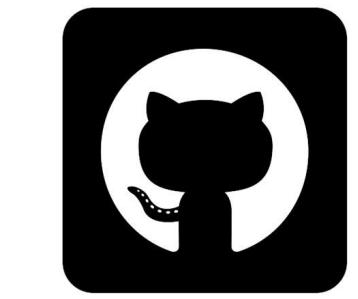


# Construire des Applications Performantes avec



# Developers



@clunven

clunven

@clun

Cédrick Lunven  
Directeur Developer Relations

01

Fondamentaux  
Apache Cassandra™

60 MIN

02

Modélisation  
de données

30 MIN

03

Utilisation  
des drivers

30 MIN

04

Spring Data

20 MIN

05

Quarkus

20 MIN

06

Micronaut

20 MIN

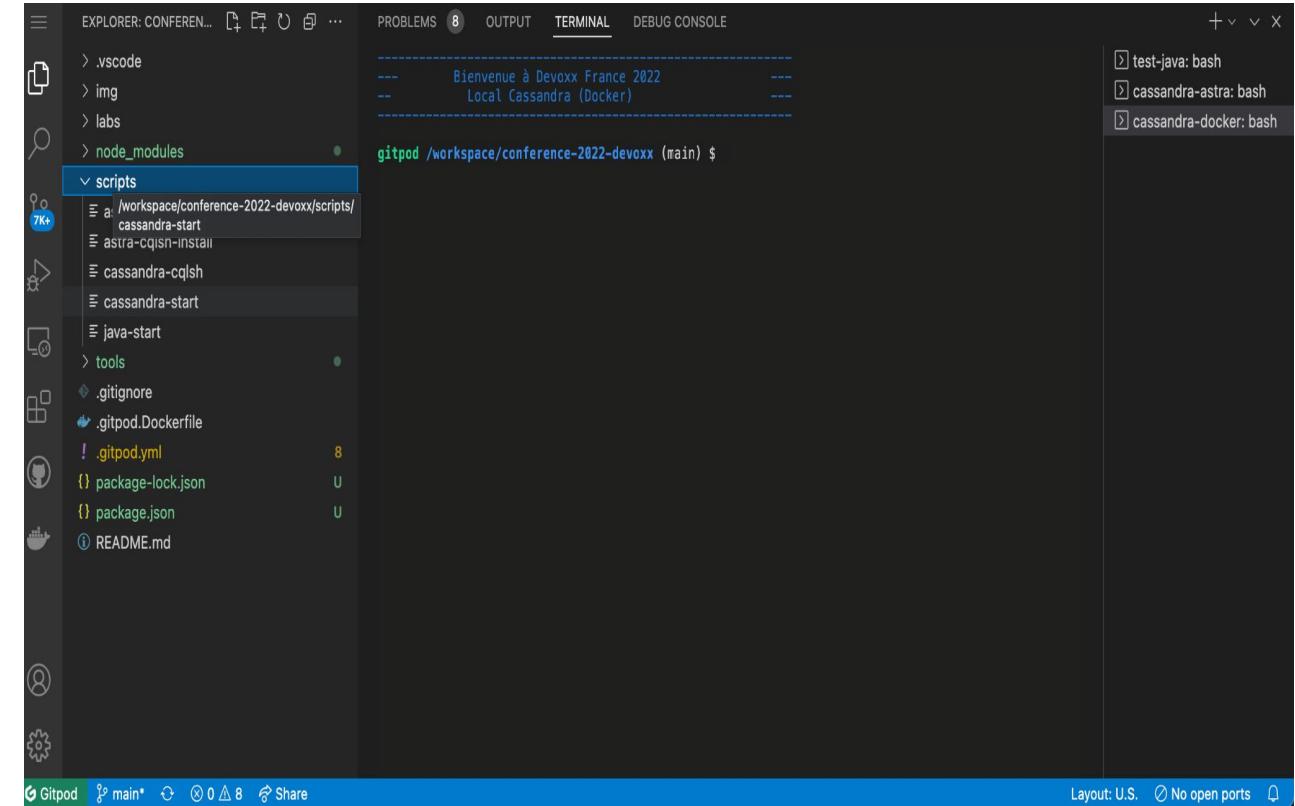


# Les Labs

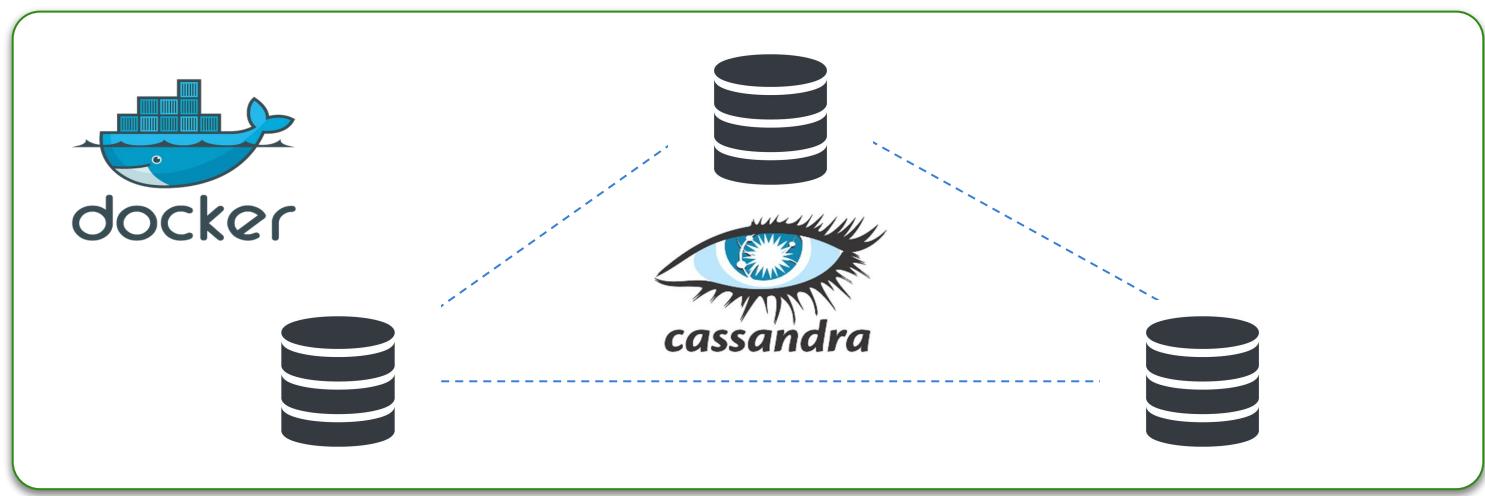
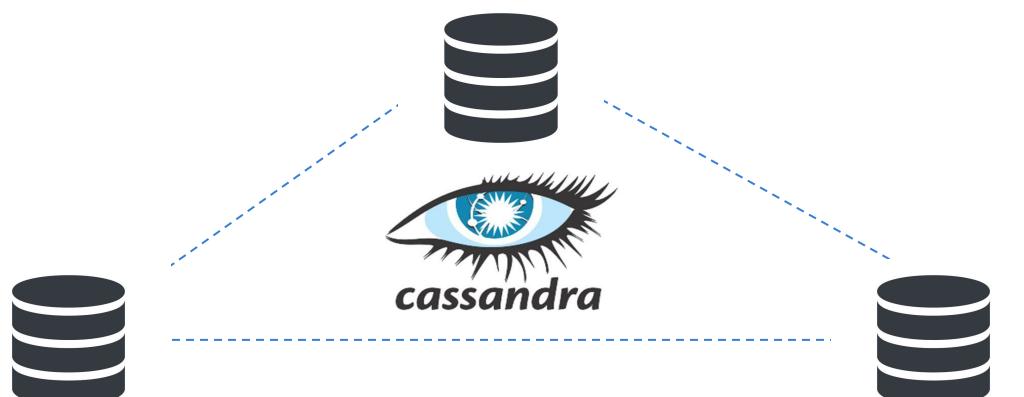
## Code + Exercises + Slides



