h é y y âã h 5V yâ y ã Rí áíy âã R y
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kRRCGDF 5h áã y ã P y íá âã Syâ ã dy éy T áy y
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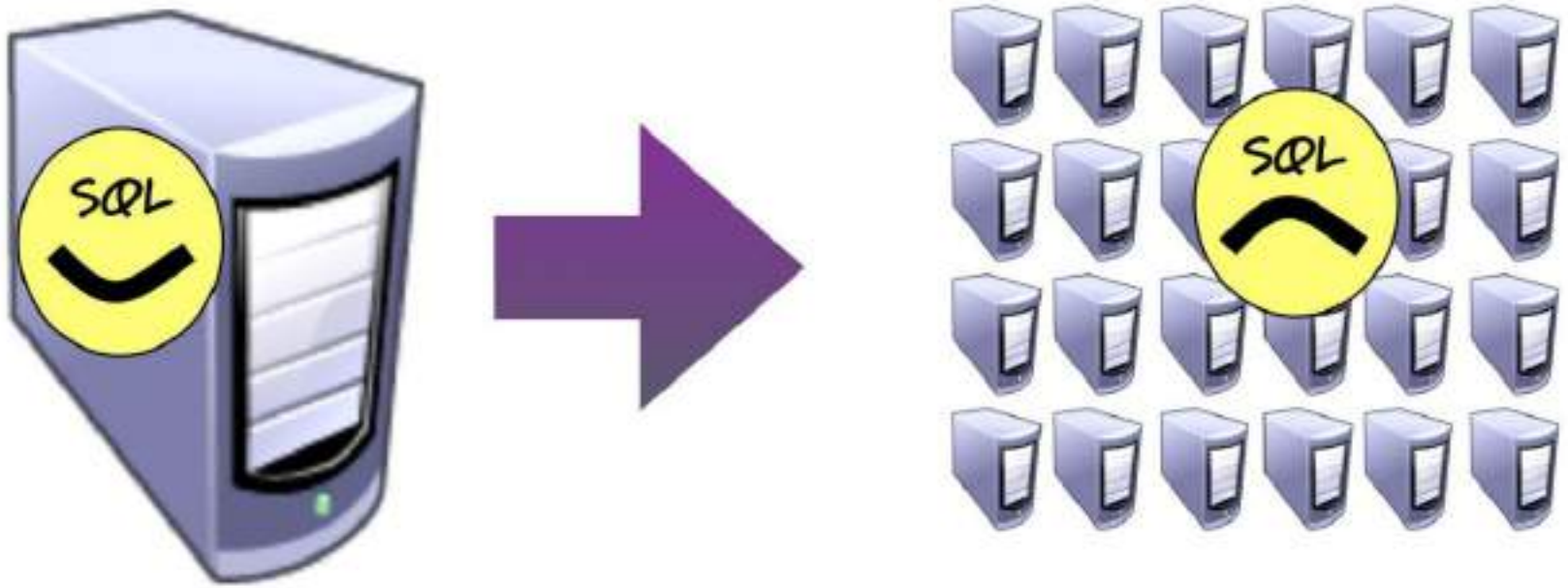

