Brothers in Arms

How to Make MySQL and PostgreSQL Work Together

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Agenda

- Introduction
- Replication
    - *PostgreSQL Replication*
    - *MySQL Replication*
- Challenges
- Available solutions
    - *SymmetricDS*
    - *Tungsten Replicator*
    - *Apache Kafka with Debezium*
- Demo

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Introduction

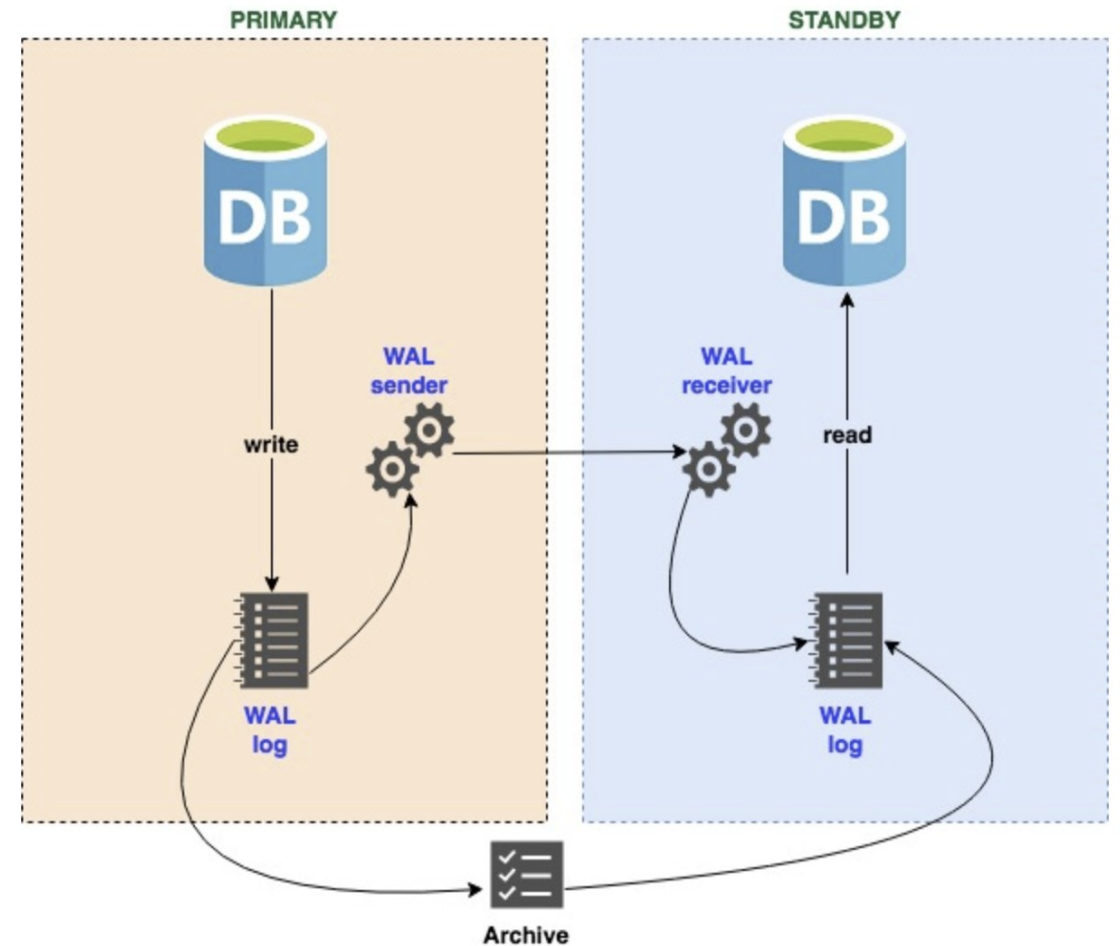## Why replicate data between different databases?

