

# Changing SYSCATSPACE Page Size Using DB2 “RESTORE ... TRANSPORT”



## Applies to:

SAP systems on DB2 Version 9.7 Fix Pack 3 SAP and higher. For more information, visit the [Landscape Design and Architecture homepage](#).

## Summary

As of DB2 Version 9.7 Fix Pack 3, DB2 allows you to move from one DB2 database to another database schema with the new RESTORE ... TRANSPORT option. SAP customers can use this new DB2 capability to either migrate their system catalog tablespace to a different page size, or to move schemas (and thus entire SAP instances) from one database to another.

This paper provides a detailed description of how to migrate the DB2 catalog tablespace to a different page size. In addition, it highlights some of the other possible use cases of the RESTORE ... TRANSPORT option.

**Author:** Jack Kuria and Frank-Martin

**Company:** Jack Kuria – IBM, Frank-Martin - SAP

**Created on:** 28 April, 2011

## Author Bio

Jack Kuria work at IBM Canada, IBM SAP DB2 Migration

Frank-Martin Haas works as a development architect in the SAP DB2 development team. His main development areas are the SAP/DB2 database interface and various tools, for example, R3load. In his role as development architect, he is also part of the SAP team that drives the optimization of DB2 for SAP in collaboration with IBM.

## Table of Contents

The RESTORE ..... TRANSPORT Option.....	3
How to Replace or Modify SYSCATSPACE for an Existing SAP System Database.....	5
1. Create a list of tablespaces containing your user data.....	5
2. Take an offline backup of the original database.....	5
3. Drop the original SAP database (optional).....	6
4. Create a new database.....	6
5. Restore the database parameters from the source database.....	7
6. Enable log archival.....	7
7. Attach all SAP tablespaces to the new database.....	7
8. Transfer ownership of transported objects.....	8
Revoke privileges on transported objects from instance owner (Optional).....	9
Run "db6_update_db script" and grant missing privileges.....	9
Re-create tablespaces using the DBA Cockpit.....	10
Take a backup of your new database.....	10
Related Content.....	11
Copyright.....	12

## About this Paper

Back in the 90ies, the default page size for SAP systems on DB2 for Linux, UNIX, and Windows was 4KB. All DB2 tablespaces were created with a page size of 4 KB, including the DB2 catalog tablespace. SAP has meanwhile changed the default page size for new installations to 16 KB. While this was mainly done to accommodate the increased row width for Unicode tables, the larger page size also allows that more character columns are mapped to VARCHAR instead of LONG VARCHAR or LOB. In addition, the larger page size facilitates more LOB inlining.

Before Version 8.2.2, however, DB2 was not capable of using a page size other than 4 KB. So even for databases that only had data tablespaces with page size of 16 KB, the SYSCATSPACE tablespace still was on 4 KB. With DB2 Version 8.2.2, you were able to choose a page size other than 4 KB also for the DB2 catalog. Today, all new SAP system installations are always performed with a uniform page size of 16 KB.

Having multiple page sizes in the database introduces the need of a buffer pool and a system temporary tablespace per used page size, which increases administration cost. It is therefore beneficial to use a uniform page size for the database.

Customer who started the deployment of their SAP system with a page size other than 16 KB were able to migrate their data tablespaces to 16 KB tablespaces using report DB6CONV. However, there was no such capability for the catalog tablespace. Up to and including DB2 V9.7 FP 3, the only way to migrate the system catalog to a page size of 16 KB was a complete data migration.

DB2's new RESTORE ... TRANSPORT option transports all tablespaces of a database schema into a different existing database. A database schema must always be transported completely. This new capability has been available as of DB2 Version 9.7 FP2. Due to some mandatory APARs, however, you **must** use DB2 V9.7 FP3 SAP or higher.

You can use the RESTORE ... TRANSPORT option to move the entire SAP schema of a DB2 database over to a newly created (empty) DB2 database with a 16 KB catalog tablespace, effectively resulting in a catalog page size migration.

This paper describes in detail how to use the RESTORE... TRANSPORT option with an SAP database so that the new system is fully functional. Since this procedure does not involve an export or import of all SAP data, it represents a good option if you want to change the page and extent size of SYSCATSPACE or move your tablespaces to a SYSCATSPACE with reclaimable storage. In case of a damaged SYSCATSPACE, the described procedure can also serve as a repair option.

