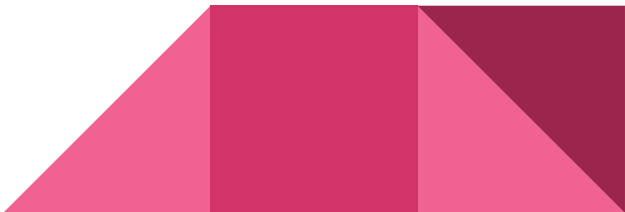


Elasticsearch

Ops and Docker

Introduction

- What is Elasticsearch?
 - A little bit of Distributed systems theory
 - ES scaling
 - Docker
 - Examine an ES cluster
 - Create partitions
- 

Elastic in a nutshell

- You know, for search
- Under the hood it's a Lucene index (Text search engine written in Java)
- WCO use it to index and search Cases
- ES adds distributed scalability and resilience.



Distributed Systems & CAP

CAP Theorem (*Brewer 1999*)

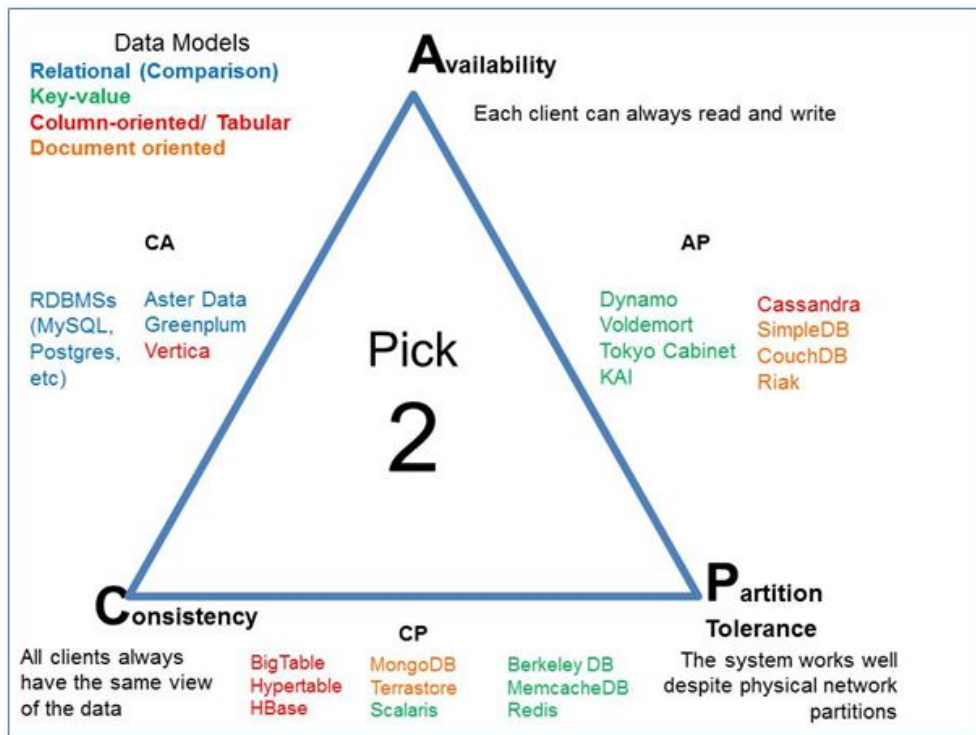
Consistency

Availability

Partition tolerance



Distributed Systems & CAP



Elastic CAP

- Arguably ES is **CP**
- This is not that simple though
- See <https://aphyr.com/posts/323-jepsen-elasticsearch-1-5-0>



