EMQX Rebalancing and Node Evacuation

Ilya Averyanov

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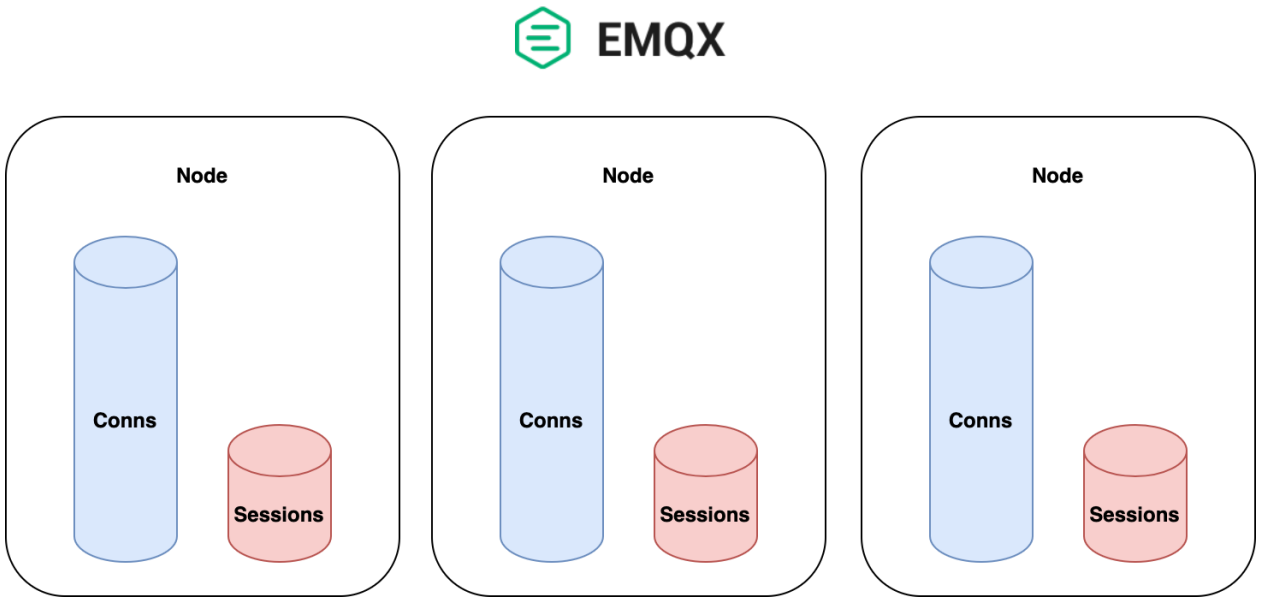
