elasticsearch

Elasticsearch 7.x

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SYDLE

elasticsearch

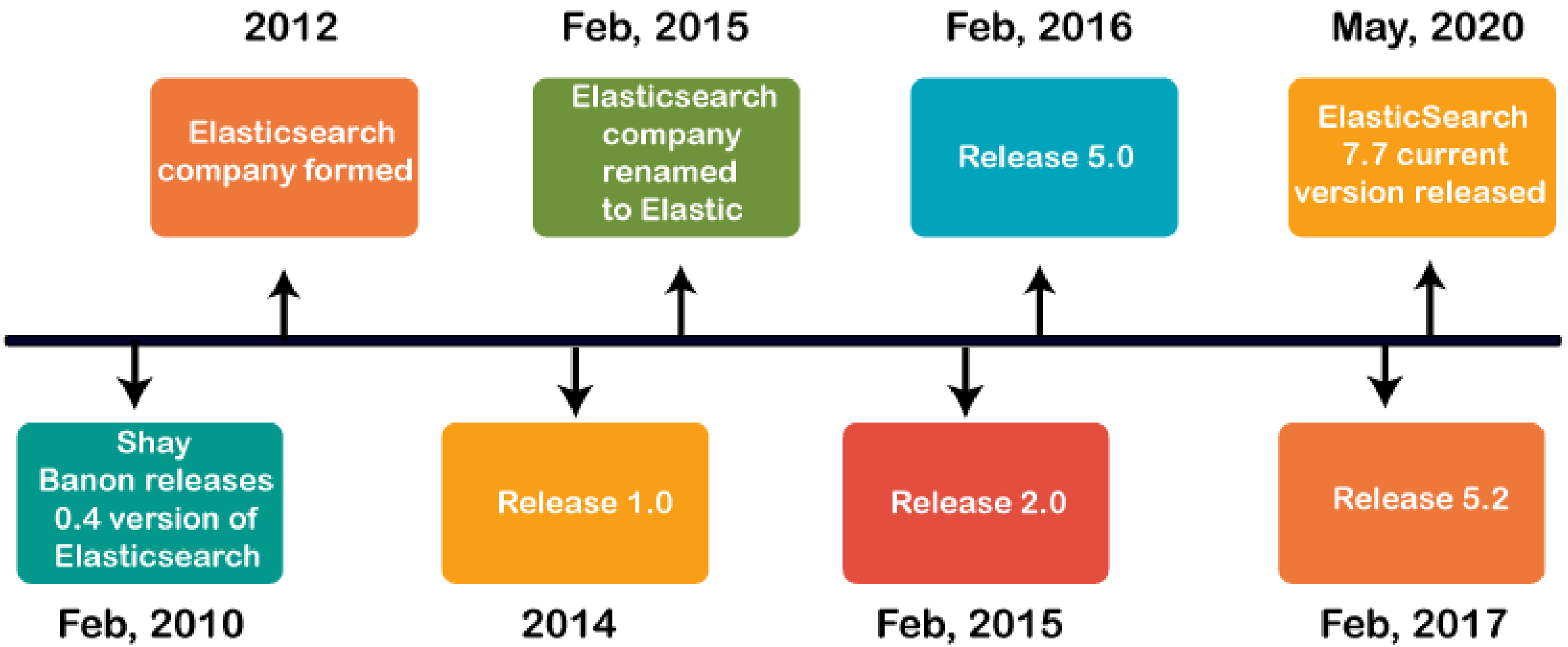
Agenda

- Architecture
- Cluster Configuration
- Essential Commands
- Backup / Restore
- Graphical Interface Clients

