Reading: Perform Point-in-Time Backup and Restore

Estimated Time: 10 minutes

Objectives:

- Understand the significance of Point-in-Time Recovery (PITR) in database management.

- Gain an overview of key Linux commands used for conducting Point-in-Time Backup and Restore of MySQL

Database.

Significance of Point-in-Time Recovery (PITR):

PITR allows restoring a database to a specific moment, reducing data loss. It uses a combination of full

backups and binary logs.

Key Techniques:

- Full Backups: Entire database snapshot.

- Incremental Backups: Changes since last backup.

- Binary Logs: Logs of all data changes (INSERT, UPDATE, DELETE).

How Binary Logs Work:

1. Enable binary logging (log_bin in my.cnf).

2. MySQL starts recording logs (e.g., mysql-bin.000001).

3. Manage logs to avoid disk space issues.

4. Restore from full backup, then apply binary logs.

Practical PITR Steps:

1. Download SQL scripts using wget.

2. Install and start MySQL (sudo apt-get install mysql-server).

3. Access MySQL CLI (sudo mysql -u root -p).

4. Create and populate world database.

5. Perform mysqldump with --flush-logs and --delete-master-logs.

6. Simulate crash by deleting /var/lib/mysql/world and stopping MySQL.

7. Restore full backup, apply binary logs with mysqlbinlog and mysql CLI.

Conclusion:

PITR is crucial for database reliability and recovery. Following best practices ensures minimal data loss and effective recovery.

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