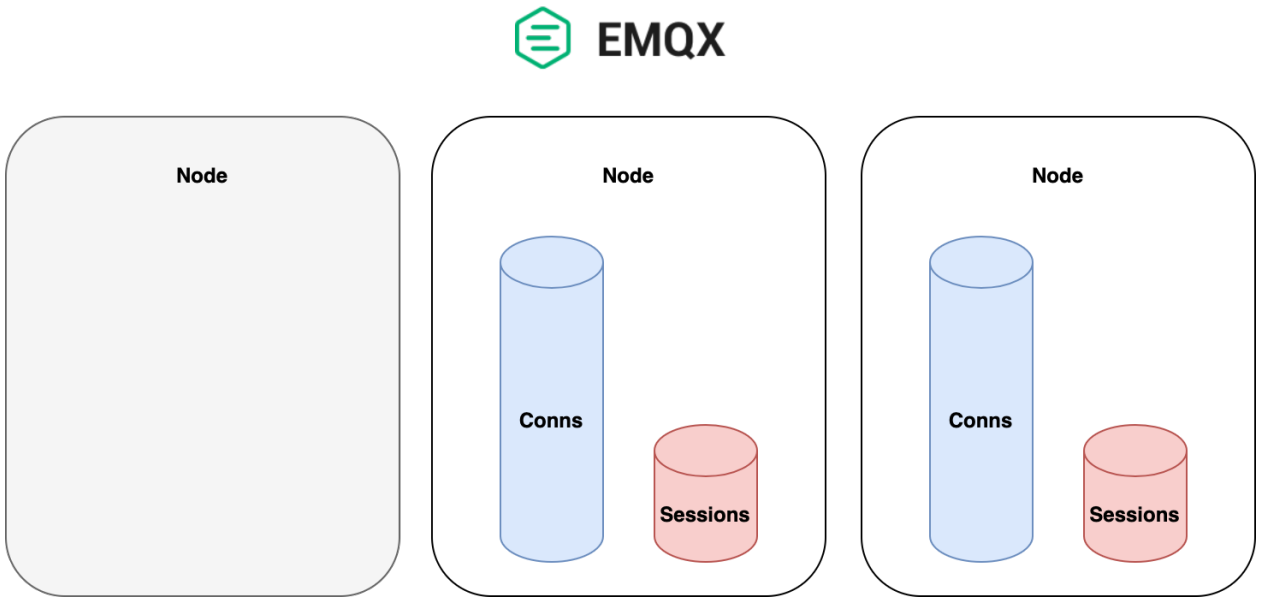
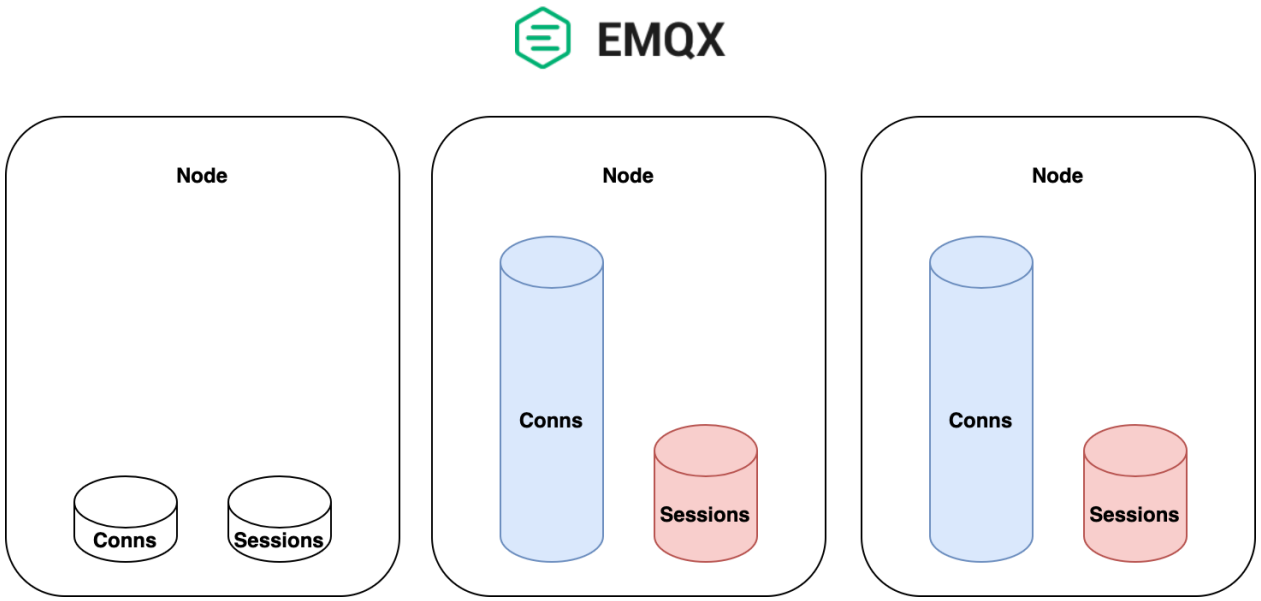
Node Evacuation
Problem