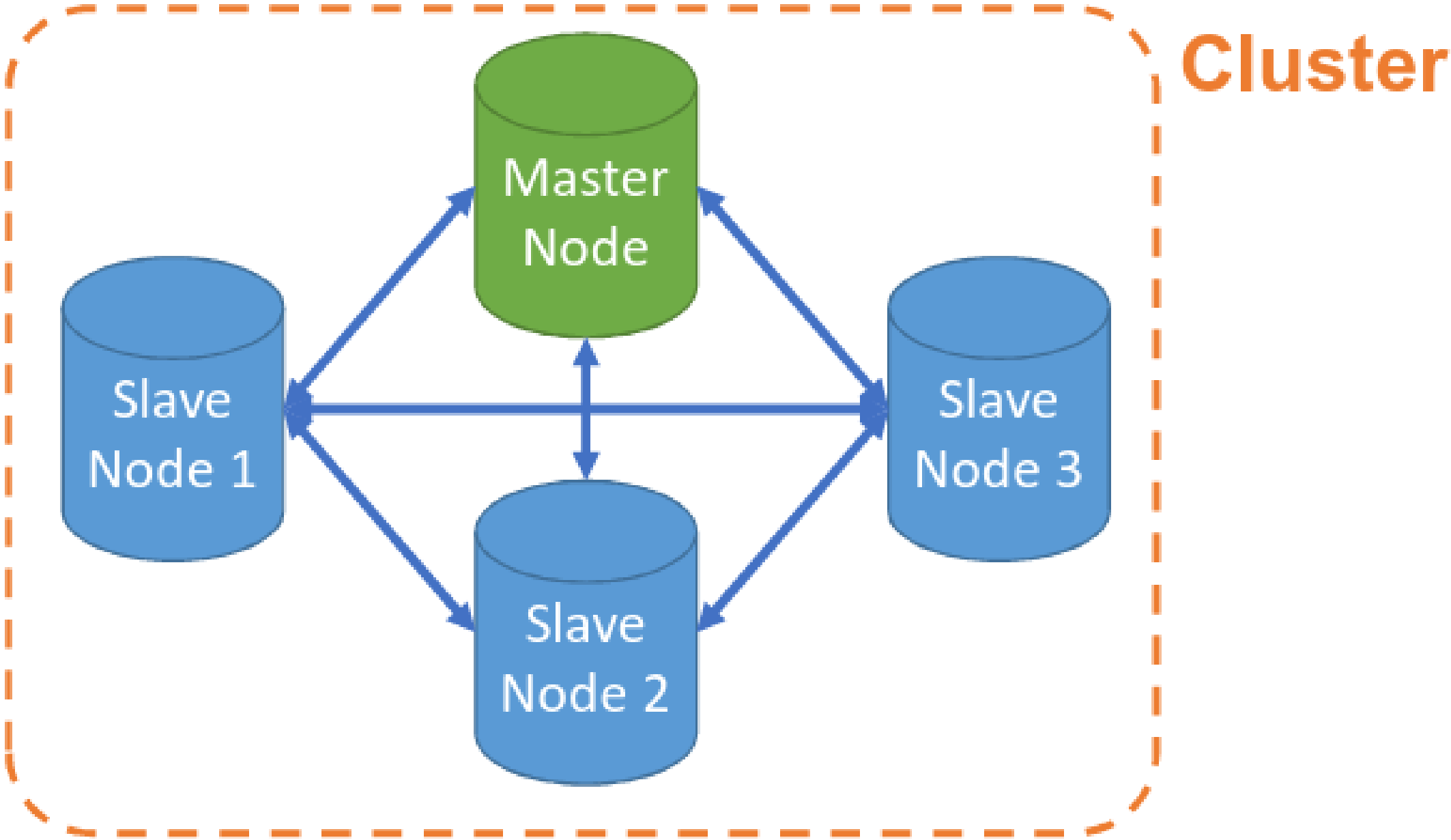
elasticsearch

Elasticsearch Architecture

Elasticsearch - Architecture



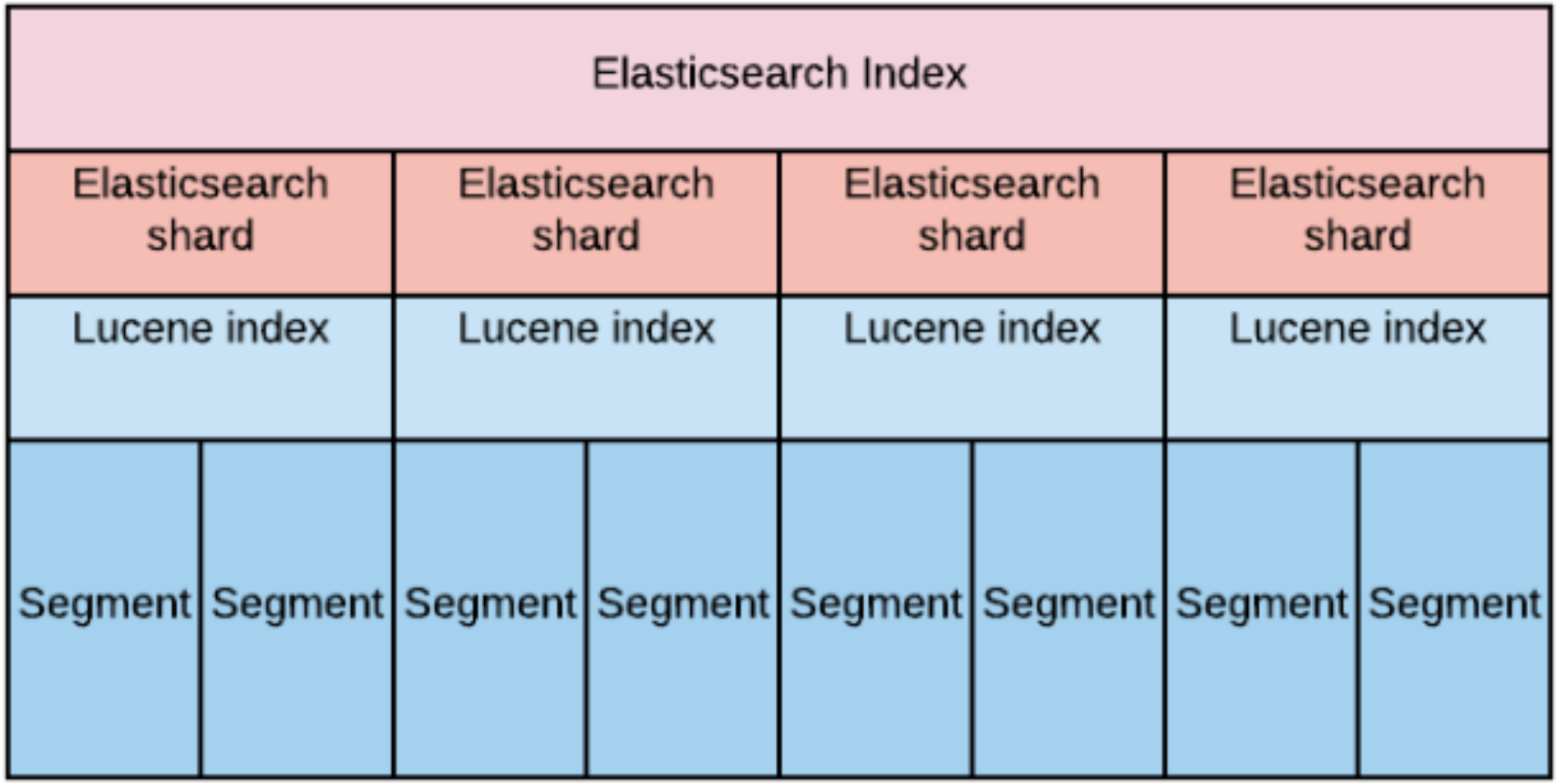
Elasticsearch - Architecture



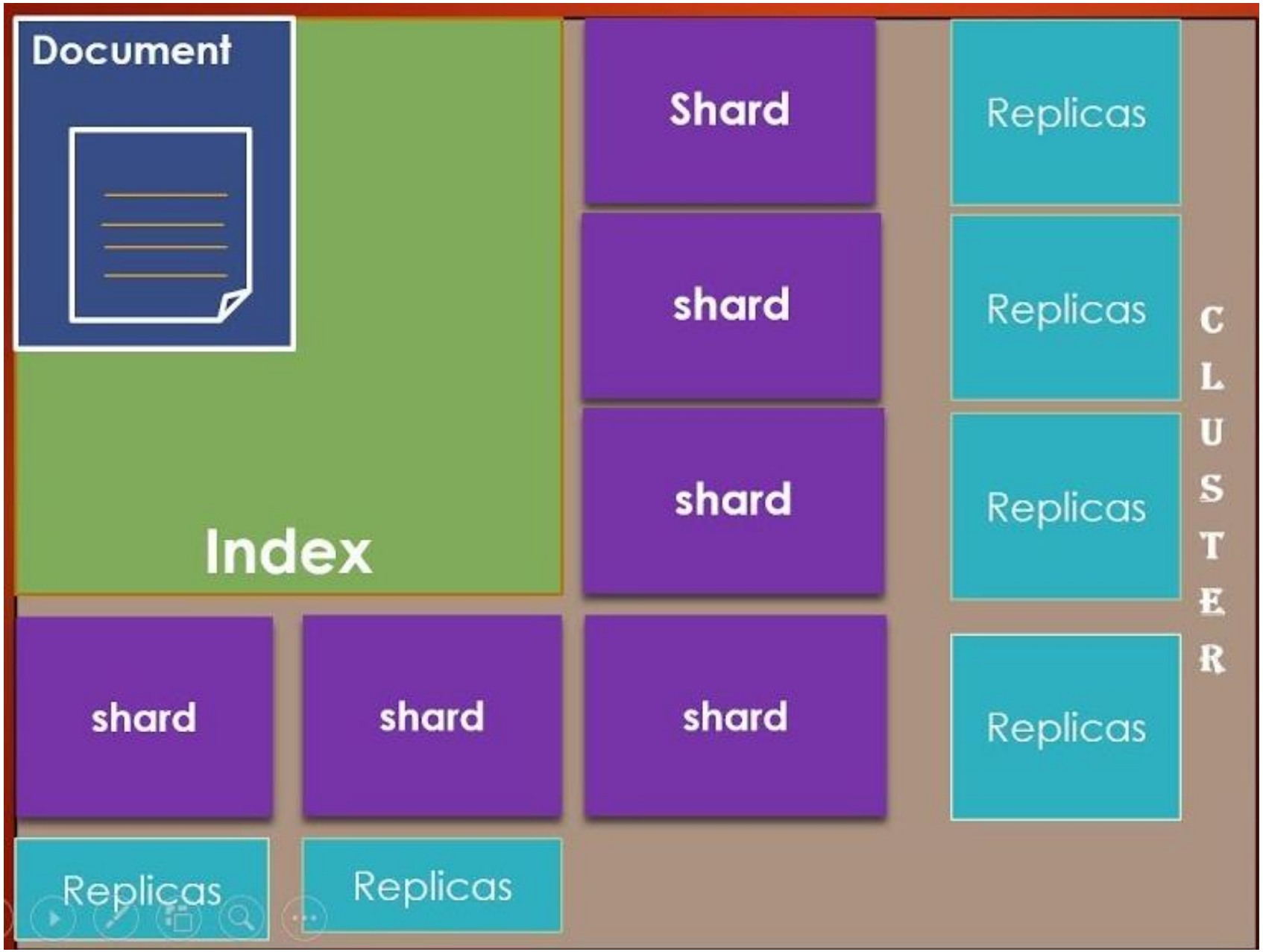
Elasticsearch - Architecture

Lucene segments

Each Elasticsearch index is divided into shards. Shards are both logical and physical division of an index. Each Elasticsearch shard is a Lucene index. The maximum number of documents you can have in a Lucene index is 2,147,483,519.
The Lucene index is divided into smaller files called segments. A segment is a small Lucene index. Lucene searches in all segments sequentially.