Other use cases of the RESTORE ... TRANSPORT option include the consolidation of SAP schemas into one target database, or the split of an existing SAP database with multiple schemas into separate databases. SAP allows consolidating multiple SAP systems in one single DB2 database. This capability is known Multiple Components in One Database (MCOB). Up to DB2 V9.7 FP3, you would use R3load (or Jload respectively) to move an SAP schema from one database to another one (for example, a new one). With the RESTORE ... TRANSPORT option, you can do this with using DB2 means with greatly reduced downtime. In addition, you can use the RESTORE... TRANSPORT option to split an SAP database with multiple schemas into separate databases.

MCOB consolidation and split are not covered in this paper. The procedure, however, is very similar to the described procedure of a catalog migration.

## The RESTORE ..... TRANSPORT Option

Normally, the RESTORE DATABASE command is used to recover a database or tablespace after a problem, such as failure of media, storage, or an application. If you have backed up your database or individual tablespaces, you can re-create them if they have become damaged or corrupted in some way.

The RESTORE ... TRANSPORT option transports tablespaces and database schemas into a different existing database. A database schema must always be transported completely. All objects related to the transported database schemas must be contained in the transported tablespaces and these tablespaces must not contain objects from other database schemas. This is called a valid transport set. The transport operation does not create a new database, so the database already has to exist. The transported database schemas must not exist in the target database.

If you transport data from a backup image to a different database, the objects contained in the tablespaces being restored are re-created in the target database, and the tablespace definitions and containers are added to the target database.

If the database schemas in the source database are protected by any DB2 security settings or authorizations, the transported database schemas in the target database retain the same settings or authorizations.

In the current version of DB2 V9.7, additional restrictions apply to the RESTORE ... TRANSPORT option. Check if your database hits any of those limitations as described in the following:

- The transport does not re-create table aliases in the target database. In an SAP database, aliases typically only exist while an SAP system upgrade is running.

Make sure that no aliases exist in your database before you start the procedure. To check, use the following command that lists all table aliases in your database:

```
db2 " select tabschema, tabname from syscat.tables where type = 'A' "
```

- The transport does not transport range-partitioned tables. Since SAP NetWeaver BW on DB2 for Linux, UNIX, and Windows uses MDC instead of range partitioning, range-partitioned tables are rarely used. However, the SAP dictionary tolerates the use of range partitioning. (The correct term for ABAP systems is ABAP dictionary)

Verify that no range-partitioned tables exist in your database before you start the procedure. To check, use the following command that lists all table range-partitioned tables in your database:

```
db2 " select tabschema, tabname from syscat.datapartitionexpression "
```

- Other objects that are not transported are jobs, index extensions, nicknames, servers, wrappers, and so on. However, these are not created by the SAP system.
- The transport is not supported for databases using DB2s database partitioning feature (DPF)
- The RESTORE ... TRANSPORT option is **not compatible** with the RESTORE ... REBUILD option.
- The RESTORE ... TRANSPORT option is **not** supported for a restore from a snapshot backup image.
- The transport does not transport objects in DB2 system tablespaces like SYSTOOLSPACE.

For more information and restrictions of the RESTORE DATABASE and TRANSPORT option, see the IBM DB2 V9.7 Information Center at:

<http://publib.boulder.ibm.com/infocenter/db2luw/v9r7/index.jsp?topic=/com.ibm.db2.luw.admin.ha.doc/doc/t0006242.html>

## How to Replace or Modify SYSCATSPACE for an Existing SAP System Database.

In the following section, we describe how to modify tablespace SYSCATSPACE by using the RESTORE ... TRANSPORT command in an SAP database. The described steps are necessary to get a healthy system with a new SYSCATSPACE.

Make sure that you have tested the procedure thoroughly before you apply it to a productive SAP system database.

In the following, a database and SAP system with name 'E72' is used. The name of the SAP ABAP schema and connect user is 'sape72' and the name of the DB2 instance is 'db2e72'. This implies the following environment settings:

```
SAPSYSTEMNAME=E72
```

```
DB2INSTANCE=db2e72
```

```
DB2DBDFT=E72
```

```
dfs_db6_schema=sape72
```

The example can be easily translated to other system and database names. The SAP system used in the example has been a Unicode system containing an SAP ABAP stack only.