Node Evacuation
Problem



Node Rebalance
Problem

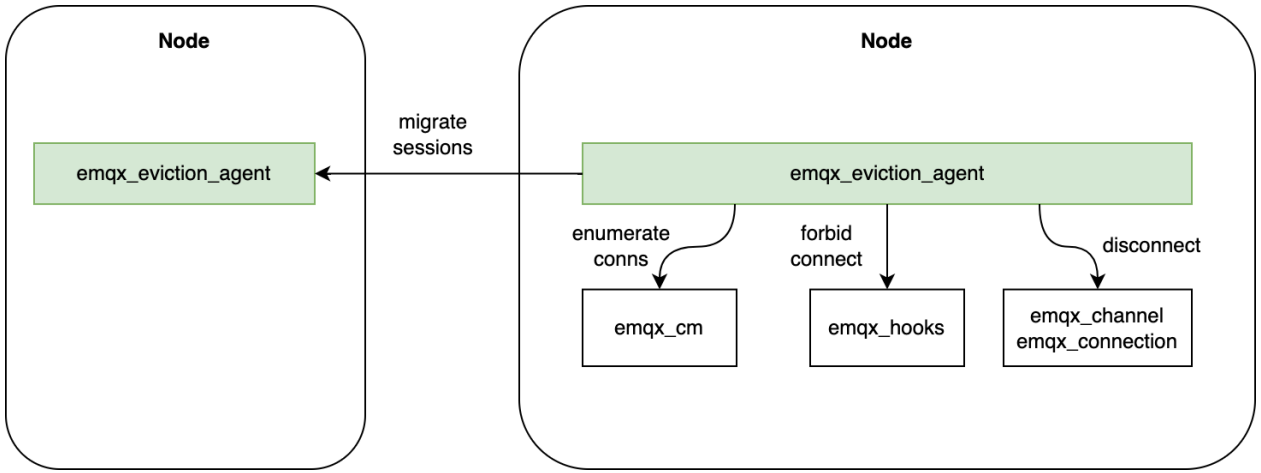


Node Rebalance
Solution

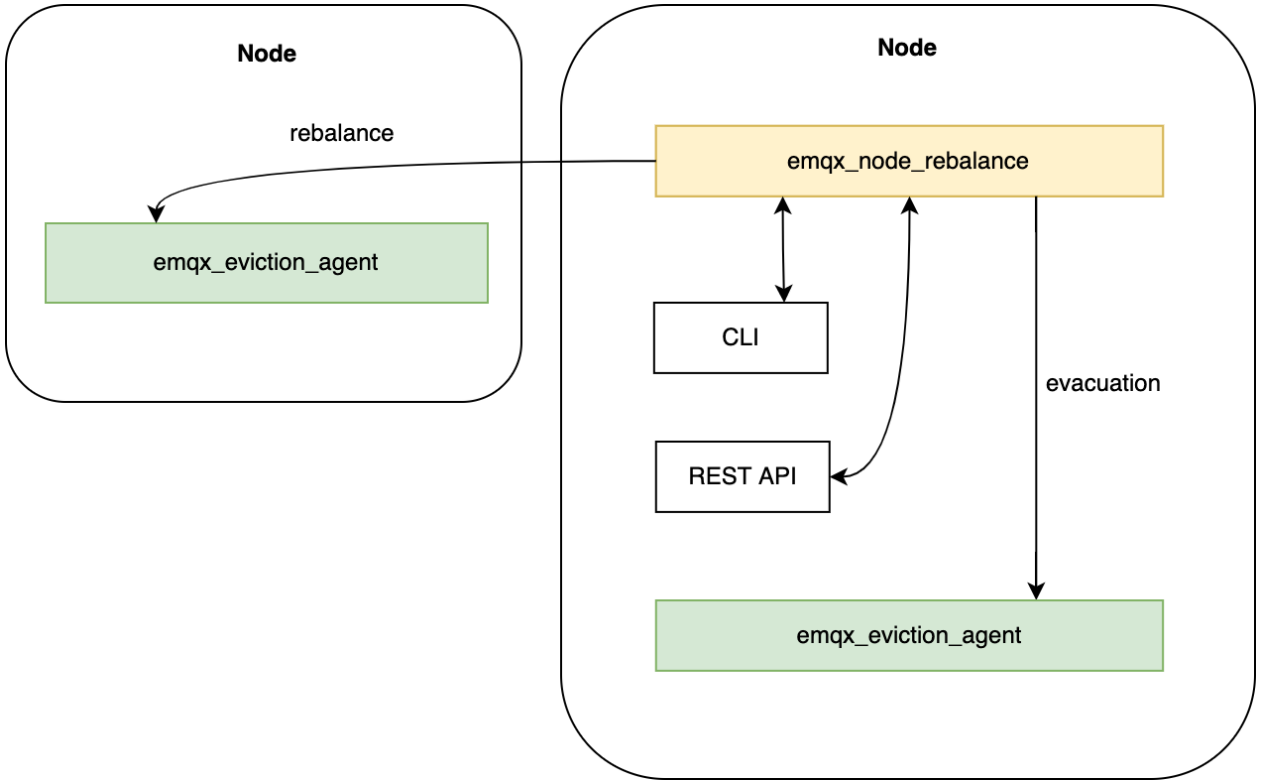
We introduce two new apps:

