SCALE YOUR  elasticsearch CLUSTER

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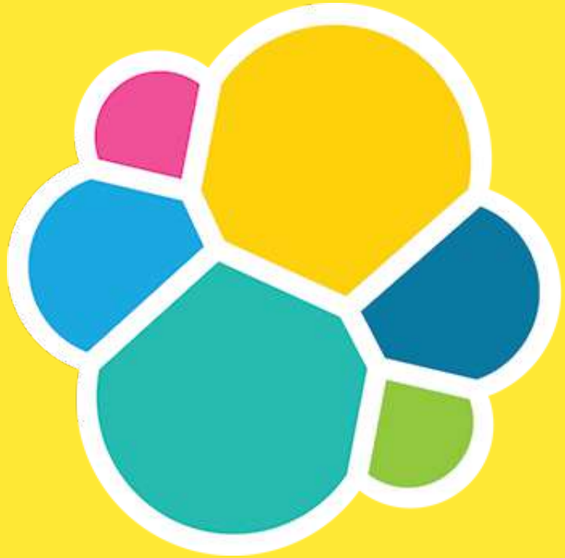

elastic

DEVELOPER

AGENDA

LIFECYCLE MANAGEMENT

FROZEN INDICES

ROLLUPS

Strigo

https://github.com/xeraa/scale-elasticsearch-workshop#workshop

LIFECYCLE MANAGEMENT

INDEX LIFECYCLE MANAGEMENT (ILM)




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FEATURES & ORDER

https://github.com/elastic/elasticsearch/blob/7.7/x-pack/plugin/core/src/main/java/org/elasticsearch/xpack/core/ilm/TimeseriesLifecycleType.java

```
static final List<String> ORDERED_VALID_HOT_ACTIONS = Arrays.asList(
  SetPriorityAction.NAME, UnfollowAction.NAME, RolloverAction.NAME
);
static final List<String> ORDERED_VALID_WARM_ACTIONS = Arrays.asList(
  SetPriorityAction.NAME, UnfollowAction.NAME, ReadOnlyAction.NAME,
        AllocateAction.NAME, ShrinkAction.NAME, ForceMergeAction.NAME
);
static final List<String> ORDERED_VALID_COLD_ACTIONS = Arrays.asList(
  SetPriorityAction.NAME, UnfollowAction.NAME, AllocateAction.NAME, FreezeAction.NAME
);
static final List<String> ORDERED_VALID_DELETE_ACTIONS = Arrays.asList(
  WaitForSnapshotAction.NAME, DeleteAction.NAME
);
```

TIMING

MIN_AGE: INDEX AGE OR ROLLOVER DATE

PREVIOUS PHASE MUST HAVE FINISHED

WHAT ABOUT ELASTIC CURATOR?

SNAPSHOT LIFECYCLE MANAGEMENT (SLM)

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Workshop: Step 1 to 10

FROZEN INDICES

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RATIO HEAP : STORAGE

INDEX > FROZEN INDEX > CLOSED INDEX

FROZEN INDEX

READ-ONLY

NO MEMORY

THROTTLED THREAD POOL

1 PARALLEL SEARCH / NODE

100 IN QUEUE

Demo: Step 11

PRE_FILTER_SHARD_SIZE

ADDITIONAL ROUND TRIP

SKIP IMPOSSIBLE SHARDS

DATE RANGE FILTER

ROLLUPS

think of the bytes

Workshop: Step 12 to 17

CONCLUSION

CODE

https://github.com/xeraa/scale-elasticsearch

https://github.com/xeraa/scale-elasticsearch-workshop

RECAP

LIFECYCLE MANAGEMENT

FROZEN INDICES

ROLLUPS

Data 2 configurations

gcp.data.highio.1 Data Ingest Master

An I/O optimized Elasticsearch instance.

Fault tolerance

○ 1 zone ◉ 2 zones ○ 3 zones

RAM per Node

1 GB | 2 GB | **4 GB** | 8 GB | 16 GB | 32 GB | 64 GB

× **Nodes** 1 = **RAM per Zone** 4 GB

Summary

4 GB RAM | 120 GB storage × 1 node × 2 zones = 8 GB RAM | 240 GB storage

› User setting overrides

gcp.data.highstorage.1 Data Ingest Master

A storage optimized Elasticsearch instance.

Fault tolerance

○ 1 zone ◉ 2 zones ○ 3 zones

RAM per Node

2 GB | **4 GB** | 8 GB | 16 GB | 32 GB | 64 GB

× **Nodes** 1 = **RAM per Zone** 4 GB

Summary

4 GB RAM | 400 GB storage × 1 node × 2 zones = 8 GB RAM | 800 GB storage

› User setting overrides

Machine Learning 1 configuration

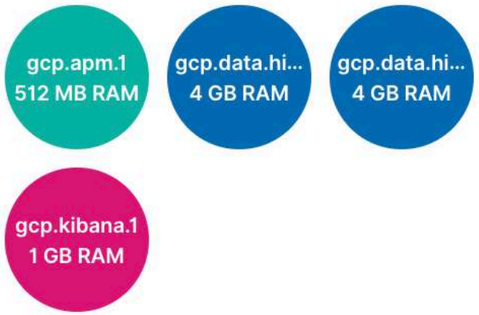
gcp.ml.1 Machine Learning

Summary

Version	v7.1.1
ES data memory	16 GB
ES data storage	1.02 TB
Total memory	17.5 GB
Total storage	1.02 TB
Hourly rate	$0.7328
Monthly rate	$534.94

Architecture

Zone 1



Zone 2

- gcp.apm.1
- gcp.data.highio.1
- gcp.data.highstorage.1
- gcp.kibana.1

Questions?

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