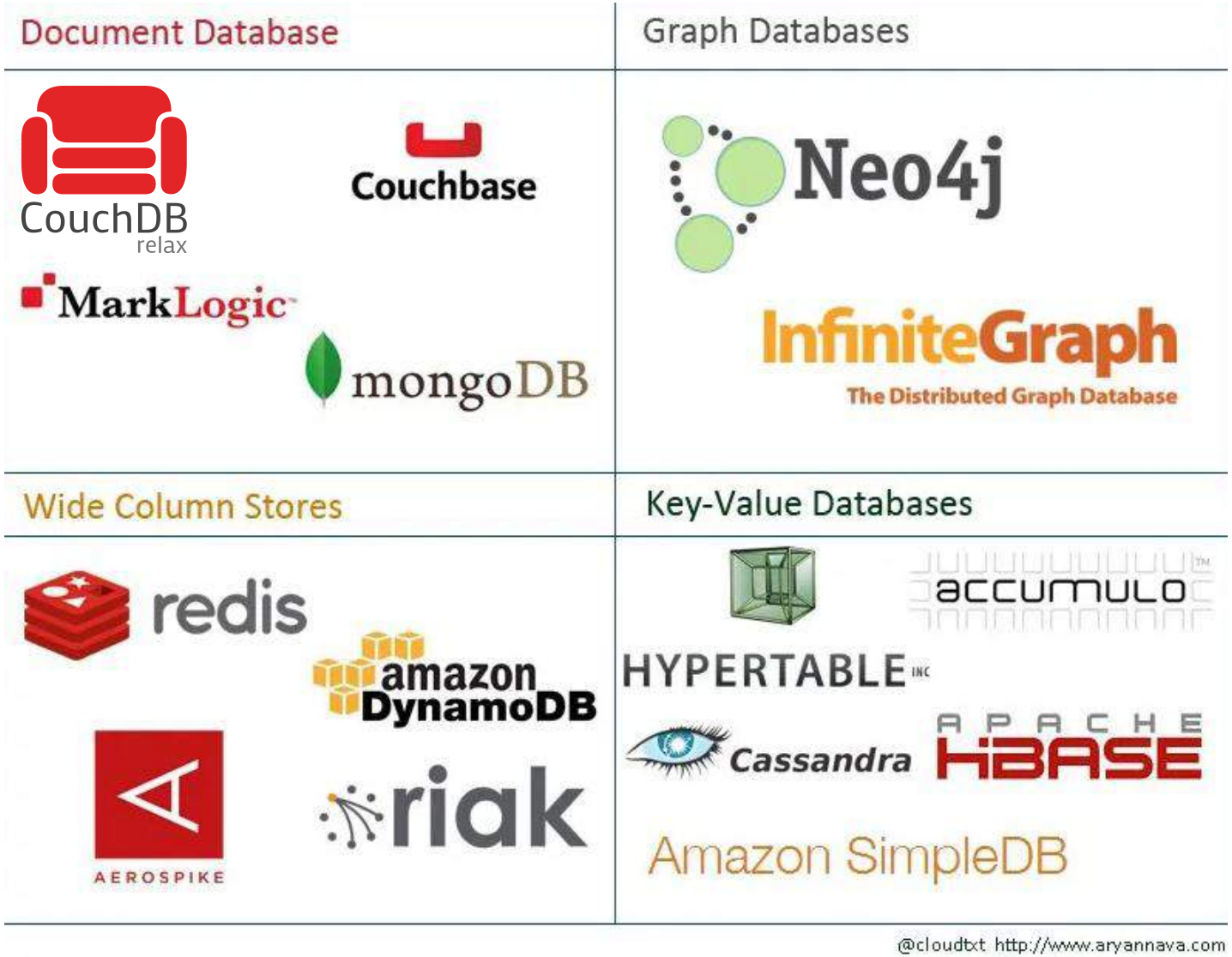
Document Database
CouchDB
relax
Couchbase
MarkLogic
mongoDB
Graph Databases
Neo4j
InfiniteGraph
The Distributed Graph Database
Wide Column Stores
redis
amazon DynamoDB
AEROSPIKE
riak
Key-Value Databases
accumulo
HYPERTABLE INC
Cassandra
APACHE HBASE
Amazon SimpleDB
@cloudtxt http://www.aryannava.com

X I ´ V

```
{ "users":[
        {
            "firstName":"Ray",
            "lastName":"Villalobos",
            "joined": {
                "month":"January",
                "day":12,
                "year":2012
            }
        },
        {
            "firstName":"John",
            "lastName":"Jones",
            "joined": {
                "month":"April",
                "day":28,
                "year":2010
            }
        }
    ]}
```

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    y zíã ã í yá ã
  - Ph /Sí ízííâyâã 2 l ã áíy y hy íáí y ã 04ã
    y zíã ã í ã á ã