## IDE



## Database + Api + Streaming



01

Fondamentaux  
Apache Cassandra™

60 MIN

02

Modélisation  
de données

30 MIN

03

Utilisation  
des drivers

30 MIN

04

Spring Data

20 MIN

05

Quarkus

20 MIN

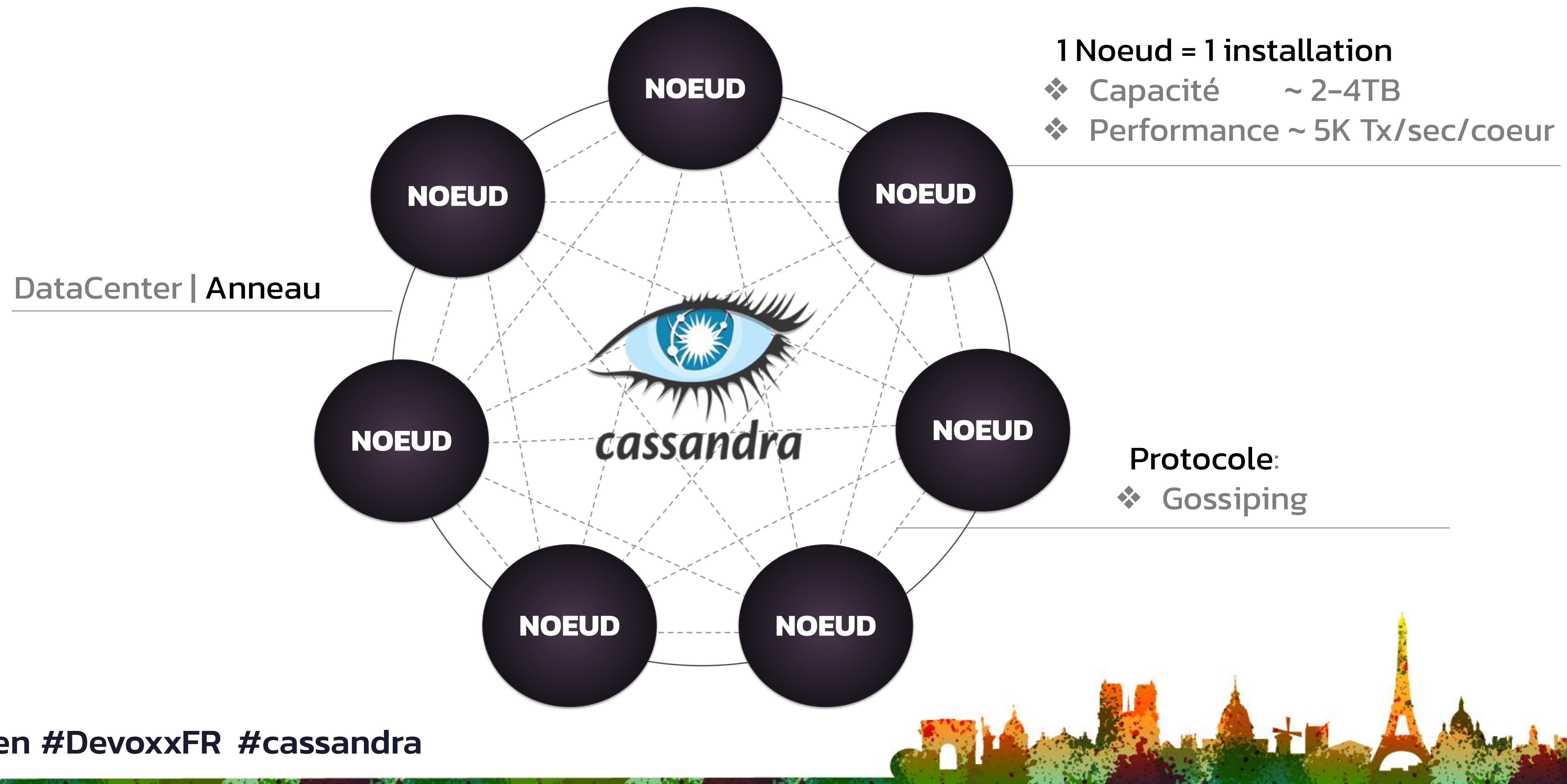
06

Micronaut

20 MIN



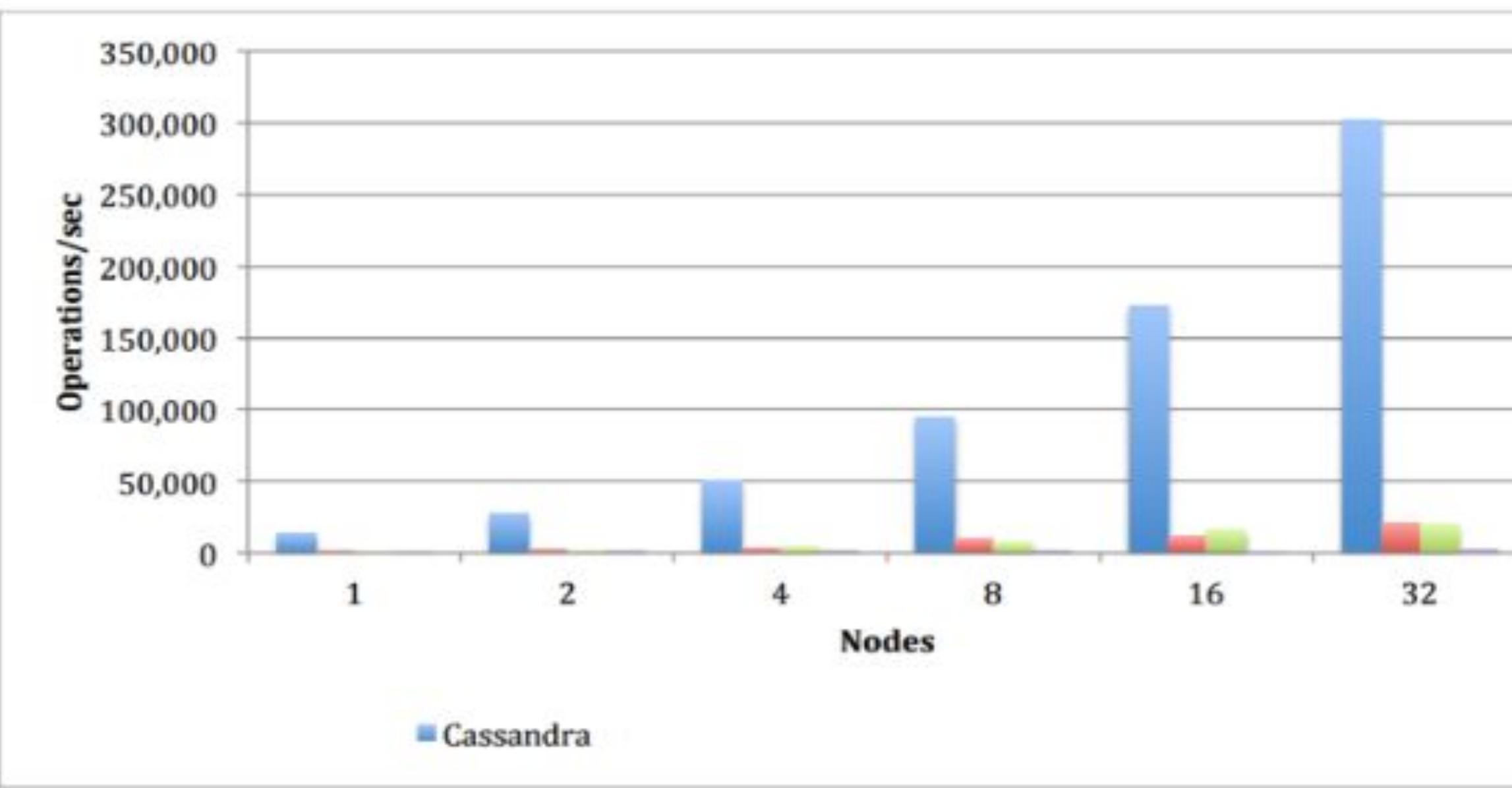
# Apache Cassandra™ = BDD NoSQL Distribuée



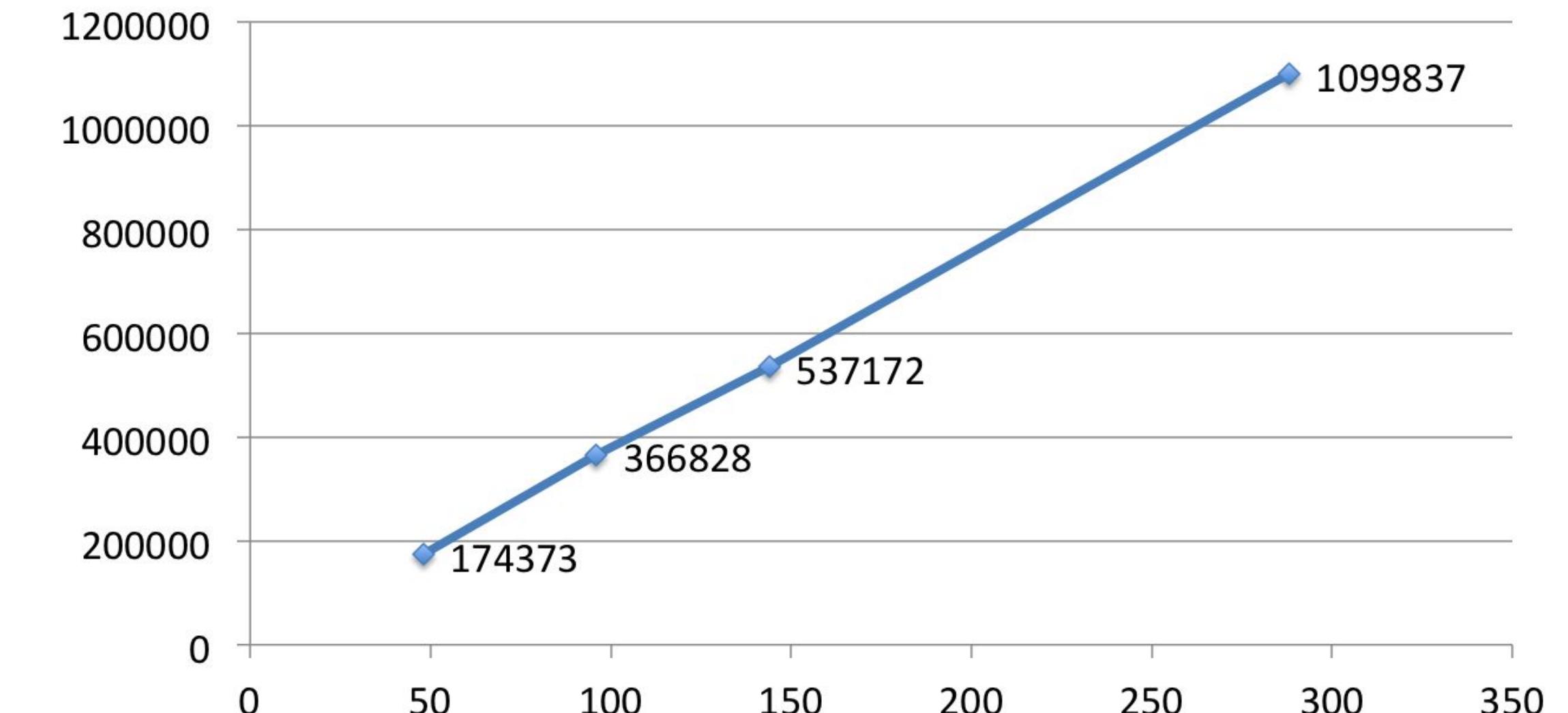
## Scale-Up Linearity

## Scalabilité Linéaire

Balanced Read/Write Mix



Client Writes/s by node count – Replication Factor = 3



[netflixtechblog.com/benchmarking-cassandra-scalability-on-aws-over-a-million-writes-per-second-39f45f066c9e](http://netflixtechblog.com/benchmarking-cassandra-scalability-on-aws-over-a-million-writes-per-second-39f45f066c9e)



# Scalabilité

## Apache Cassandra @ Netflix

- 98% of streaming data is stored in Apache Cassandra
- Data ranges from customer details to viewing history to billing and payments
- Foundational datastore for serving millions of operations per second

- 30 million ops/sec on most active single cluster
- 500 TB most dense single cluster
- 9216 CPUs in biggest cluster