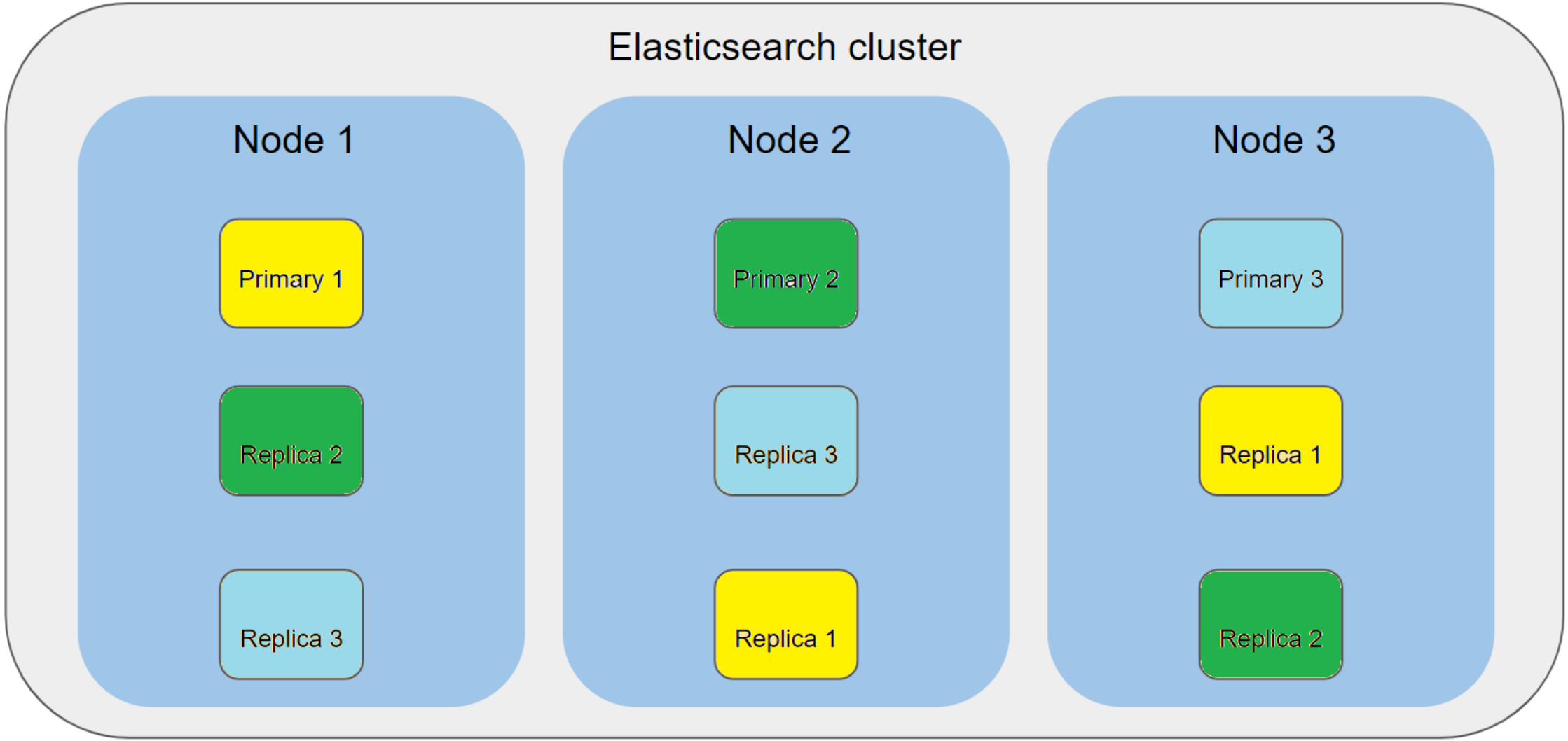


Elasticsearch - Architecture

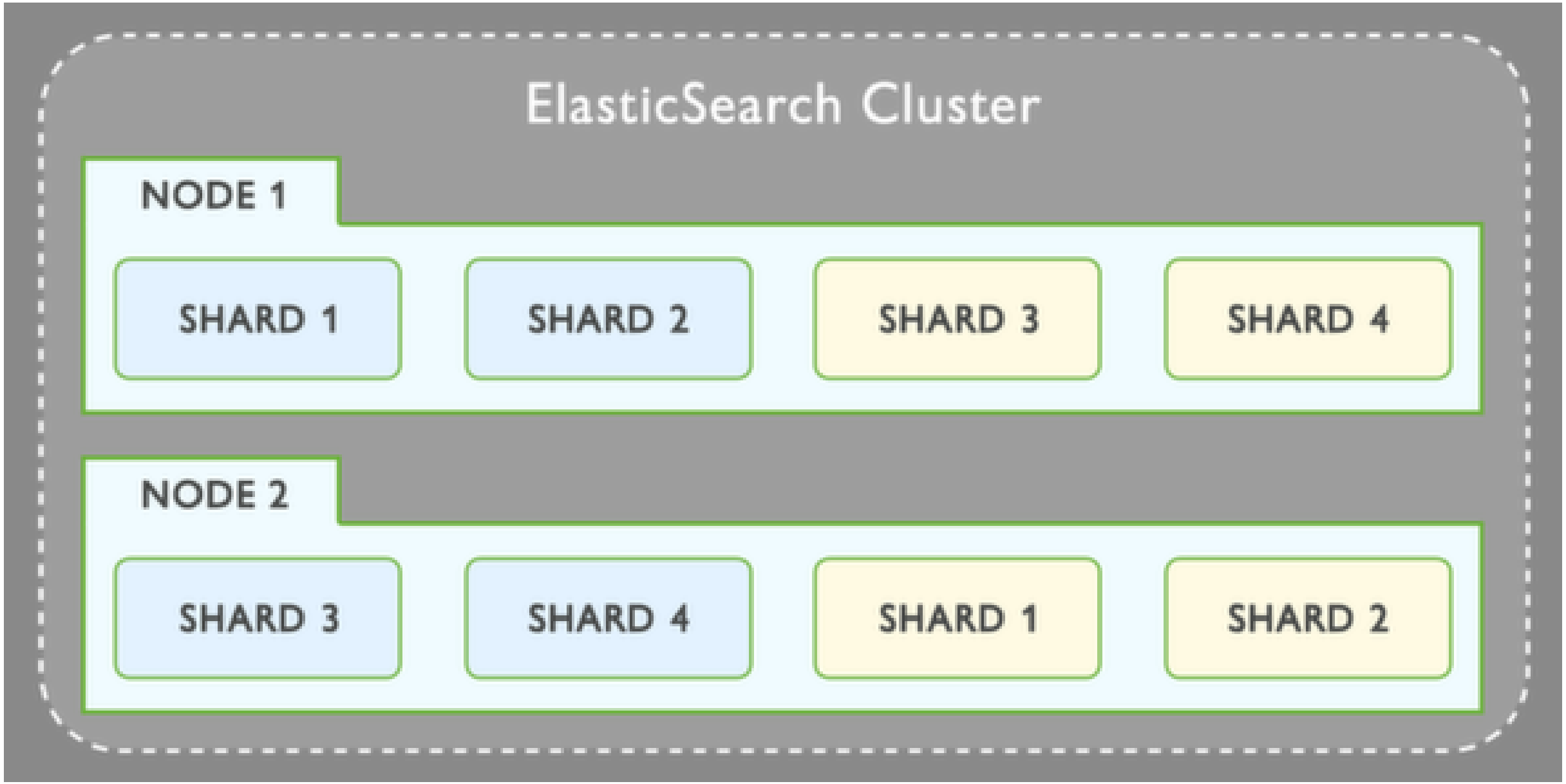


Elasticsearch - Architecture

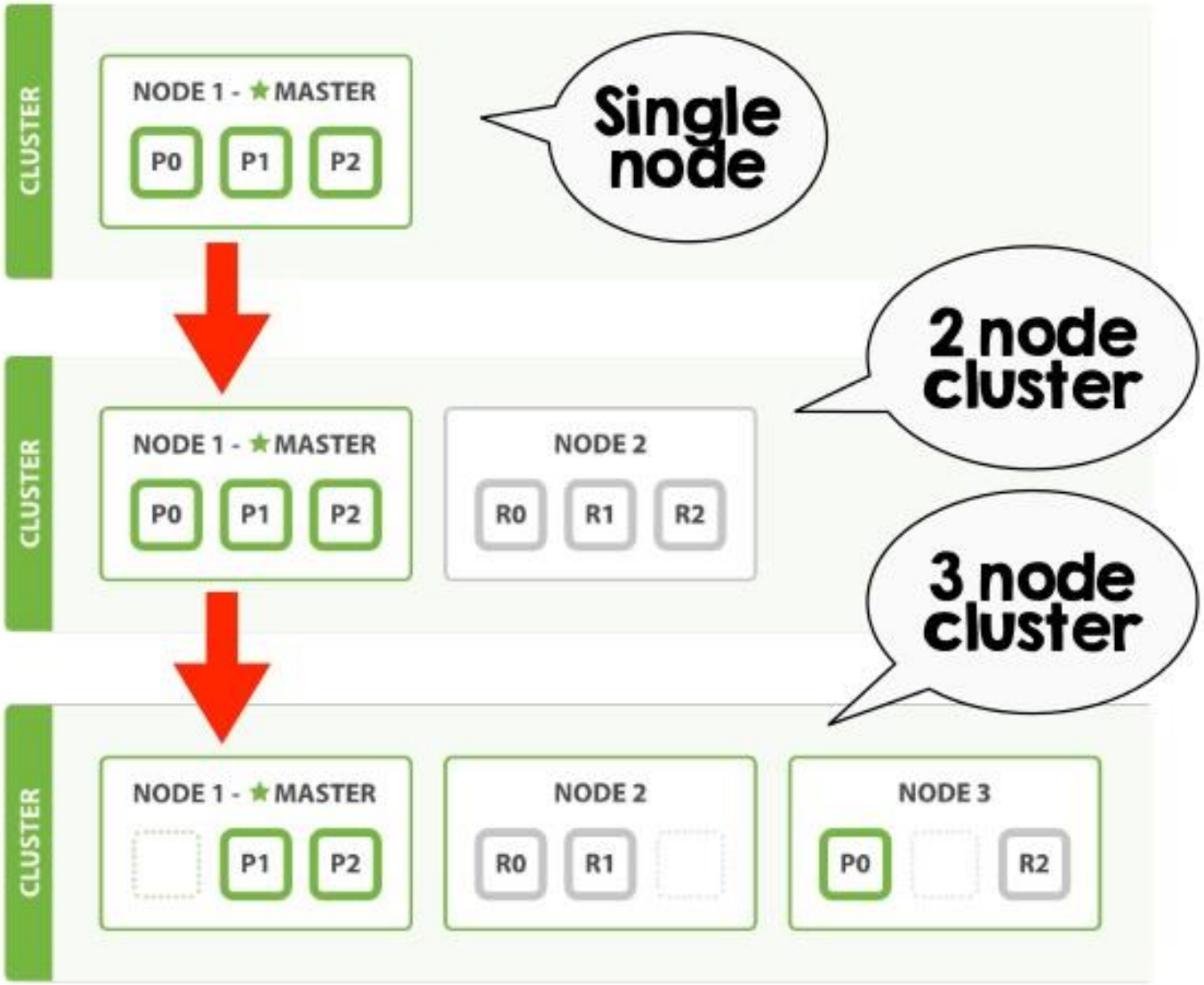
The number of replica shards acts as a multiplier for the number of primary shards. That means that if you have an index with 3 primary shards and 2 replicas each primary shard will have 2 replicas for a total of 9 shards (3 primary and 6 replicas).



Elasticsearch - Architecture



Elasticsearch - Architecture



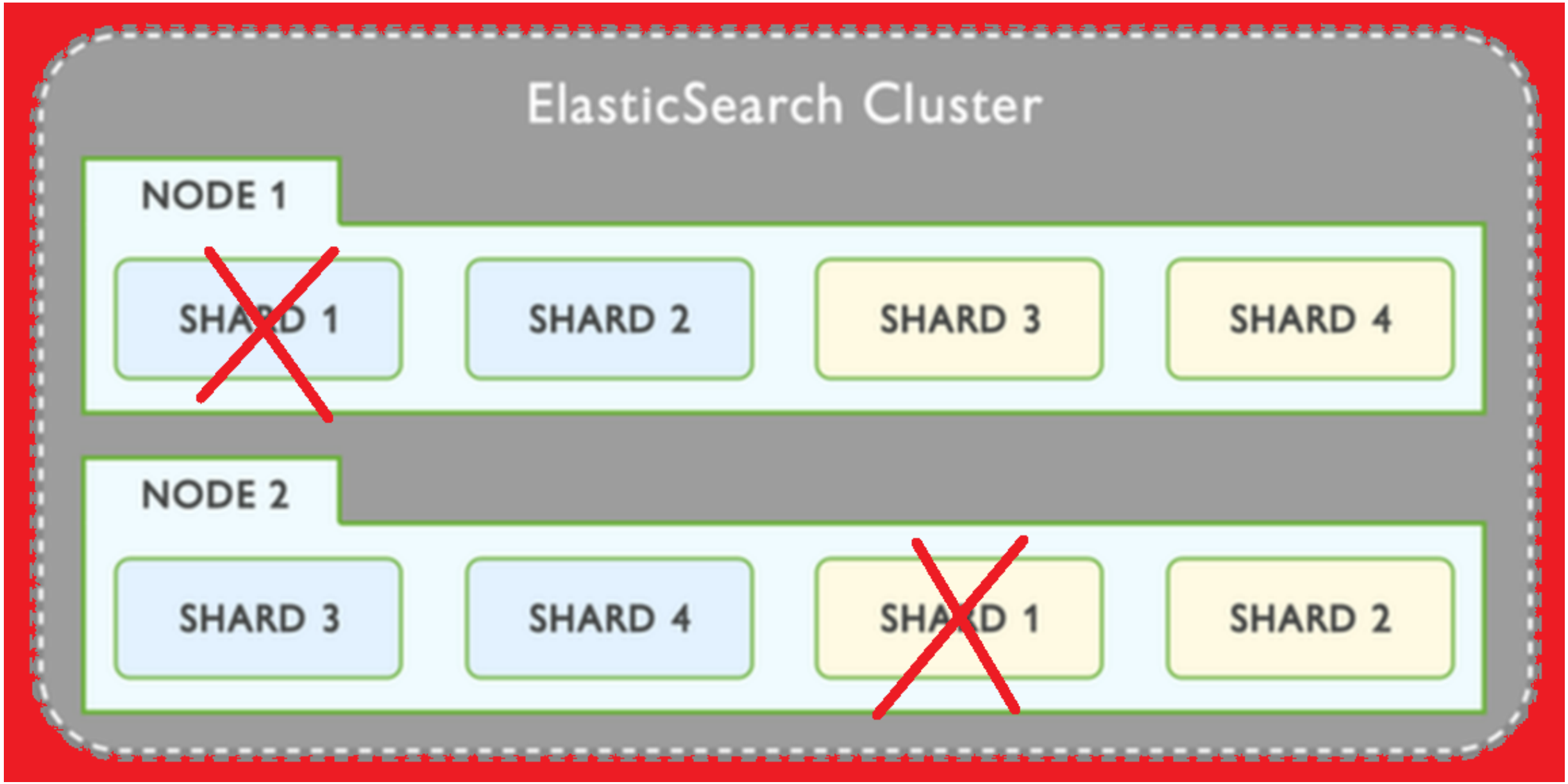
MongoDB - Architecture

- **RED:** A red cluster status means that at least one primary shard and its replicas are not allocated to a node. A red status indicates that not only has the primary shard been lost, but also that a replica has not been promoted to primary in its place.