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  h êí õêõú
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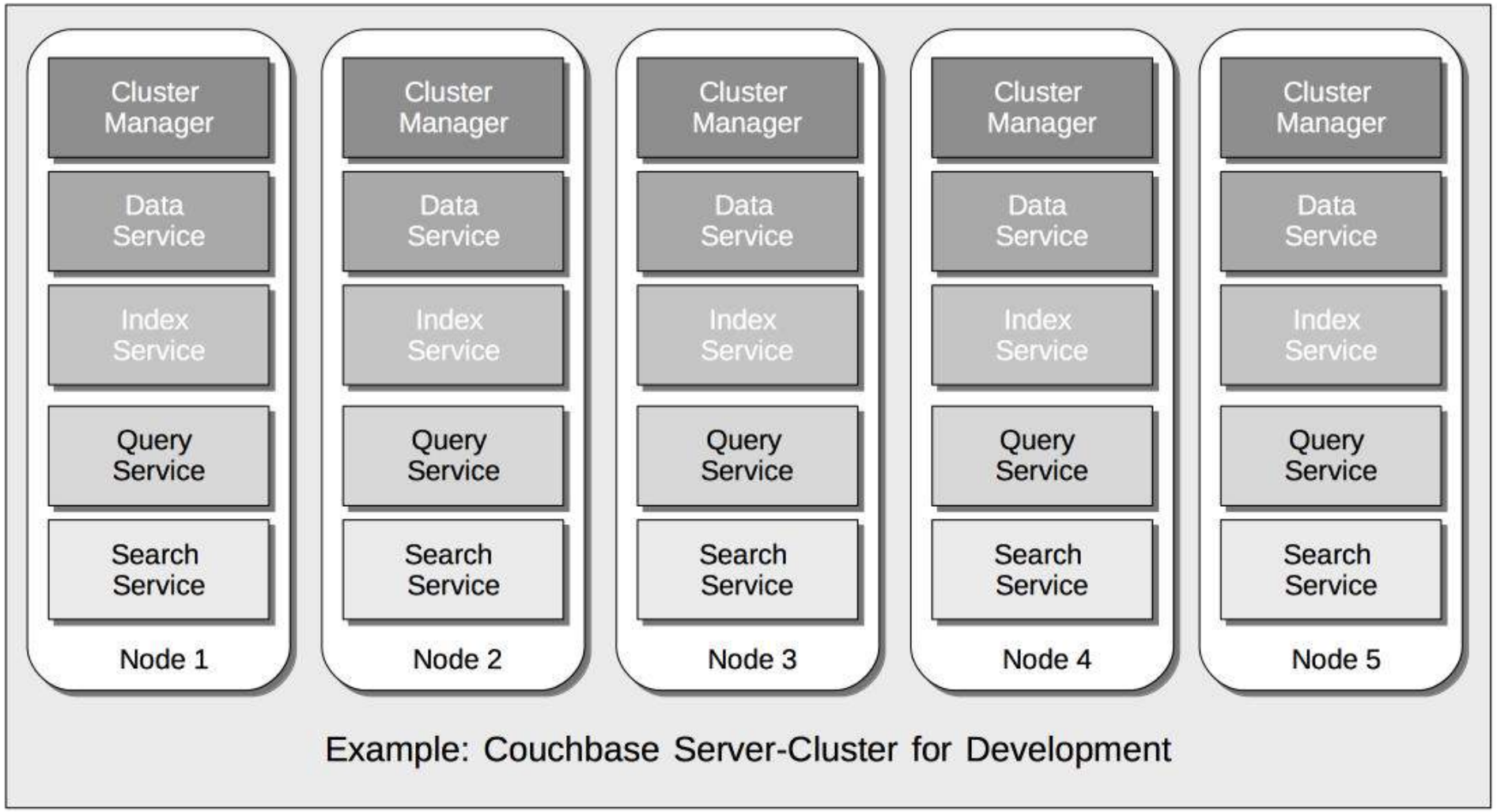
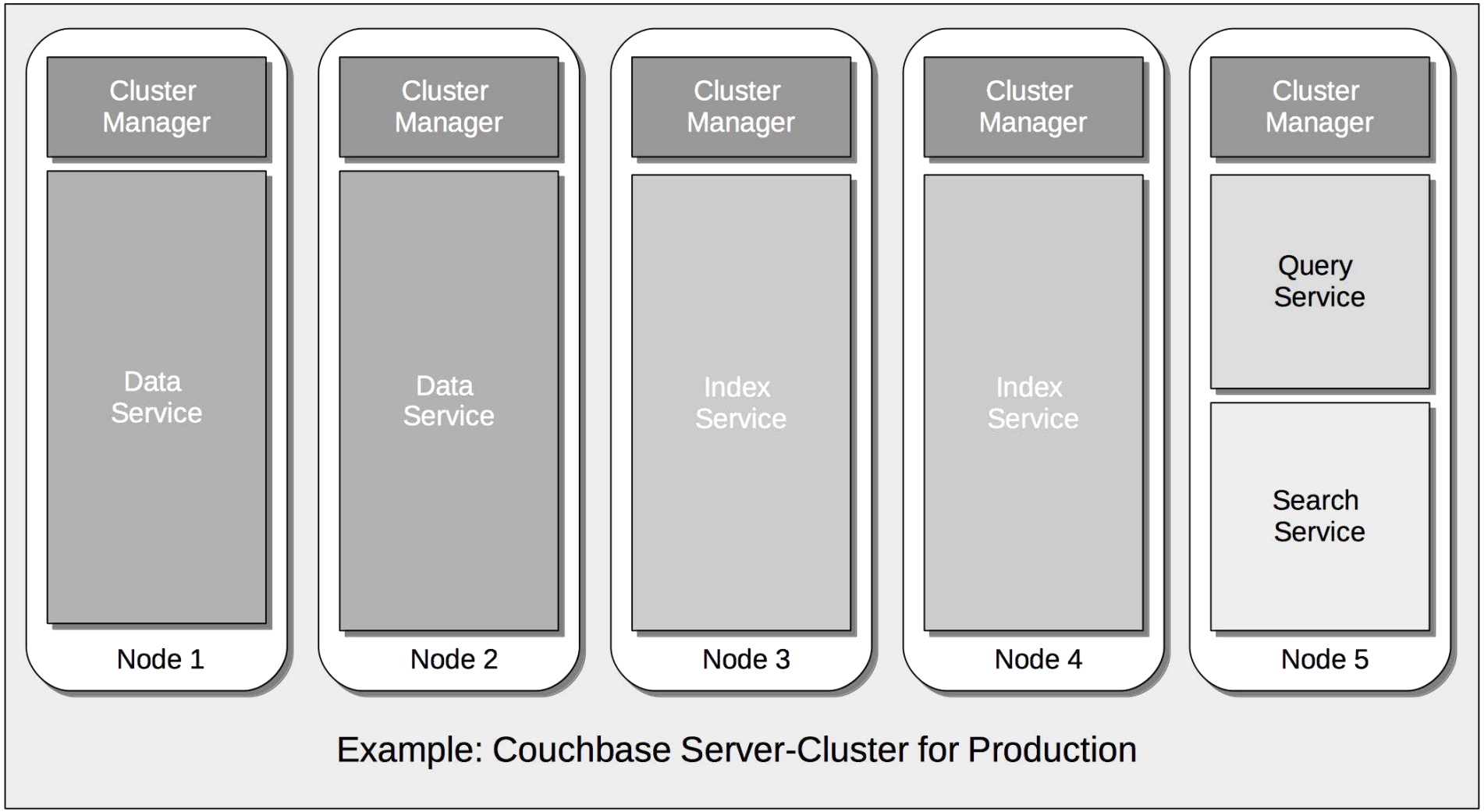

