

Introduction

At the very basic level, every database recovery will involve most of these seven steps. However, depending on the situation and the type of recovery requested, certain steps might be eliminated or changed significantly.

At a high level, the following steps are common to most database recoveries.

Credit: <http://www.dbta.com/Editorial/News-Flashes/Planning-Database-Recovery-Options-118536.aspx>

1. Identify the failure

The detection of an outage is usually simple: either the database is not responding to the application or the DBMS has displayed some type of error message. Some problems are more insidious, though, such as a corrupt control file. This type of problem takes more skill to identify.

2. Analyze the situation

The DBA must analyze the error to determine the cause, type, and scope of the failure. Based on the results of this analysis, the DBA will choose a recovery method. This is usually the most time-consuming recovery task.

4. Determine what needs to be recovered.

The DBA must determine which database objects (and perhaps other components such as logs) are failing and prepare a recovery script that is appropriate for each component. This task can also consume a significant amount of time, especially for larger systems.

4. Identify dependencies between Database Objects

Identify dependencies between the database objects to be recovered. The failure of one database object can impact other database objects (e.g., indexes and referentially related tables). Loss of data or recovery to a prior point-in-time will most likely affect related database objects.

5. Locate the required image copy backup(s)

The closer the image copy backup is to the recovery point in time, the shorter amount of time it will take to recover. Keep in mind other factors such as the time it takes to find tapes in the library and the possibility of the tape being located at an off-site location.

Database Recovery

- DBMS should provide four basic facilities for backup & recovery of a database:

1. Backup Facility
 - Periodic backup
2. Journalizing Facility
 - Audit trail of transaction
3. Checkpoint Facility
 - Suspends and synchronize
4. Recovery Manager
 - Restore and restart processing

6. Restore the image copy backup(s)

Restoration is accomplished using the database recovery utility or file system recovery command of choice

7. Roll forward through the database log(s)

To recover to current or to a point in time after the image copy backup was taken, the database logs will need to be processed.