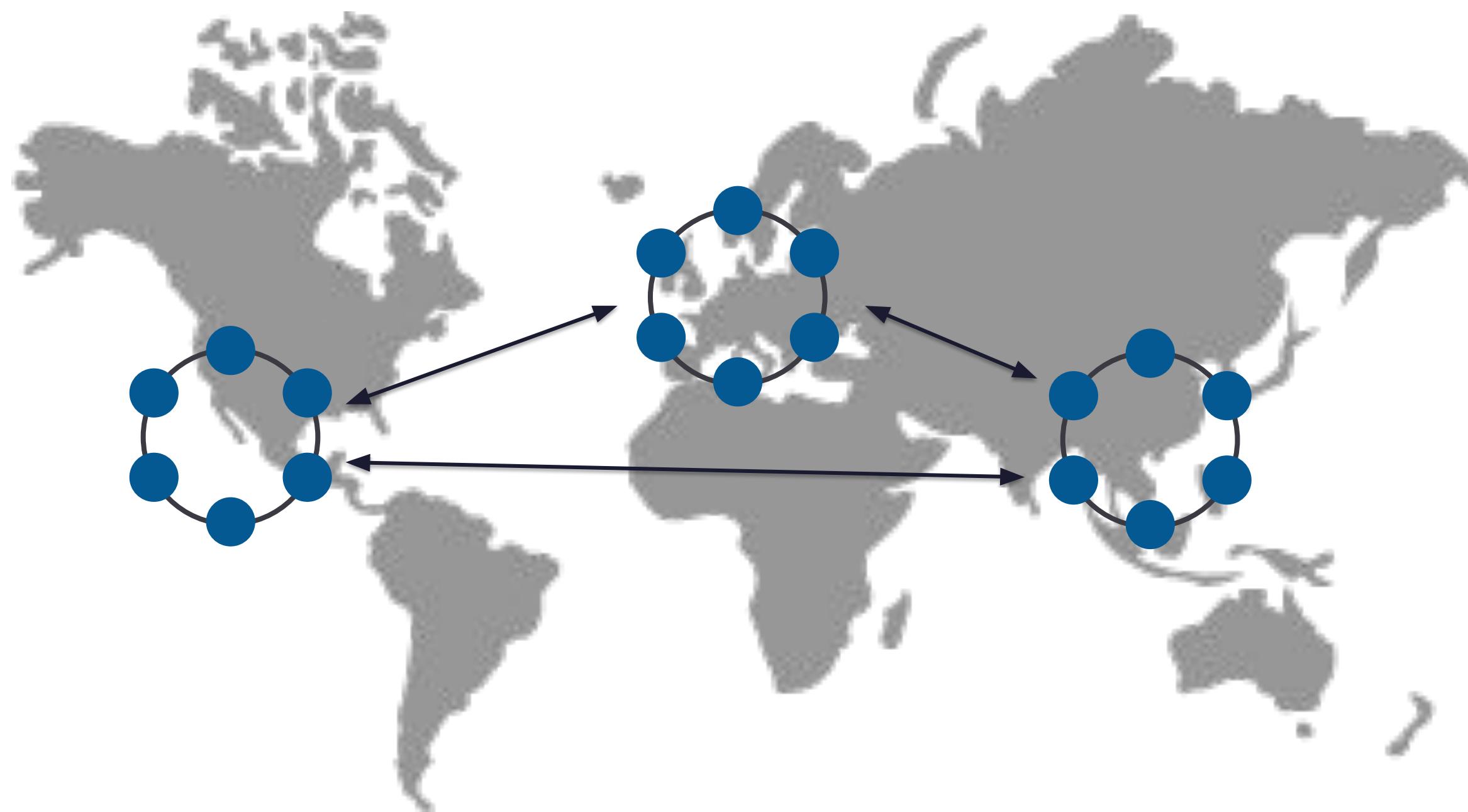
O(100) Clusters  
O(10000) Instances  
O(10,000,000) Replications per second  
O(100,000,000) Operations per second  
O(1,000,000,000,000) Petabytes of data

## Apple Scale

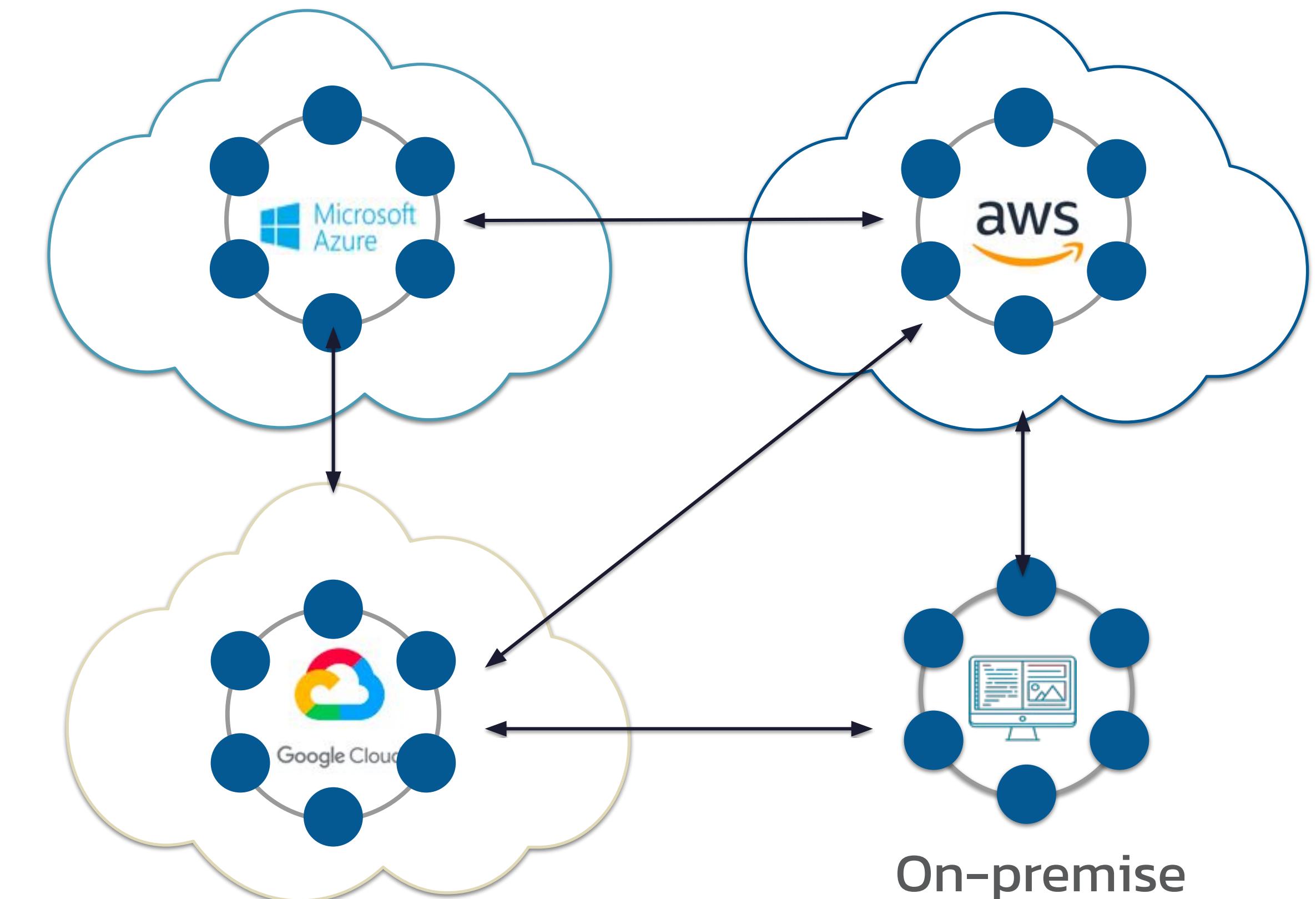
- 160K+ Apache Cassandra instances
- 100+ PB stored
- Several million ops / sec
- 1000s of clusters



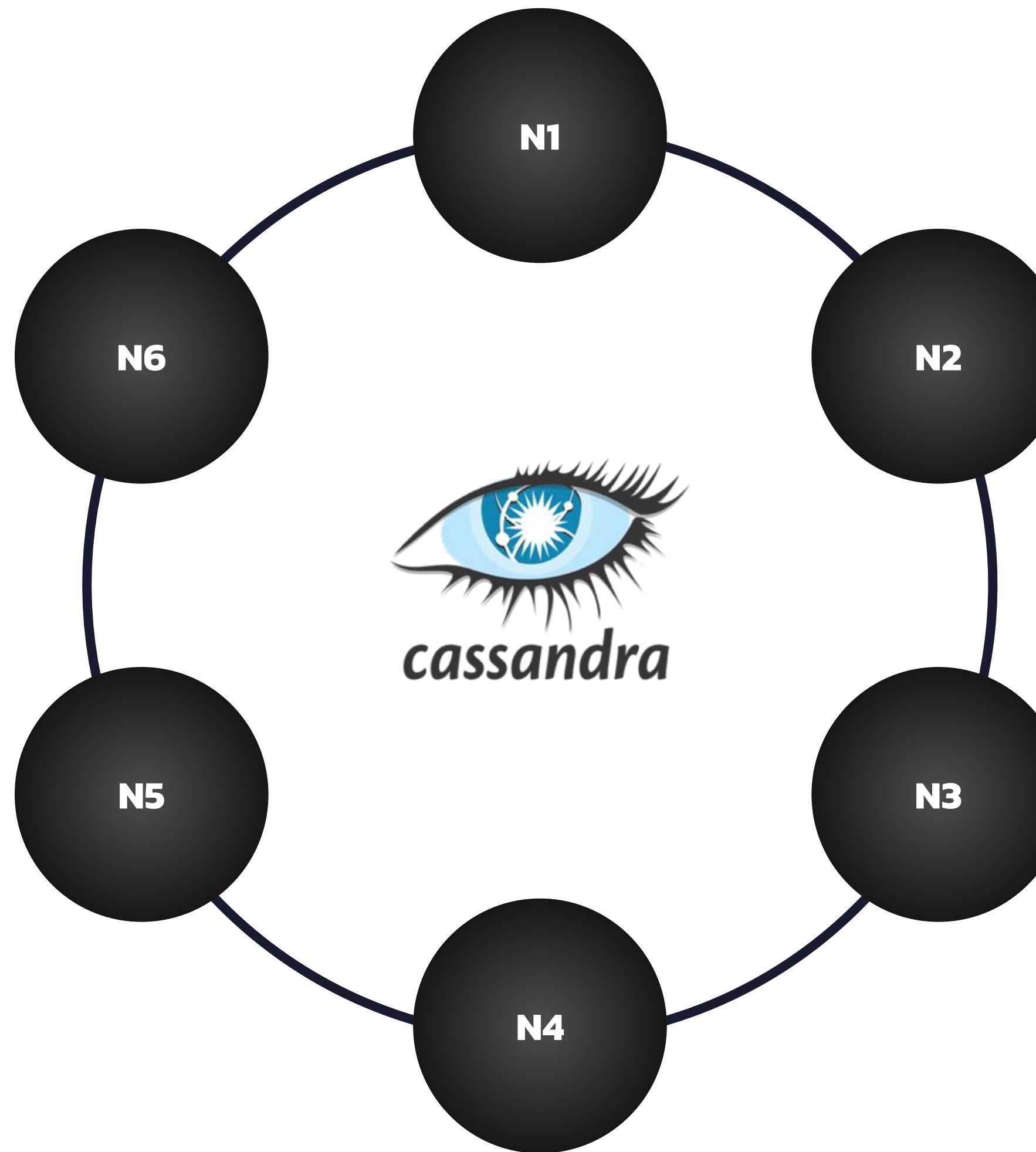
## Distribution géographique (DDN)



