etcd

BDNR Project - Milestone 1

Group 5:

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History

- Developed by CoreOS
- Affiliated with Cloud Native Computing Foundation (CNCF)
- etcd's first release was in 2013

- Owners:
  - CoreOS → RedHat → IBM

- Name origin
  - /etc folder - place to store configuration data
  - ‘d’ stands for distributed systems
- Main purpose
  - Concurrency control in cluster management systems of CoreOS

Description

- Designed for large scale distributed systems
  - systems that do not tolerate split-brain operations and sacrifice availability to achieve that
- Consistent key-value storage for configuration management, service discovery and coordinating distributed work
  - Consistent and fault-tolerant
  - Stability, reliability, scalability and performance
- Used in common distributed patterns such as leader election, distributed locks and monitoring machine liveness

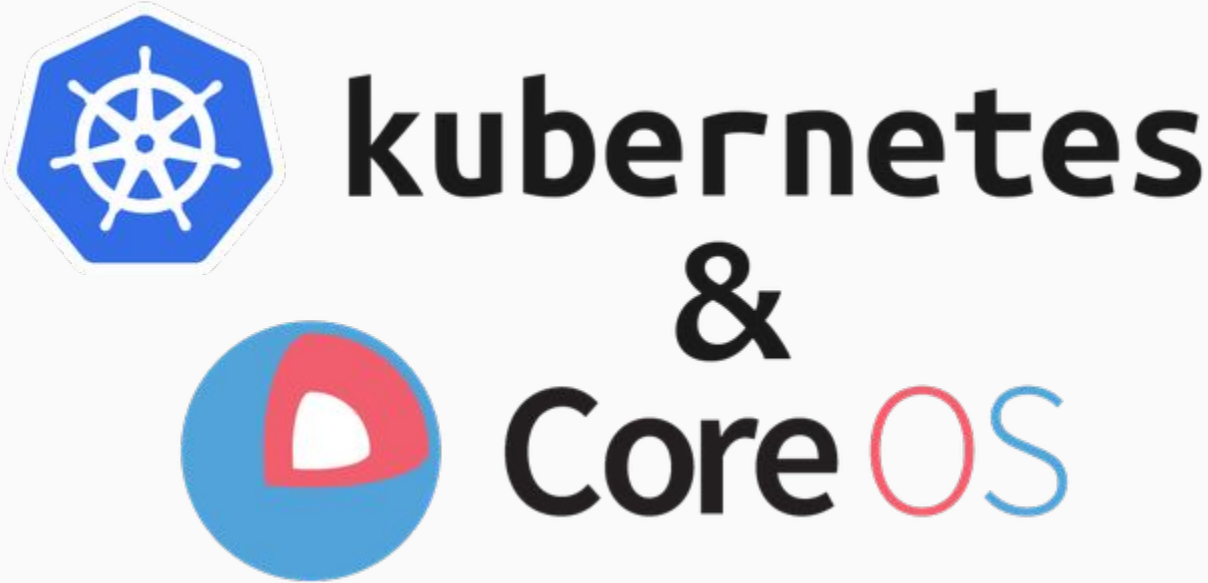
Why etcd?

- Fully replicated
  - every node has access to the data stored
- Highly available
  - designed to have no single point of failure and tolerant hardware and network failure
- Reliably consistent
  - every “read” returns the latest “write” across all nodes
- Fast
  - has been benchmarked at 10000 writes per second
- Secure
  - supports TLS and SSL
  - role-based access control
- Simple
  - any application can read or write data using HTTP/JSON tools

ectd vs. Redis

Feature	ectd	Redis
Memory	Disk	In-memory
Focus	Distributed system config	Database, cache
Fault tolerance	Strong	Limited
Failover mechanism	Strong	Limited
Supported data types	Limited	Wide range
Read/write performance	Slower	Faster

Usage



Pricing and Licensing Model