5/var/mqsi/brokers/ibx211
mkdir -p /XAT6/var/mqsi/brokers/ibx211

ls -a1F /XAT5/var/mqsi/brokers/ibx211
ls -a1F /XAT6/var/mqsi/brokers/ibx211
ln -s /var/mqsi/brokers/ibx211 /XAT5/var/mqsi/brokers/ibx211
ln -s /var/mqsi/brokers/ibx211 /XAT6/var/mqsi/brokers/ibx211
ls -a1F /XAT5/var/mqsi/brokers/ibx211
ls -a1F /XAT6/var/mqsi/brokers/ibx211
/*
```

## Step 13 : CreateSymlinksforBrokerFSonXATOnly

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workf low:
Complete	greefni	greefni	noFeedback		No

### Description:

Create symlinks for broker file system://var/mqsi/brokers/ points to /plex/var/mqsi/berokers/.This step is for XAT only.

### Instructions:

Generated instruction text for step: CreateSymlinksforBrokerFSUpdate this field with your own text

### Template Content:

```
//S1      EXEC USSBATCH,SU=Y
//STDOUT  DD SYSOUT=*
//STDERR  DD SYSOUT=*
/* create directories if they do not yet exist
/* then create symbolic link
//SYSIN   DD *
umask 022
mkdir -p /XAT1/var/mqsi/brokers
mkdir -p /XAT2/var/mqsi/brokers
mkdir -p /XAT3/var/mqsi/brokers

ls -alF /XAT1/var/mqsi/brokers/ibx211
ls -alF /XAT2/var/mqsi/brokers/ibx211
ls -alF /XAT3/var/mqsi/brokers/ibx211
ln -s /plex/var/mqsi/brokers/ibx211 /XAT1/var/mqsi/brokers/ibx211
ln -s /plex/var/mqsi/brokers/ibx211 /XAT2/var/mqsi/brokers/ibx211
ln -s /plex/var/mqsi/brokers/ibx211 /XAT3/var/mqsi/brokers/ibx211
ls -alF /XAT1/var/mqsi/brokers/ibx211
ls -alF /XAT2/var/mqsi/brokers/ibx211
ls -alF /XAT3/var/mqsi/brokers/ibx211
/*
```

## Step 14 : Create IIB BIPPROF from template

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB Administration	No

### Description:

Create IIB BIPPROF broker profile file from template.Runs under broker userID to set permissions correctly.

### Instructions:

Create BIPPROF from template. Copies customized bipprof file to Broker home directory

### Template Content:

```

# *****
#           IBM Integration Bus                               *
#           *
# Profile for an integration node.                             *
#           *
# *****
# *****
# 1. Component Settings
# *****
#
# 1.1 MQSI_REGISTRY references the component path. Also needed by
#     commands.
#     e.g. MQSI_REGISTRY=/mqsi/nodes/MQ01BRK
#
# 1.2 MQSI_COMPONENT_NAME is set to the integration node name.
#     e.g. MQSI_COMPONENT_NAME=MQ01BRK
#
# 1.3 MQSI_FILEPATH needed by commands to reference the component
#     version install path.
#     e.g. MQSI_FILEPATH=usr/lpp/mqsi/V7R0M0
#
# 1.4 MQSI_LILPATH needed by components to find LILs
#     e.g. MQSI_LILPATH=usr/lpp/mqsi/V7R0M0/lil
#
# 1.5 MQSI_SECURITY_PROVIDER_PATH needed by components to find LSLs
#     e.g. MQSI_SECURITY_PROVIDER_PATH=usr/lpp/mqsi/V7R0M0/SecurityProviders
#
# it should be frozen or V9R0M0
export VBRKR=V9R0M0
# it should be frzn or v300
export VFT=v300
export MQSI_REGISTRY=/var/mqsi/brokers/ibx211
export MQSI_COMPONENT_NAME=IBX211
export MQSI_FILEPATH=/usr/lpp/mqsi/$VBRKR
export MQSI_LILPATH=$MQSI_FILEPATH/lil
export MQSI_SECURITY_PROVIDER_PATH=$MQSI_FILEPATH/SecurityProviders
# *****
# 2. NLS Settings
# *****
#
# 2.1 LANG and LC_ALL determine in which locale the component
#     will run.
#     e.g. LANG=Ja_JP.IBM-939 and LC_ALL=Ja_JP.IBM-939 for
#           japanese locale.
#           LANG=C, LC_ALL=C for US English locale.
#
# 2.2 TZ has the timezone setting in which you are located.
#     e.g. TZ=EST5EDT,M3.2.0/2,M11.1.0/2   for USA Eastern Standard Time
#           TZ=CET-1CEST,M3.5.0/2,M10.5.0/3 for Central Europe
#           TZ=GMT0BST,M3.5.0/1,M10.5.0/2   for the UK
#           Please refer to the IBM Manual
#           "Unix System Services Command Reference SC28-1892.
#
# 2.3 NLSPATH contains the location of the message catalog(s).
#     (NO NEED TO CHANGE FROM DEFAULT!)
#
# 2.4 MQSI_CONSOLE_NLSPATH is used to locate the messages for
#     the console.
#     For Japanese or S-Chinese messages, change En_US to
#     Ja_JP or Zh_CN below. For English messages these can be
#     displayed in mixed or upper case only. (see MC_MESSAGES)
#     Note that MQSI_CONSOLE_NLSPATH does not use %L or %N
#
export LANG=C
export LC_ALL=C
export TZ='CET-01CEST-02,M3.5.0,M10.5.0'
NLSPATH=$MQSI_FILEPATH/messages/%L/%N
export NLSPATH=$NLSPATH:/u/tivmanu/kqi/messages/Langcode

```

