



Journey from PostgreSQL to CockroachDB: Scaling Cisco AI Defense for resilience, compliance, and growth

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The background features a dark blue field with two prominent, flowing, multi-colored lines. The line on the left transitions from orange at the bottom to pink and purple towards the top. The line on the right is a vibrant cyan blue. Both lines are composed of many fine, overlapping strands, giving them a wispy, ethereal appearance.

Journey to Cockroach

Background



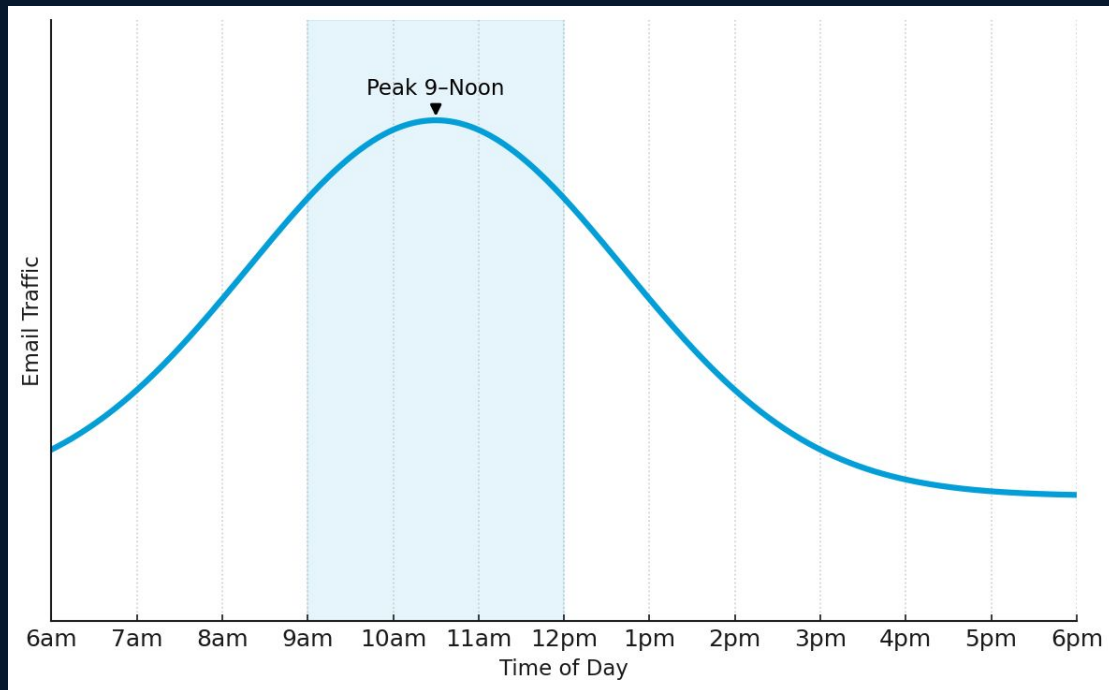
Armorblox

Email Security - NLU



- AI Defense
- AI Canvas
- AI Assistants

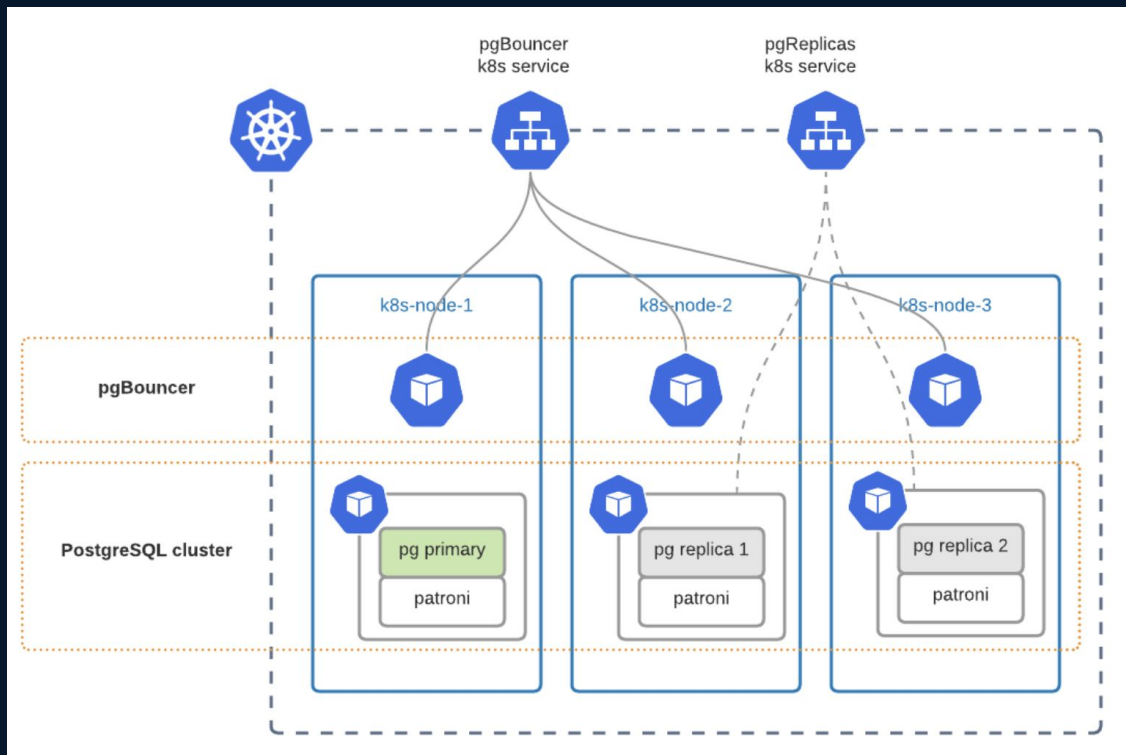
Bit more context ...