Cluster Manager
Data Service
Index Service
Query Service
Search Service
Node 1
Cluster Manager
Data Service
Index Service
Query Service
Search Service
Node 2
Cluster Manager
Data Service
Index Service
Query Service
Search Service
Node 3
Cluster Manager
Data Service
Index Service
Query Service
Search Service
Node 4
Cluster Manager
Data Service
Index Service
Query Service
Search Service
Node 5
Example: Couchbase Server-Cluster for Development

k



Example: Couchbase Server-Cluster for Production

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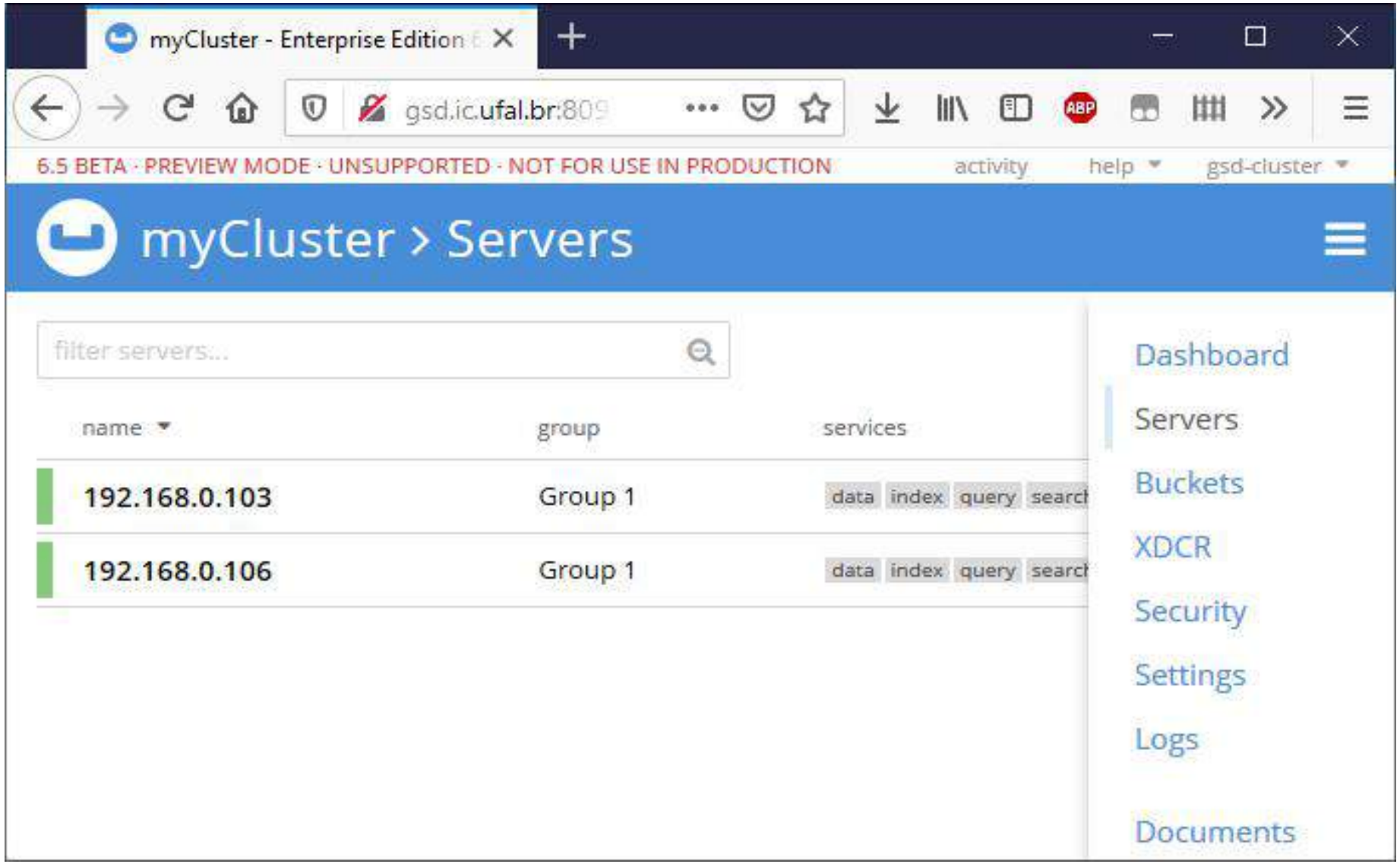
myCluster - Enterprise Edition
gsd.ic.ufal.br:809
6.5 BETA · PREVIEW MODE · UNSUPPORTED · NOT FOR USE IN PRODUCTION
activity
help
gsd-cluster
myCluster > Servers
filter servers...
name
group
services
192.168.0.103
Group 1
data index query search
192.168.0.106
Group 1
data index query search
Dashboard
Servers
Buckets
XDCR
Security
Settings
Logs
Documents