- Migrate data from one database to the another with minimal downtime;

- Feed legacy/in-house systems with web transactions;

- DW and Reporting;

- Use the correct technology assets (GEO, Sync Replication, json, etc);

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Replication

Replication

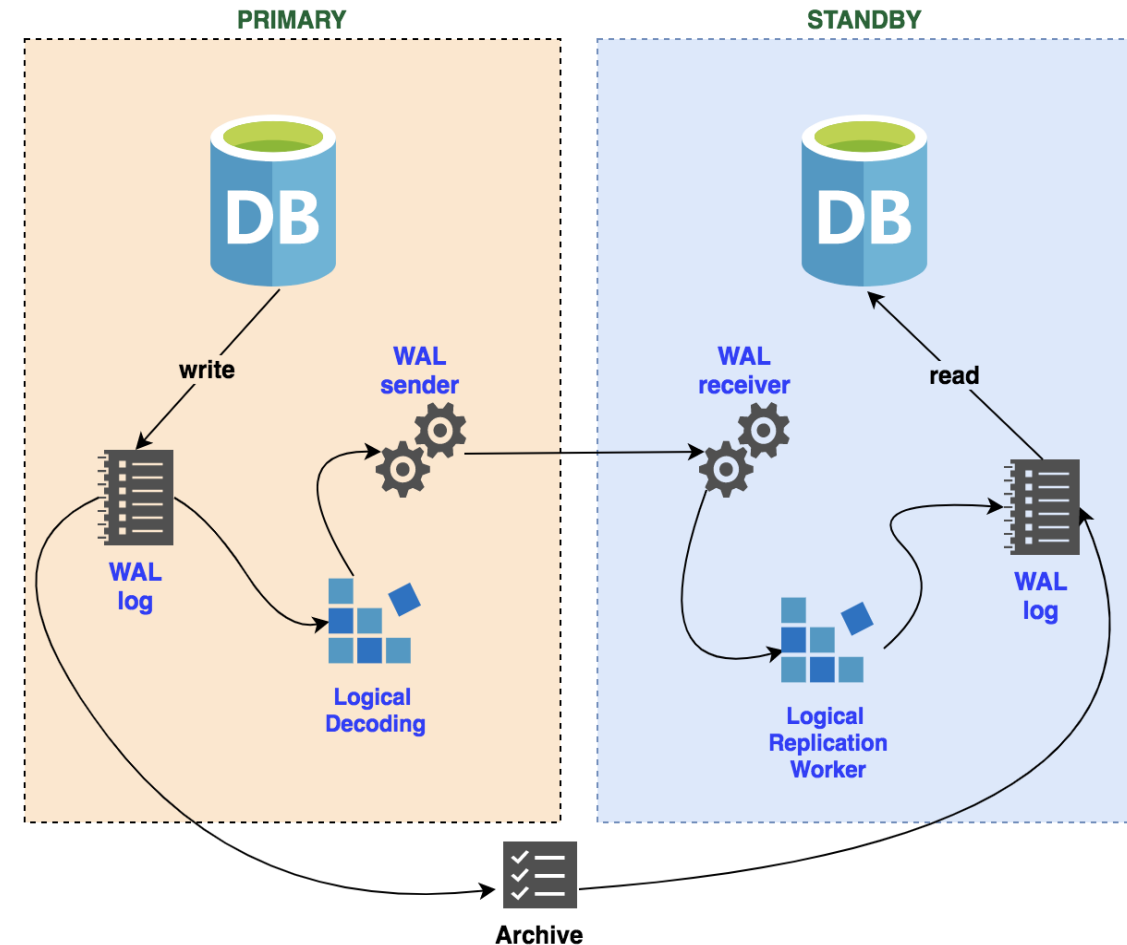## PostgreSQL Streaming Replication

- Physical replication (blocks, byte-by-byte);
- Not possible with different major versions;
- Slaves readable, not writeable;
- Slaves have same structure as master;
- Complex timeline control;
- Re-sync slave often requires new BKP;

Replication...

