Setting up high availability disaster recovery (HADR) databases

Application

DB2 8.2

Advantages

- provides a high availability solution for both partial and complete site failures
- With HADR, the standby database can take over in seconds.
- Rolling upgrades and other kinds of planned outages.
- Simple and Easy Configuration.
- Easy maintenance

CLIENT BACKGROUND

Dawn Media group is the oldest and biggest Media group in Pakistan with wide range of products from Dawn Newspaper, Dawn TV Channel, FM89, Spider Monthly Internet Magazine, Herald Magazine and many other News & Entertainment related magazine Headed by Mr. Hameed Haroon. The Dawn Group enjoy the privilege of being founded by the founder of Pakistan Quaid-e-Azam Mohammed Ali Jinnah in 1941, the News paper has its wide spread reach and coverage both within and outside the country.

Following is a list of publications produced and owned by the Dawn Group:

- Dawn, its flagship
- The Star, Pakistan's most popular evening newspaper
- Herald, current affairs monthly
- Spider, a monthly Internet magazine
- Aurora, a marketing and advertising bi-monthly

BUSINESS PROBLEM

A site failure can be caused by a hardware, network, or software (DB2 or operating system) failure. Without HADR, a partial site failure requires the database management system (DBMS) server or the machine where the database resides to be rebooted. The length of time it takes to restart the database and the machine where it resides is unpredictable. It can take several minutes before the database is brought back to a consistent state and made available. A high availability solution is required to reduce down time.

SOLUTION

DB2(R) high availability disaster recovery (HADR) provides a high-availability technology to help you recover from complete site failures, as well as to support applications that demand ultrafast failover for partial site failures. HADR is also useful for rolling upgrades and other kinds of planned outages. HADR ships database log records for an entire database from a source copy of the database (called the primary) to a target copy of the database (called the standby). The standby database cannot be accessed by applications. The standby is initialized using a restore or a split mirror, which is an identical and independent copy of disk volumes that can be attached to a different system and can be used in various ways.

When you start HADR, it retrieves log records and replays those records on the standby until the standby catches up to the in-memory log set of the primary. The primary then writes log data to local disk and sends them to the standby. Updates to the standby database occur by rolling forward log data that is generated on the primary database and shipped to the standby database.

With HADR, the standby database can take over in seconds. Further, you can redirect the clients that were using the original primary database to the standby database (new primary database) by using automatic client reroutes or retry logic in the application.

After the failed original primary server is repaired, it can rejoin the HADR pair as a standby database if the two copies of the database can be made consistent. After the original primary database is reintegrated into the HADR pair as the standby database, you can switch the roles of the databases to enable the original primary database to once again be the primary database.