Scaling from **2 to 3 nodes** in **Azure Cosmos DB for PostgreSQL (Citus)** doesn't *automatically* rebalance or redistribute data — but it sets the stage for **manual rebalancing** to improve performance and data distribution going forward.

Here’s a breakdown:

**📦 Before Scaling: 2 Nodes**

* Your distributed tables have shards split between 2 workers (Node A & Node B).
* Each shard is stored **fully on one node**.
* Shard count and placement is determined at table creation (based on create\_distributed\_table and shard count).

**⬆️ After Scaling to 3 Nodes: What Happens?**

**✅ 1. New Node (Node C) is Added**

SELECT \* FROM master\_add\_node('node-c-host', 5432);

* Node C joins the Citus cluster.
* **No data is automatically moved** to Node C at this point.
* **Existing shards stay where they are (on A and B)**.

**📥 2. Effect on Existing Data**

* All existing shards and data remain on Node A and Node B.
* Node C remains **idle** until shards are **moved manually**.

**🆕 3. Effect on New Data**

* New **tables or shards** created **after scaling** may get assigned to Node C, depending on how shard placement is chosen.
* But **existing distributed tables will not automatically rebalance** across the new node unless you do it manually.

**🔁 How to Rebalance Across All 3 Nodes**

Run:

sql

CopyEdit

SELECT rebalance\_table\_shards();

Or for a specific table:

sql

CopyEdit

SELECT rebalance\_table\_shards('your\_table\_name');

This will:

* Migrate shards across nodes A, B, and C
* Try to evenly distribute shard **count and size**
* Avoid data duplication — shards are **moved**, not copied

**🧠 Why Manual Rebalancing is Not Automatic?**

* Automatic movement can impact performance or introduce inconsistency if done blindly.
* Rebalancing is typically done **during low-traffic windows** by DBAs.
* Gives you **control** over how and when to optimize distribution.

**🚦 Best Practice After Scaling**

| **Task** | **Recommendation** |
| --- | --- |
| Add new node | master\_add\_node(...) |
| Check current shard placement | SELECT \* FROM citus\_shards\_distribution; |
| Move shards manually | rebalance\_table\_shards() |
| Monitor usage/load | pg\_stat\_statements, shard size views |