DB2 data migration from zLinux platform to X86Linux platform

Steps to be performed on zLinux DB2 setup:

1. Log in to system using root user on which DB2 database is installed.

2. Go to <DB2 installation directory >/bin directory. Make sure that /bin directory does not contain tabnn.msg, tabnn.ixf, db2move.lst, IMPORT/EXPORT.out or tab*.lob files generated as part of any previous import/export activity. If such files are present, you can move them to different directory.

3. As part of data migration we will be running four sets of export commands (a-d below) and collect output files thus generated in separate directories. Data exported in all these four sets would then be imported in same order on target DB2 setup on X86Linux machine. Before running below commands make sure that the db2 instance profile on which the database under consideration resides is properly sourced.

    a) ./db2move <*source database name*> export –u <*database user name*> -p <*database user password*> -tn RESOURCE_PROVIDERS,LCR_INPROGRESS_TABLE,PO_TOPIC_TABLE,SCHEDULED_MESSAGE,NEXTVALUE,PROCESS,SYNCH_POINT,PASSWORD_TRANSACTION,LISTDATA,REPORT,ENTITY_COLUMN,COLUMN_REPORT,AUTHORIZATION_OWNERS,ACI,ACI_ROLEDNS,ACI_PRINCIPALS,ACI_PERMISSION_ATTRIBUTERIGHT,ACI_PERMISSION_CLASSRIGHT,ENTITLEMENT,ENTITLEMENT_PROVISIONINGPARAMS,SYNCHRONIZATION_HISTORY,SYNCHRONIZATION_LOCK,RESOURCES_SYNCHRONIZATIONS,CHANGELOG,SERVICE_ACCOUNT_MAPPING,RECONCILIATION,AUTH_KEY,POLICY_ANALYSIS,COMPLIANCE_ALERT,AUDIT_EVENT,I18NMESSAGES,BULK_DATA_SERVICE,MIGRATION_STATUS,RECERTIFICATIONLOG,SCRIPT,MANUAL_SERVICE_RECON_ACCOUNTS,VIEW_DEFINITION,COMMON_TASKS,SUMMARY_ORDER,PASSWORD_SYNCH,ROLE_INHERITANCE,SOD_POLICY,SOD_VIOLATION_HISTORY,SOD_VIOLATION_STATUS,RECERTIFIER_DETAILS_INFO

    Where:

<source database name>	Name of the database configured for ITIM. Eg. ITIMDB
<database user name>	Name of the database user configured for ITIM database. E.g itimuser
<database user password>	The password of the database user.

    Upon successful execution of above command the following set of files will be created in <DB2 installation directory >/bin directory. Move all these files to a separate folder say **/parent_export**.

EXPORT.out	The summarized result of the EXPORT action.
db2move.lst	The list of original table names, their corresponding PC/IXF file names (tabnnn.ixf), and message file names (tabnnn.msg). This list, the exported PC/IXF files, and LOB files (tabnnnc.yyy) are used as input to the db2move IMPORT or LOAD action.
tab*nnn*.ixf	The exported PC/IXF file of a specific table. "nnn" is the table number.
tab*nnn*.msg	The export messages file of the corresponding table. "nnn" is the table number.
tab*nnnc.yyy*.lob	The exported LOB files of a specific table. "nnn" is the table number. "c" is a letter of the alphabet. "yyy" is a number ranging from 001 to 999.These files are created only if the table being exported contains LOB data.

b)./db2move <source database name> export –u <database user name> -p <database user password> -tn ACTIVITY,USERRECERT_HISTORY

Where:

<source database name>	Name of the database configured for ITIM. Eg. ITIMDB
<database user name>	Name of the database user configured for ITIM database. E.g itimuser
<database user password>	The password of the database user.

Upon successful execution of above command the following set of files will be created in <DB2 installation directory >/bin directory. Move all these files to a separate folder say **/child1_export**.

