Learning ElasticSearch 5.0

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Video 2.3

What Is a Cluster?

In this Video, we are going to take a look at...

- What is an ElasticSearch cluster?
- Nodes defined and explained
- Partitioning the index into shards
- Replicas and failover

What Is an ElasticSearch Cluster?

- One or more instances of ElasticSearch running on a given network

Nodes

- Instance of ElasticSearch
- Handle http and transport protocols
- Types of nodes:
  - Master-eligible node
  - Data node

About Shards

- Partitions that make up an index
- 5 shards per index (default setting)
- Make ElasticSearch distributed
- Failover auto-balances shards

How Shards Work

- Distributed across ElasticSearch instances
- Single Node cluster
  - Development / testing
- Multi-Node cluster
  - Production

Shards, a Closer Look (5 Primary Shards)

Single Node cluster

Node1

[P0 P1 P2 P3 P4]

Multi-Node cluster

Node1

[P0 P1 P3]

Node2

[P2 P4]

* P = Primary shard

Replicas and Failover

- Duplication of primary shard
- Takes over if primary fails
- Node rejoins cluster after failure
- New node synchronizes with others

Replicas, a Closer Look (2 Nodes, 5 Shards and 1 Replica)

Node1
[P0 P1 P2 R3 R4]

Node1
[P0 P1 P2 R3 R4]

* P = Primary shard
  R = Replica shard

Node2
[R0 R1 R2 P3 P4]
* cluster status: GREEN (good)

Node2 [Started & Synced]
[R0 R1 R2 P3 P4]
* cluster status: GREEN (good)

Node2 [FAILED]
~~[R0 R1 R2 P3 P4]~~
* cluster status: YELLOW (warning)

Next Video

Setting Shards and Replicas