- 2M+ Mailboxes
- 10K+ Tenants
- ~25K+ mail / sec
- 50/50 - Enterprises & MSP

Bottleneck - DB

Postgres in Kubernetes (2018)



Challenges in K8S (2020)



Resource Limits



Node Instability



Pod Failovers



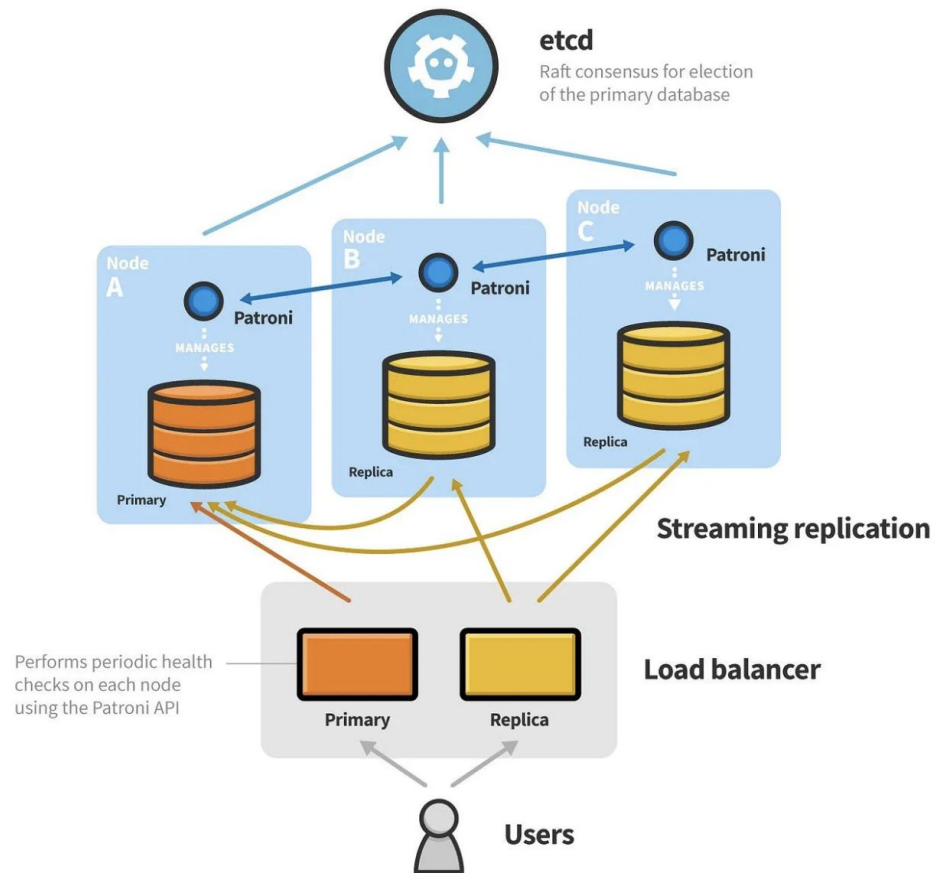
Noisy Neighbors



DevOps Complexity

Postgres in VMs (2020)

Patroni architecture



Quick wins (2021)



**Beefy
5-node cluster**



Primary (write only)



Async standby



DB Experts



Percona (24/7 DBA)

Challenge Continues (2022)



Vertical Scaling

- Vertical scale limits
- Lack of active-active



Multi-Tenant Schemas

- XID (500K+ tables)
- Vacuuming



Backup & Restore

- Missing WAL files
- Replication lags



Multiple DB Clusters

- \$\$\$
- Operational Overhead

Permanent Solution (2023)



Truly Distributed



**Managed
(Hosted Option)**



**Minimal Operational
Overhead**



People

Cisco AI



Cisco
AI Defense



Cisco
AI Canvas



Cisco
AI Assistants