- `emqx_eviction_agent` – low-level logic
- `emqx_node_rebalance` – high-level scenarios

EMQX Eviction Agent



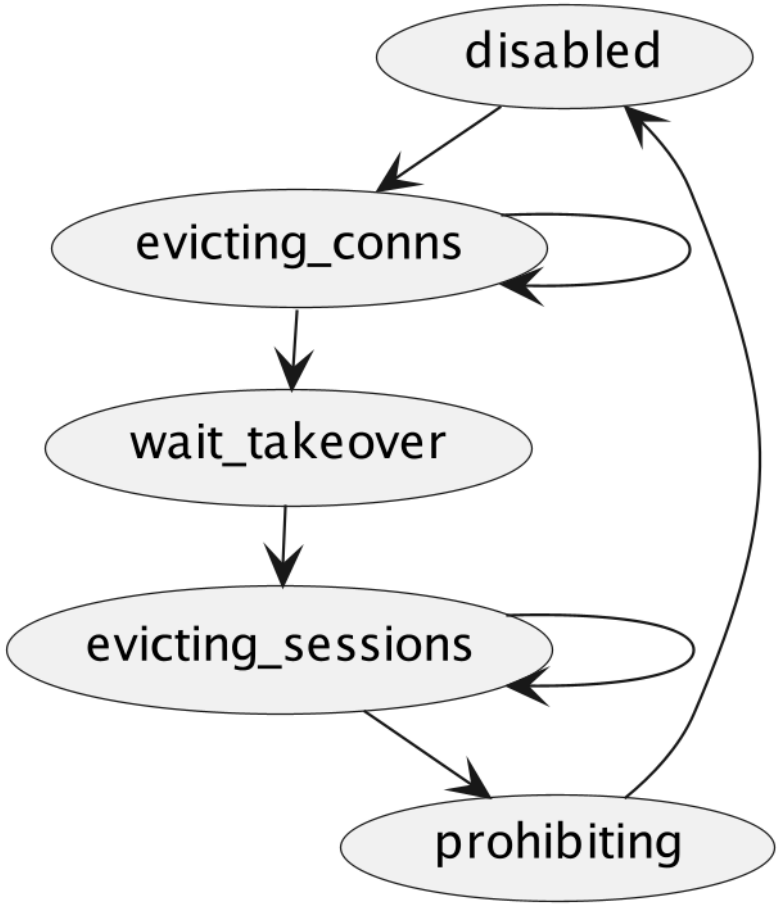
EMQX Node Rebalance



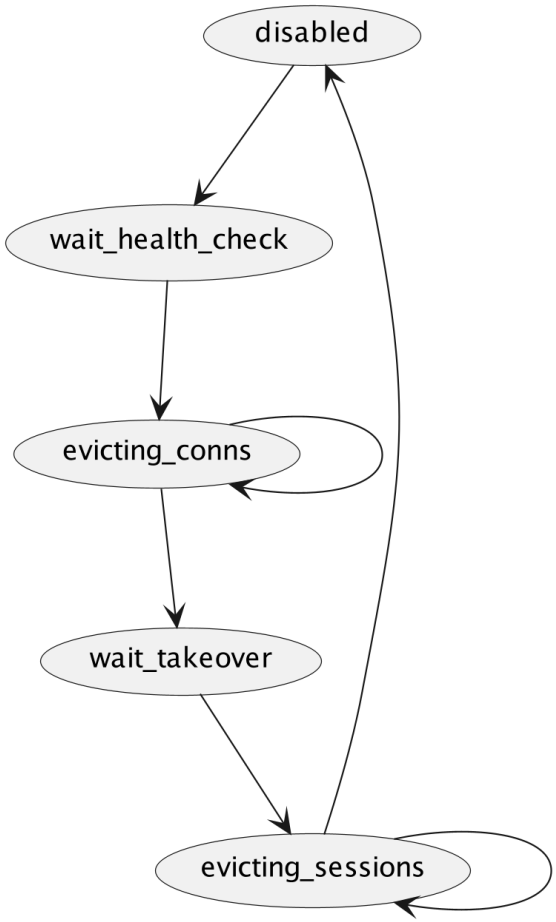
EMQX Node Rebalance
Scenarios

- Node evacuation
- Node rebalance

EMQX Node Evacuation
Algorithm



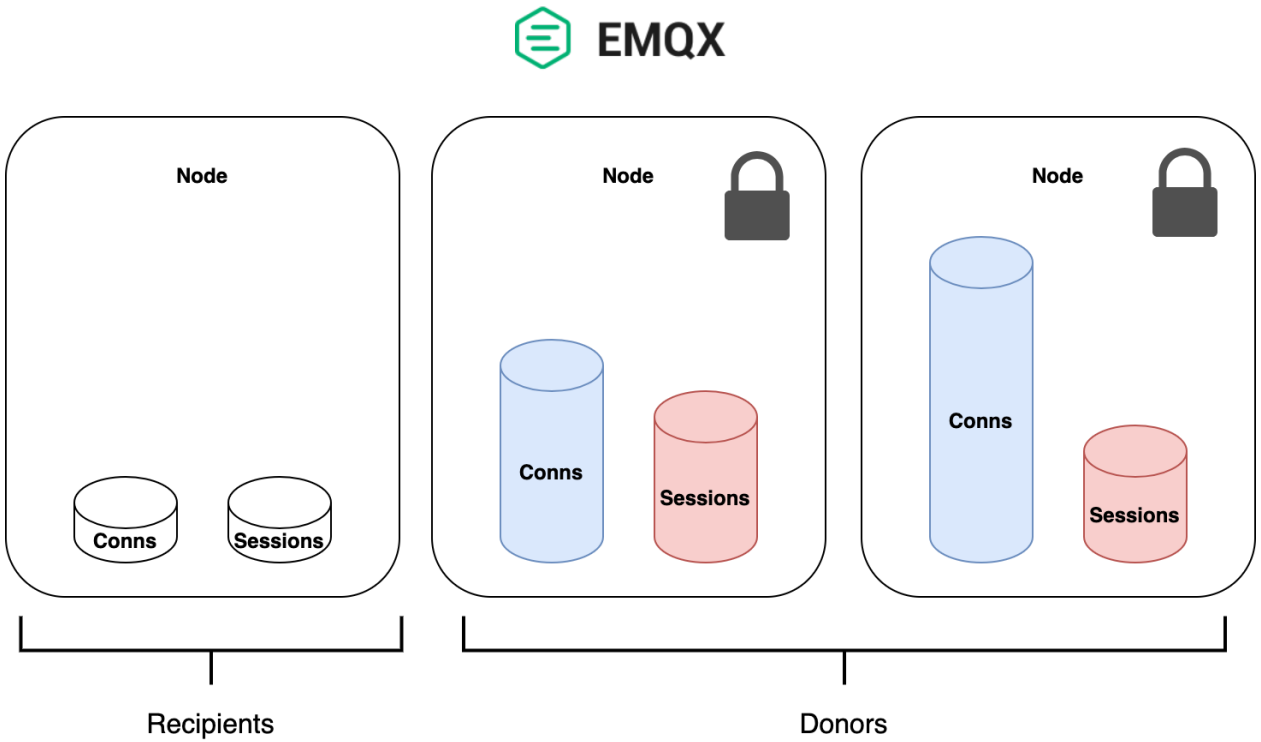
EMQX Node Rebalance
Algorithm