```

M_C_N_0=/u/tivmanu/kqi/messages/Langcode
MQSI_CONSOLE_NLSPATH=$MQSI_FILEPATH/messages/En_US
export MQSI_CONSOLE_NLSPATH=$MQSI_CONSOLE_NLSPATH:$M_C_N_0
# *****
# 3. Automatic Restart Management (ARM) Settings
# *****
#
# 3.1 MQSI_USE_ARM specifies whether to use ARM.
#     e.g. MQSI_USE_ARM=YES for ARM enabled.
#         MQSI_USE_ARM=NO  for ARM not enabled.
#
# 3.2 MQSI_ARM_ELEMENTNAME required if ARM enabled.
#
# 3.3 MQSI_ARM_ELEMENTTYPE required if ARM enabled.
#
export MQSI_USE_ARM=NO
export MQSI_ARM_ELEMENTNAME=IBX211
export MQSI_ARM_ELEMENTTYPE=
# *****
# 4. DB2 Settings
# *****
#
# 4.1 MQSI_DB2_ALWAYS_PREPARE
#     (NO NEED TO CHANGE FROM DEFAULT!)
#
# 4.2 MQSI_DB2_CONVERSION specifies the DB2 Converter.
#     (ONLY REQUIRED FOR USER DATABASES)
#     e.g. MQSI_DB2_CONVERSION=SINGLE
#           WBIMB uses a SQL_EBCDIC_SCCSID to determine
#           the DB2 converter.
#           Note that this setting reflects the current
#           WBIMB behavior.
#           MQSI_DB2_CONVERSION=MIXED
#           WBIMB uses SQL_EBCDIC_MCCSID to determine
#           the DB2 converter.
#           Note that this setting requires that DB2 is
#           configured to accept mixed byte data. This
#           setting should be used when the customer
#           wants data to be stored in the configured
#           DB2 EBCDIC mixed byte code page.
#           MQSI_DB2_CONVERSION=LOCAL
#           WBIMB uses localConverter identified by
#           LC_ALL/LANG settings. This complies to what
#           is done on distributed. This setting
#           requires that WBIMB and DB2 are using the same
#           codepage, otherwise only WBIMB can read DB2
#           data correctly, it gets unreadable for other
#           ( non-WBIMB ) applications that want to read
#           the data.
#
# 4.3 DSNAINI references the component dsnaoini file.
#     (NO NEED TO CHANGE FROM DEFAULT!)
#
export MQSI_DB2_ALWAYS_PREPARE=NO
export MQSI_DB2_CONVERSION=UNICODE
export DSNAINI=//\'SYS2.ZOSWFX1.PARMLIB\ (BIPDSNX2\)\ '
# *****
# 5. Java Settings
# *****
#
# 5.1 JAVAHOME contains the root directory of the JAVA install.
#     e.g. JAVAHOME=/usr/lpp/java/IBM/J1.7
#         /usr/lpp/java/J7.1_64
export JAVAHOME=/usr/lpp/java/J7.1_64
# *****
# 6. IBM Integration Bus Settings
# *****
#
# 6.1 _BPX_BATCH_SPAWN

```