### 1. Create a list of tablespaces containing your user data

You first need to find out which tablespaces contain your SAP data and need to be transported. To do so, enter the following SQL statement to generate a list of tablespaces that contain objects of a database schema:

```
db2 "select distinct substr( t.tabschema, 1, 10) schema, substr( tbs.tbSPACE, 1, 30 )
    from syscat.tablespaces tbs, syscat.tables T
    where tbs.tbSPACE IN ( t.tbSPACE , t.index_tbSPACE, t.long_tbSPACE )
    order by schema"
```

In our example, we want to transport only tablespaces that contain objects related to schema SAPE72. The following list of tablespaces containing objects from schema SAPE72 is returned:

```
E72#DDICD, E72#DDICI, E72#USER1D, E72#USER1I, E72#BTABD, E72#BTABI, E72#STABD, E72#STABI,
E72#POOLD, E72#POOLI, E72#DOCUD, E72#DOCUI, E72#ES701D, E72#ES701I, E72#SOURCED,
E72#SOURCEI, E72#PROTD, E72#PROTI, E72#LOADD, E72#LOADI, E72#CLUD, E72#CLUI, E72#EL701D,
E72#EL701I, E72#ODSD, E72#ODSI, E72#DIMD, E72#DIMI, E72#FACTD, E72#FACTI
```

The output of the SQL statement proves that no objects from other schema are contained in these tablespaces. This means that the tablespaces listed above are a valid transport set.

Note: In current versions of SAP systems, monitoring objects are created in schema SAPTOOLS. The tablespaces in the SAP system containing objects from SAPTOOLS cannot be transported because some objects of the SAPTOOLS schema have been created in tablespace SYSTOOLSPACE and system tablespaces (that is, tablespaces that start with 'SYS') cannot be transported. The objects in the SAPTOOLS schema can later be re-created by reinitializing the DBA Cockpit. However, some historical monitoring data contained in SAPTOOLS tables is lost during the RESTORE DATABASE ... TRANSPORT procedure.

### 2. Take an offline backup of the original database

You need a full offline database backup as a basis for the RESTORE ... TRANSPORT operation. The backup can be directed to any target medium. The following command is a simple backup command that creates a backup image in directory /db2/backup. To compress the backup image, the *compress* keyword was used:

```
db2 BACKUP DATABASE E72 TO /db2/backup COMPRESS
```

```
sapbxvm15.torolab.ibm.com - PuTTY
saplxvm15:db2e72 3> db2 backup database E72 to /db2/backup/ compress
Backup successful. The timestamp for this backup image is : 20101118175724
saplxvm15:db2e72 4>
```

Since we are going to drop the original database, the database configuration of the original database should be saved. To do this, run the following command and check the contents of the output file:

```
db2 get db cfg for e72 > saved_db_cfg.txt
```

The saved database configuration is used in a later step to restore the current configuration.

### 3. Drop the original SAP database (optional)

After you have made sure that your backup has finished successfully and the configuration of your source database has been saved, you can drop the existing SAP database using the following command:

```
db2 drop database E72
```

If you want to rebuild your database on a different hardware you can skip this step.

### 4. Create a new database

Now, create a new database with the static properties that you would like to achieve. You can do so by running a CREATE DATABASE command as user db2<dbsid>. Note that you cannot choose all parameters of the CREATE DATABASE command freely for an SAP system database. The following applies:

- The default page size of an SAP system database is 16 KB. If no strong reasons exist, create your database with a uniform page size for all tablespaces. Do not choose a default page size lower than 16 KB.
- The database collating sequence and character set must match the code page of the SAP system.

For an SAP Unicode database, the following clause in the CREATE DATABASE command is mandatory:

```
USING CODESET UTF-8 TERRITORY EN_US COLLATE USING IDENTITY_16BIT
```

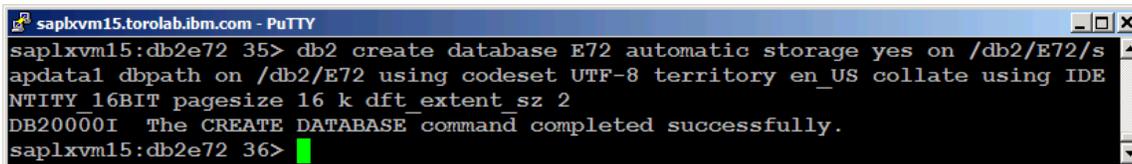
The corresponding mandatory clause for an SAP non Unicode database is as follows:

```
USING CODESET ISO8859-1 TERRITORY EN_US COLLATE USING IDENTITY
```

- The default extent size for newly created tablespaces is 2 pages. If you change this setting, be aware that more space is wasted for small or empty tables and that the space usage for MDC tables is affected.