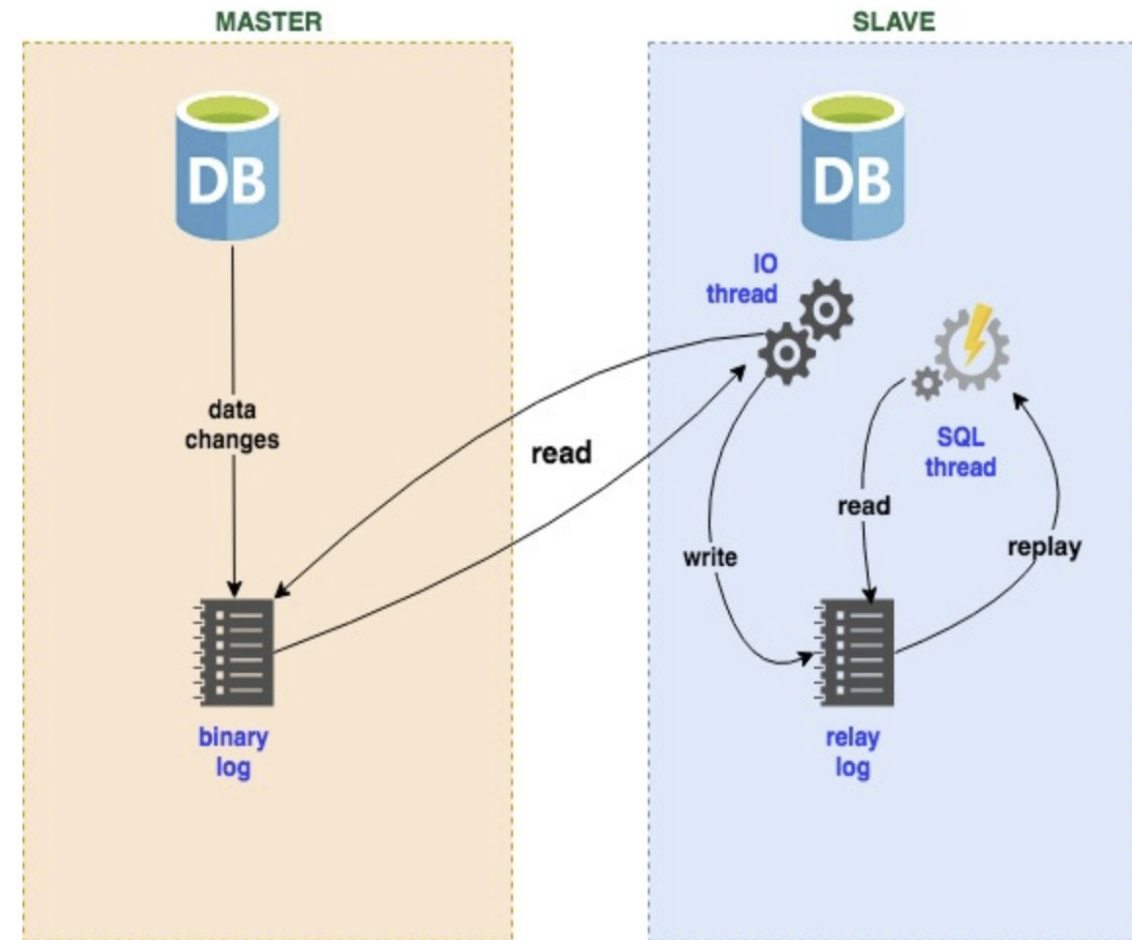**PostgreSQL Logical Replication (PG 10+)**

- Uses a publish and subscribe model;
- Slaves can now be writable;
- Now possible with different major versions;
- Transactional consistency is guaranteed for publications within a single subscription;
- Better granularity and control;
- Doesn't replicate DDL;

Replication...

