Percona's XtraBackup and Installation

Percona XtraBackup

- *Percona XtraBackup* open-source, free *MySQL* hot backup software that performs non-blocking backups for *InnoDB* and *XtraDB* databases.
- With *Percona XtraBackup*, you can achieve the following benefits:
- Backups that complete quickly and reliably
- Uninterrupted transaction processing during backups
- Savings on disk space and network bandwidth
- Automatic backup verification
- Higher uptime due to faster restore time
- Percona XtraBackup makes MySQL hot backups for all versions of Percona Server for MySQL, and MySQL. It performs streaming, compressed, and incremental MySQL backups.

Percona XtraBackup Funtionality

- Percona XtraBackup is based on InnoDB’s crash-recovery functionality.
- It copies your InnoDB data files, which results in data that is internally inconsistent;
- But then it performs crash recovery on the files to make them a consistent, usable database again.
- This works because InnoDB maintains a redo log, also called the transaction log.
- This contains a record of every change to InnoDB data. When InnoDB starts, it inspects the data files and the transaction log, and performs two steps.
- It applies committed transaction log entries to the data files, and it performs an undo operation on any transactions that modified data but did not commit.
- Percona XtraBackup works by remembering the log sequence number (LSN) when it starts, and then copying away the data files.
- It takes some time to do this, so if the files are changing, then they reflect the state of the database at different points in time.

Percona XtraBackup Funtionality

- At the same time, Percona XtraBackup runs a background process that watches the transaction log files, and copies changes from it.
- Percona XtraBackup needs to do this continually because the transaction logs are written in a round-robin fashion, and can be reused after a while.
- Percona XtraBackup needs the transaction log records for every change to the data files since it began execution.
- After that xtrabackup will use LOCK BINLOG FOR BACKUP to block all operations that might change either binary log position, xtrabackup will then finish copying the REDO log files and fetch the binary log coordinates.
- After this is completed xtrabackup will unlock the binary log and tables.
- Finally, the binary log position will be printed to STDERR and xtrabackup will exit returning 0 if all went OK.
- During the prepare phase, *Percona XtraBackup* performs crash recovery against the copied data files, using the copied transaction log file. After this is done, the database is ready to restore and use.