The following CREATE DATABASE command creates a Unicode database using automatic storage with four storage paths:

```
db2 "CREATE DATABASE E72 AUTOMATIC STORAGE YES
ON /db2/E72/sapdata1,/db2/E72/sapdata2,/db2/E72/sapdata3,/db2/E72/sapdata4
DBPATH ON /db2/E72
USING CODESET UTF-8 TERRITORY EN_US COLLATE USING IDENTITY_16BIT
PAGESIZE 16 k
DFT_EXTENT_SZ 2"
```



```
sapbcvm15.torolab.ibm.com - PuTTY
saplxvm15:db2e72 35> db2 create database E72 automatic storage yes on /db2/E72/s
apdata1 dbpath on /db2/E72 using codeset UTF-8 territory en_US collate using IDE
NTITY 16BIT pagesize 16 k dft extent sz 2
DB20000I The CREATE DATABASE command completed successfully.
saplxvm15:db2e72 36>
```

## 5. Restore the database parameters from the source database

You have to change the DB parameters to original values to ensure a correct configuration for an SAP system database and to ensure the SAP system is prepared for the RESTORE ... TRANSPORT command in step 6.

Restore the original SAP DB2 configuration parameters that you have saved in step 1 using the "db2 get db cfg ..." and "db2 update db cfg ..." commands.

Set the database parameters of the new database according to the parameters saved in file *saved\_db\_cfg.txt*.

## 6. Enable log archival

To use the RESTORE DATABASE ... TRANSPORT option, you must enable log archival for the target database. Therefore, the database parameter LOGRETAIN must be set to ON. You might have already set this database parameter to ON in the previous step. Activating this parameter using the following command changes the database from circular logging to archival logging:

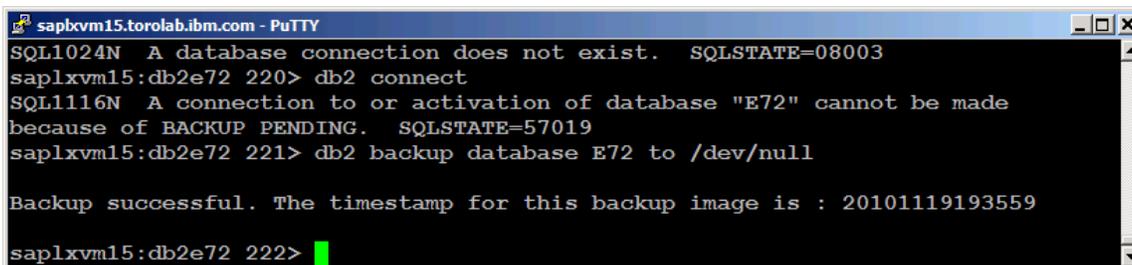
```
db2 update db cfg for E72 using LOGRETAIN ON
```

DB2 enforces a full database backup after this change.

You must perform a backup before DB2 allows new connections after parameter LOGRETAIN has been activated. If no backup has been performed, DB2 returns SQL1116N on connection requests.

Since the target database has been newly created and is empty at this point in time, a dummy backup to /dev/null is sufficient. After all steps of this example have been completed, you must take a full fresh backup as follows.

```
db2 backup database E72 to /dev/null
```



```
sapbcvm15.torolab.ibm.com - PuTTY
SQL1024N A database connection does not exist. SQLSTATE=08003
saplxvm15:db2e72 220> db2 connect
SQL1116N A connection to or activation of database "E72" cannot be made
because of BACKUP PENDING. SQLSTATE=57019
saplxvm15:db2e72 221> db2 backup database E72 to /dev/null

Backup successful. The timestamp for this backup image is : 20101119193559
saplxvm15:db2e72 222>
```

## 7. Attach all SAP tablespaces to the new database

The RESTORE DATABASE ... TRANSPORT command is used to attach all ABAP tablespaces for schema SAPE72 to the new database. This process ensures that the physical and logical objects contained in the tablespaces being restored are re-created in the target database and the tablespace definitions and containers are added to target database as well.