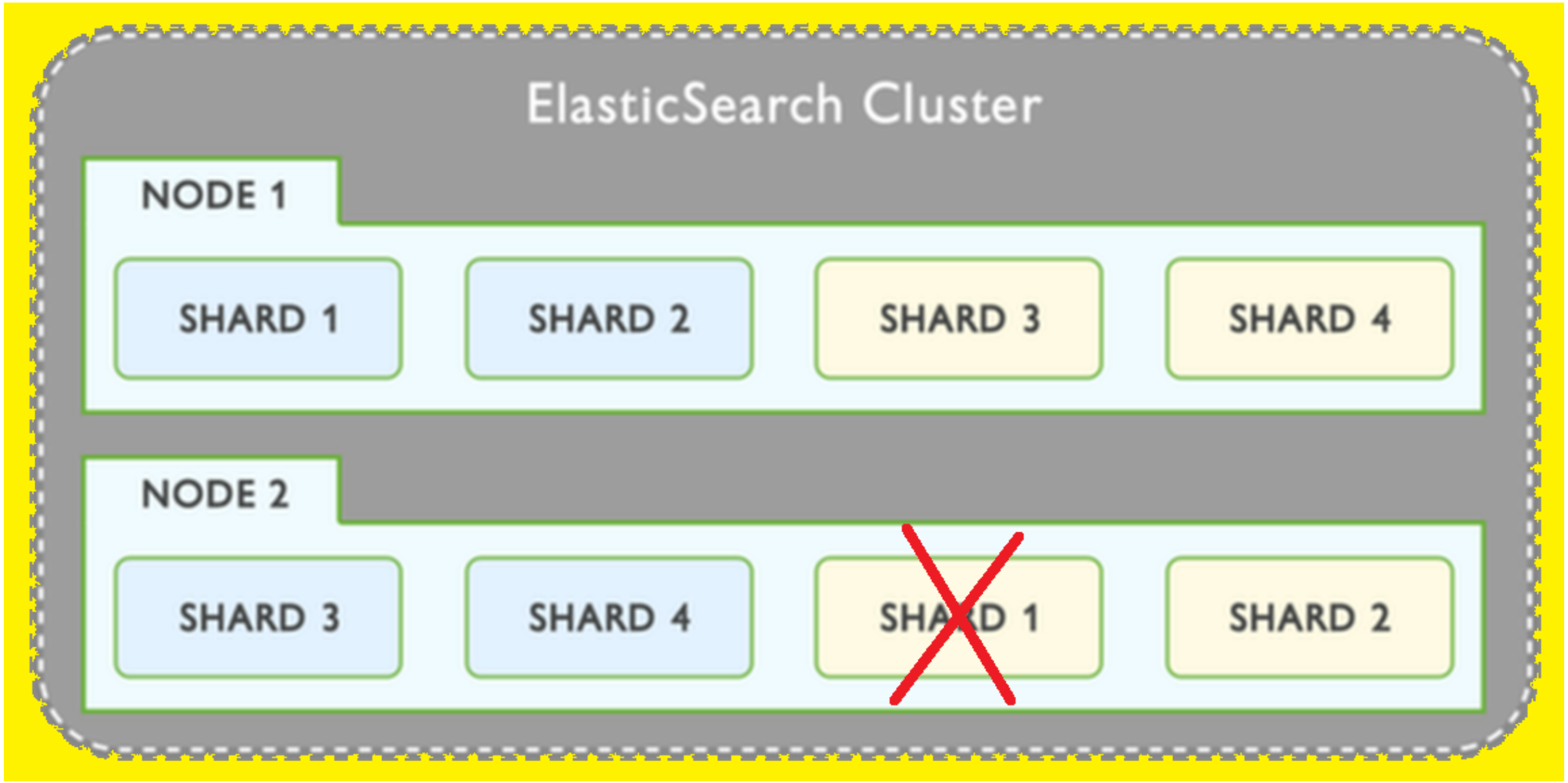
- **YELLOW:** A yellow cluster status means that the primary shards for all indices are allocated to nodes in a cluster, but the replica shards for at least one index are not.

- **GREEN:** Great. Your cluster is fully operational. Elasticsearch is able to allocate all shards and replicas to machines within the cluster.

Elasticsearch - Architecture



Elasticsearch - Architecture



elasticsearch

Elasticsearch
Cluster Configuration

Elasticsearch – Cluster Configuration

```
# Download JDK 11.0.6
https://download.oracle.com/otn/java/jdk/11.0.6+8/90eb79fb590d45c8971362673c5ab495/jdk-11.0.6_linux-x64_bin.rpm

$ rpm -ivh jdk-11.0.6_linux-x64_bin.rpm

# Download Elasticsearch
$ wget https://artifacts.elastic.co/downloads/elasticsearch/elasticsearch-7.6.1-x86_64.rpm

$ rpm -ivh elasticsearch-7.6.1-x86_64.rpm

$ chown -R elasticsearch.elasticsearch /var/lib/elasticsearch

$ vim /usr/lib/systemd/system/elasticsearch.service
LimitNOFILE=65536
LimitNPROC=65536
LimitMEMLOCK=infinity

$ systemctl daemon-reload

$ vim /etc/security/limits.conf
elasticsearch  -  nofile  65536
elasticsearch soft memlock unlimited
elasticsearch hard memlock unlimited
```

Elasticsearch – Cluster Configuration

```
/elasticsearch
`-- cluster
    |-- elasticsearch-1
    |   |-- data
    |   |-- elasticsearch-7.6.1
    |   |   |-- bin
    |   |   |-- config
    |   |   |   |-- elasticsearch.yml
    |   |   |   |-- jvm.options
    |   |   |-- logs
    |   |   |   |-- gc.log
    |   `-- log
    |       |-- cluster.log
    |-- elasticsearch-2
    |   |-- data
    |   |-- elasticsearch-7.6.1
    |   |   |-- bin
    |   |   |-- config
    |   |   |   |-- elasticsearch.yml
    |   |   |   |-- jvm.options
    |   |   |-- logs
    |   |   |   |-- gc.log
    |   `-- log
    |       |-- cluster.log
    |-- elasticsearch-3
    |   |-- data
    |   |-- elasticsearch-7.6.1
    |   |   |-- bin
    |   |   |-- config
    |   |   |   |-- elasticsearch.yml
    |   |   |   |-- jvm.options
    |   |   |-- logs
    |   |   |   |-- gc.log
    |   `-- log
    |       |-- cluster.log
```

Elasticsearch – Cluster Configuration

$ cat /elasticsearch/cluster/elasticsearch-1/elasticsearch-7.6.1/config/elasticsearch.yml

```
cluster.name: cluster
node.name: elasticsearch01
node.master: true
node.data: true
node.ingest: false
bootstrap.memory_lock: true
network.host: elasticsearch01
http.port: 9200
#transport.tcp.port: 9300
discovery.zen.ping.unicast.hosts: ["elasticsearch01","elasticsearch02:9301","elasticsearch03:9302"]
action.destructive_requires_name: false
bootstrap.system_call_filter: false
action.auto_create_index: ".watches,.triggered_watches,.watcher-history-*"
path.logs: /elasticsearch/cluster/elasticsearch-1/log
path.data: /elasticsearch/cluster/elasticsearch-1/data
cluster.initial_master_nodes: elasticsearch01, elasticsearch02, elasticsearch03
discovery.zen.minimum_master_nodes: 2
gateway.recover_after_nodes: 2
gateway.expected_nodes: 3
gateway.recover_after_time: 10m
cluster.routing.allocation.disk.threshold_enabled: false
http.max_initial_line_length : 10mb
```

Elasticsearch – Cluster Configuration

$ cat /elasticsearch/cluster/elasticsearch-2/elasticsearch-7.6.1/config/elasticsearch.yml

```
cluster.name: cluster
node.name: elasticsearch02
node.master: true
node.data: true
node.ingest: false
bootstrap.memory_lock: true
network.host: elasticsearch02
http.port: 9201
#transport.tcp.port: 9301
discovery.zen.ping.unicast.hosts: ["elasticsearch01","elasticsearch02:9301","elasticsearch03:9302"]
action.destructive_requires_name: false
bootstrap.system_call_filter: false
action.auto_create_index: ".watches,.triggered_watches,.watcher-history-*"
path.logs: /elasticsearch/cluster/elasticsearch-2/log
path.data: /elasticsearch/cluster/elasticsearch-2/data
cluster.initial_master_nodes: elasticsearch01, elasticsearch02, elasticsearch03
discovery.zen.minimum_master_nodes: 2
gateway.recover_after_nodes: 2
gateway.expected_nodes: 3
gateway.recover_after_time: 10m
cluster.routing.allocation.disk.threshold_enabled: false
http.max_initial_line_length : 10mb
```

