

Replicatie

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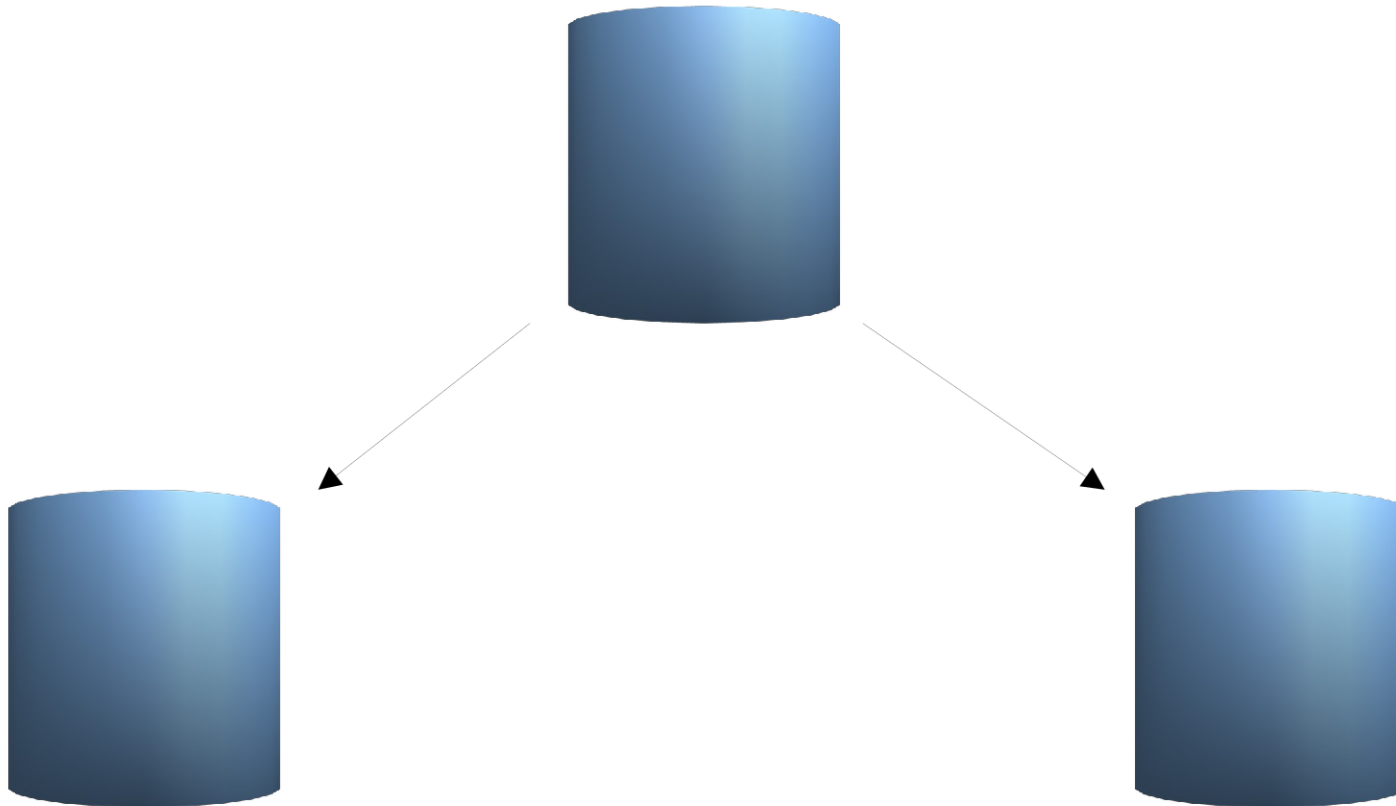
Replicatie

- Verband CAP theorema
 - Hoge beschikbaarheid (naast data partitionering, parallele query verdeling over meerdere servers, ..)
- Fysische
- Logische
- Andere (bv triggergebaseerd, externe applicatie ea)