EXPORT.out	The summarized result of the EXPORT action.
db2move.lst	The list of original table names, their corresponding PC/IXF file names (tabnnn.ixf), and message file names (tabnnn.msg). This list, the exported PC/IXF files, and LOB files (tabnnnc.yyy) are used as input to the db2move IMPORT or LOAD action.
tab*nnn*.ixf	The exported PC/IXF file of a specific table. "nnn" is the table number.
tab*nnn*.msg	The export messages file of the corresponding table. "nnn" is the table number.
tab*nnnc.yyy*.lob	The exported LOB files of a specific table. "nnn" is the table number. "c" is a letter of the alphabet. "yyy" is a number ranging from 001 to 999.These files are created only if the table being exported contains LOB data.

c) ./db2move <source database name> export –u <database user name> -p <database user password > -tn REMOTE_RESOURCES_RECONS, PO_NOTIFICATION_TABLE,WORKITEM,ACCT_CHANGE, BULK_DATA_STORE,SOD_RULE,USERRECERT_ACCOUNT

Where:

<source database name>	Name of the database configured for ITIM. Eg. ITIMDB
<database user name>	Name of the database user configured for ITIM database. E.g itimuser
<database user password>	The password of the database user.

Upon successful execution of above command the following set of files will be created in <DB2 installation directory >/bin directory. Move all these files to a separate folder say **/child2_export**.

EXPORT.out	The summarized result of the EXPORT action.
db2move.lst	The list of original table names, their corresponding PC/IXF file names (tabnnn.ixf), and message file names (tabnnn.msg). This list, the exported PC/IXF files, and LOB files (tabnnnc.yyy) are used as input to the db2move IMPORT or LOAD action.
tab*nnn*.ixf	The exported PC/IXF file of a specific table. "nnn" is the table number.
tab*nnn*.msg	The export messages file of the corresponding table. "nnn" is the table number.
tab*nnnc.yyy*.lob	The exported LOB files of a specific table. "nnn" is the table number. "c" is a letter of the alphabet. "yyy" is a number ranging from 001 to 999.These files are created only if the table being exported contains LOB data.

d) If ITIM 5.1 setup from where the DB2 data is being exported, is at any maintenance level lower than or equal to FP13 then execute following command:

./db2move <source database name> export –u <database user name> -p < database user password > -tn REMOTE_SERVICES_REQUESTS,REMOTE_RESOURCES_RECON_QUERIES, PO_NOTIFICATION_HTMLBODY_TABLE,PROCESSDATA,PROCESSLOG, WI_PARTICIPANT,ACTIVITY_LOCK,PENDING,RECONCILIATION_INFO, WORKFLOW_CALLBACK,ATTR_CHANGE,POLICY_ANALYSIS_ERROR, AUDIT_MGMT_TARGET,AUDIT_MGMT_PROVISIONING, AUDIT_MGMT_DELEGATE,BULK_DATA_INDEX,TASKS_VIEWABLE, SOD_OWNER,SOD_RULE_ROLE,SOD_VIOLATION_ROLE_MAP, USERRECERT_ROLE,USERRECERT_GROUP

If ITIM 5.1 setup from where the DB2 data is being exported, is at any maintenance level higher than FP13 IF46 then execute the following command:

./db2move <source database name> export –u <database user name> -p < database user password > -tn REMOTE_SERVICES_REQUESTS,REMOTE_RESOURCES_RECON_QUERIES, PO_NOTIFICATION_HTMLBODY_TABLE,PROCESSDATA,PROCESSLOG, WI_PARTICIPANT,ACTIVITY_LOCK,PENDING,RECONCILIATION_INFO, WORKFLOW_CALLBACK,ATTR_CHANGE,POLICY_ANALYSIS_ERROR, AUDIT_MGMT_TARGET,AUDIT_MGMT_PROVISIONING, AUDIT_MGMT_DELEGATE,BULK_DATA_INDEX,TASKS_VIEWABLE, SOD_OWNER,SOD_RULE_ROLE,SOD_VIOLATION_ROLE_MAP, USERRECERT_ROLE,USERRECERT_GROUP,PENDING_REQUESTS

Where:

<source database name>	Name of the database configured for ITIM. Eg. ITIMDB
<database user name>	Name of the database user configured for ITIM database. E.g itimuser
<database user password>	The password of the database user.

