



# **Automatic AIX to Windows DB Conversion**

**Save time to learn IBM DB2 !!!**

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# Scenario



- Different environments like QA, SIT or UAT.
- DEV team replicates the relevant DB on local machine.
- DB2 backups are OS specific.

SQL2570N An attempt to restore on **target OS "Windows-86"** from a backup created on **source OS "AIX-64"** failed due to the **incompatibility of operating systems** or an incorrect specification of the restore command.

## Goal:

**Efficiently** create a Windows replica of AIX DB.

# Conventional v/s Automated

## Conventional Process

- Generate dump files using db2move & db2look.
- Copy dump files to windows machine.
- Edit the tablespace path from AIX's filesystem (/data) to Window's drive (D:\).
- Create the windows DB and publish the backup.

## Automated Process

- Configure AIX and Windows machines for **password-less** communication using **openSSH** (one time activity).
- Execute commands from window's cygwin prompt on remote AIX machine to generate dump files.
- Copy dump files and create the windows DB.

# How it Works?

- masterAIX.sh : Generates dump files on AIX machine.

```
db2look -d $AIXDBName -a -x -e -l -c > db2look.ddl
```

```
perl -00nle 'BEGIN {open TF, ">> partial1.sql"; open FK, ">> fks.sql"; } if ( /FOREIGN KEY/ ) { print FK; } else { print TF; }; END {close TF,FK;}' db2look.ddl
```

```
perl -00nle 'BEGIN {open RM, ">> partial2.sql"; open TS, ">> tablespaces.sql"; } if ( /TABLESPACE/ ) { print TS; } else { print RM; }; END {close TS,RM;}' partial1.sql
```

```
perl -00nle 'BEGIN {open FI, ">> partial.sql"; open BP, ">> bufferpools.sql"; } if ( /BUFFERPOOL/ ) { print BP; } else { print FI; }; END {close BP,FI;}' partial2.sql
```

```
db2 -x "select 'export to ' || TABNAME || '.ixf of ixf select * from ' || TABNAME || ';' from syscat.tables where tabschema='$AIXDBSchema' and type='T' " > export.sql
```

```
db2 -x "select 'load from ' || TABNAME || '.ixf of ixf insert into ' || TABNAME || ';' from syscat.tables where tabschema='$AIXDBSchema' and type='T'" > load.sql
```

```
db2 -x "select 'set integrity for ' || TABNAME || ' immediate checked ;' from syscat.tables where tabschema='$AIXDBSchema' and type='T'" > setintegrity.sql
```

```
db2 -x "select 'refresh table ' || tabname || ';' from syscat.tables where type='S' and tabschema='$AIXDBSchema'" > refreshMqt.sql
```

```
sed -e 's/\/\/$AIXDBName\\\/1' -e 's/\/\//g' -e 's/\\data\\\/\//g' -e 's/\\NODE.*[0-9]\\\/\//g' -e 's/\\(\/\//g' -e 's/)\\/\//g' tablespaces.sql > Windows_tablespaces.sql
```

```
db2 -tvf export.sql -l export.out
```

# How it Works? (contd...)

- masterWin.sh : Creates the Windows DB.

```
ssh -l $Username $HostAddress exec 'mkdir $HOME/AIX2WindowsFiles'  
scp masterAIX.sh $Username@$HostAddress:$HOME/AIX2WindowsFiles'  
ssh -l $Username $HostAddress exec sh '$HOME'/AIX2WindowsFiles/masterAIX.sh $AIXDBName $AIXDBSchema
```

```
ssh -l $Username $HostAddress exec 'tar -cf $HOME/AIX2WindowsFiles.tar $HOME/AIX2WindowsFiles'  
scp $Username@$HostAddress:~/AIX2WindowsFiles.tar .  
ssh -l $Username $HostAddress exec 'rm -rf ~/AIX2WindowsFiles*'  
tar -xmf AIX2WindowsFiles.tar
```

```
db2 create db $AIXDBName  
db2 update db cfg for $AIXDBName using LOGFILSIZ 10000  
db2 update db cfg for $AIXDBName using LOGSECOND 200  
db2 update db cfg for $AIXDBName using AUTO_REVAL DEFERRED_FORCE
```

Execute scripts to create bufferpools, tablespaces, database objects, load data , set integrity and refresh MQTs.  
Revalidate invalid objects (procedures) using sysproc.ADMIN\_REVALIDATE\_DB\_OBJECTS.

Take DB backup and copy it to shared location.

```
cat mailMessageBody.txt; uuencode ConversionLogs.zip | mail -s "AIX2Windows DB Conversion for $DBName  
DB" $mailRecipient
```

How do we initiate the process?

**./masterWin.sh DBNAME SCHEMA HOSTADDRESS INSTANCE\_OWNER PRIMARY\_MAILRCP  
SECONDARY\_MAILRCP**

# Better than Others?



## ❖ Advantages

- Completely automated process.
- Tablespace relative path.  
DFTDBPATH\DB2\_instance\NODE0000\SQLnnnnnn\TABLESPACE\_REL\_PATH
- Publishes backup with conversion logs.

## ❖ Important Tip

- Schedule a CRON job and forget about it.



# References



- OpenSSH:

<http://www.thegeekstuff.com/2008/06/perform-ssh-and-scp-without-entering-password-on-openssh/>

- Tablespace Relative Path:

[http://publib.boulder.ibm.com/infocenter/tivihelp/v47r1/index.jsp?topic=%2Fcom.ibm.tivoli.itws.doc\\_8.6%2Fawspimst253.htm](http://publib.boulder.ibm.com/infocenter/tivihelp/v47r1/index.jsp?topic=%2Fcom.ibm.tivoli.itws.doc_8.6%2Fawspimst253.htm)

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**Thank You**



**You Made My Day**