replication slots

Last updated by | Hamza Aqel | Jan 10, 2023 at 6:33 AM PST

Desription

Azure database for PostgreSQL - flexible uses synchronize replication for HA server and it has 2 slots:

- azure_standby_*: this slot is used to replication to standby server.
- wal_replica_*: this slot is for archive component. (WAL server node, which is based on a replica with no local redo replay nor local database)

wal_replica_* has the following functionalities:

- If any standby or other secondary instance fails, the existing code in the WAL Server for supporting cascading replication will handle this case (Cascade WAL data to HA and Hot Standby nodes)
- Persists WAL data. Essentially a remotely managed pg_wal storage system. Instead of the primary writing to local files in pg_wal it writes WAL to the WAL Server in addition to WAL archiving.
- Periodically monitor the Primary, and keep track on high water mark LSN acknowledged, so in case of the primary did not cleanly shut down or a disaster happened, it can keep track of the highest LSN acknowledged and send the needed WAL records and wait for the primary to complete recovery or to the standby in case of failover if needed.

Troubleshoot

Checking Kusto it will show 2 slots for HA servers:

```
MonOBPgSqlReplicationStats
| where LogicalServerName == 'SERVER_NAME'
| where TIMESTAMP >= START_TIME and TIMESTAMP <= END_TIME
| project TIMESTAMP, Slot_name, Slot_type, Active, Replay_lag
```

TIMESTAMP	Slot_name	Slot_type	Active	Replay_lag
2022-10-30 16:06:20.0000000	azure_standby_a2417f8c7ae8	physical	1	00:00:00.0047480
2022-10-30 16:06:20.0000000	wal_replica_meru11pgwe_gjvg	physical	1	22.04:32:39.3327770
2022-10-30 16:11:20.0000000	azure_standby_a2417f8c7ae8	physical	1	00:00:00.0053820
2022-10-30 16:11:20.0000000	wal_replica_meru11pgwe_gjvg	physical	1	22.04:37:39.4121110
2022-10-30 16:16:20.0000000	azure_standby_a2417f8c7ae8	physical	1	00:00:00.0047650
2022-10-30 16:16:20.0000000	wal_replica_meru11pgwe_gjvg	physical	1	22.04:42:39.4443490
2022-10-30 16:21:20.0000000	azure_standby_a2417f8c7ae8	physical	1	00:00:00.0069070

for any replication lag you need to check only azure_standby_* slots.

If you see high replication lag or wal_replica_* slots you can ignore this lag as this is for archiver process.

pg_stat_replication

If customer ran pg_stat_replication and noticed high replication lag for SERVER_NAME-* slot you can safely ignore this slot.

You need only to troubleshoot any replication lag for azure_standby* slot