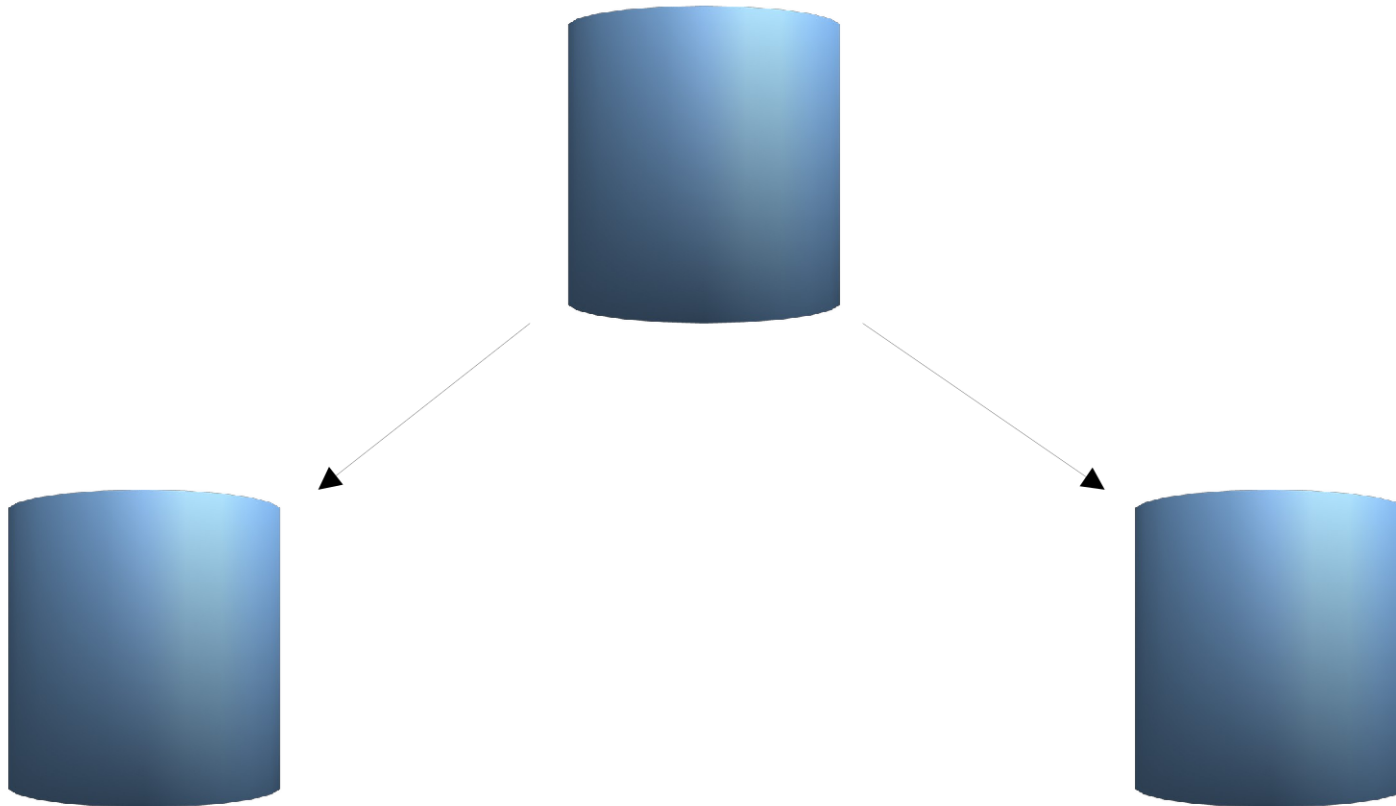
CAP

- Consistentie:
alle knooppunten in het systeem zien dezelfde data op hetzelfde moment
- Availability (beschikbaarheid):
elke aanvraag krijgt een antwoord terug.
- Partitie tolerant:
als een knooppunt uitvalt, dan blijft het systeem functioneren
 - > 2 van de 3
 - * uitbreiding: pancelc (latency vs consistency)
 - * sync/async