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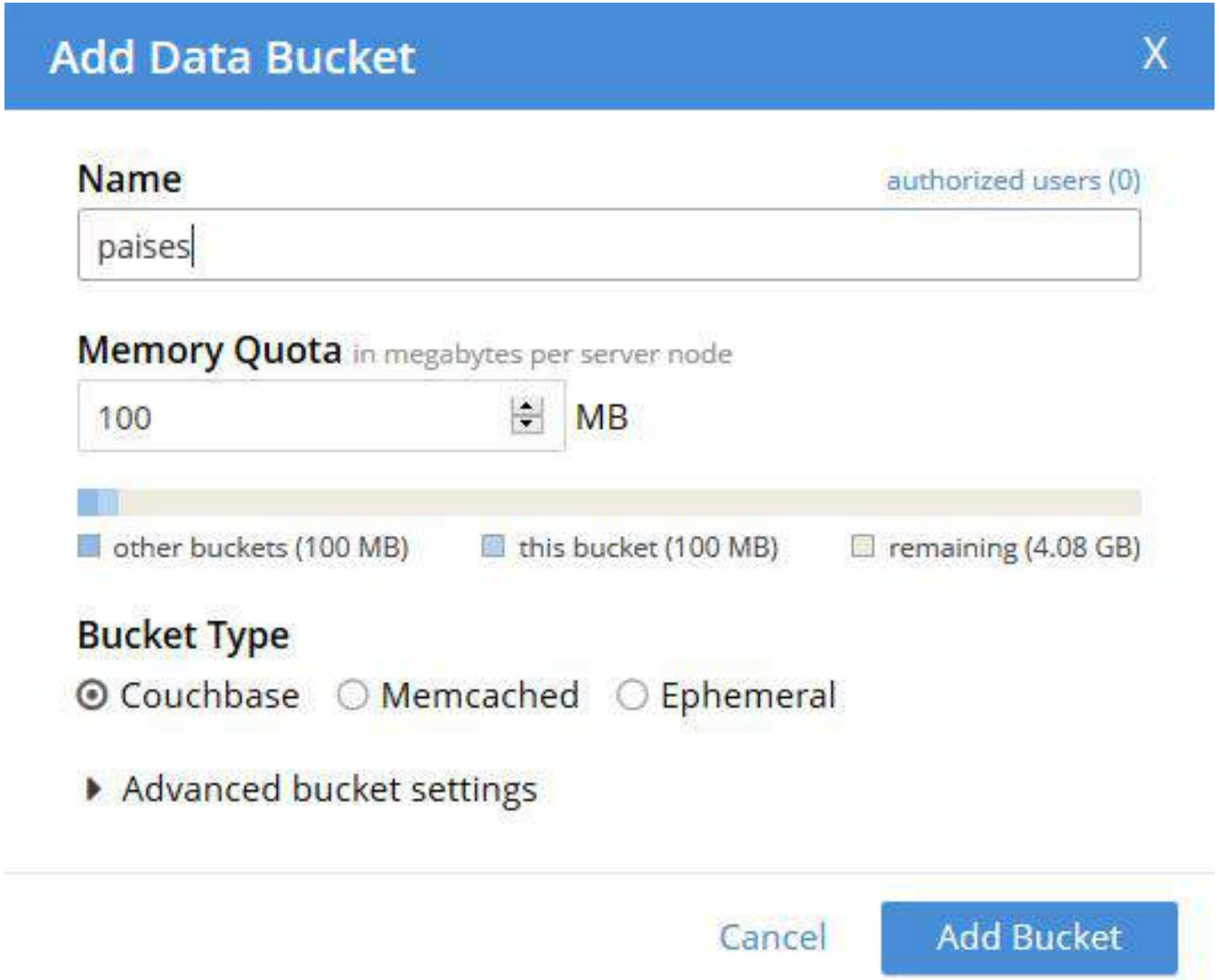
Add Data Bucket
X
Name
authorized users (0)
paises
Memory Quota in megabytes per server node
100
MB
other buckets (100 MB)
this bucket (100 MB)
remaining (4.08 GB)
Bucket Type
Couchbase
Memcached
Ephemeral
Advanced bucket settings
Cancel
Add Bucket