MySQL

- Logical Replication;
- Slaves can be writable;
- Possible with different major versions*;
- Good granularity and control;
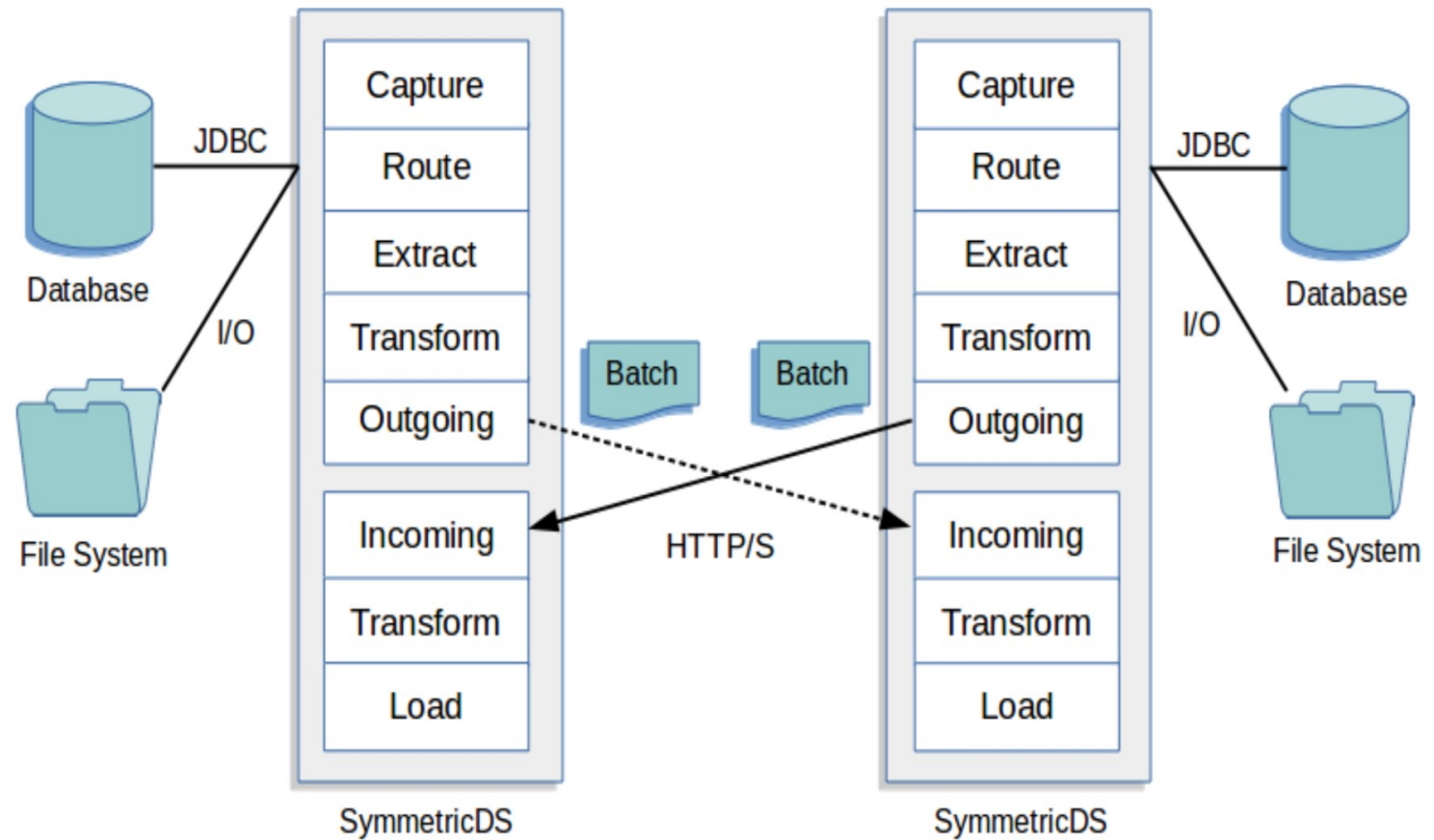- Replicates schema and data;
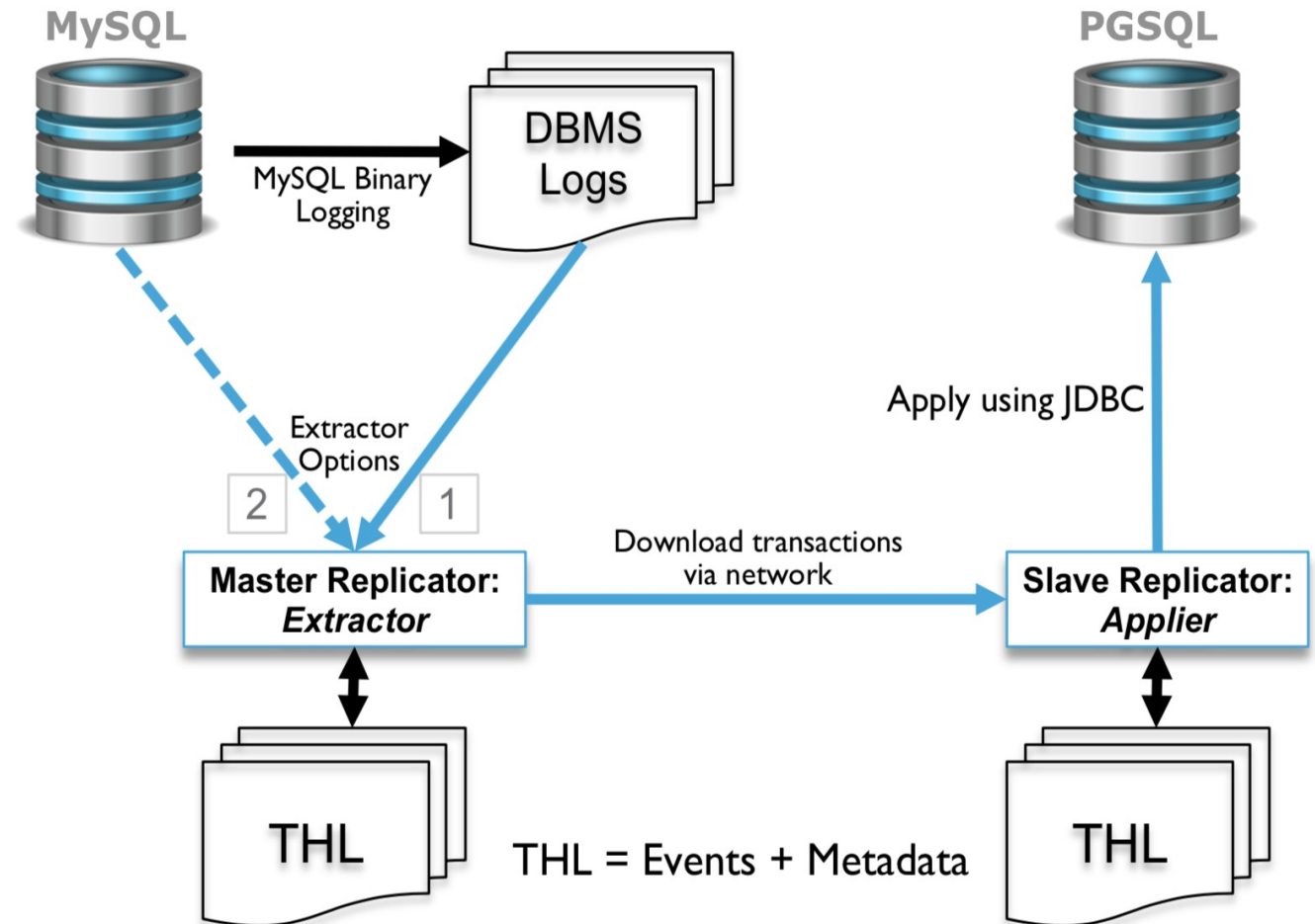
Available solutions

