Database-Online-Backup with
SEPsesam and
IBM DB2 Universal Database on Linux, Unix and Windows

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1 Introduction

SEPsesam online backup for IBM DB2 (sdb2) provides a XBSA interface between DB2 and SEPsesam for saving data of DB2 databases to sesam server. XBSA API specifies the access from DB2 *db2 backup* utility to a backup application. SEPsesam will manage the whole backup media handling like loading the correct tapes, whereas *db2 backup* decides which data has to be saved or recovered. This document provides information about the sesam specific parts of DB2 backups. It's not a DB2 backup adminstration guide. Please read DB2 administration documentation to get familiar with DB2's backup and recovery concepts and tools.

2 System requirements

- IBM DB2 7/8 on Linux

- SEP sesam v2.4 (incl. DB-Online-Module for DB2)

- the standard Sesam Backup Client is already installed

- working SEPsesam file system backups for this client

3 Installation

The SEPsesam DB2 packet includes only one shared library which DB2 server loads dynamically during backup or restore. Please adjust the pathes and variables according to your needs.

- SESAM_ROOT=/opt/sesam/bin/sesam (Sesam installation directory)

3.1 Installation on Linux or Unix

- First verify that the standard Sesam Backup Client is already installed

- File system backup should work with this sesam client

- Login as *root* user

- Unpack tar file to a temporary directory

- Copy *db2xbsa.so* to *$SESAM_ROOT/bin/sesam* directory

```
root@linux:~# cd /tmp
root@linux:/tmp # tar xvzf sesam-db2-2.4.1-14_linux.i386.tgz
sesam-db2-2.4.1-14/
sesam-db2-2.4.1-14/db2xbsa.so
sesam-db2-2.4.1-14/sesam-db2.pdf
root@linux:/tmp # cd sesam-db2-2.4.1-14/
root@linux:/tmp/sesam-db2-2.4.1-14 #  cp db2xbsa.so /opt/sesam/bin/sesam
```

4 Configuration

4.1 Configuration on sesam server

Create a new backup task for the DB2 server with task type *DB2_UDB*. For backup source you can specify whatever you want, bcs. DB2 decides which data has to be saved.

4.2 Configuration on DB2 server

To give DB2 the necessary information to connect to SEPsesam, the following options can be set.

4.2.1 Mandatory parameters

- **SESAM_SERVER** Name of SEPsesam server

- **SESAM_JOB** Jobname of DB2 backup Name of an already configured task on sesam server with task type *DB2_UDB*

- **SESAM_POOL** Media pool name Name of an already configured media pool on sesam server

4.2.2 Optional parameters

- SESAM_TAPE_SERVER Name of tapeserver to use

- SESAM_DRIVE Drive number to use

- XBSA_TRACE=<Trace level> (0—1—2)

- XBSA_LOGFILE=<Full pathname of trace file>

Although *XBSA_TRACE* and *XBSA_LOGFILE* are not mandantory, they should be set to get information in case of problems during backup or restore. For restore only **SESAM_SERVER** and **SESAM_JOB** are mandantory.

5 DB2 backups and restores

The following examples are showing, how backup or restores can be started on DB2 server. They do not cover all functions of DB2, but should give some hints for using DB2 backup and SEPsesam together.

5.1 DB2 backup

- Backup of complete database

```
db2inst@linux:~>db2 BACKUP DATABASE sesam_db \
LOAD /opt/sesam/bin/sesam/db2xbsa.so \
OPTIONS 'SESAM_SERVER=midrangix;SESAM_JOB=db2_sesamdb; \
SESAM_POOL=DISK;XBSA_LOGFILE=/home/db2inst1/sdb2.log; \
XBSA_TRACE=1' INCLUDE LOGS WITHOUT PROMPTING;
```

- Restore of complete database

```
db2inst@linux:~>db2 RESTORE DATABASE sesam_db  \
LOAD /opt/sesam/bin/sesam/db2xbsa.so \
OPTIONS 'SESAM_SERVER=midrangix;SESAM_JOB=abas_db2_2; \
XBSA_LOGFILE=/home/db2inst1/sdb2.log;XBSA_TRACE=1' \
TAKEN AT 20060113134350 TO "/tmp/db2restore" INTO sesamdb2
```

5.2   Trouble shooting

- Check the messages on SEPsesam server.

- More information can be found in the *sdb2* logfile.   Logfile name is set by XBSA_LOGFILE=¡path to *sdb2.log*¿ and loglevel by XBSA_TRACE=1.   All sesam XBSA messages have the prefix *XBSA*. For more information XBSA_TRACE can be set to 2, but then the logfiles can become quite large.

5.3   Install into DB2 default library directory

Instead of copying shared library into '*SESAM_ROOT*/bin/sesam' directory and specifying the path by the 'LOAD' command, you can put it into DB2 library directory on the DB2 server too. Please adjust the pathes and variables according to your needs.

- DB2DIR=/opt/IBM/db2/V8.1 (the DB2 product directory)

```
root@linux:~# cd /tmp/sesam-db2-2.4.1-14
root@linux:/tmp/sesam-db2-2.4.1-14 #  cp db2xbsa.so /opt/IBM/db2/V8.1/lib
```

Then the db2 backup command has to be changed slightly. The 'LOAD' parameter is replaced by 'USE XBSA'.

```
db2inst@linux:~>db2 BACKUP DATABASE sesam_db USE XBSA \
OPTIONS 'SESAM_SERVER=midrangix;SESAM_JOB=db2_sesamdb; \
SESAM_POOL=DISK;XBSA_LOGFILE=/home/db2inst1/sdb2.log; \
XBSA_TRACE=1' INCLUDE LOGS WITHOUT PROMPTING;
```

6 DB2 documentation

- 'Data Recovery and High Availability Guide Reference'

- 'System Management: Backup Services API (XBSA)'

- 'Backup Services Application Programmer's Interface'