Typically, an SAP ABAP or Java system contains tables, indexes, primary keys, and views. In rare cases, it also contains triggers. All these objects are re-created in the target database by the RESTORE DATABASE ... TRANSPORT command. The command also fills the DB2 system catalog tables with the statistics information from the source database. For a complete list of transported objects, see the IBM documentation.

In our example, we transport only tablespaces that contain objects of schema SAPE72. The corresponding list of tablespaces was derived in step 1. Run the command as DB2 instance owner, in this case db2e72. The RESTORE DATABASE ... TRANSPORT command corresponding to our example is as follows:

```
db2 " RESTORE DATABASE E72
TABLESPACE( E72#DDICD, E72#DDICI, E72#USER1D, E72#USER1I, E72#BTABD, E72#BTABI,
E72#STABD, E72#STABI, E72#POOLD, E72#POOLI, E72#DOCUD, E72#DOCUI, E72#ES701D, E72#ES701I,
E72#SOURCED, E72#SOURCEI, E72#PROTD, E72#PROTI, E72#LOADD, E72#LOADI, E72#CLUD,
E72#CLUI, E72#EL701D, E72#EL701I, E72#ODSD, E72#ODSI, E72#DIMD, E72#DIMI, E72#FACTD,
E72#FACTI)
SCHEMA (sape72) FROM /db2/backup
TRANSPORT INTO E72 "
```

```
saplxvm15.torolab.ibm.com - PuTTY
99c99
< Log retain for recovery enabled          (LOGRETAIN) = RECOVERY
---
> Log retain for recovery enabled          (LOGRETAIN) = OFF
112c112
< First log archive method                (LOGARCHMETH1) = LOGRETAIN
---
> First log archive method                (LOGARCHMETH1) = OFF
saplxvm15:db2e72 128> db2
(c) Copyright IBM Corporation 1993,2007
Command Line Processor for DB2 Client 9.7.3

You can issue database manager commands and SQL statements from the command
prompt. For example:
  db2 => connect to sample
  db2 => bind sample.bnd

For general help, type: ?.
For command help, type: ? command, where command can be
the first few keywords of a database manager command. For example:
? CATALOG DATABASE for help on the CATALOG DATABASE command
? CATALOG          for help on all of the CATALOG commands.

To exit db2 interactive mode, type QUIT at the command prompt. Outside
interactive mode, all commands must be prefixed with 'db2'.
To list the current command option settings, type LIST COMMAND OPTIONS.

For more detailed help, refer to the Online Reference Manual.

db2 => restore database E72 TABLESPACE(E72#DDICD, E72#DDICI, E72#USERID, E72#USER1I, E72#BTABD, E72#BTABI, E72#STAB
D, E72#STABI, E72#POOLD, E72#POOLI, E72#DOCUD, E72#DOCUI, E72#ES701D, E72#ES701I, E72#SOURCED, E72#SOURCEI, E72#PROT
D, E72#PROTI, E72#LOADD, E72#LOADI, E72#CLUD, E72#CLUI, E72#EL701D, E72#EL701I, E72#ODSD, E72#ODSI, E72#DIMD, E72#D
IMI, E72#FACTD, E72#FACTI) schema (sape72) from /db2/backup TRANSPORT into E72

DB20000I The RESTORE DATABASE command completed successfully.
db2 => db2 =>
```

## 8. Transfer ownership of transported objects

In the source database, all objects of the SAP database schema are owned by the SAP connect user. The RESTORE DATABASE ... TRANSPORT command transfers the ownership of all objects in the transported schemas to the DB2 instance owner, in this case db2e72. Therefore, the next step after transporting objects is to transfer ownership of all objects back to the SAP connect user.