Elasticsearch – Cluster Configuration

$ cat /elasticsearch/cluster/elasticsearch-3/elasticsearch-7.6.1/config/elasticsearch.yml

```
cluster.name: cluster
node.name: elasticsearch03
node.master: true
node.data: true
node.ingest: false
bootstrap.memory_lock: true
network.host: elasticsearch03
http.port: 9202
#transport.tcp.port: 9302
discovery.zen.ping.unicast.hosts: ["elasticsearch01","elasticsearch02:9301","elasticsearch03:9302"]
action.destructive_requires_name: false
bootstrap.system_call_filter: false
action.auto_create_index: ".watches,.triggered_watches,.watcher-history-*"
path.logs: /elasticsearch/cluster/elasticsearch-3/log
path.data: /elasticsearch/cluster/elasticsearch-3/data
cluster.initial_master_nodes: elasticsearch01, elasticsearch02, elasticsearch03
discovery.zen.minimum_master_nodes: 2
gateway.recover_after_nodes: 2
gateway.expected_nodes: 3
gateway.recover_after_time: 10m
cluster.routing.allocation.disk.threshold_enabled: false
http.max_initial_line_length : 10mb
```

Elasticsearch – Cluster Configuration

$ vim /elasticsearch/cluster/elasticsearch-x/elasticsearch-7.6.1/config/jvm.options

```
################################################################
## IMPORTANT: JVM heap size
################################################################
## You should always set the min and max JVM heap size to the same value. For example, to set
## the heap to 4 GB, set:
##
## -Xms4g
## -Xmx4g
##
## See https://www.elastic.co/guide/en/elasticsearch/reference/current/heap-size.html
## for more information
################################################################

# Xms represents the initial size of total heap space
# Xmx represents the maximum size of total heap space

-Xms1g
-Xmx1g

## G1GC Configuration
# NOTE: G1 GC is only supported on JDK version 10 or later
# to use G1GC, uncomment the next two lines and update the version on the
# following three lines to your version of the JDK
10-13:-XX:-UseConcMarkSweepGC
10-13:-XX:-UseCMSInitiatingOccupancyOnly
11-:-XX:+UseG1GC
11-:-XX:G1ReservePercent=25
11-:-XX:InitiatingHeapOccupancyPercent=30
```

Elasticsearch – Cluster Configuration

```
$ su - elasticsearch
$ /elasticsearch/cluster/elasticsearch-1/elasticsearch-7.6.1/bin/elasticsearch -d
$ /elasticsearch/cluster/elasticsearch-2/elasticsearch-7.6.1/bin/elasticsearch -d
$ /elasticsearch/cluster/elasticsearch-3/elasticsearch-7.6.1/bin/elasticsearch -d
```

```
$ ps aux | grep java
elastic+  2611 47.3 28.3 4924788 1686400 pts/0 SLl  13:05   1:03
/elasticsearch/cluster/elasticsearch-1/elasticsear
h-7.6.1/lib/* org.elasticsearch.bootstrap.Elasticsearch -d

elastic+  2721 49.7 29.2 4938480 1740536 pts/0 SLl  13:05   1:03
/elasticsearch/cluster/elasticsearch-2/elasticsear
h-7.6.1/lib/* org.elasticsearch.bootstrap.Elasticsearch -d

elastic+  2844 50.0 28.3 4931156 1684296 pts/0 SLl  13:06   0:58
/elasticsearch/cluster/elasticsearch-3/elasticsear
h-7.6.1/lib/* org.elasticsearch.bootstrap.Elasticsearch -d
```

```
Obs.: $ systemctl start elasticsearch.service
```

elasticsearch

Elasticsearch Essential Commands

Elasticsearch – Essential Commands

```
$ curl http://elasticsearch01:9200
{
  "name" : "elasticsearch01",
  "cluster_name" : "cluster",
  "cluster_uuid" : "k66-3_5-RnetK3ITEzzGGg",
  "version" : {
    "number" : "7.6.1",
    "build_flavor" : "default",
    "build_type" : "tar",
    "build_hash" : "aa751e09be0a5072e8570670309b1f12348f023b",
    "build_date" : "2020-02-29T00:15:25.529771Z",
    "build_snapshot" : false,
    "lucene_version" : "8.4.0",
    "minimum_wire_compatibility_version" : "6.8.0",
    "minimum_index_compatibility_version" : "6.0.0-beta1"
  },
  "tagline" : "You Know, for Search"
}
```

Elasticsearch – Essential Commands

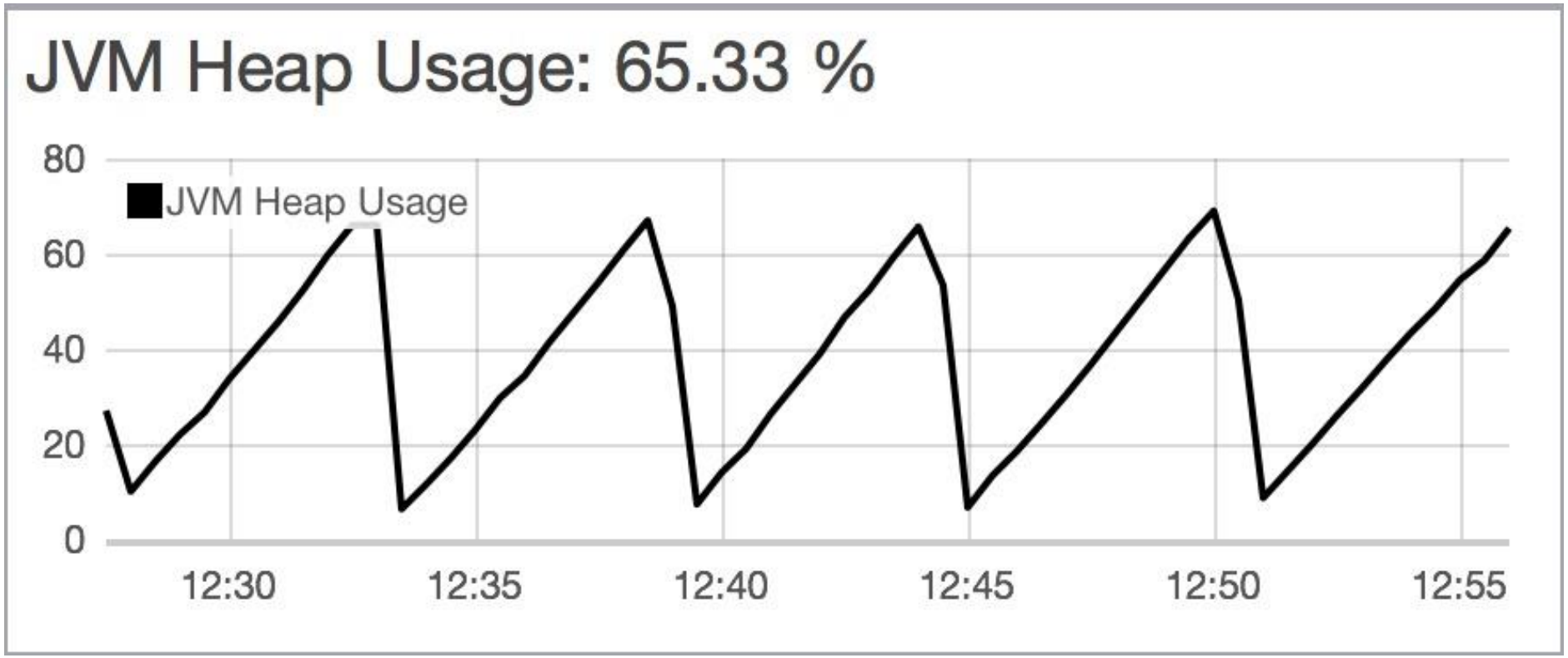
```
$ curl http://elasticsearch01:9200/_cluster/settings?pretty=true
{
  "persistent" : {
    "action" : {
      "search" : {
        "shard_count" : {
          "limit" : "3000"}}
    },
    "cluster" : {
      "routing" : {
        "allocation" : {
          "node_concurrent_incoming_recoveries" : "20",
          "cluster_concurrent_rebalance" : "20",
          "node_concurrent_recoveries" : "20",
          "disk" : {
            "threshold_enabled" : "false"},
          "node_initial_primaries_recoveries" : "40",
          "node_concurrent_outgoing_recoveries" : "20"}
      },
      "max_shards_per_node" : "30000"},
    "indices" : {
      "recovery" : {
        "max_bytes_per_sec" : "100mb"}
    },
    "search" : {
      "max_buckets" : "10000"}
  },
  "transient" : { }
}
```

Elasticsearch – Essential Commands

```
$ curl -H 'Content-Type: application/json' -XPUT 'http://elasticsearch01:9200/_cluster/settings' -d '{
>     "persistent": {
>           "cluster.routing.allocation.node_concurrent_incoming_recoveries": "20",
>           "cluster.routing.allocation.cluster_concurrent_rebalance": "20",
>           "cluster.routing.allocation.node_concurrent_recoveries": "20",
>           "cluster.routing.allocation.node_initial_primaries_recoveries": "40",
>           "cluster.routing.allocation.node_concurrent_outgoing_recoveries": "20",
>           "cluster.max_shards_per_node": "30000",
>           "indices.recovery.max_bytes_per_sec": "100mb",
>           "action.search.shard_count.limit": "3000",
>           "search.max_buckets": 10000,
>           "cluster.routing.allocation.disk.threshold_enabled": "false"
>     }
> }'
{"acknowledged":true}
```

Elasticsearch – Essential Commands

```
$ curl -s http://elasticsearch01:9200/_nodes/elasticsearch01/stats?pretty=true | grep heap
          "heap_used_in_bytes" : 530395136,
          "heap_used_percent" : 49,
          "heap_committed_in_bytes" : 1073741824,
          "heap_max_in_bytes" : 1073741824,
          "non_heap_used_in_bytes" : 122030336,
          "non_heap_committed_in_bytes" : 133636096
```