## Déploiements Hybrid-Cloud et Multi-Cloud



# La donnée est distribuée, partitionnée, repliquée

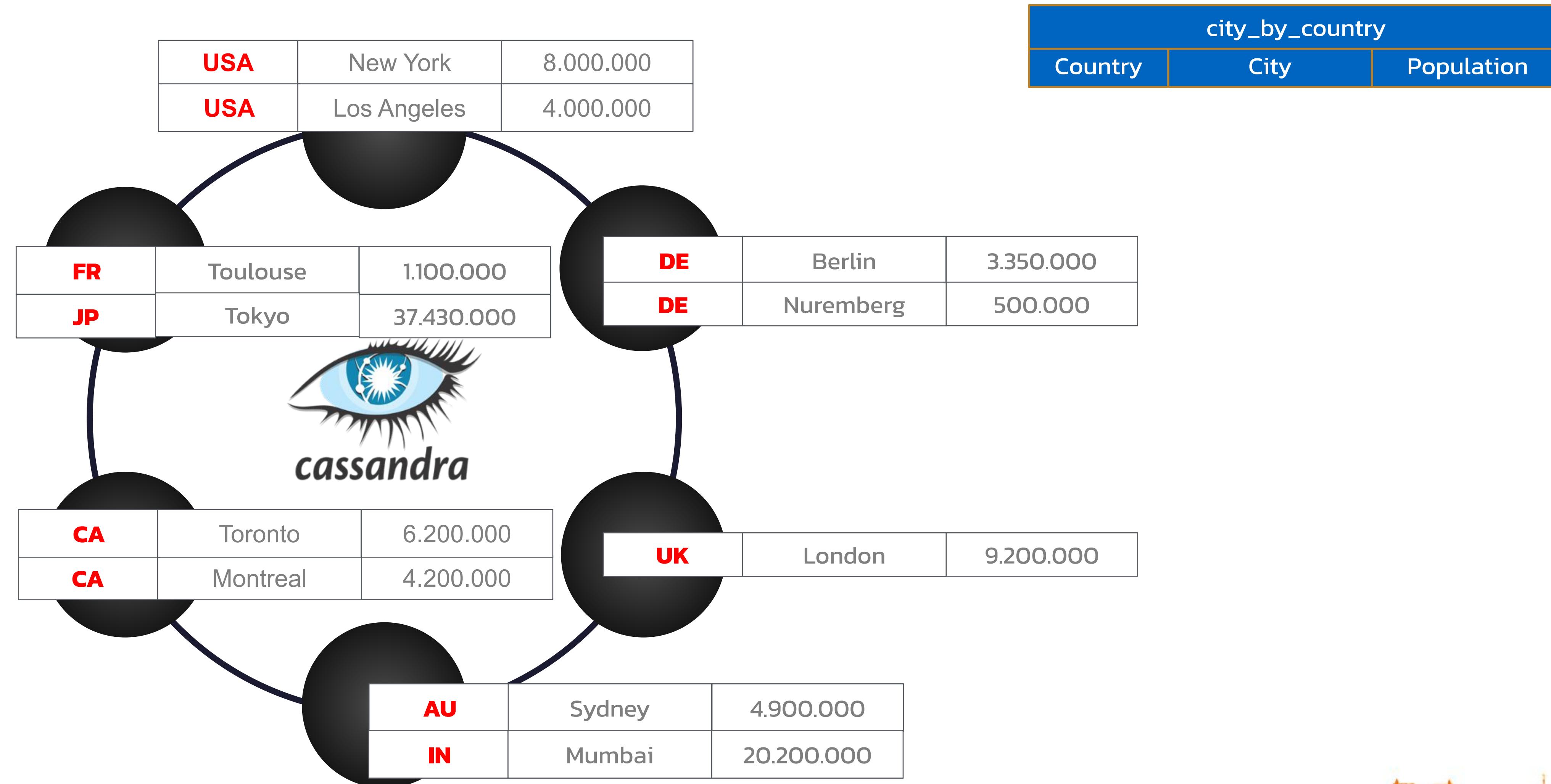


city_by_country		
Country	City	Population
USA	New York	8.000.000
USA	Los Angeles	4.000.000
FR	Paris	2.230.000
DE	Berlin	3.350.000
UK	London	9.200.000
AU	Sydney	4.900.000
DE	Nuremberg	500.000
CA	Toronto	6.200.000
CA	Montreal	4.200.000
FR	Toulouse	1.100.000
JP	Tokyo	37.430.000
IN	Mumbai	20.200.000