```

# (MUST NOT CHANGE FROM DEFAULT!)
#
# 6.2 MQSI_MC_MESSAGES determines if messages should appear in
# mixed case or upper case.
# e.g. MQSI_MC_MESSAGES=YES for mixed case
# MQSI_MC_MESSAGES=NO for upper case
#
# 6.3 MQSI_COMMAND_DATABASE_ECHO if defined, mqsi commands
# display information when creating DB2 tables/indexes.
#
# 6.4 MQSI_COMMAND_ZOS_MQ_ECHO if defined, mqsi commands display
# information returned from the MQ command server when
# creating/deleting queues.
#
# 6.5 MQSI_COMMAND_ZOS_MQ_ECHO_RC if defined, mqsi commands display
# reason and return codes from the MQ command server when
# creating/deleting queues.
#
# 6.6 MQSI_DEPLOY_PROGRESS if defined, shows deployment progress
# by the integration server.
#
# 6.7 STEPLIB
# (MUST NOT CHANGE FROM DEFAULT!)
#
# 6.8 MQSI_COMMAND_ZOS_ERROR_RC if defined, mqsi commands return
# this value as the return code if an error occurs.
#
# 6.9 MQSI_FAD current FAD level.
#
export _BPX_BATCH_SPAWN=NO
export MQSI_MC_MESSAGES=NO
export MQSI_COMMAND_DATABASE_ECHO=1
export MQSI_COMMAND_ZOS_MQ_ECHO=1
export MQSI_COMMAND_ZOS_MQ_ECHO_RC=1
export MQSI_DEPLOY_PROGRESS=1
export STEPLIB=SYS3.DBXC.SDSNEXIT:SYS3.DBXC.SDSNLOAD:SYS3.DBXC.SDSNLOD2
export MQSI_COMMAND_ZOS_ERROR_RC=16
export MQSI_FAD=7
# *****
# 7. Other Settings
# *****
#
# NO NEED TO CHANGE FROM DEFAULT!
# path to MQ: /usr/lpp/mqm/V9R0M0
CP=/usr/lpp/mqm/V9R0M0/java/lib/com.ibm.mq.jar
CP=$CP:/usr/lpp/mqm/V9R0M0/java/lib/connector.jar
CP=$CP:/usr/lpp/mqm/V9R0M0/java/lib/com.ibm.mq.commonservices.jar
CP=$CP:/usr/lpp/mqm/V9R0M0/java/lib/com.ibm.mq.headers.jar
CP=$CP:/usr/lpp/mqm/V9R0M0/java/lib/com.ibm.mq.jmqi.jar
CP=$CP:/usr/lpp/mqm/V9R0M0/java/lib/com.ibm.mq.pcf.jar
CP=$CP:/usr/lpp/mqm/V9R0M0/java/lib/com.ibm.mqjms.jar
CP=$CP:$MQSI_FILEPATH/classes
CP=$CP:$MQSI_FILEPATH/classes/deploymgr.jar
CP=$CP:$MQSI_FILEPATH/classes/ConfigManagerProxy.jar
CP=$CP:$MQSI_FILEPATH/sample/ConfigManagerProxy/ConfigManagerProxySamples.jar
CP=$CP:$MQSI_FILEPATH/classes/brokerutil.jar
CP=$CP:$JAVAHOME/lib
CP=$CP:/usr/lpp/IBM/ftm/$VFT/run/classes
CP=$CP:/usr/lpp/IBM/ftm/$VFT/run/classes/*
CP=$CP:$MQSI_FILEPATH/messages
export CLASSPATH=$CP
export ICU_DATA=$MQSI_FILEPATH/icudata
export ICU_PLUGINS=$MQSI_FILEPATH/icudata
LP=/usr/lpp/mqm/V9R0M0/java/lib
LP=$LP:$MQSI_FILEPATH/lib/wbimb
LP=$LP:$MQSI_FILEPATH/lib
LP=$LP:$JAVAHOME/lib/s390x
LP=$LP:$JAVAHOME/lib/s390x/classic
export LIBPATH=$LP

```