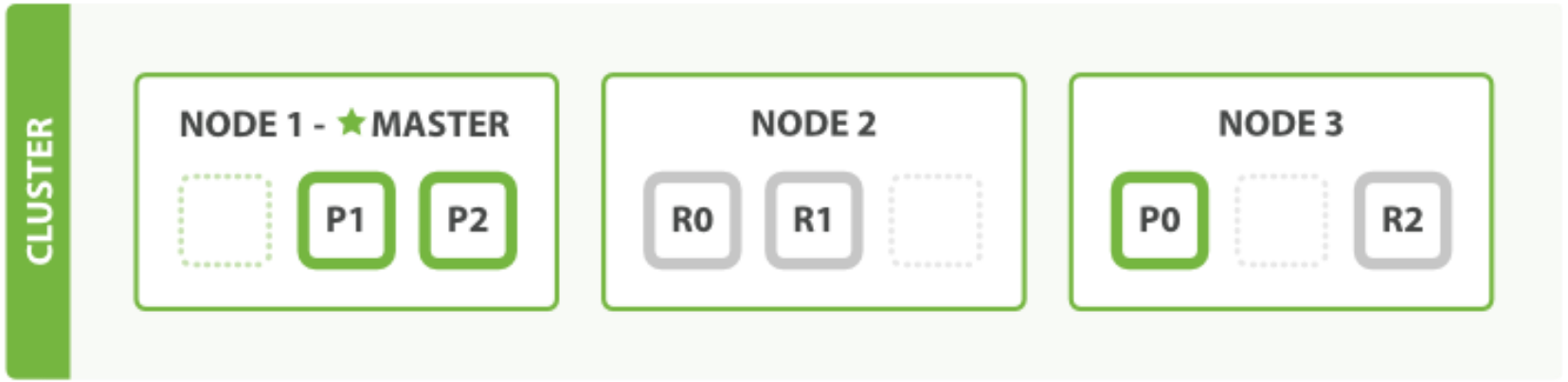


Elasticsearch – Essential Commands

```
$ curl -XGET http://elasticsearch01:9200/_cat/nodes?v
ip           heap.percent ram.percent cpu load_1m load_5m load_15m node.role master name
192.168.1.75           23          93   6    0.04    0.24     0.32 dlm       -      elasticsearch01
192.168.1.75           21          93   6    0.04    0.24     0.32 dlm       *      elasticsearch02
192.168.1.75           39          93   6    0.04    0.24     0.32 dlm       -      elasticsearch03

$ curl http://elasticsearch01:9200/_cat/health?v
cluster status node.total node.data shards pri relo init unassign pending_tasks active_shards_percent
cluster green           3         3     22  11    0    0        0             0                100.0%

$ curl http://elasticsearch01:9200/_cat/indices?v
health status index    uuid                   pri rep docs.count docs.deleted store.size pri.store.size
green  open   cars     iLMSr-AkR7qxdliCav17JA   3   1       1000            0    882.2kb        441.1kb
green  open   bank     -l2U7PwxTomxUy6Q9MTlVA   1   1       1000            0    857.4kb        428.7kb
green  open   product  yb-2i07RQU6XSgMDmodZUw   1   1       1000            0    855.1kb        427.5kb
green  open   item     8-89M8A8RViwAxn3woJWEQ   1   1       1000            0    828.3kb        414.1kb
green  open   elements Coi4Im1tQLiaX9qB_NJ1YA   5   1       1000            0    950.8kb        475.4kb

$ curl http://elasticsearch01:9200/_cat/tasks?v
action                        task_id    type      timestamp running_time ip            node
cluster:monitor/tasks/lists    FvijA:1745 transport 16:25:52  4.7ms        192.168.1.75 elasticsearch01
cluster:monitor/tasks/lists[n] FvijA:1746 direct    16:25:52  3.1ms        192.168.1.75 elasticsearch01
cluster:monitor/tasks/lists[n] 5_mhL:1729 transport 16:25:52  4.5ms        192.168.1.75 elasticsearch03
cluster:monitor/tasks/lists[n] eYQ3W:3000 transport 16:25:52  4.3ms        192.168.1.75 elasticsearch02
```

Elasticsearch – Essential Commands

```
$ curl 'http://elasticsearch01:9200/_cat/indices?s=pri.store.size:desc&v'
health status index    uuid                   pri rep docs.count docs.deleted store.size pri.store.size
green  open   elements Coi4Im1tQLiaX9qB_NJ1YA   5   1       1000            0    950.8kb        475.4kb
green  open   cars     iLMSr-AkR7qxdliCav17JA   3   1       1000            0    882.2kb        441.1kb
green  open   bank     -l2U7PwxTomxUy6Q9MTlVA   1   1       1000            0    857.4kb        428.7kb
green  open   product  yb-2i07RQU6XSgMDmodZUw   1   1       1000            0    855.1kb        427.5kb
green  open   item     8-89M8A8RViwAxn3woJWEQ   1   1       1000            0    828.3kb        414.1kb

$ curl http://elasticsearch01:9200/_cat/allocation?v
shards disk.indices disk.used disk.avail disk.total disk.percent host          ip            node
     7        1.3mb    16.8gb     78.4gb     95.3gb           17 elasticsearch02 192.168.1.75 elasticsearch02
     8        1.4mb    16.8gb     78.4gb     95.3gb           17 elasticsearch03 192.168.1.75 elasticsearch03
     7        1.3mb    16.8gb     78.4gb     95.3gb           17 elasticsearch01 192.168.1.75 elasticsearch01
```