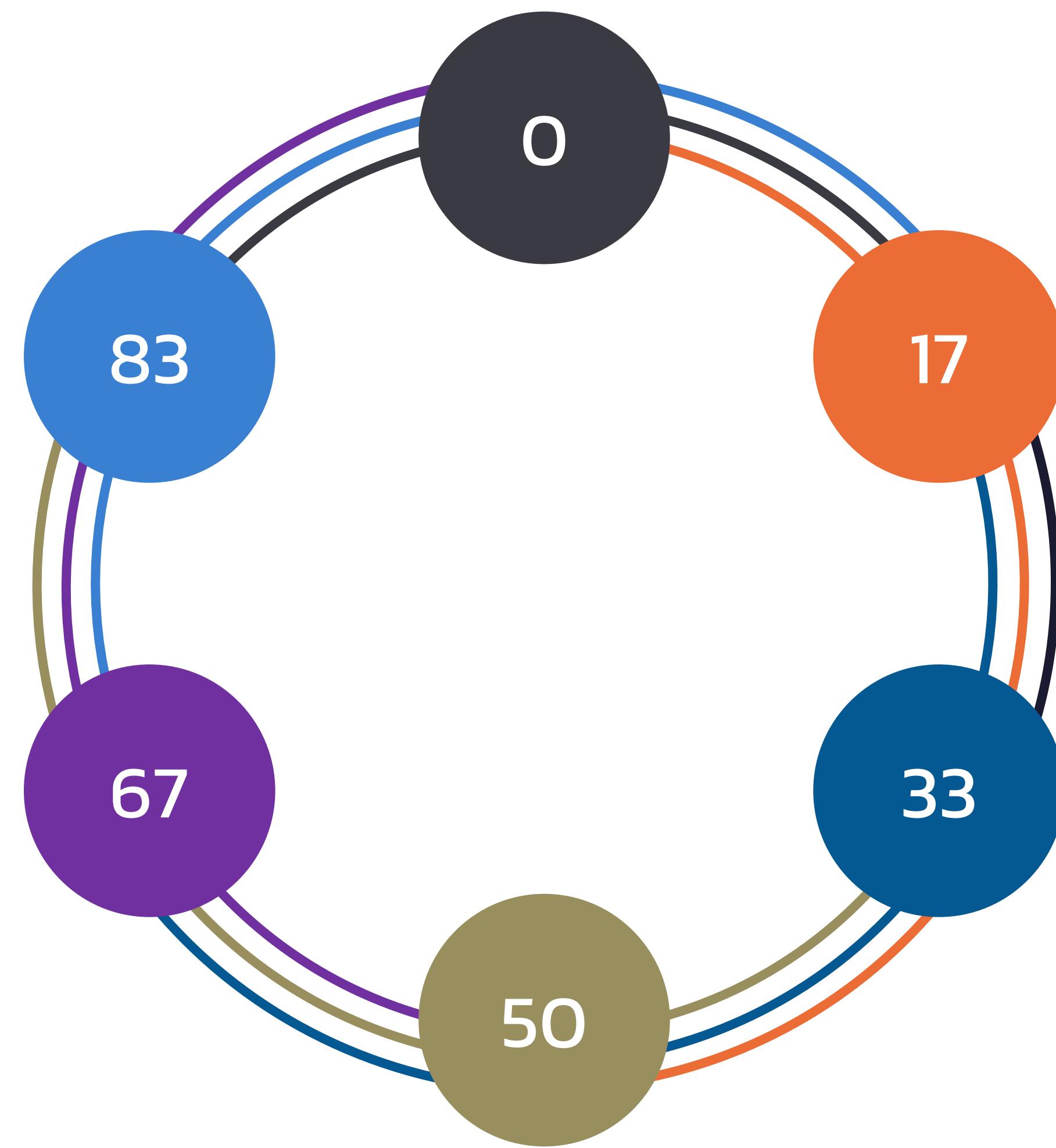
Partition Key



# La donnée est partitionnée et distribuée



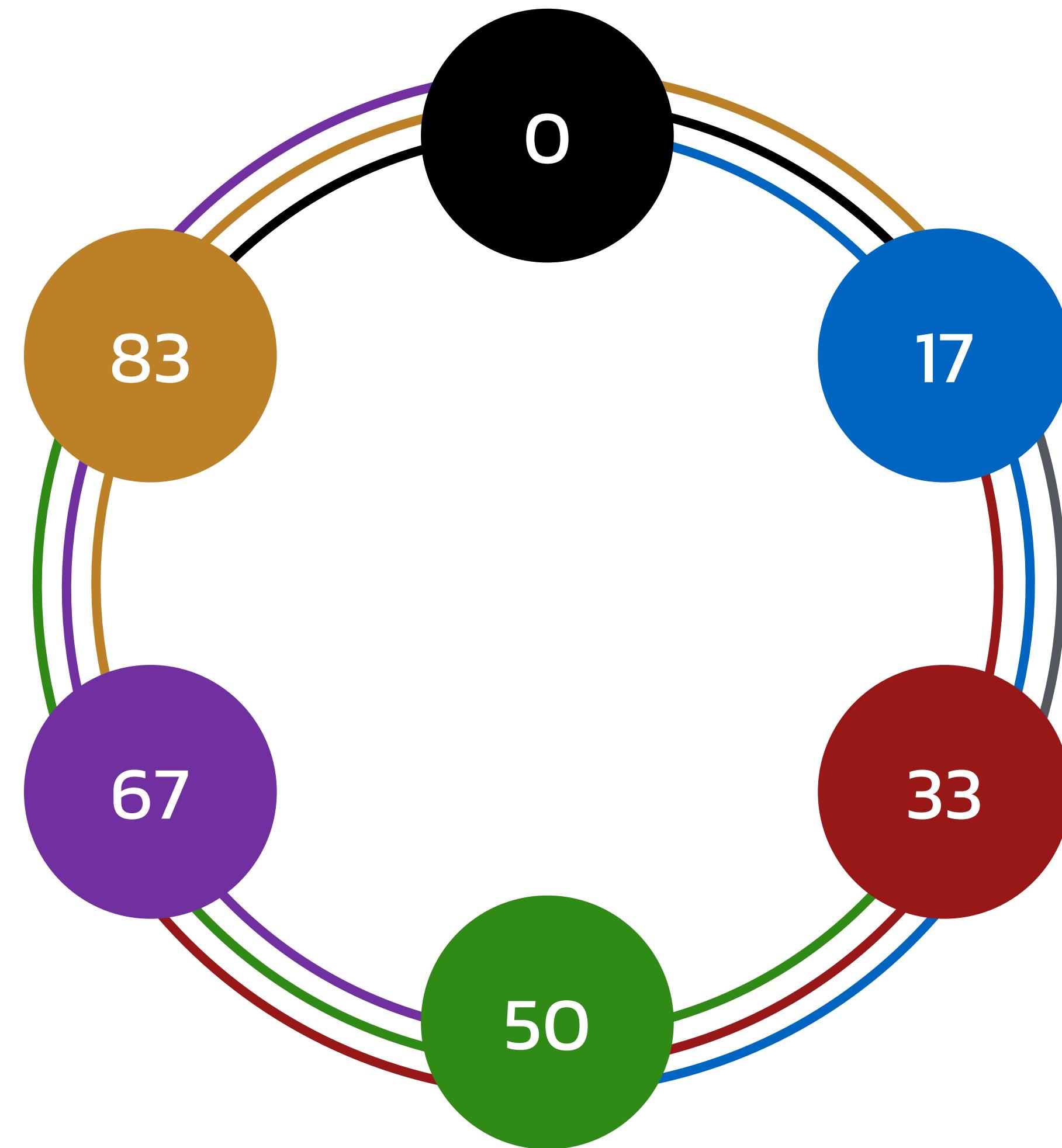
# Facteur de réPLICATION



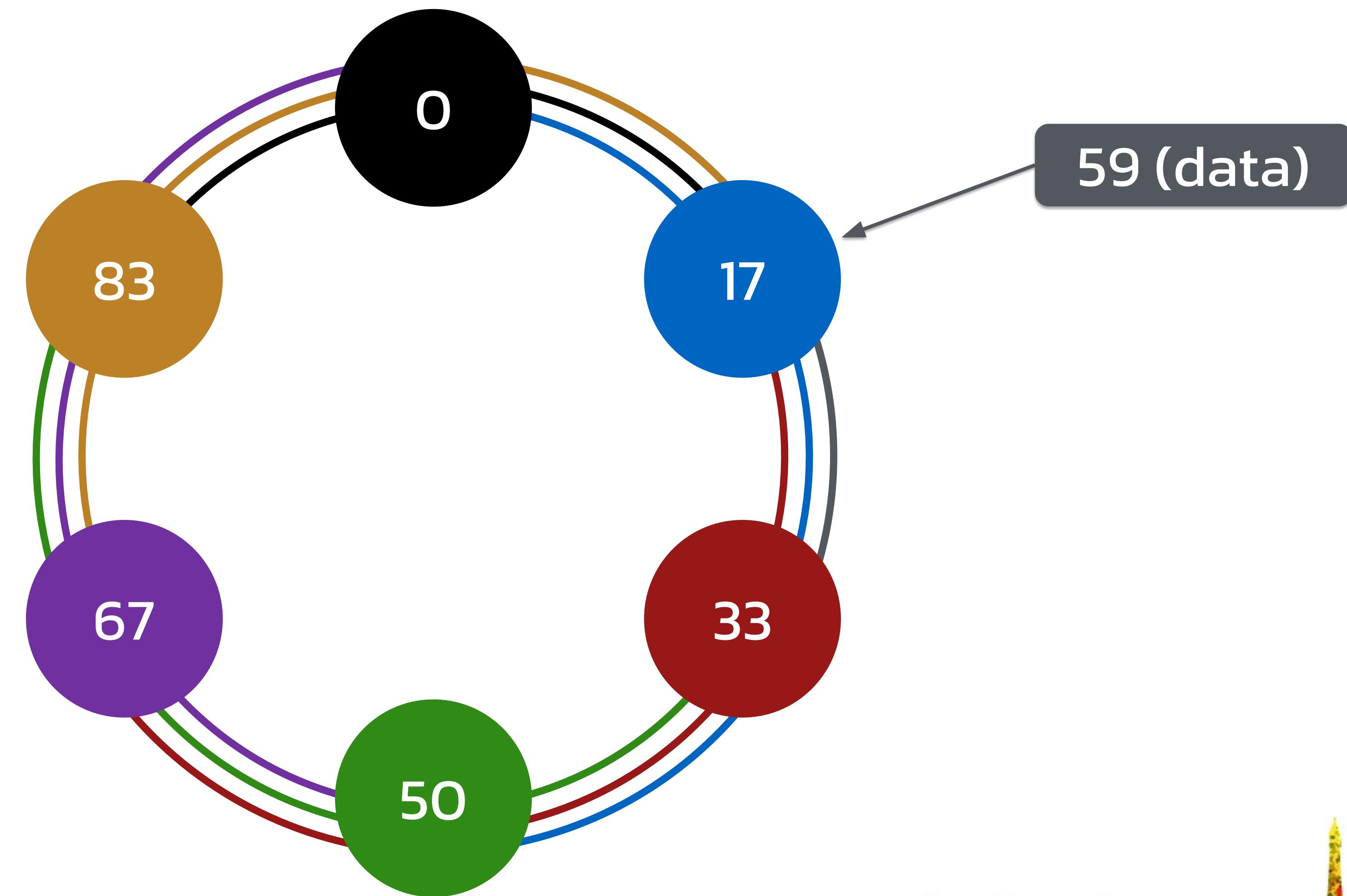
# Facteur de réPLICATION

RF = 3

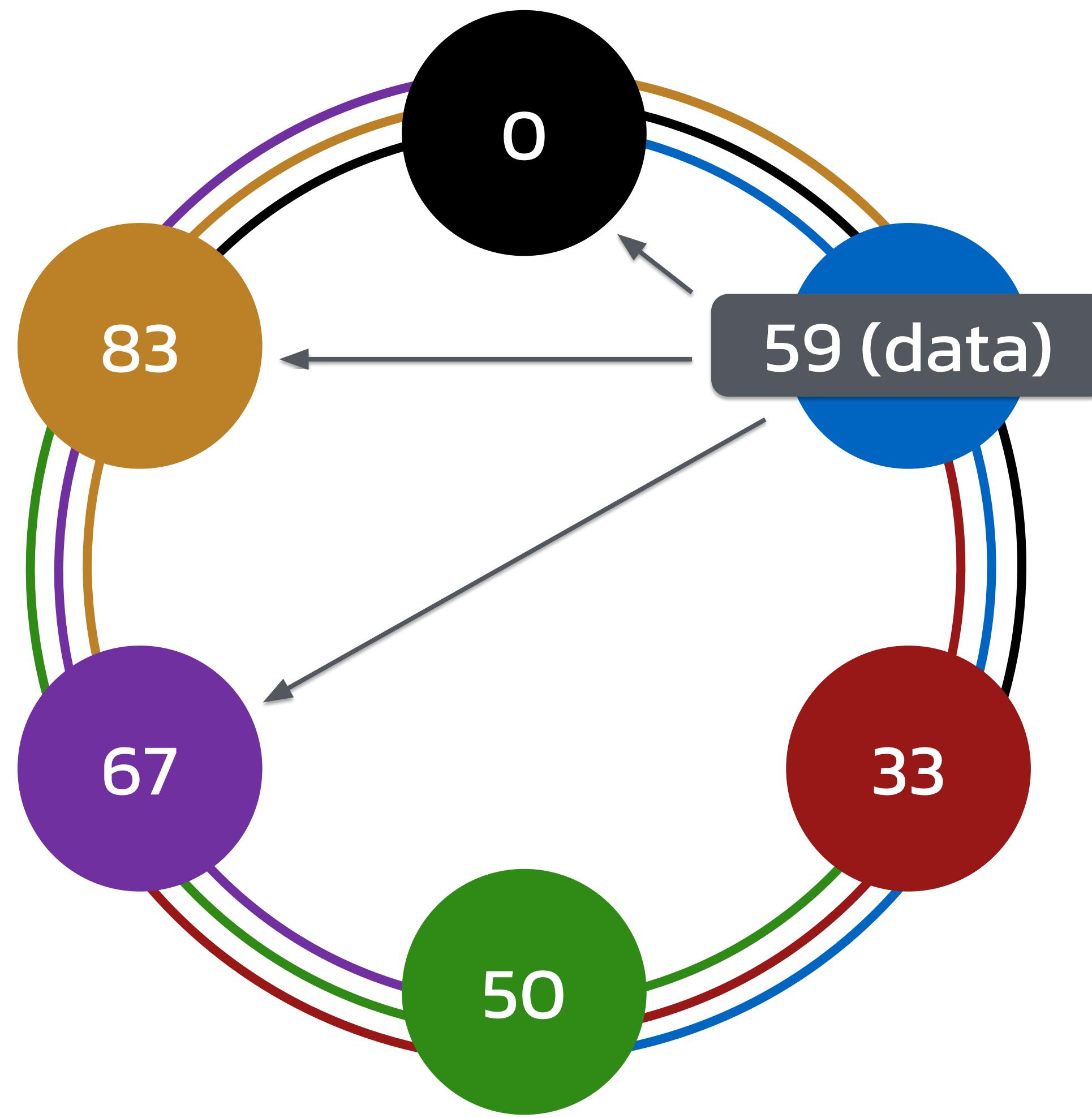
Replication Factor 3  
means that every  
row is stored on 3  
different nodes