Run TRANSFER OWNERSHIP commands to change ownership of database tables, views and indexes. On UNIX-based operation systems, you can use the shell command to directly execute all "TRANSFER OWNERSHIP" commands that are generated by DB2 CLP commands. For systems based on Windows, you might have to pipe the output of the first DB2 CLP command into a file and execute it in a second step as follows:

```
db2 " grant connect, bindadd, creattab, implicit_schema, load, create_external_routine on database to user
sape72"
```

```
db2 " grant execute on function sape72.db6pmcf to public"
```

```
db2 " grant execute on function sape72.db6pm_lst to public "
```

```
db2 " select 'db2 ' || x'27' || ' transfer ownership of table sape72.'
|| x'22' || tablename || x'22' || ' to user sape72 preserve privileges ' "
```

```
|| x'27' from syscat.tables where tabschema = 'SAPE72' and type = 'T' " | sh
```

```
db2 " select 'db2 ' || x'27' || ' transfer ownership of view sape72.'
|| x'22' || tablename || x'22' || ' to user sape72 preserve privileges '
|| x'27' from syscat.tables where tabschema = 'SAPE72' and type = 'V' " | sh
```

```
db2 " select 'db2 ' || x'27' || ' transfer ownership of index sape72.'
|| x'22' || indname || x'22' || ' to user sape72 preserve privileges '
|| x'27' from syscat.indexes where indschema = 'SAPE72' " | sh
```

Check if the output of the commands contains errors.

### Revoke privileges on transported objects from instance owner (Optional)

The TRANSFER OWNERSHIP command in the previous section has been run with PRESERVE PRIVILEGES clause. In current DB2 versions, this clause is mandatory and leaves explicit privileges for the instance owner. These privileges cause no harm but need to be revoked explicitly if you want to restrict data access on SAP system tables for the instance owner.

Similar to the previous section, you need to run explicit REVOKE commands to take away those privileges from the instance owner. Since the instance owner cannot REVOKE privileges from itself, you need to temporarily grant the ACCESSCTRL privilege to the connect user.

As user db2<dbsid>, execute the following command:

```
db2 "grant ACCESSCTRL on database to user sape72"
```

Connect to the database as user sape72 and execute the following series of commands:

```
db2 " select 'db2 ' || x'27' || ' revoke CONTROL on '
|| x'22' || tablename || x'22' || ' from user db2e72 '
|| x'27' from syscat.tables where tabschema = 'SAPE72' " | sh
```

```
db2 " select 'db2 ' || x'27' || ' revoke CONTROL on index '
|| x'22' || indname || x'22' || ' from user db2e72 '
|| x'27' from syscat.indexes where indschema = 'SAPE72' " | sh
```

```
db2 " select 'db2 ' || x'27' || ' revoke ALL on '
|| x'22' || tablename || x'22' || ' from user db2e72 '
|| x'27' from syscat.tables where tabschema = 'SAPE72' " | sh
```

Connect to the database as user db2<dbsid> again and revoke the ACCESSCTRL privilege from user sape72 as follows:

```
db2 "revoke ACCESSCTRL on database from user sape72"
```

### Run "db6\_update\_db script" and grant missing privileges

The db6\_update\_db script validates your configuration settings and repair some of the settings that have been lost during the RESTORE ... TRANSPORT procedure. For example, it re-creates the DB2 system tablespaces SYSTOOLSPACE and SYSTOOLSTMPSPACE that could not be transported and it performs additional grants for the connect user. For more information, see SAP Notes **1304436** and **1363169**.

The latest version of the script is attached to SAP Note **1365982**. The script itself does not perform immediate changes. It analyses the database and generates an output script that you can check for plausibility before you apply the suggested changes to your database.

Run the db6\_update\_db script and its output script as user db2<dbsid>.

```

saplxvm15.torolab.ibm.com - PuTTY
-r          set autorunstats.
-k          do not set DB2 WORKLOAD=SAP.
-a          do not set autoresize on DMS tablespaces.
-m or -u    this is a migration/upgrade from an older DB2 version, so reorganize
the system catalog.

saplxvm15:db2e72 53> ./db6_update_db.sh -d E72

*****
* db6 update db.sh script version 0014 *
*****

Database Connection Information

Database server      = DB2/LINUX8664 9.7.3
SQL authorization ID = DB2E72
Local database alias = E72

The script db6 update db out.sh was created. Please verify the generated script
Then run it in the following way: db6 update db out.sh > db6_update_db_out.sh.log.
Finally check the logfile db6_update_db_out.sh.log for errors !!!

saplxvm15:db2e72 54>