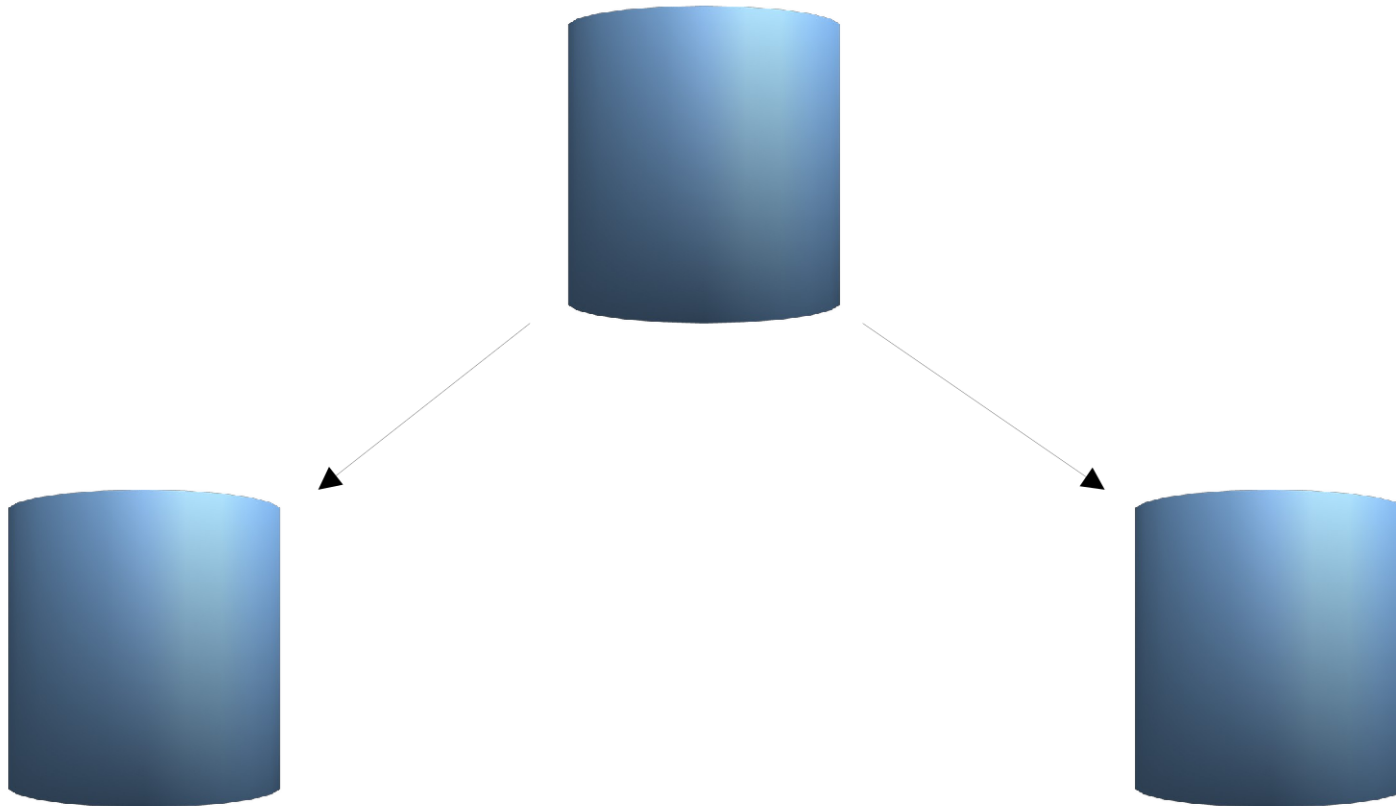
CAP Voorbeeld 1



CAP Voorbeeld 3



CAP Voorbeeld 2



Andere: Niet ingebouwd

- <https://www.symmetricds.org/>

[HOME](#)[ABOUT](#)[DOWNLOAD](#)[DOCUMENTATION](#)[DEVELOPER](#)[GET HELP](#)

Fast & Flexible Database Replication

SymmetricDS is open source database replication software that focuses on features and cross platform compatibility.



CROSS PLATFORM

Replicate data across different platforms, with compatibility for many databases. Sync from any database to any database in a heterogeneous environment.

[READ MORE +](#)

SCALE OUT PERFORMANCE

Optimized for performance and scalability, replicate thousands of databases asynchronously in near real time, and span replication across multiple tiers.

[READ MORE +](#)

FLEXIBLE CONFIGURATION

Configure which tables and columns to sync, and in which direction. Subset rows and distribute them across databases. Combine, filter, and transform data.

[READ MORE +](#)

Andere: Niet ingebouwd

- <https://debezium.io/>

[FAQ](#)[DOCUMENTATION](#)[RELEASES](#)[COMMUNITY](#)[BLOG](#)

Debezium

[Latest stable \(2.6\) →](#)

Stream changes from your database.

Debezium is an open source distributed platform for change data capture. Start it up, point it at your databases, and your apps can start responding to all of the inserts, updates, and deletes that other apps commit to your databases. Debezium is durable and fast, so your apps can respond quickly and never miss an event, even when things go wrong.

[Try our tutorial](#)

Fysisch

- Exacte kopie
- “Transactielog” (xlog > pg:WAL)

Logische

- Fijner
- “SQL” : logical decoding
- Typische gebruik:
 - Incrementeel veranderingen doorsturen
 - Verdere afhankelijkheden op de subscriber
 - Verzamelen van data van verschillende databanken
 - Replicatie over verschillende besturingssystemen en/of versies van db software
 - Toegangsbeleid (rechten op subscriber naar rollen)
 - Een deel van een db delen met andere dbn

Overzicht binnen planeet pg

Feature	Shared Disk	File System Repl.	Write-Ahead Log Shipping	Logical Repl.	Trigger-Based Repl.	SQL Repl. Middle-ware	Async. MM Repl.	Sync. MM Repl.
Popular examples	NAS	DRBD	built-in streaming repl.	built-in logical repl., pglogical	Londiste, Slony	pgpool-II	Bucardo	
Comm. method	shared disk	disk blocks	WAL	logical decoding	table rows	SQL	table rows	table rows and row locks
No special hardware required		•	•	•	•	•	•	•
Allows multiple primary servers				•		•	•	•
No overhead on primary	•		•	•		•		
No waiting for multiple servers	•		with sync off	with sync off	•		•	
Primary failure will never lose data	•	•	with sync on	with sync on		•		•
Replicas accept read-only queries			with hot standby	•	•	•	•	•
Per-table granularity				•	•		•	•
No conflict resolution necessary	•	•	•		•	•		•

Links

- <https://www.postgresql.org/docs/current/high-availability.html>
- <https://www.postgresql.org/docs/current/logical-replication.html>
- https://en.wikipedia.org/wiki/CAP_theorem

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