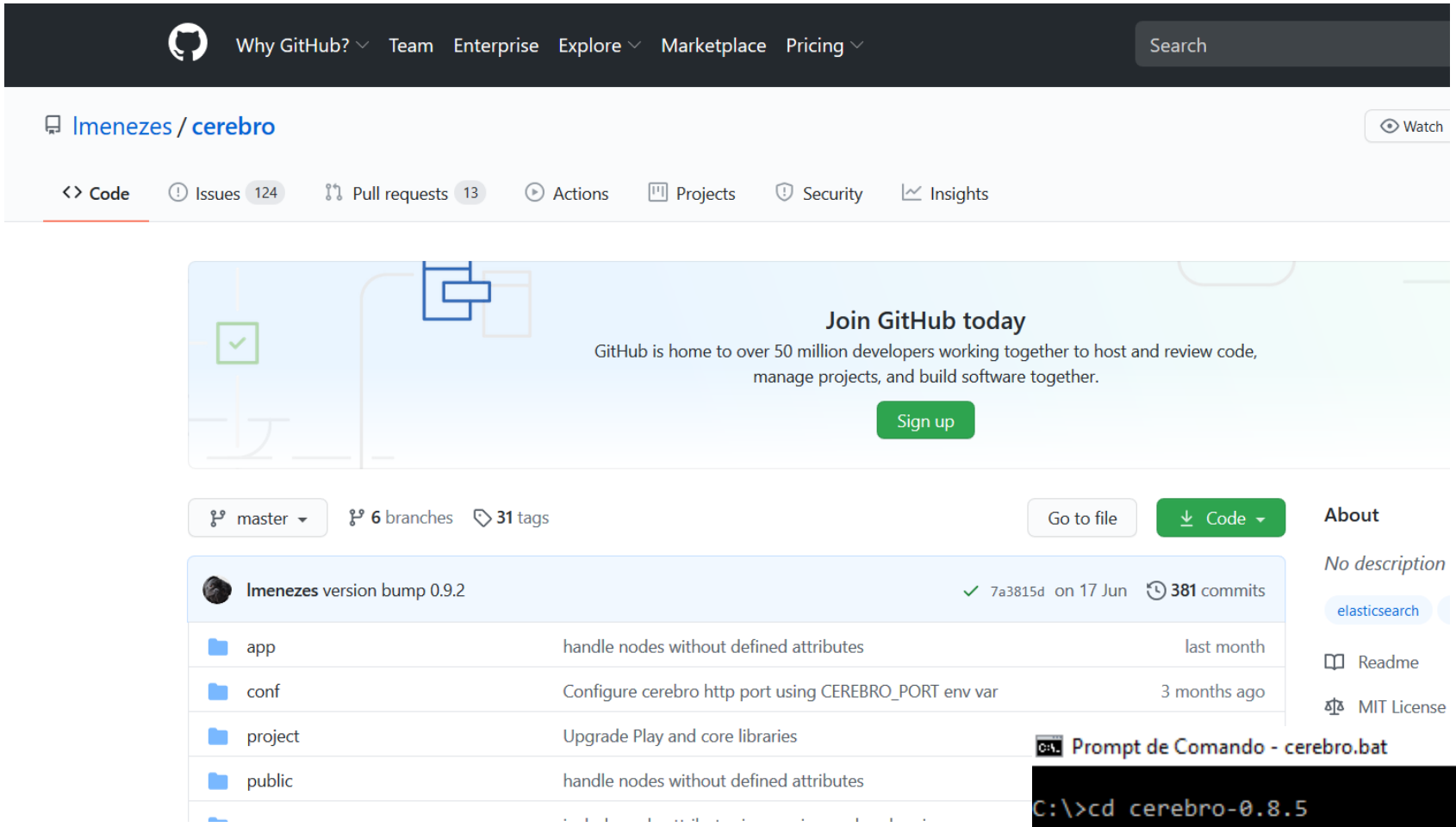
Elasticsearch – Essential Commands

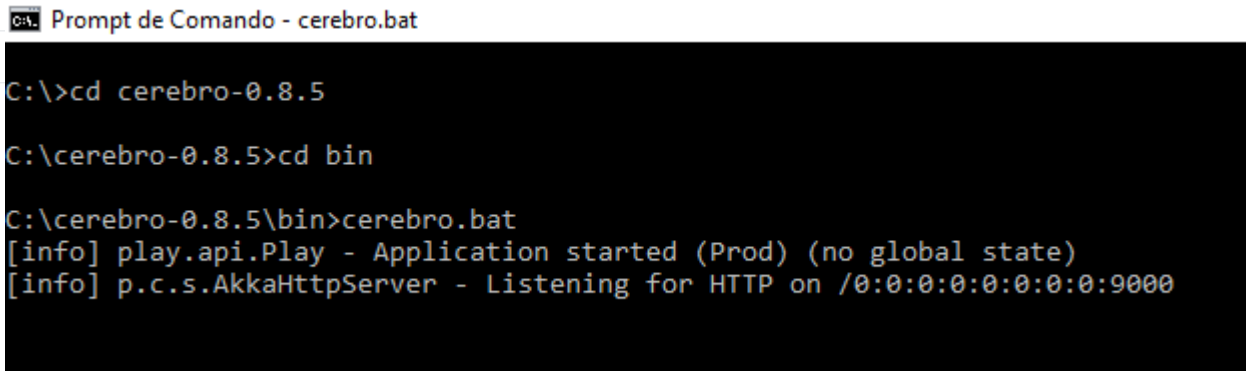
```
$ curl http://elasticsearch01:9200/_settings?pretty=true
{
  "cars" : {
    "settings" : {
      "index" : {
        "creation_date" : "1594667605760",
        "number_of_shards" : "3",
        "number_of_replicas" : "1",
        "uuid" : "iLMSr-AkR7qxdliCav17JA",
        "version" : {
          "created" : "7060199"
        },
        "provided_name" : "cars"
      }
    }
  },
  "bank" : {
    "settings" : {
      "index" : {
        "creation_date" : "1594667268396",
        "number_of_shards" : "1",
        "number_of_replicas" : "1",
        "uuid" : "-l2U7PwxTomxUy6Q9MTlVA",
        "version" : {
          "created" : "7060199"
        },
        "provided_name" : "bank"
      }
    }
  },
```

Elasticsearch – Essential Commands

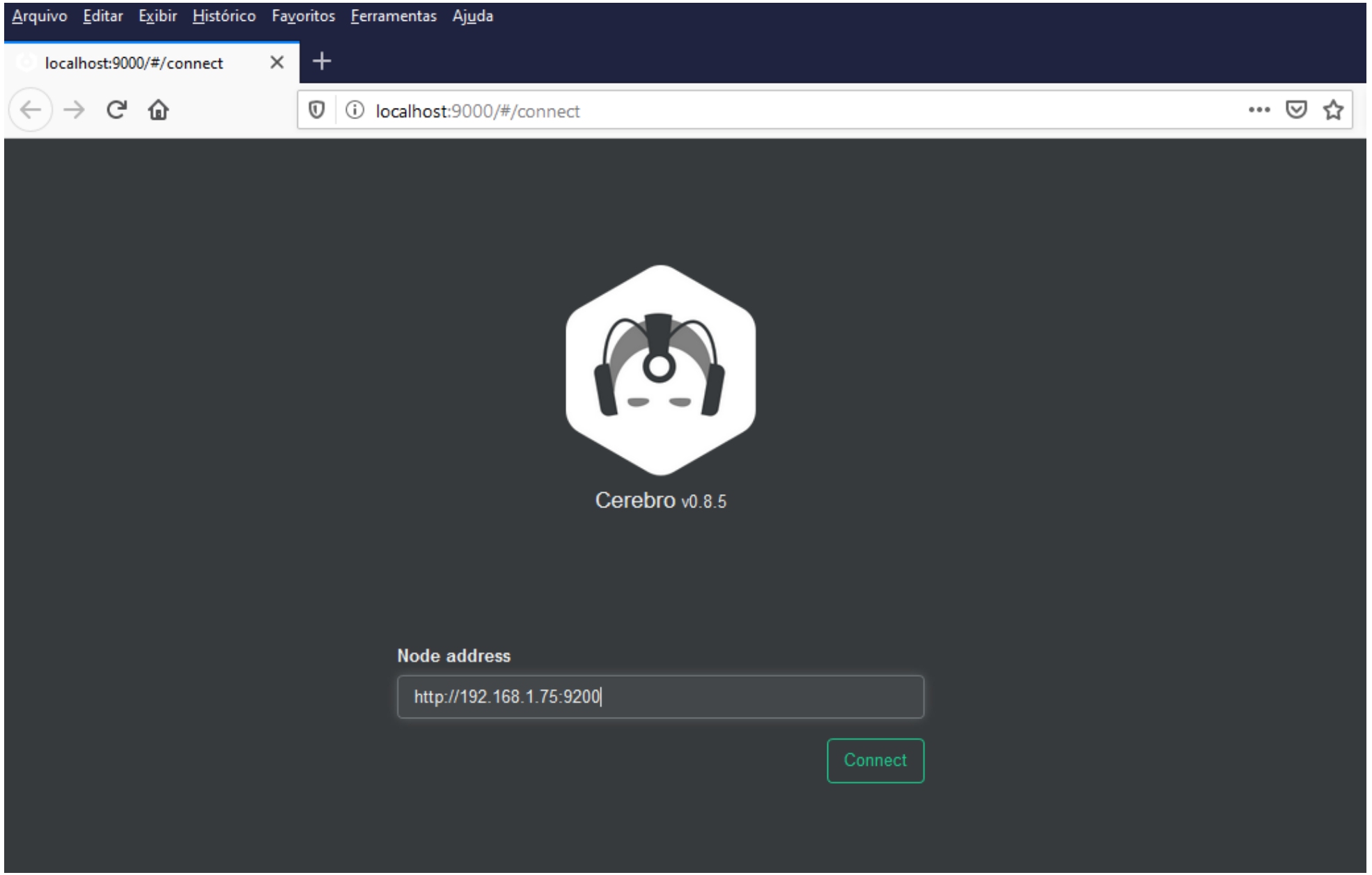
```
$ curl http://elasticsearch01:9200/_cat/shards?v
index    shard prirep state   docs   store ip            node
cars     1     p      STARTED  352 154.8kb 192.168.1.75 elasticsearch02
cars     1     r      STARTED  352 154.8kb 192.168.1.75 elasticsearch01
cars     2     p      STARTED  307 136.7kb 192.168.1.75 elasticsearch01
cars     2     r      STARTED  307 136.7kb 192.168.1.75 elasticsearch03
cars     0     r      STARTED  341 149.5kb 192.168.1.75 elasticsearch02
cars     0     p      STARTED  341 149.5kb 192.168.1.75 elasticsearch03
bank     0     p      STARTED 1000 428.7kb 192.168.1.75 elasticsearch02
bank     0     r      STARTED 1000 428.7kb 192.168.1.75 elasticsearch03
product  0     r      STARTED 1000 427.5kb 192.168.1.75 elasticsearch01
product  0     p      STARTED 1000 427.5kb 192.168.1.75 elasticsearch03
item     0     r      STARTED 1000 414.1kb 192.168.1.75 elasticsearch02
item     0     p      STARTED 1000 414.1kb 192.168.1.75 elasticsearch01
elements 3     p      STARTED  194  93.2kb 192.168.1.75 elasticsearch02
elements 3     r      STARTED  194  93.2kb 192.168.1.75 elasticsearch01
elements 2     r      STARTED  185  88.3kb 192.168.1.75 elasticsearch02
elements 2     p      STARTED  185  88.3kb 192.168.1.75 elasticsearch03
elements 1     p      STARTED  202    95kb 192.168.1.75 elasticsearch01
elements 1     r      STARTED  202    95kb 192.168.1.75 elasticsearch03
elements 4     p      STARTED  198  94.1kb 192.168.1.75 elasticsearch01
elements 4     r      STARTED  198  94.1kb 192.168.1.75 elasticsearch03
elements 0     p      STARTED  221 104.5kb 192.168.1.75 elasticsearch02
elements 0     r      STARTED  221 104.5kb 192.168.1.75 elasticsearch03
```