```
MQSI_LILPATH=$MQSI_LILPATH:/usr/lpp/IBM/ftm/$VFT/run/jplugin
export MQSI_LILPATH=$MQSI_LILPATH:/u/tivmanu/kqi/lil64
MIBDIRS=$MQSI_FILEPATH/snmp-mib
export MIBDIRS
export PATH=$MQSI_FILEPATH/bin
export PATH=$PATH:/bin
export PATH=$PATH:$JAVAHOME/bin
export KQI_CONFIG_FILE_PATH=/u/tivmanu/kqi/lil64
export JAVA_HOME=/usr/lpp/java/J7.1_64
export TMPDIR=/var/mqsi/brokers/ibx211/tmp
export HOME=/u/miscuser/ibx211u
export MQSI_SMF_NDNM=-1
export MQSI_SMF_FLNM=-1
RUNOPTS='XPLINK(ON), '
RUNOPTS=$RUNOPTS'RPTOPTS(ON), '
RUNOPTS=$RUNOPTS'STORAGE(NONE,NONE,NONE,0) '
export _CEE_RUNOPTS=$RUNOPTS
export MQSI_FILENODES_MAXIMUM_RECORD_LENGTH=268435456
```





## Step 15 : Create ENVFILE from BIPPROF created in previous step

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB	No

### Description:

Create IIB environment file ENVFILE from profile BIPPROF created in previous step. Runs under broker userID to set permission correctly at once.

### Instructions:

Generated instruction text for step: CreateEnvironmentFileUpdate this field with your own text. Must run under Broker userID

### Template Content:

```
//*****  
//* Create ENVFILE from BIPPROF  
//*****  
//*  
//CREATENV EXEC PGM=IKJEFT1B,REGION=0M  
//STDOUT DD SYSOUT=*  
//STDERR DD SYSOUT=*  
//SYSTSPRT DD SYSOUT=*  
//SYSTSIN DD *  
BPXBATCH SH -  
. /u/miscuser/ibx211u/bipprof; -  
/bin/printenv > -  
/u/miscuser/ibx211u/ENVFILE  
/*
```

## Step 16 : Creation of IIB tmp directories

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Creates broker tmp directories.

### Instructions:

Run job CRENWDR.jcl.

### Template Content:

```
//S1      EXEC USSBATCH,SU=Y
//STDOUT  DD SYSOUT=*
//STDERR  DD SYSOUT=*
//SYSIN   DD *
chmod 755 /u/miscuser/ibx211u/ENVFILE
mkdir /plex/var/mqsi/brokers/ibx211/tmp
chown IBX211U:FUSTCBRK \
        /plex/var/mqsi/brokers/ibx211/tmp
chmod 775 /plex/var/mqsi/brokers/ibx211/tmp
ls -ld /plex/var/mqsi/brokers/ibx211/tmp
```

Step 17 : Create broker

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workf low:
Complete	greefni	greefni	noFeedback	IIB administration	No

Description:

Create broker using mqsi command.

Instructions:

Run job CreateBroker.jcl.

Template Content:

```
//*****
//*          IBM Integration Bus                      *
//*          *                                         *
//* Sample job to create an Integration node (mqsicreatebroker). *
//*          *                                         *
//*****
//* Run mqsicreatebroker command
//* Run with Broker userID
//*****
//*
//BIPCRBK  EXEC PGM=IKJEFT1B,REGION=0M
//*          MQSeries Runtime Libraries
//STEPLIB  DD DISP=SHR,DSN=SYS3.SCSQANLE
//          DD DISP=SHR,DSN=SYS3.SCSQAUTH
//          DD DISP=SHR,DSN=SYS3.SCSQLOAD
//STDENV   DD PATHOPTS=(ORDONLY),
//          PATH='/u/miscuser/ibx211u/ENVFILE'
//STDOUT   DD SYSOUT=*
//STDERR   DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
BPXBATSL PGM -
  /usr/lpp/mqsi/V9R0M0/bin/-
mqsicreatebroker -
  IBX211 -
  -q Q1X0 -
  -1
/*
//
```

## Step 18 : Authorisations directories

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Set authorisations on directories such that access is limited to functions that needs access.

### Instructions:

Run job AUTHFS.jcl.

### Template Content:

```
//S1      EXEC USSBATCH,SU=Y
//STDOUT  DD SYSOUT=*
//STDERR  DD SYSOUT=*
//SYSIN   DD *
#!/bin/sh
# gaat recursief door directories vanaf startpunt, slaat links over
# reageert ook goed op spaties in directory namen
function dodir
{
    typeset fname savedir
    ls | while read "fname" ; do
        if [[ -L "$fname" ]] ; then
            echo 'skipped link ' "$fname"
        elif [[ -f "$fname" ]] ; then
            setfacl -m group:USNZOS01:rx "$fname"
            setfacl -m user:TW4#:rx "$fname"

        elif [[ -d "$fname" ]] ; then
            savedir=$(pwd)
            setfacl -m group:USNZOS01:rx "$fname"
            setfacl -m user:TW4#:rx "$fname"
            setfacl -m f:group:USNZOS01:rx ./
            setfacl -m f:user:TW4#:rx ./

            cd "$fname"
            dodir $savedir/$fname
            cd "$savedir"

        fi
    done
    return
}

fname2=/plex/var/mqsi/brokers/ibx211/
cd $fname2 && \
dodir $(pwd)
setfacl -m group:USNZOS01:rx ./
setfacl -m d:group:USNZOS01:rx ./

setfacl -m user:TW4#:rx ./
setfacl -m d:user:TW4#:rx ./

exit 0
```

---

## Step 19 : Create Broker queues

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Create broker queues using mqsi command.

### Instructions:

Run job CreateBrokerQueues.jcl.Run with Broker userid.

### Template Content:

```
//*****
//*          IBM Integration Bus                      *
//*          *                                     *
//* Sample job to create an Integration node (mqsicreatebroker). *
//*          *                                     *
//*****
//* Run mqsicreatebroker command
//*****
//*
//BIPCRBK EXEC PGM=IKJEFT1A,REGION=0M
//*      MQSeries Runtime Libraries
//STEPLIB DD DISP=SHR,DSN=SYS3.SCSQANLE
//        DD DISP=SHR,DSN=SYS3.SCSQAUTH
//        DD DISP=SHR,DSN=SYS3.SCSQLOAD
//STDENV DD PATHOPTS=(ORDONLY),
//        PATH='/u/miscuser/ibx211u/ENVFILE'
//STDOUT DD SYSOUT=*
//STDERR DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
BPXBATSL PGM -
  /usr/lpp/mqsi/V9R0M0/bin/-
mqsicreatebroker -
  IBX211 -
  -q Q1X0 -
  -2
/*
//
```

Step 20 : Set Web Admin security - currently to off only

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workf low:
Complete	greefni	greefni	noFeedback	IIB administration	No

Description:

Set Web Admin security - currently switched off only.

Instructions:

Generated instruction text for step: EnableWebAdminSecurityEnable the Web UI

Template Content:

```
//BIPCHBK EXEC PGM=IKJEFT1A,REGION=0M
//STEPLIB DD DISP=SHR,DSN=SYS3.SCSQANLE
// DD DISP=SHR,DSN=SYS3.SCSQAUTH
// DD DISP=SHR,DSN=SYS3.SCSQLOAD
//STDENV DD PATHOPTS=(ORDONLY),
// PATH='/u/miscuser/ibx211u/ENVFILE'
//STDOUT DD SYSOUT=*
//STDERR DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
BPXBATSL PGM -
  /usr/lpp/mqsi/V9R0M0/bin/-
mqsichangebroker -
  IBX211 -
  -s inactive
/*
```

## Step 21 : Start Broker

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Start the Broker for final customization. Enhancement: use better way to fire operator commands.

### Instructions:

Generated instruction text for step: StartBrokerUpdate this field with your own text

### Template Content:

```
//GENER EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
GENERATE
LABELS DATA=ALL
/*
//SYSUT1 DD *
/* REXX */
RC=ISFCALLS('ON')
ADDRESS SDSF "ISFEXEC '/S IBX211'"
ISFDELAY="10"
/* REPLY IS IN STEM ISFULOG. */
/*
//SYSUT2 DD DSNAME=&&DS1(CMD),DISP=(NEW,PASS),
// UNIT=SYSDA,SPACE=(TRK,(5,,2))
//*
//RDWRJ EXEC PGM=IKJEFT01
//SYSPRINT DD SYSOUT=*
//SYSPROC DD DISP=SHR,DSN=&&DS1
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
CMD
/*
//
```



## Step 22 : Change port number for the web admin

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Set web admin port for the broker.

### Instructions:

Run job CHAPORT.jcl.

### Template Content:

```
//*****
//*          IBM Integration Bus                      *
//*          *                                          *
//* Sample job to change properties (mqsichangeproperties). *
//*          *                                          *
//*****
//* Run mqsichangeproperties command
//*****
//*
//BIPCHPR EXEC PGM=IKJEFT1A,REGION=0M
//*      MQSeries Runtime Libraries
//STEPLIB DD DISP=SHR,DSN=SYS3.SCSQANLE
//        DD DISP=SHR,DSN=SYS3.SCSQAUTH
//        DD DISP=SHR,DSN=SYS3.SCSQLOAD
//STDENV DD PATHOPTS=(ORDONLY),
//        PATH='/u/miscuser/ibx211u/ENVFILE'
//STDOUT DD SYSOUT=*
//STDERR DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
BPXBATSL PGM -
  /usr/lpp/mqsi/V9R0M0/bin/-
mqsichangeproperties -
  IBX211 -
  -b webadmin -
  -o HTTPConnector -
  -n port -
  -v 6500
/*
//
```

## Step 23 : DB connectivity jdbc odbc

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Define broker's odbc and jdbc connections.

### Instructions:

Run job DBCDEFS.jcl.

### Template Content:

```

//*****
//* Sample JOB to set up FTM JDBC and ODBC connections.          *
//*                                                              *
//*****
//*                                                              *
//* Run WMB commands for FTM JDBC/ODBC configuration.          *
//*                                                              *
//* MUST RUN UNDER BROKER USERID                                *
//*                                                              *
//*****
//FTM#DSNS EXEC PGM=IKJEFT1A
//*TEPLIB DD DISP=SHR,DSN=SYS3.SCSQANLE
//*          DD DISP=SHR,DSN=SYS3.SCSQAUTH
//*          DD DISP=SHR,DSN=SYS3.SCSQLOAD
//STDENV DD PATHOPTS=(ORDONLY),
//          PATH='/u/miscuser/ibx211u/ENVFILE'
//STDOUT DD SYSOUT=*
//STDERR DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
BPXBATSL PGM -
  /usr/lpp/mqsi/V9R0M0/bin/-
mqsireportproperties IBX211 -
  -o AllReportableEntityNames -
  -c AllTypes -
  -r

BPXBATSL PGM -
  /usr/lpp/mqsi/V9R0M0/bin/-
mqsicreateconfigurableservice IBX211 -
  -c JDBCProviders -
  -o FTMJDBCProvider -
  -n connectionUrlFormat -
  -v "jdbc:db2://[serverName]:[portNumber]/[databaseName]:/-
user=[user];password=[password];"

BPXBATSL PGM -
  /usr/lpp/mqsi/V9R0M0/bin/-
mqsichangeproperties IBX211 -
  -c JDBCProviders -
  -o FTMJDBCProvider -
  -n description -
  -v "FTM_DB2_Database_(JDBC)"

BPXBATSL PGM -
  /usr/lpp/mqsi/V9R0M0/bin/-
mqsichangeproperties IBX211 -
  -c JDBCProviders -
  -o FTMJDBCProvider -
  -n databaseName -
  -v DBXC

BPXBATSL PGM -
  /usr/lpp/mqsi/V9R0M0/bin/-
mqsichangeproperties IBX211 -
  -c JDBCProviders -
  -o FTMJDBCProvider -
  -n portNumber -
  -v 10446

BPXBATSL PGM -
  /usr/lpp/mqsi/V9R0M0/bin/-
mqsichangeproperties IBX211 -
  -c JDBCProviders -
  -o FTMJDBCProvider -
  -n serverName -
  -v DBXC

```

```
BPXBATSL PGM -  
  /usr/lpp/mqsi/V9R0M0/bin/-  
mqsichangeproperties IBX211 -  
  -c JDBCProviders -  
  -o FTMJDBCProvider -  
  -n jarsURL -  
  -v "/usr/lpp/db2b10/jdbc/classes"  
  