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```
db.stocks.aggregate([
  { "$match": {
    "$and": [
      {"symbol": {
        "$in": [
          "AAPL",
          "GOOG"]}},
      { "value": {
        "$gt": 0 }}]}},
  { "$group": {
    "_id": {
      "symbol": "$symbol" },
    "sum(value * volume)": {
      "$sum": {
        "$multiply": [
          "$value",
          "$volume"]}}}},
  { "$project": {
    "_id": 0,
    "sum(value * volume)": "$sum(value * volume)",
    "symbol": "$_id.symbol"}}
  { "$sort": {
    "sum(value * volume)": -1,
    "symbol": 1 }}])
```

```
SELECT SUM(value * volume) AS val, symbol
FROM   db.stocks
WHERE  symbol IN ( "AAPL", "GOOG" ) AND value > 0
GROUP  BY symbol
ORDER  BY val DESC, symbol ASC
```

S

```
INSERT INTO paises (KEY, VALUE)
  VALUES ( "1", { "nome": "Estados Unidos",
  "nomeIngles":"United States",
  "continente":"América do Norte"} ),
  VALUES ( "2", { "nome": "França",
  "nomeIngles":"France",
  "continente":"Europa"} ),
  VALUES ( "3", { "nome": "Reino Unido",
  "nomeIngles":"United Kingdom",
  "continente":"Europa"} );.
```

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```
SELECT nome

FROM paises

WHERE continente = 'Europa'
```

```
[
  {
    "code": 4000,
    "msg": "No index available on keyspace paises that matches your query. Use CREATE INDEX or CREATE PRIMARY INDEX to create an index, or check that your expected index is online.",
    "query_from_user": "SELECT nome FROM paises WHERE continente = `Europa`"
  }
]
```

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  - k ã ã y ã

```
CREATE PRIMARY INDEX ON paises


SELECT nome
   FROM paises
   WHERE continente = 'Europa'
```

```
[
   {
      "nome": "França"
   },
   {
      "nome": "Reino Unido"
   }
]
```

```
SELECT RAW name
FROM `travel-sample`
WHERE country = 'United States'
LIMIT 10
```

```
[
  {
    "code": 4000,
    "msg": "No index available on keyspace `travel-sample` that matches your query. Use CREATE INDEX or CREATE PRIMARY INDEX to create an index, or check that your expected index is online.",
    "query_from_user": "SELECT * FROM `travel-sample` WHERE country = 'United States'"
  }
]
```

m

```
CREATE INDEX countryindex
ON `travel-sample`(country)

SELECT RAW name
FROM `travel-sample`
WHERE country = 'United States'
LIMIT 10
```

~

```
[
  "40-Mile Air",
  "Texas Wings",
  "Atifly",
  "Locair",
  "SeaPort Airlines",
  "Alaska Central Express",
  "AirTran Airways",
  "U.S. Air",
  "PanAm World Airways",
  "Bemidji Airlines"
]
```

m

- Quantos aeroportos existem em cada país?

```
SELECT country,
  COUNT(country) as `Quantity`
FROM `travel-sample`
WHERE type = 'airport'
GROUP BY country
```

```
[
  {
    "code": 4000,
    "msg": "No index available on keyspace `travel-sample` that matches your query. Use CREATE INDEX or CREATE PRIMARY INDEX to create an index, or check that your expected index is online.",
    "query_from_user": "select airportname, count(airportname) \nfrom `travel-sample`\nwhere city = 'Los Angeles' and type = 'airport'\ngroup by airportname"
  }
]
```

```
CREATE INDEX airportcity
ON `travel-sample`(type, city)

SELECT country,
 COUNT(country) as `Quantity`
FROM `travel-sample`
WHERE type = 'airport'
GROUP BY country
```

~


```
[
  {
    "Quantity": 187,
    "country": "United Kingdom"
  },
  {
    "Quantity": 221,
    "country": "France"
  },
  {
    "Quantity": 1560,
    "country": "United States"
  }
]
```

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```
SELECT (distinct t1.city), COUNT(type)
FROM `travel-sample` t1
WHERE t1.type = "landmark" AND
      t1.city IN (SELECT RAW city
                  FROM `travel-sample`
                  WHERE type = "airport"
                     AND city LIKE "P%")
GROUP BY city, type
ORDER BY city
```

```
[
  {
    "Quantity": 1,
    "city": "Palmdale"
  },
  {
    "Quantity": 173,
    "city": "Paris"
  },
  {
    "Quantity": 14,
    "city": "Penzance"
  },
  {
    "Quantity": 9,
    "city": "Perth"
  },
  {
    "Quantity": 2,
    "city": "Peterborough"
  },
  {
    "Quantity": 21,
    "city": "Plymouth"
  }
]
```

y

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```
SELECT p.continente,
    COUNT(t.type) AS `Quantidade`
FROM paises p JOIN `travel-sample` t
ON  t.country = p.nomeIngles
WHERE t.type = 'airport'
GROUP BY p.continente, t.type
```