Available solutions

SymmetricDS

- Scalable;
- Asynchronous;
- Trigger based;
- One way and multi-master;
- Routing;
- Filtered Synchronization;
- Transformation Capabilities;

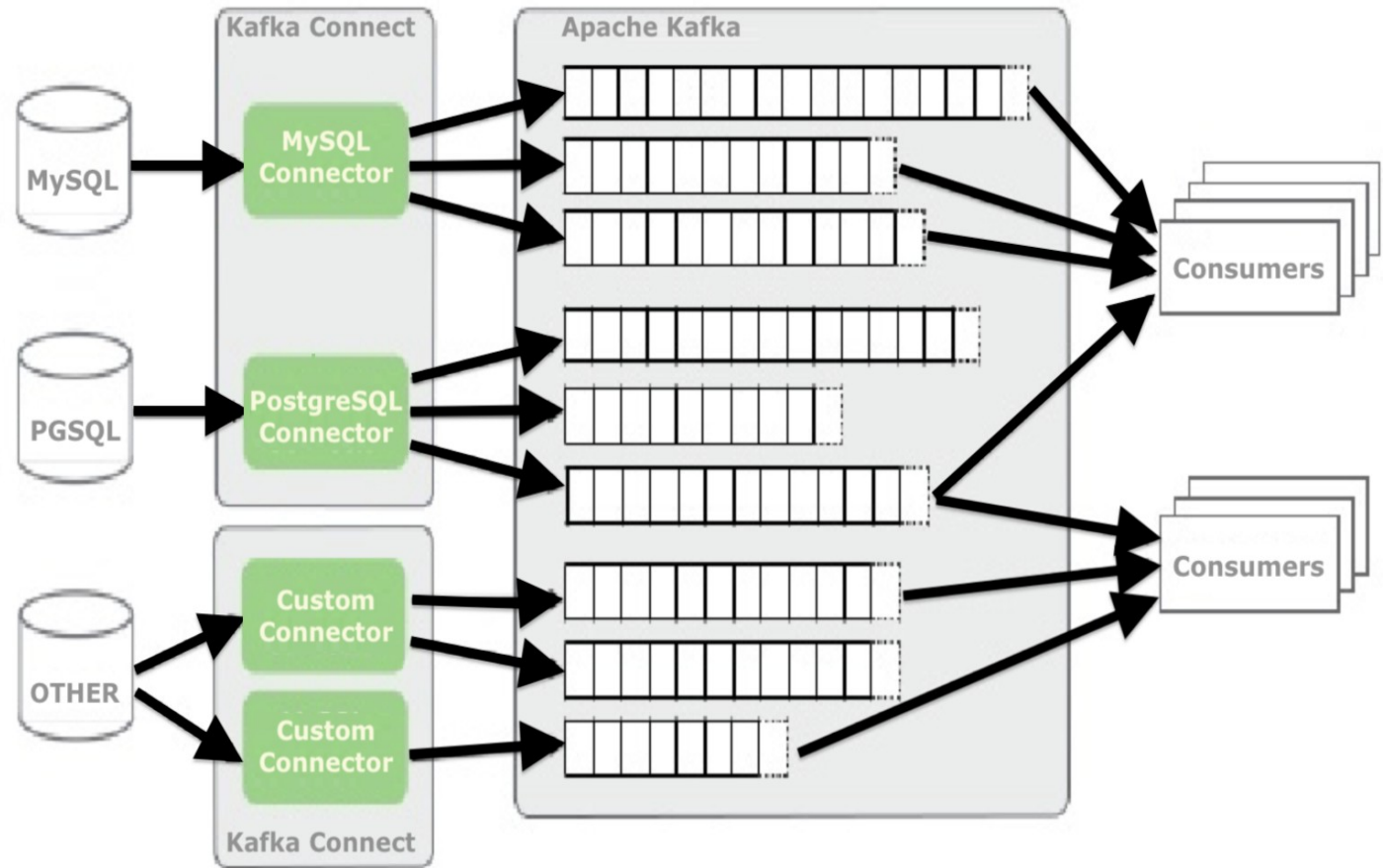PERCONA

Available solutions...

Tungsten Replicator

- Row-based (heterogeneous)
- Asynchronous;
- Transactionally Consistent;
- Flexible Extraction;
- Filtered Synchronization;
- Transformation Capabilities;

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Available solutions...

Debezium (Apache Kafka)

- Row-based;
- Asynchronous/Queue (topics);
- Transactionally Consistent;
- Flexible Extraction;
- Filtered Synchronization;
- Transformation Capabilities;

Challenges

There are many challenges when replicating from different DB's:

- Data Type Differences;

- Provisioning;

- Database vs. Schema;

- SQL Dialect Differences;

Demo

Database Performance Matters