```

```

saplxvm15.torolab.ibm.com - PuTTY
db2 terminate | tee -a db6_update_db_out.log

echo
echo "*****" | tee -a db6_update_db_out.log
echo Done. | tee -a db6_update_db_out.log

saplxvm15:db2e72 55> db6_update_db_out.sh > db6_update_db_out.sh.log

-----
                DB2 Service Tools
                I      B      M
                -----
                db2upd97

This tool is a service utility designed to update a DB2 Version 9.7
database to the current fixpak level.

-----

DB2 Universal Database Version 9.7, 5622-044 (c) Copyright IBM Corp. 2009
Licensed Material - Program Property of IBM
IBM DATABASE 2 Database update to current fix pack tool

saplxvm15:db2e72 56>

```

## Re-create tablespaces using the DBA Cockpit

In this stage, the SAP system is almost fully functional again but some tablespaces that are used for monitoring functions have been lost. The SAPTOOLSPACE and SAPTOOLSTMPSPACE tablespaces do not yet exist since RESTORE ... TRANSPORT cannot transport database schemas that have dependent objects in DB2 system tablespaces. If you created your database using automatic storage, the DBA Cockpit automatically re-creates these tablespaces for you. To do this, start your SAP system, log on and call transaction DBACOCKPIT. If the DBA Cockpit cannot create the tablespace, an appropriate error message is returned. For more information about the SAPTOOLS tablespace, see SAP Note 1111597.

## Take a backup of your new database

Your SAP system and database should be fully functional now. As a last step, you need to take a full backup of your new database to bring it back into a recoverable state.

```

saplxvm15.torolab.ibm.com - PuTTY
SQL1032N No start database manager command was issued.
saplxvm15:db2e72 69> db2start
11/26/2010 16:17:21 0 0 SQL1063N DB2START processing was successful.
SQL1063N DB2START processing was successful.
saplxvm15:db2e72 70> db2 backup database E72 to /db2/backup/ compress

Backup successful. The timestamp for this backup image is : 20101126161727

saplxvm15:db2e72 71>

```

## Related Content

[IBM DB2 Database for Linux, UNIX, and Windows Information Center](#)

[Using Restore](#)

[DB2 V9.7 Database Schema Transporting](#)

For more information, visit the [Landscape Design and Architecture homepage](#).

## Copyright

© 2011 SAP AG. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

Microsoft, Windows, Outlook, and PowerPoint are registered trademarks of Microsoft Corporation.

IBM, DB2, DB2 Universal Database, OS/2, Parallel Sysplex, MVS/ESA, AIX, S/390, AS/400, OS/390, OS/400, iSeries, pSeries, xSeries, zSeries, System i, System i5, System p, System p5, System x, System z, System z9, z/OS, AFP, Intelligent Miner, WebSphere, Netfinity, Tivoli, Informix, i5/OS, POWER, POWER5, POWER5+, OpenPower and PowerPC are trademarks or registered trademarks of IBM Corporation.

Adobe, the Adobe logo, Acrobat, PostScript, and Reader are either trademarks or registered trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Oracle is a registered trademark of Oracle Corporation.

UNIX, X/Open, OSF/1, and Motif are registered trademarks of the Open Group.

Citrix, ICA, Program Neighborhood, MetaFrame, WinFrame, VideoFrame, and MultiWin are trademarks or registered trademarks of Citrix Systems, Inc.

HTML, XML, XHTML and W3C are trademarks or registered trademarks of W3C®, World Wide Web Consortium, Massachusetts Institute of Technology.

Java is a registered trademark of Sun Microsystems, Inc.

JavaScript is a registered trademark of Sun Microsystems, Inc., used under license for technology invented and implemented by Netscape.

MaxDB is a trademark of MySQL AB, Sweden.

SAP, R/3, mySAP, mySAP.com, xApps, xApp, SAP NetWeaver, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

These materials are provided "as is" without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement.

SAP shall not be liable for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials.

SAP does not warrant the accuracy or completeness of the information, text, graphics, links or other items contained within these materials. SAP has no control over the information that you may access through the use of hot links contained in these materials and does not endorse your use of third party web pages nor provide any warranty whatsoever relating to third party web pages.

Any software coding and/or code lines/strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended better explain and visualize the syntax and phrasing rules of certain coding. SAP does not warrant the correctness and completeness of the Code given herein, and SAP shall not be liable for errors or damages caused by the usage of the Code, except if such damages were caused by SAP intentionally or grossly negligent.