How does ES Scale

- Nodes
- Shards
- Replicas

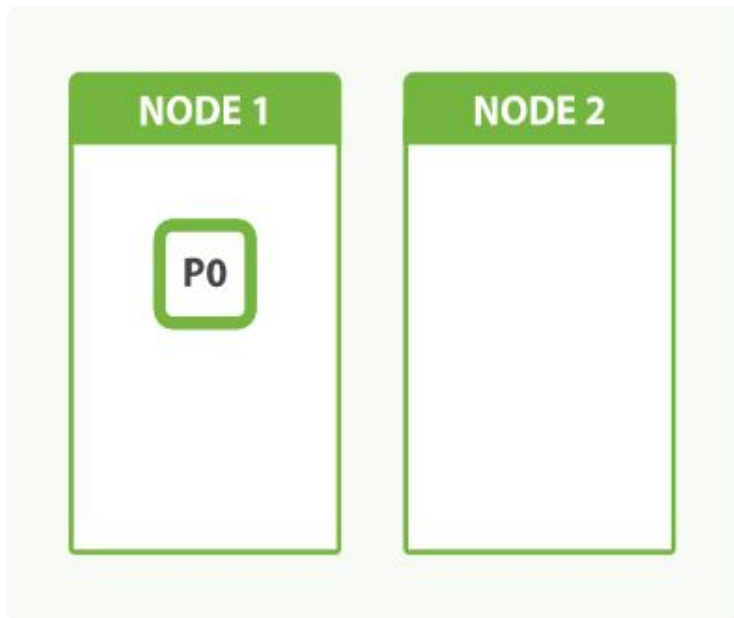


Scaling

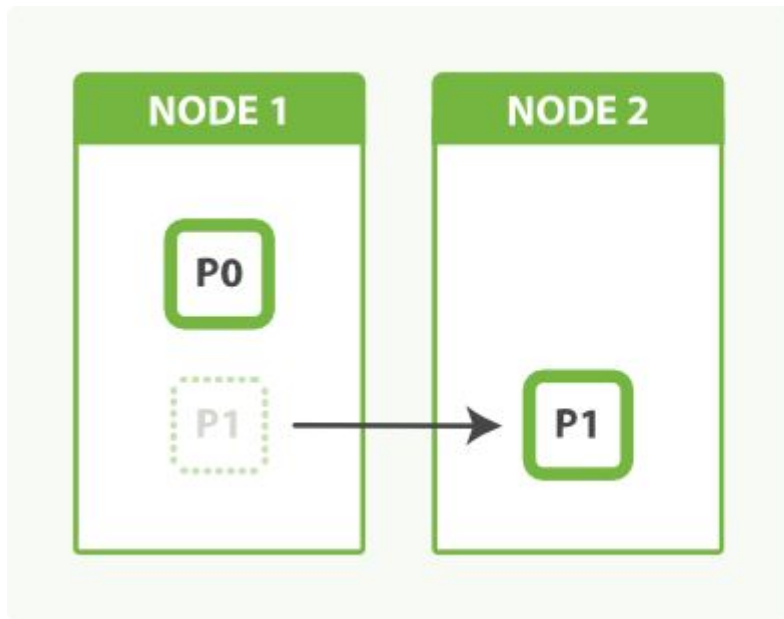
- Scaling Up (Vertical Scaling)
- Scaling Out (Horizontal Scaling)



