

Chapter 1:- Core Concepts

→ What is etcd

CKA NOTES 2025

It is Distributed reliable Key-value Store

Story:- How etcd comes in picture

→ Relational Database (Traditional Database)

id	Name	role
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1	Ayan	cloud
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2	Anand	devops
---	-------	--------

3	Thiri	data
---	-------	------

→ Then we add more one column Salary, grade
(Thiri is intern there is no Salary for her and grade also)

id	Name	role	Salary	grade
----	------	------	--------	-------

1	Ayan	cloud	10K	A
---	------	-------	-----	---

2	Anand	devops	15K	A
---	-------	--------	-----	---

3	Thiri	data		
---	-------	------	--	--

→ It means whenever new information added in table entire table will affected
in this table there is empty space in the

Relational Database

Yes ✓

~~Not~~ Yes (sql)

Good

Rigid X

Structure data

Name

Schema

Complex query

Performance

Flexibility

Best for

* Document Store:-

→ Document store information in form of Document

→ Each Document have individual file Document
So particular information will store into particular Document and it will not affect to other Document

Document Store

Key	value	Key	value	Key	value
Name	John	Name	Dave	Name	Ancnd
Age	45	Age	34	Age	20
Location	N.W	Location	N.W	Location	India

Document-1 Document-2 Document-3

Let's add information Document 3

Key	value	Key	value	Key	value
name	John	name	Dave	name	Anand
Age	45	Age	34	Age	20
location	N.W.	location	N.W.	location	India
				role	devops
				Salary	15K

Other document Store is not affected

→ Document store information in
Json or YAML format.

→ Used for un/semi-structured

* Key-value store

→ It will store information as key-value
Store ex:- name:- Anand

Role:- Devops

→ It's very easy to install and use

→ It's also flexible Don't affect other and
Superfast performance

→ used for simple fast lookup

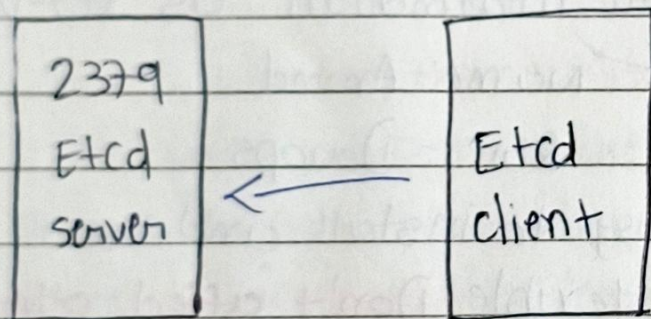
name	Relational DB	Documentstore	Key-value
Schema	Yes	No	No
Complex	Yes	No	No
performance	Good	good	very fast
flexibility	No	yes	Very flexible
Best for	structured data	un/semi structured data	Simple fast lookup

* ETCD:-

→ When you install ETCD ~~and~~ ⁱⁿ ~~with~~ ^{on} ~~services~~

→ Run `.etcd` it will start service

Listen port- 2379 by default



• `.etcd`

• `.etcdctl put key1 value2`

• `.etcdctl get key1`

• `.etcdctl`

Adding data

Retrieving data

↑
If want to see more options

API change

etcd cli	V2	V3
Set value	Set	put
Get value	get	get
Delete value	rm	del
Transactions	X	txn

etcd V3.2 in Nov 2018 become
CNCF Incubation

2019-2020 become CNCF Graduated

* ETCd role in Kubernetes

→ whatever changes in k8s cluster it
will store in ETCd (Replica Creation, Node
update, pod creation etc)

* What is kube-API server?

→ kube apiserver through communicate with
master node and kubeapi will say to
kublet in slave node what to do