Upon successful execution of above command the following set of files will be created in <DB2 installation directory >/bin directory. Move all these files to a separate folder say **/child3_export**.

EXPORT.out	The summarized result of the EXPORT action.
db2move.lst	The list of original table names, their corresponding PC/IXF file names (tabnnn.ixf), and message file names

	(tabnnn.msg). This list, the exported PC/IXF files, and LOB files (tabnnnc.yyy) are used as input to the db2move IMPORT or LOAD action.
tab*nnn*.ixf	The exported PC/IXF file of a specific table. "nnn" is the table number.
tab*nnn*.msg	The export messages file of the corresponding table. "nnn" is the table number.
tab*nnnc.yyy*.lob	The exported LOB files of a specific table. "nnn" is the table number. "c" is a letter of the alphabet. "yyy" is a number ranging from 001 to 999.These files are created only if the table being exported contains LOB data.

4. Go to ITIM_HOME/config/rdbms/db2 directory and locate enrole_admin.sql, enrole.ddl, itim_sib.ddl. Copy these files to any directory say /DDL_Files.

   Note: For clustered environment, ITIM_HOME is the directory on deployment manager machine where ITIM is installed.

Steps to be performed on X86Linux DB2 setup:

1. Create a user with the same name as that of ITIM database user (e.g. itimuser) present on source zLinux machine. Put this user in root group.

2. Create a database to which data is to be migrated, by using the commands given in ISIM installation guide.

3. Copy DDL and SQL file(s) from /DDL_Files directory (created in step 4 under "Steps to be performed on zLinux DB2 setup" section above) to any directory on X86Linux machine.

4. Go to <DB2 installation directory>/bin directory and connect to above created database by using following command:

   db2 connect to <database name> user <database administrator> using <database administrator password>

   Where:

<database name>	Name of the database created in step 2
<database administrator>	Name of the database administrator for ISIM database
<database administrator password>	The password of the database administrator.

5. Run enrole_admin.sql and itim_sib.ddl files copied in step 3 above, by using following commands:

   db2 –tf <directory path>/enrole_admin.sql

   db2 –tf <directory path>/itim_sib.ddl

6. Disconnect from database by using below command:

   db2 disconnect all

7. Go to <DB2 installation directory>/bin directory and connect to above created database by using following command:

   db2 connect to <database name> user <database user name> using <database user password>

   Where:

<database name>	Name of the database created in step 2
< database user name >	Name of the database user for ISIM database created in step 1.
<database user password>	The password of the database user.

8. Run enrole.ddl file copied in step 3 above, by using following command:

   db2 –tf <directory path>/enrole.ddl

9. Disconnect from database by using below command:

   db2 disconnect all

10. Run four set of import commands (a-d) corresponding to export commands ran earlier. Before running below commands make sure that the db2 instance profile on which the database under consideration resides is properly sourced.

    a) Copy data from /parent_export directory (created in step 3a under "Steps to be performed on zLinux DB2 setup" section above) from zLinux setup to <DB2 installation directory>/bin directory on X86Linux setup. Switch user to root (if it is changed before) and go to <DB2 installation directory>/bin directory. Run following command:

       ./db2move <target database name> import –u <database user name> –p <database user password> -io insert

       Where:

<target database name>	Name of the database configured for ISIM. Eg. ITIMDB
<database user name>	Name of the database user configured for ISIM database created in step 1. E.g itimuser
<database user password>	The password of the database user.

       Upon successful execution of above command the following set of files will be created in <DB2 installation directory >/bin directory. Move all these files to a separate folder say **/parent_import**.

IMPORT.out	The summarized result of the IMPORT action.
tabnnn.msg	The import messages file of the corresponding table.