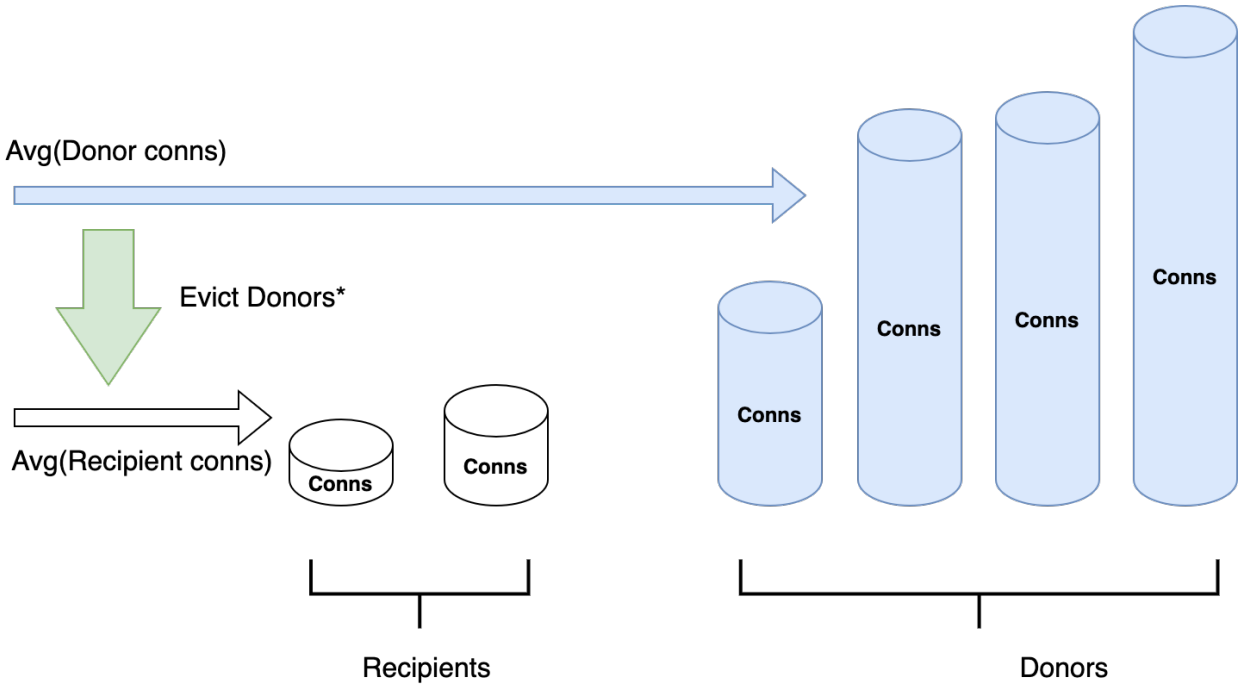
EMQX Node Rebalance vs Node Evacuation

- Node evacuation is **node-local** and only communicates with the local `emqx_eviction_agent`
- Node evacuation is **persistent** — node keeps rejecting connections after restart
- Node rebalance is **distributed** and has a **coordinator** communictating with remote `emqx_eviction_agents`