~

```
[
  {
    "Quantidade": 1560,
    "continente": "América do Norte"
  },
  {
    "Quantidade": 408,
    "continente": "Europa"
  }
]
```

```
INSERT INTO frotaAvioes (KEY, VALUE)
  VALUES ( "1", { "continente":"América do Norte",
"frota":7550}),
  VALUES ( "2", { "continente":"Europa", "frota":5260}),
  VALUES ( "3", { "continente":"Africa", "frota":740}),
  VALUES ( "4", { "continente":"Oriente Médio", "frota":1550}),
  VALUES ( "5", { "continente":"América Latina",
 "frota":1580}),
  VALUES ( "6", { "continente":"Ásia Central", "frota":1270}),
  VALUES ( "7", { "continente":"Ásia e Pacífico",
 "frota":7880});

CREATE INDEX fcontinente ON frotaAvioes(continente)
```

y

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```
SELECT f.continente AS `Continente`,
   f.frota AS `Frota de aeronaves`,
   s.qtde AS `Quantidade de Aeroportos`
FROM (
   SELECT p.continente, COUNT(t.type) AS `qtde`
   FROM paises p JOIN `travel-sample` t
   ON  t.country = p.nomeIngles
   WHERE t.type = 'airport'
   GROUP BY p.continente, t.type) s
JOIN frotaAvioes f
ON f.continente =  s.continente
```

