3.2.4 IBM DB2 archive log handling

With IBM DB2, you have many choices about how to handle your DB2 archive logs. You can put both of them to DASD and maybe rely on a later migration to tape through DFSMShsm or an equivalent application. You can write one archive log to DASD and another one to tape. Alternatively, you can put them both directly to tape.

Depending on your choice, the tape environment is more or less critical to your DB2 application. This depends also on the number of active DB2 logs that you define in your DB2 environment. In some environments, due to peak workload, logs are switched every two minutes. If all DB2 active logs are used and they cannot be archived to tape, DB2 stops processing.

Scenario

You have a four-cluster grid, spread over two sites. A TS7700D and a TS7700T are at each site. You store one DB2 archive log directly on tape and the other archive log on disk. Your requirement is to have two copies on tape:

- Using the TS7700 can improve your recovery (no recalls from physical tape needed).
- Having a consistency point of R, N, R, N provides two copies, which are stored in both TS7700s. If one TS7700 is available, DB2 archive logs can be stored to tape. However, if one TS7700 is not available, you have only one copy of the data. In a DR situation where one of the sites is not usable for a long time, you might want to change your policies to replicate this workload to the local TS7700T as well.
- If the TS7700D enters the `Out of cache resources` state, new data and replications to that cluster are put on hold. To avoid this situation, consider having this workload also target the TS7700T and enable the Automatic Removal policy to free space in the TS7700D. Until the `Out of cache resources` state is resolved, you might have fewer copies than expected within the grid.
- If one TS7700D is not available, all mounts must be run on the other TS7700D cluster.
- In the unlikely event that both TS7700Ds are not reachable, DB2 stops working when all DB2 logs on the disk are used.
- Having a consistency point of R, N, R, D provides you with three copies, which are stored in both TS7700Ds and in the TS7700T of the second location. That exceeds your original requirement, but in an outage of any component, you still have two copies. In a loss of the primary site, you do not need to change your DB2 settings because two copies are still written. In an `Out of Cache resources` condition, the TS7700D can remove the data from cache because there is still an available copy in the TS7700T.

Note: Any application with the same behavior can be treated similarly.

3.2.5 DFSMShsm Migration Level 2

Several products are available on the IBM Z platform for hierarchical storage management (HSM). IBM Data Facility Storage Management Subsystem Hierarchical Storage Manager (DFSMShsm) provides different functions. DFSMShsm migrates active data from disk pools to ML2 tape in which the only copies of these data sets are on tape.