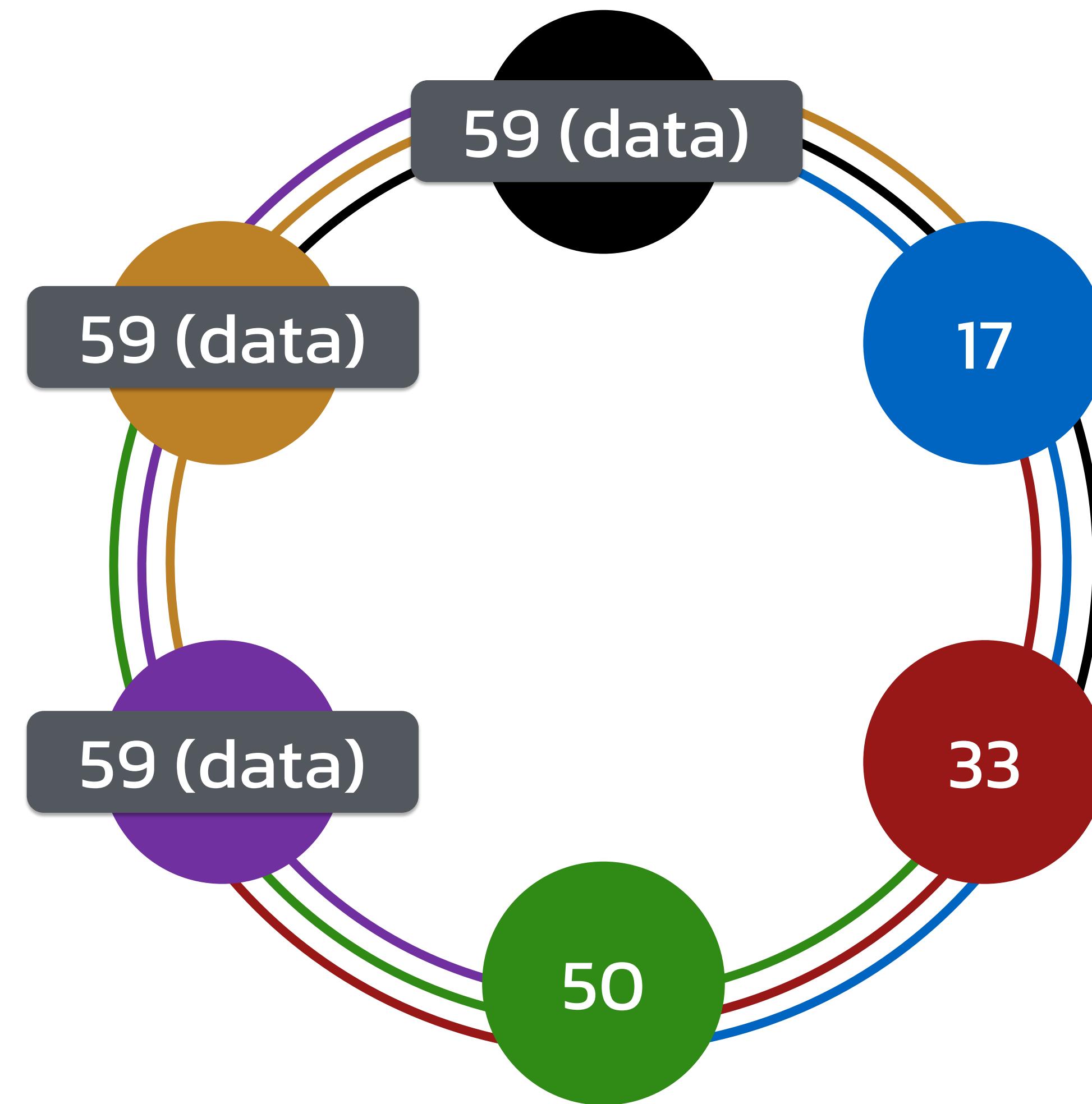
RF = 3



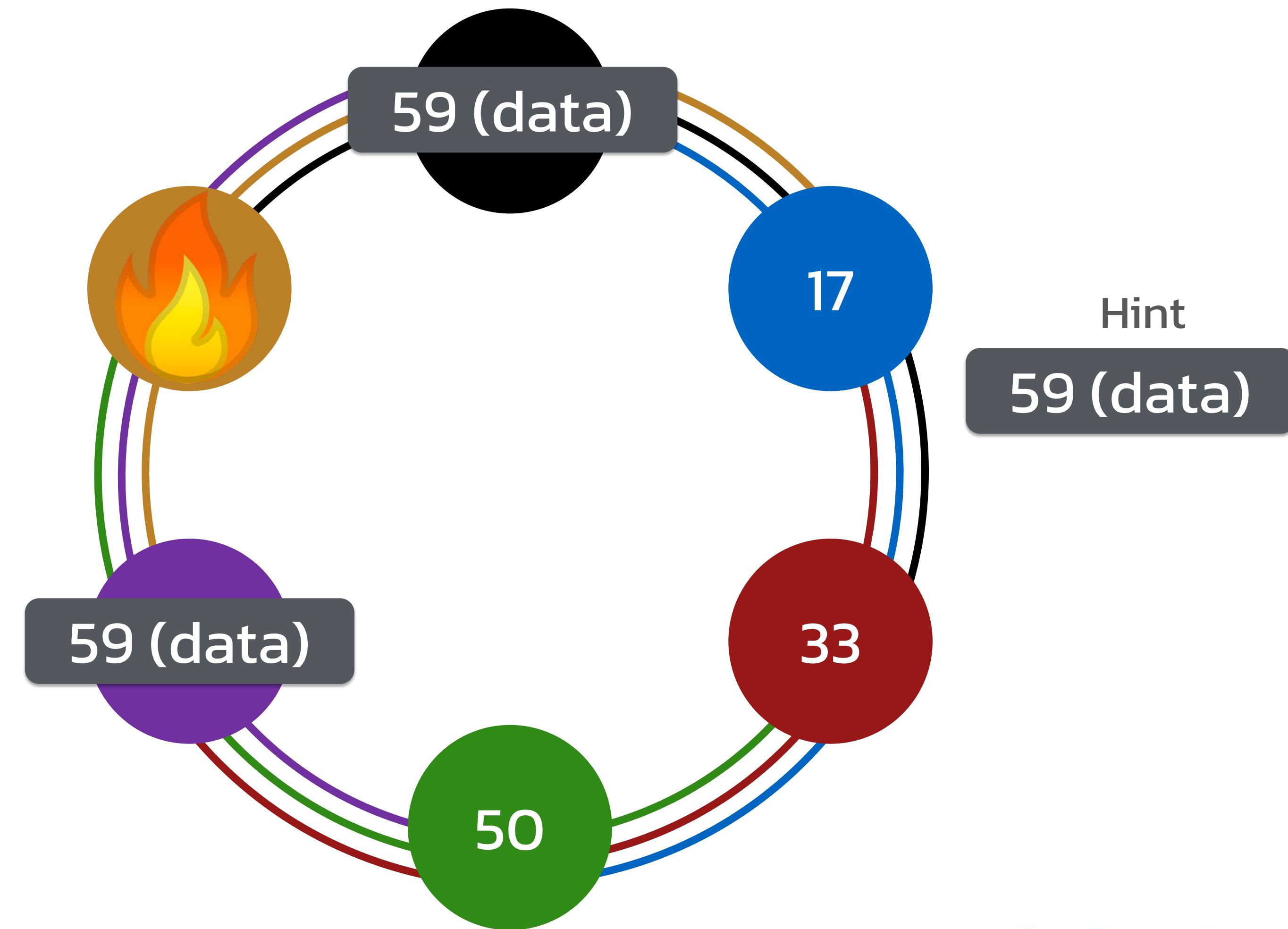
RF = 3



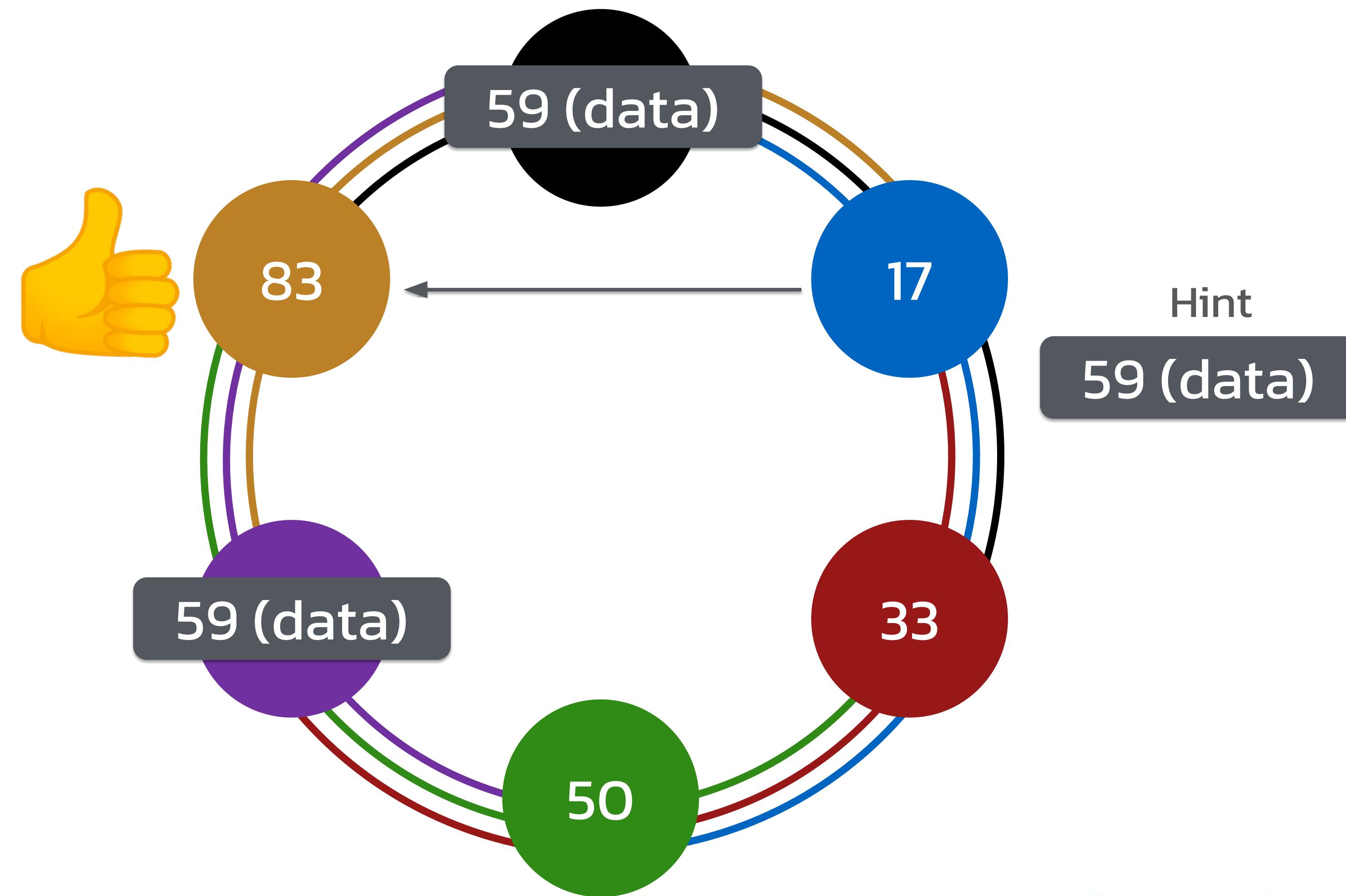
RF = 3



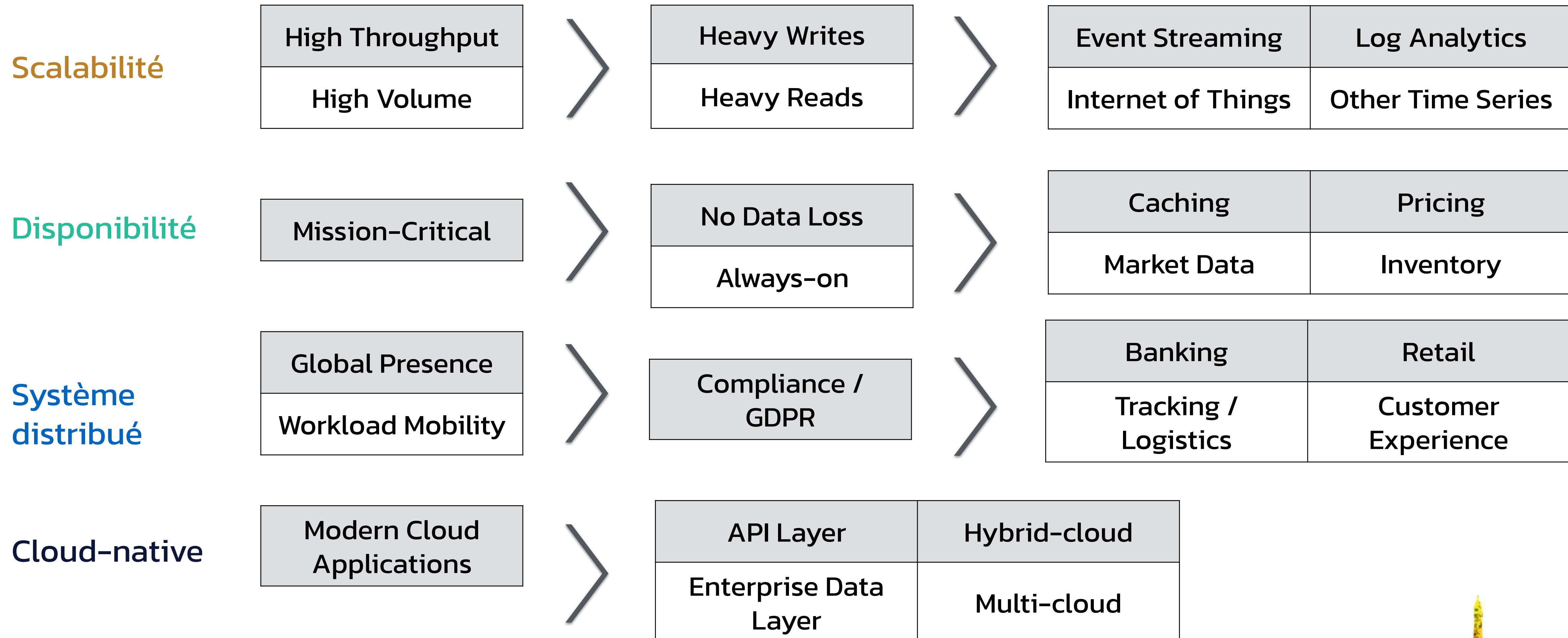
RF = 3



RF = 3