       Also remove tabnn.ixf, db2move.lst files from <DB2 installation directory>/bin directory.

b) Copy data from /child1_export directory(created in step 3b under "Steps to be performed on zLinux DB2 setup" section above) from zLinux setup to <DB2 installation directory>/bin directory on X86Linux setup. Switch user to root (if it is changed before) and go to <DB2 installation directory>/bin directory. Run following command:

./db2move.sh <target database name> import –u <database user name> –p <database user password> -io insert

Where:

<target database name>	Name of the database configured for ISIM. Eg. ITIMDB
<database user name>	Name of the database user configured for ISIM database created in step 1. E.g itimuser
<database user password>	The password of the database user.

Upon successful execution of above command move following output data generated in <DB2 installation directory>/bin directory to a separate directory say **/child1_import**.

IMPORT.out	The summarized result of the IMPORT action.
tabnnn.msg	The import messages file of the corresponding table.

Additionally remove tabnn.ixf, DB2MOVE.lst files from <DB2 installation directory>/bin directory.

c) Copy data from /child2_export directory(created in step 3c under "Steps to be performed on zLinux DB2 setup" section above) from zLinux setup to <DB2 installation directory>/bin directory on X86Linux setup. Switch user to root (if it is changed before) and go to <DB2 installation directory>/bin directory. Run following command:

./db2move.sh <target database name> import –u <database user name> –p <database user password> -io insert

<target database name>	Name of the database configured for ISIM. Eg. ITIMDB
<database user name>	Name of the database user configured for ISIM database created in step 1. E.g itimuser
<database user password>	The password of the database user.

Upon successful execution of above command move following output data generated in <DB2 installation directory>/bin directory to a separate directory say **/child2_import**.

IMPORT.out	The summarized result of the IMPORT action.
tabnnn.msg	The import messages file of the corresponding table.

Additionally remove tabnn.ixf, DB2MOVE.lst files from <DB2 installation directory>/bin directory.

d) Copy data from /child3_export directory(created in step 3d under "Steps to be performed on zLinux DB2 setup" section above) from zLinux setup to <DB2 installation directory>/bin directory on X86Linux setup. Switch user to root (if it is changed before) and go to <DB2 installation directory>/bin directory. Run following command:

./db2move.sh <target database name> import –u <database user name> –p <database user password> -io insert

<target database name>	Name of the database configured for ISIM. Eg. ITIMDB
<database user name>	Name of the database user configured for ISIM database created in step 1. E.g itimuser
<database user password>	The password of the database user.

Upon successful execution of above command move following output data generated in <DB2 installation directory>/bin directory to a separate directory say **/child3_import**.

IMPORT.out	The summarized result of the IMPORT action.
tabnnn.msg	The import messages file of the corresponding table.

Additionally remove tabnn.ixf, DB2MOVE.lst files from <DB2 installation directory>/bin directory.

11. Once all the imports are successful , please verify following things:

    a) Whether all the tables which were present in source database are created in target database. Whether all the tables in ITIMUSER schema contain same number of rows as they were present in source database.

    b) Check whether all the indexes present in ITIMUSER schema of source database are created in ITIMUSER schema of target database.

    c) Check whether all the views present in ITIMUSER schema of source database are created in ITIMUSER schema of target database.

    d) Check whether database permissions of source database user(e.g. itimuser) are same as that of target database user.

12. Once all the above checks are successful you can use this database for ISIM migration which should be carried out by using the steps documented on info center.

Notes:

1. Please note that the above document mentions the steps to migrate DB2 database from zLinux system to X86Linux system. For other big endian to small endian combinations there might require slight change in the above mentioned commands. For the exact syntax and details of the DB2 commands, please refer the DB2 infocenter

2. As part of this document, no instructions are given to export reporting tables, so after successful ISIM migration customer must run full data synchronization to have all the reporting tables created and populated in the database. The reason for excluding these instructions is, the number reporting tables may vary depending upon the entity mapping defined by the customer, so there is no specific set of tables which we can provide in the export command.