MySQL Replication

My SQL Replication enables us to replicate a Database or a cluster or a single/Particular table in DB asynchronously by default to multiple copies of clusters.

Major advantages:

1. Replicas need to be connected to the source to receive updates.
2. Off loading source/better segregation of duties (diving who should handle reads, writes etc)
3. Data Security as replicas can be used for backup activities, analytics etc.
4. Efficient and secure data sharing with replicas.
5. Synchronous and Asynchronous replication.

Methods of Replication:

The method of replication that needs to implemented has to be decided based on the data, complexity, size and cluster engine type and other factors. The popular among them are:

1. Binary log position based
    a. Traditional approach
    b. Requires log files and positions in them to be in sync with source and replicas.
2. Global Transaction Identifiers (GTIDs)
    a. Newer and simpler approach
    b. guarantees consistency between source and replica as long as all transactions committed on the source have also been applied on the replica

Types of Synchronization:

1. General/Default Asynchronous replication – faster method
2. Synchronous – generally used for use cases like NDB clusters where data redundancy is priority.
3. Semi Synchronous – that waits for an acknowledgement from atleast one replica server.
4. Delayed replication – in which the data replication waits for a specified amount of time.

Types of Replication Format:

1. Statement Based Replication (SBR) - replicates entire SQL statement
2. Row Based Replication (RBR) - replicates only the changed rows.
3. Mixed Based Replication (MBR) – it uses both SBR and RBR(switches between both) depending on the conditions that are provided.