```
[
  {
    "Continente": "Europa",
    "Frota de aeronaves": 5260,
    "Quantidade de Aeroportos": 408
  },
  {
    "Continente": "América do Norte",
    "Frota de aeronaves": 7550,
    "Quantidade de Aeroportos": 1560
  }
]
```

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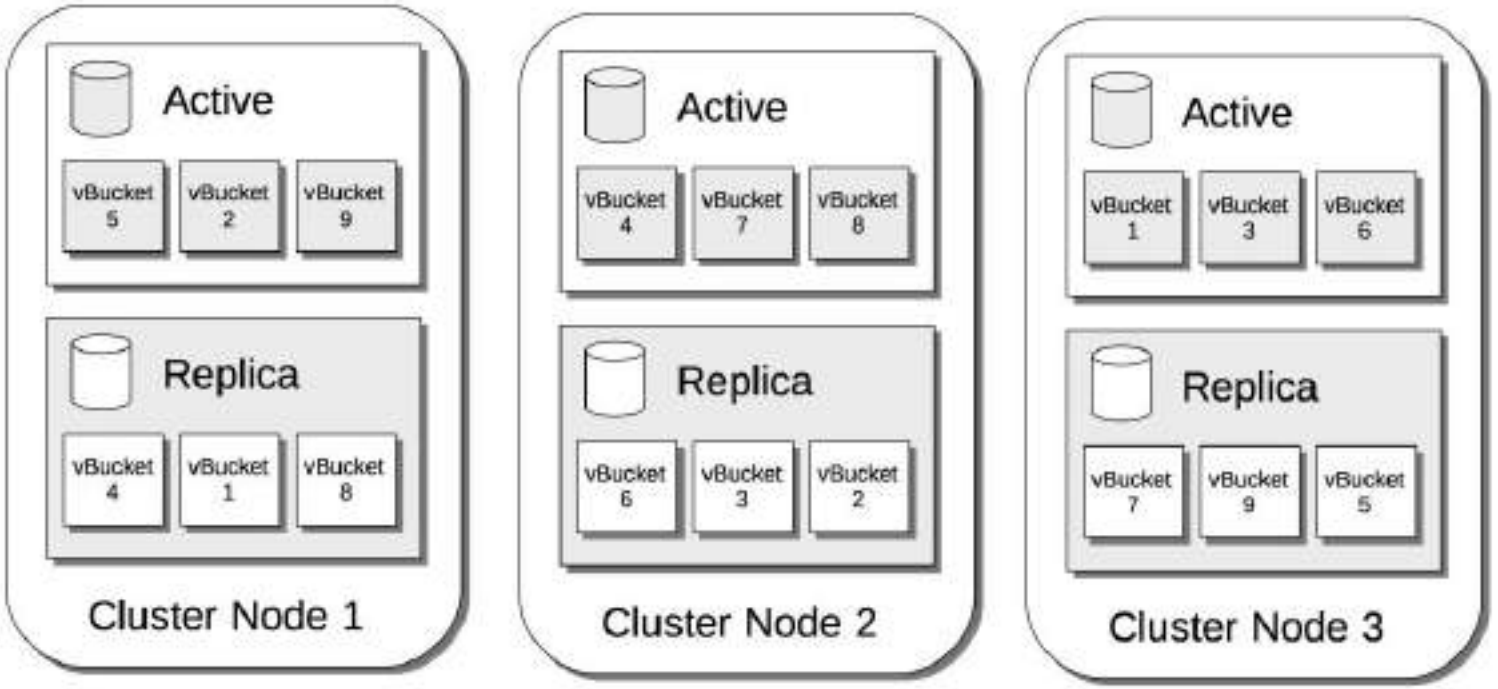

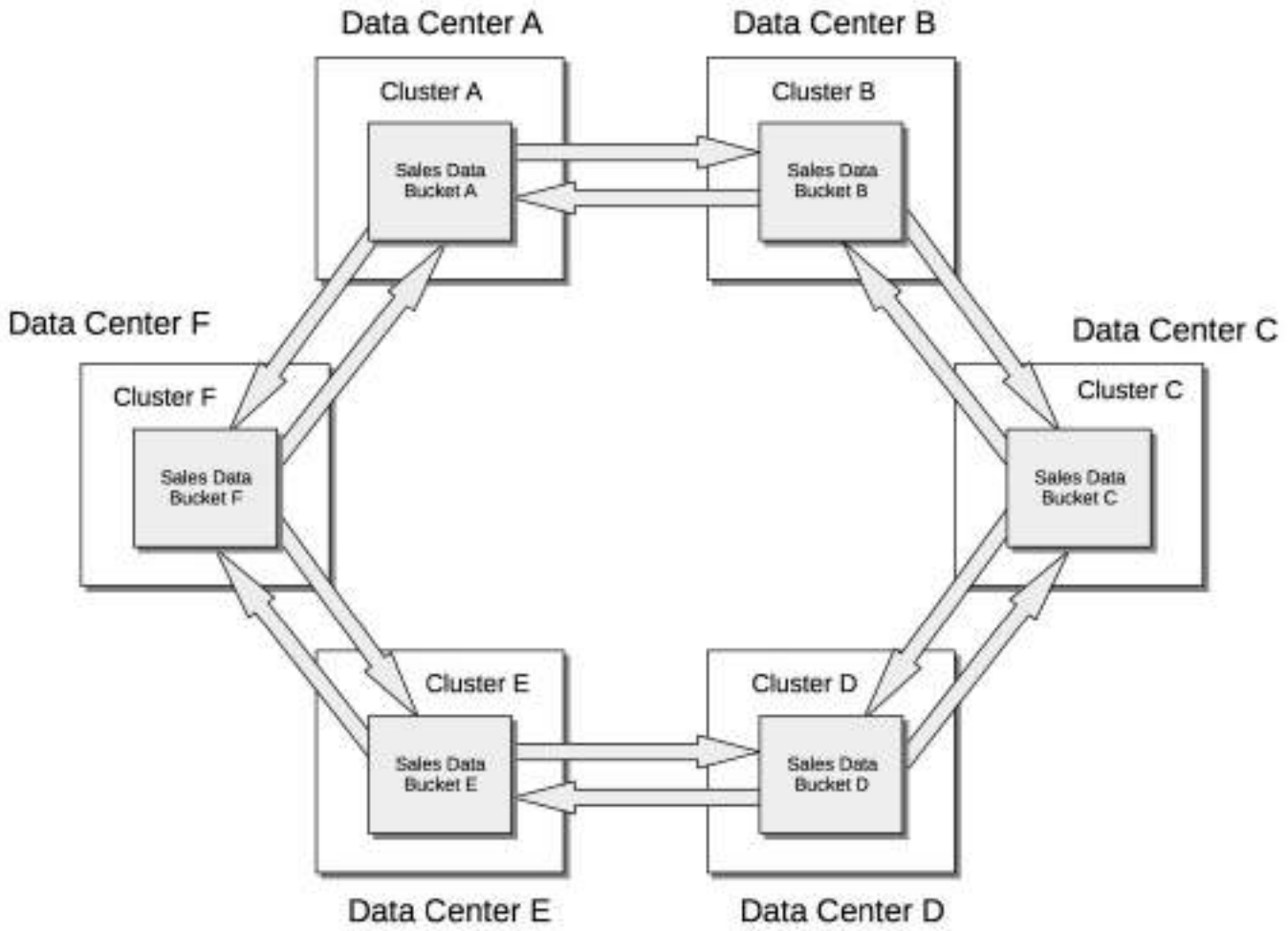
Data Center A
Data Center B
Cluster A
Cluster B
Sales Data Bucket A
Sales Data Bucket B
Data Center F
Data Center C
Cluster F
Cluster C
Sales Data Bucket F
Sales Data Bucket C
Cluster E
Cluster D
Sales Data Bucket E
Sales Data Bucket D
Data Center E
Data Center D

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- “ ê ú ê ú ê ê c

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  - díây á é y âã y íâyâã âã âyâ / ã áy ã ê í y ã ã0
  - Pây y í yá yâ á ki dã y zíã ã f ki d
  - f ãáã íy âã y zíã ã ã ã ãý ã ã âí ãí

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h é y y âã h 5V yâ y ã Rí áíy âã R y
ã e y ã íáy R yáí y
kRRCGDF 5h áã y ã P y íá âã Syâ ã dy éy T áy y
kRR9?BC 5h áã y ã P y íá âã Syâ

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<jpcsantos@usp.br>

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