BPXBATSL PGM -  
  /usr/lpp/mqsi/V9R0M0/bin/-  
mqsichangeproperties IBX211 -  
  -c JDBCProviders -  
  -o FTMJDBCProvider -  
  -n type4DatasourceClassName -  
  -v "com.ibm.db2.jcc.DB2XDataSource"  
  
BPXBATSL PGM -  
  /usr/lpp/mqsi/V9R0M0/bin/-  
mqsichangeproperties IBX211 -  
  -c JDBCProviders -  
  -o FTMJDBCProvider -  
  -n type4DriverClassName -  
  -v "com.ibm.db2.jcc.DB2Driver"  
  
BPXBATSL PGM -  
  /usr/lpp/mqsi/V9R0M0/bin/-  
mqsichangeproperties IBX211 -  
  -c JDBCProviders -  
  -o FTMJDBCProvider -  
  -n securityIdentity -  
  -v FTMDB2ID  
  
BPXBATSL PGM -  
  /usr/lpp/mqsi/V9R0M0/bin/-  
mqsisetdbparms IBX211 -  
  -n jdbc::FTMDB2ID -  
  -u ${instance-IIB_xDBC_USER} -  
  -p ftmxxusr  
  
BPXBATSL PGM -  
  /usr/lpp/mqsi/V9R0M0/bin/-  
mqsisetdbparms IBX211 -  
  -n odbc::DBXC -  
  -u ${instance-IIB_xDBC_USER} -  
  -p ftmxxusr  
  
BPXBATSL PGM -  
  /usr/lpp/mqsi/V9R0M0/bin/-  
mqsireportproperties IBX211 -  
  -c AllTypes -  
  -o AllReportableEntityNames -  
  -r  
  
/*
```



## Step 24 : Create Execution Groups for this broker

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Create execution groups, complying with naming standards. This step creates 2.

### Instructions:

Run job CRE6EXG.jcl.

### Template Content:

```
//*****
//*          IBM Integration Bus                      *
//*          *                                     *
//* Sample job to create integration servers          *
//* (mqsicreateexecutiongroup)                      *
//*          *                                     *
//*****
//* Run mqsicreateexecutiongroup command
//*****
//*
//BIPCREG EXEC PGM=IKJEFT01
//*          MQSeries Runtime Libraries
//STEPLIB DD DISP=SHR,DSN=SYS3.SCSQANLE
//          DD DISP=SHR,DSN=SYS3.SCSQAUTH
//          DD DISP=SHR,DSN=SYS3.SCSQLOAD
//STDENV DD PATHOPTS=(ORDONLY),
//          PATH='/u/miscuser/ibx211u/ENVFILE'
//STDOUT DD SYSOUT=*
//STDERR DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
BPXBATSL PGM -
  /usr/lpp/mqsi/V9R0M0/bin/-
mqsicreateexecutiongroup -
  IBX211 -
  -e IMX21101
BPXBATSL PGM -
  /usr/lpp/mqsi/V9R0M0/bin/-
mqsicreateexecutiongroup -
  IBX211 -
  -e IMX21102
/*
//
```

## Step 25 : Production user authorisation

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Authorize production user for access to brokers directories.

### Instructions:

Run job PRDAUDP.jcl.

### Template Content:

```
//S1      EXEC USSBATCH,SU=Y
//SYSIN   DD *
#!/bin/sh
# setfacl recursief vanaf startpunt, slaat links over
# reageert ook goed op spaties in directory namen
function dodir
{
    typeset fname savedir
    ls | while read "fname" ; do
        if [[ -L "$fname" ]] ; then
            echo 'skipped link ' "$fname"
        elif [[ -f "$fname" ]] ; then
            setfacl -m user:PT5X:r-- "$fname"
        elif [[ -d "$fname" ]] ; then
            savedir=$(pwd)
            setfacl -m user:PT5X:r-x "$fname"
            cd "$fname"
            dodir $savedir/$fname
            cd "$savedir"
        fi
    done
    return
}
cd /plex/var/mqsi/brokers/ibx211/registry && dodir $(pwd)
setfacl -m user:PT5X:r-x ./
setfacl -m default:user:PT5X:5 ./
setfacl -m fdefault:user:PT5X:4 ./
cd /plex/var/mqsi/brokers/ibx211/common && dodir $(pwd)
setfacl -m user:PT5X:r-x ./
setfacl -m default:user:PT5X:5 ./
setfacl -m fdefault:user:PT5X:4 ./
cd /plex/var/mqsi/brokers/ibx211/components && dodir $(pwd)
setfacl -m fdefault:user:PT5X:4 ./
setfacl -m user:PT5X:r-x ./
cd /plex/var/mqsi/brokers/ibx211/locks && dodir $(pwd)
setfacl -m fdefault:user:PT5X:4 ./
setfacl -m user:PT5X:r-x ./
cd /plex/var/mqsi/brokers/ibx211/common/log/
setfacl -m user:PT5X:rwX ./
setfacl -m user:PT5X:5 /u/miscuser/ibx211u/
setfacl -m user:PT5X:5 /u/miscuser/ibx211u/ENVFILE
setfacl -m fdefault:user:PT5X:6 ./
setfacl -m user:PT5X:rwX ./
exit 0
```

---



## Step 26 : tivoli auth

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Complete	greefni	greefni	noFeedback	IIB administration	No

### Description:

Authorize Tivoliuser for access to brokers directories.

### Instructions:

Run job TIVAUTH.jcl.

### Template Content:

```
//S1      EXEC USSBATCH,SU=Y
//STDOUT  DD SYSOUT=*
//STDERR  DD SYSOUT=*
//SYSIN   DD *
#!/bin/sh
# gaat recursief door directories vanaf startpunt, slaat links over
# reageert ook goed op spaties in directory namen
function dodir
{
    typeset fname savedir
    ls | while read "fname" ; do
        if [[ -L "$fname" ]] ; then
            echo 'skipped link ' "$fname"
        elif [[ -f "$fname" ]] ; then
            setfacl -m user:TIVMANU:r-- "$fname"
        elif [[ -d "$fname" ]] ; then
            savedir=$(pwd)
            setfacl -m user:TIVMANU:r-x "$fname"
            setfacl -m d:user:TIVMANU:r-x "$fname"
            cd "$fname"
            dodir $savedir/$fname
            cd "$savedir"
        fi
    done
    return
}
fname2=/plex/var/mqsi/brokers/ibx211/registry
cd $fname2  && dodir $(pwd)
setfacl -m user:TIVMANU:r-x ./
setfacl -m d:user:TIVMANU:r-x ./
exit 0
```

## Step 27 : Authorise directories 2nd time

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workf low:
Complete	greefni	greefni	noFeedback		No

### Description:

Second run to set permissions, for unclear reasons fixes remaining issues.

### Instructions:

Generated instruction text for step: AuthoriseDirectories2Update this field with your own text

### Template Content:

```
//S1      EXEC USSBATCH,SU=Y
//STDOUT  DD SYSOUT=*
//STDERR  DD SYSOUT=*
//SYSIN   DD *
#!/bin/sh
# gaat recursief door directories vanaf startpunt, slaat links over
# reageert ook goed op spaties in directory namen
function dodir
{
    typeset fname savedir
    ls | while read "fname" ; do
        if [[ -L "$fname" ]] ; then
            echo 'skipped link ' "$fname"
        elif [[ -f "$fname" ]] ; then
            setfacl -m group:USNZOS01:rx "$fname"
            setfacl -m user:TW4#:rx "$fname"

            elif [[ -d "$fname" ]] ; then
                savedir=$(pwd)
                setfacl -m group:USNZOS01:rx "$fname"
                setfacl -m user:TW4#:rx "$fname"
                setfacl -m f:group:USNZOS01:rx ./
                setfacl -m f:user:TW4#:rx ./

                cd "$fname"
                dodir $savedir/$fname
                cd "$savedir"

            fi
        done
    return
}

fname2=/plex/var/mqsi/brokers/ibx211/
cd $fname2 && \
dodir $(pwd)
setfacl -m group:USNZOS01:rx ./
setfacl -m d:group:USNZOS01:rx ./

setfacl -m user:TW4#:rx ./
setfacl -m d:user:TW4#:rx ./

exit 0
```

---