# Cas d'usages



01

Fondamentaux  
Apache Cassandra™

60 MIN

02

Modélisation  
de données

30 MIN

03

Utilisation  
des drivers

30 MIN

04

Spring Data

20 MIN

05

Quarkus

20 MIN

06

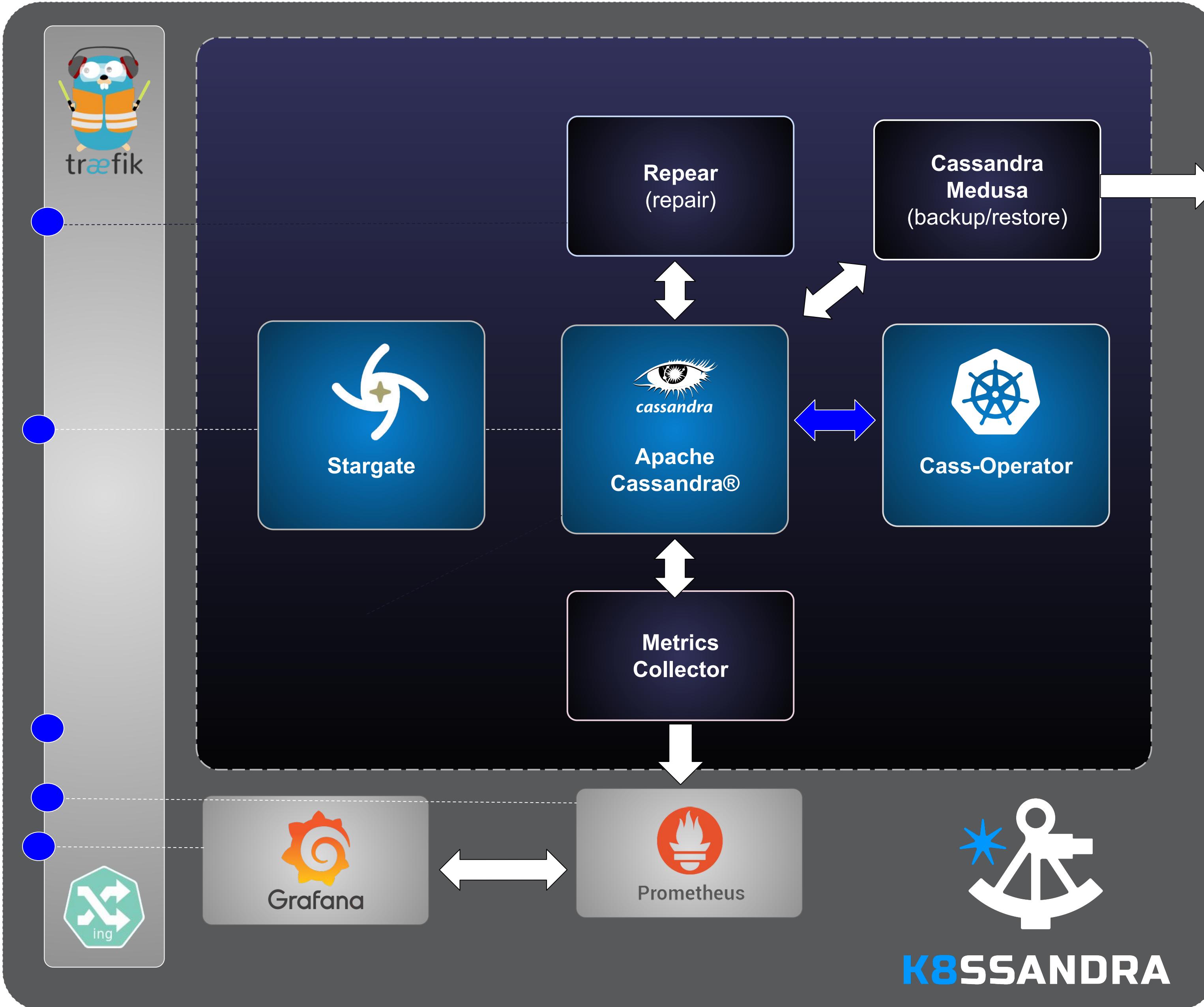
