



MySQL Backups, why we need backup, RTO and RPO explained



MySQL Backups

- It is important to back up your databases so that you can recover your data and be up and running again in case problems occur, such as system crashes, hardware failures, or users deleting data by mistake.
- Backups are also essential as a safeguard before upgrading a MySQL installation, and they can be used to transfer a MySQL installation to another system or to set up replica servers.
- MySQL offers a variety of backup strategies from which you can choose the methods that best suit the requirements for your installation.
- Types of backups: Logical versus physical, full versus incremental, and so forth.
- Methods for creating backups.
- Recovery methods, including point-in-time recovery.
- Backup scheduling, compression, and encryption.
- Table maintenance, to enable recovery of corrupt tables.



Why Are backups needed

- Backups are needed in case of multiple problems:
- **Host Failure:** We can get multiple problems from disks stalled or broken disks. Also from cloud services, our DB instance can be broken and it's non-accessible.
- **Corrupted Data:** This can happen on a power outage, MySQL wasn't able to write correctly and close the file, sometimes when MySQL starts again it cannot start due to corrupted data and the crash recovery process cannot fix it.
- **Inconsistent Data:** When a human mistake, delete/update erroneous data over the primary or replica node.
- **DataCenter Failure:** power outage or internet provider issues.
- **Legislation/Regulation:** provide consistent business value and customer satisfaction.



Recovery Time Objective (RTO)

- The Recovery Time Objective (RTO) refers to the amount of time that may pass during a disruption before it exceeds the maximum allowable threshold specified in the Business Continuity Plan.
- The key question related to RTO is, “How quickly must the data on this system be restored?”



Recovery Point Objective (RPO)

- The Recovery Point Objective (RPO) is the duration of time and service level within which a business process must be stored after a disaster in order to avoid unacceptable consequences associated with a break in continuity.
- The key question related to RPO is, “How much data can we lose?”