- Node rebalance is **ephemeral**. It immediately aborts if a participating node crashes

EMQX Node Rebalance
Algorithm



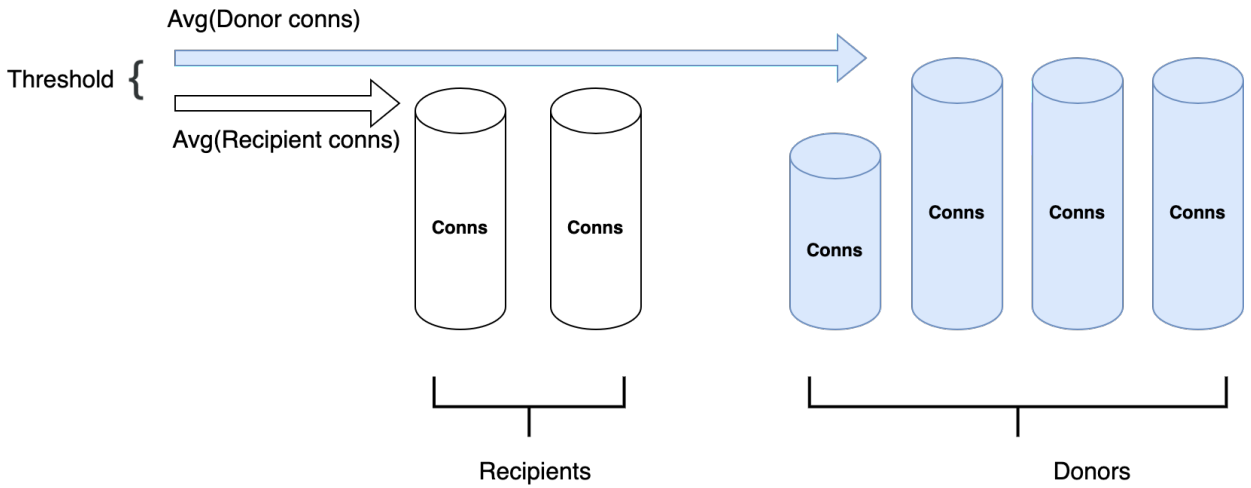
EMQX Node Rebalance
Algorithm



EMQX Node Rebalance
Scenarios

- We suppose that connection are distributed among new nodes evenly
- We do not evict from donors that have too few connections/sessions

EMQX Node Rebalance
Algorithm



Thank you!