Micronaut

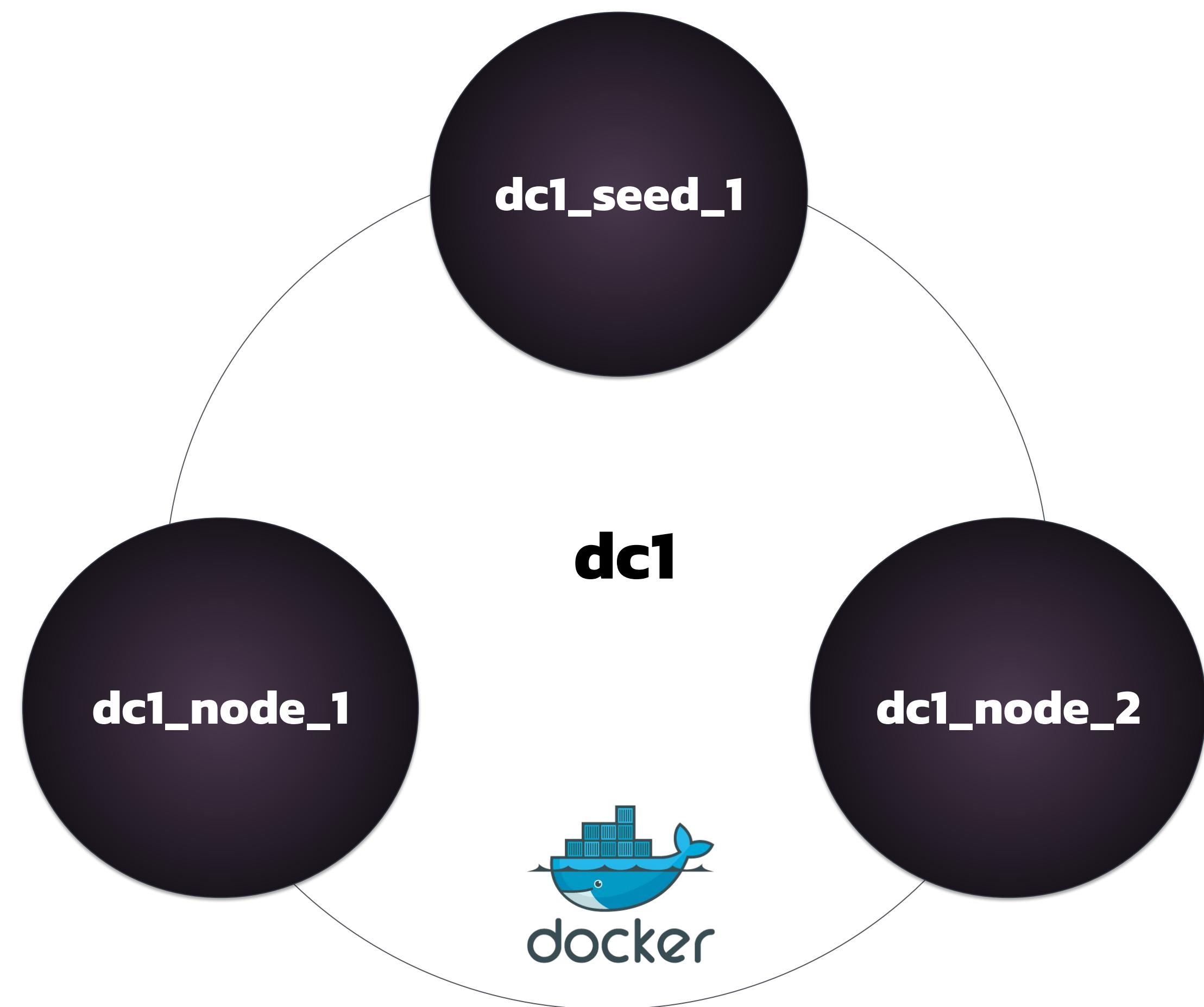
20 MIN

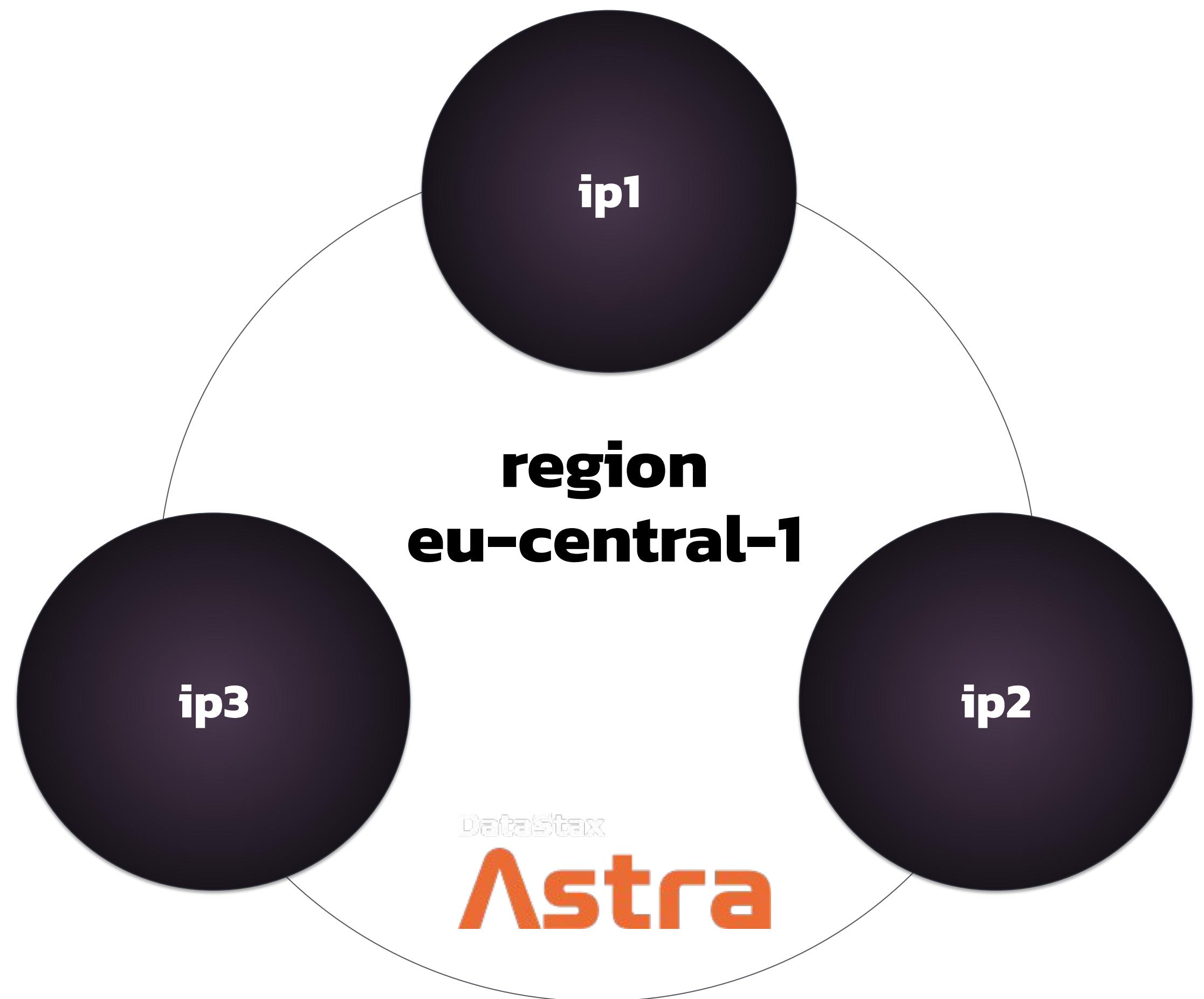


Merci !

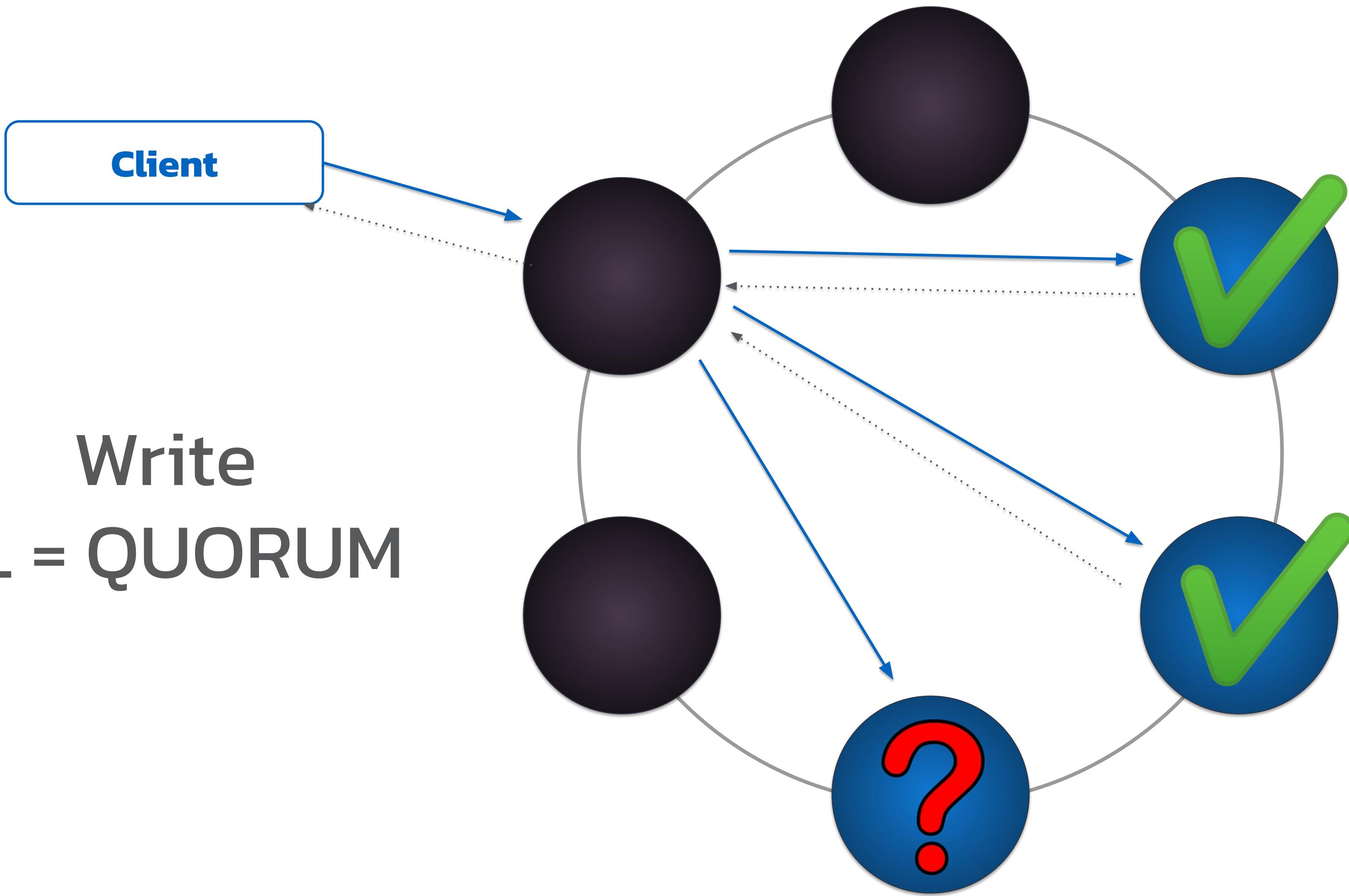








**Write**  
**CL = QUORUM**



Read  
CL = QUORUM