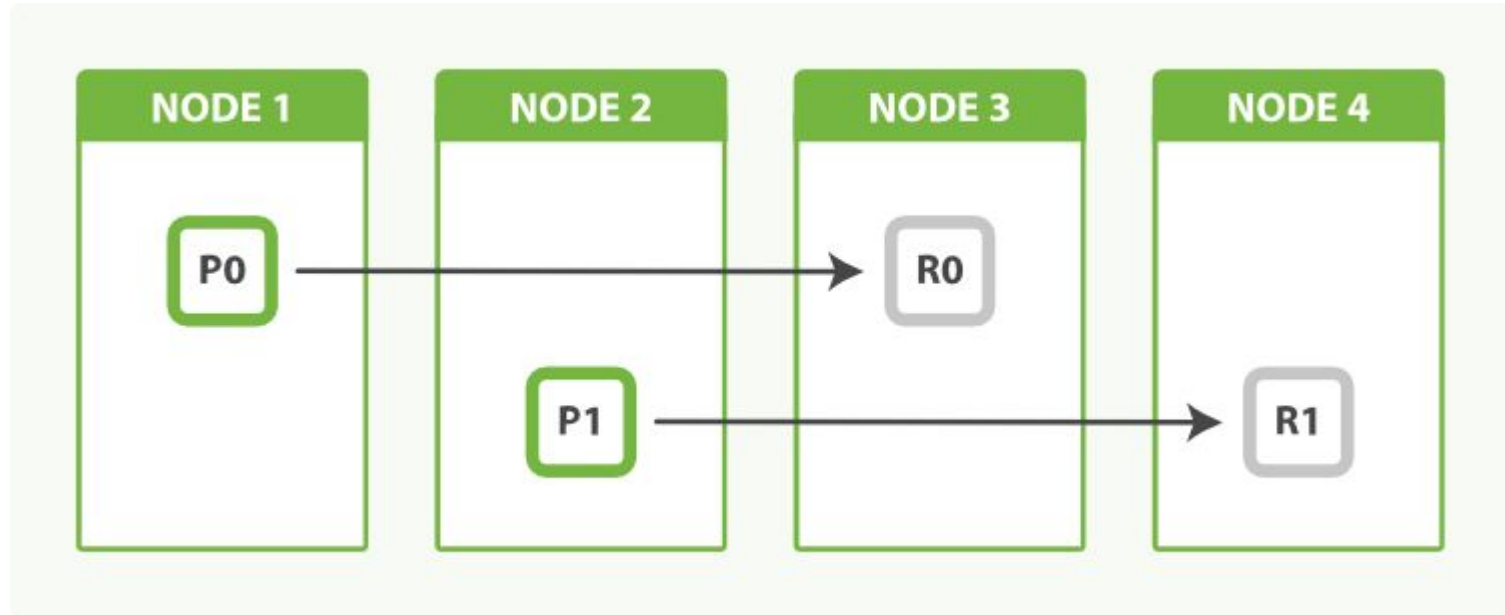
Scaling ES



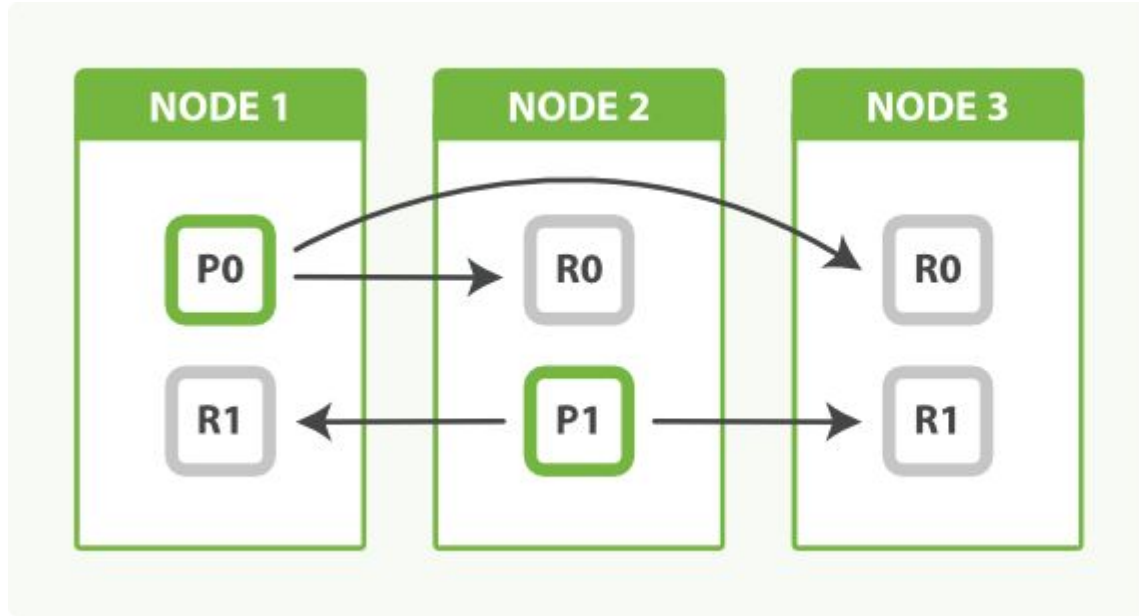
Scaling ES



Scaling ES



Scaling ES



Docker

- Write infrastructure as code
- Docker Compose
- Docker Swarm