Elasticsearch – Essential Commands

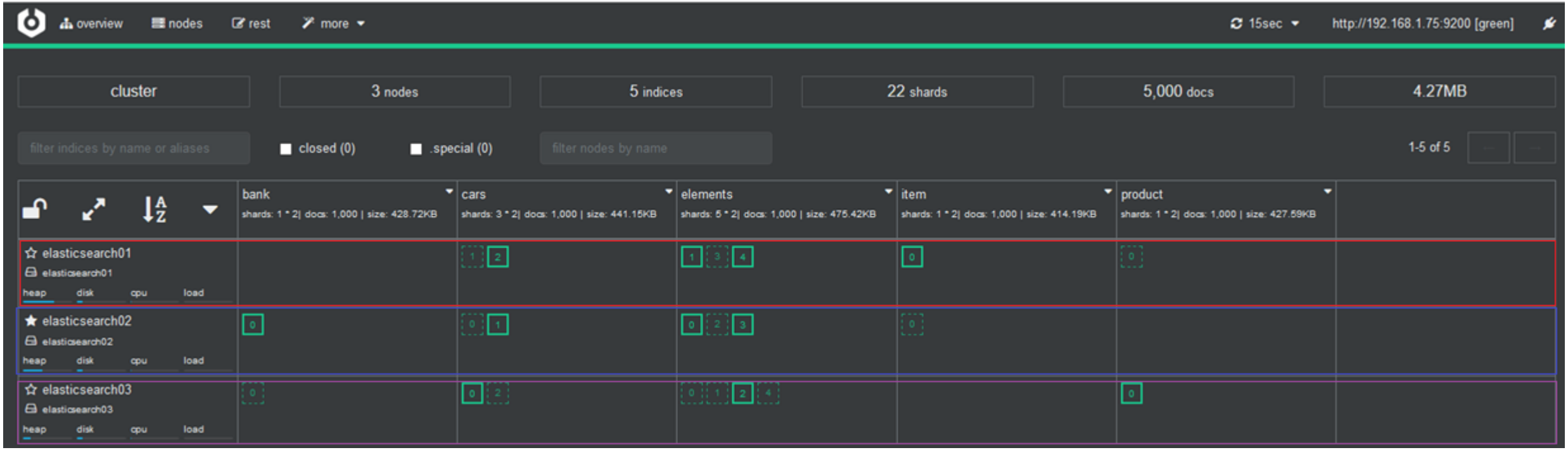




Elasticsearch – Essential Commands



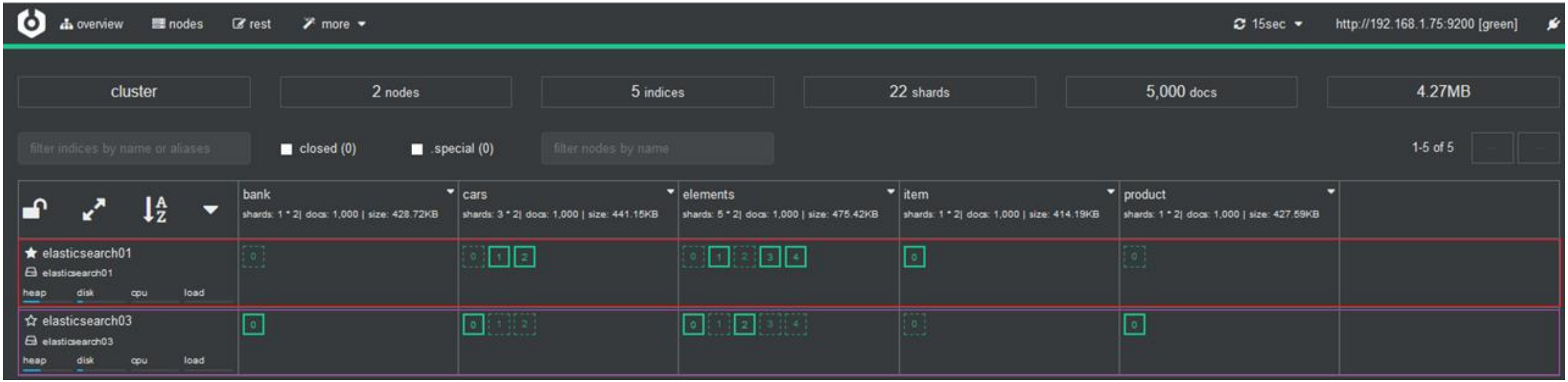
Elasticsearch – Essential Commands




```
$ curl -XGET http://elasticsearch01:9200/_cat/nodes?v
ip            heap.percent ram.percent cpu load_1m load_5m load_15m node.role master name
192.168.1.75            23          93   6    0.04    0.24     0.32 dlm       -      elasticsearch01
192.168.1.75            21          93   6    0.04    0.24     0.32 dlm       *      elasticsearch02
192.168.1.75            39          93   6    0.04    0.24     0.32 dlm       -      elasticsearch03
```

Elasticsearch – Essential Commands

```
$ kill $(ps aux | grep '/elasticsearch/cluster/elasticsearch-2' | awk '{print $2}')
-bash: kill: (11369) - No such process
```

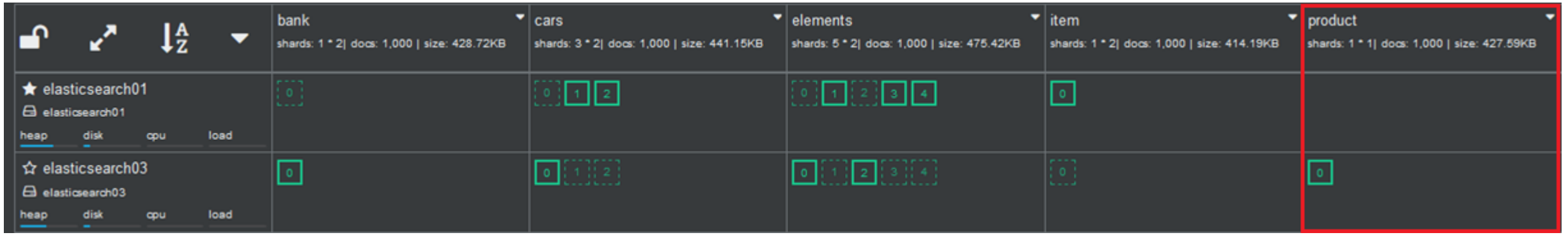



```
$ curl -XGET http://elasticsearch01:9200/_cat/nodes?v
ip            heap.percent ram.percent cpu load_1m load_5m load_15m node.role master name
192.168.1.75            49          70   0    0.00    0.01     0.05 dlm       *      elasticsearch01
192.168.1.75            50          70   0    0.00    0.01     0.05 dlm       -      elasticsearch03
```

Elasticsearch – Essential Commands

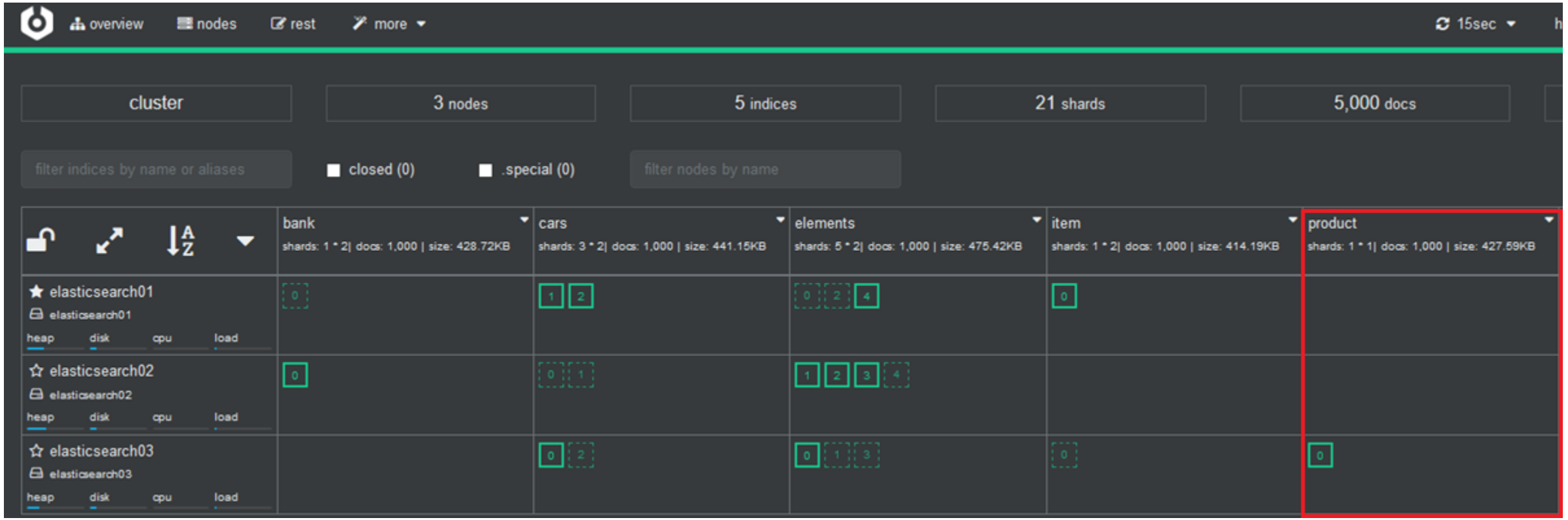
```
$ curl http://elasticsearch01:9200/product/_settings?pretty=true
{
  "product" : {
    "settings" : {
      "index" : {
        "creation_date" : "1594667305083",
        "number_of_shards" : "1",
        "number_of_replicas" : "1",
        "uuid" : "yb-2i07RQU6XSgMDmodZUw",
        "version" : {
          "created" : "7060199"
        },
        "provided_name" : "product"
      }
    }
  }
}
```

```
curl -XPUT -H 'Content-Type: application/json' 'http://es-master-01:9200/product/_settings' -d '{ "number_of_replicas" : 0 }'
{"acknowledged":true}
```



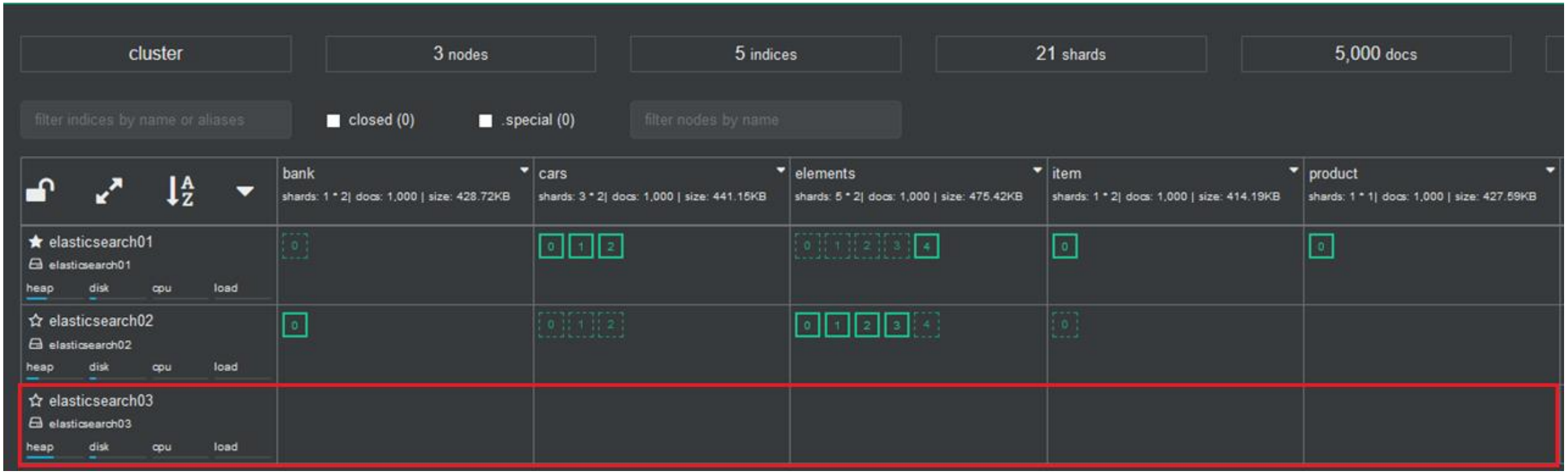
Elasticsearch – Essential Commands

```
$ /elasticsearch/cluster/elasticsearch-2/elasticsearch-7.6.1/bin/elasticsearch -d
```



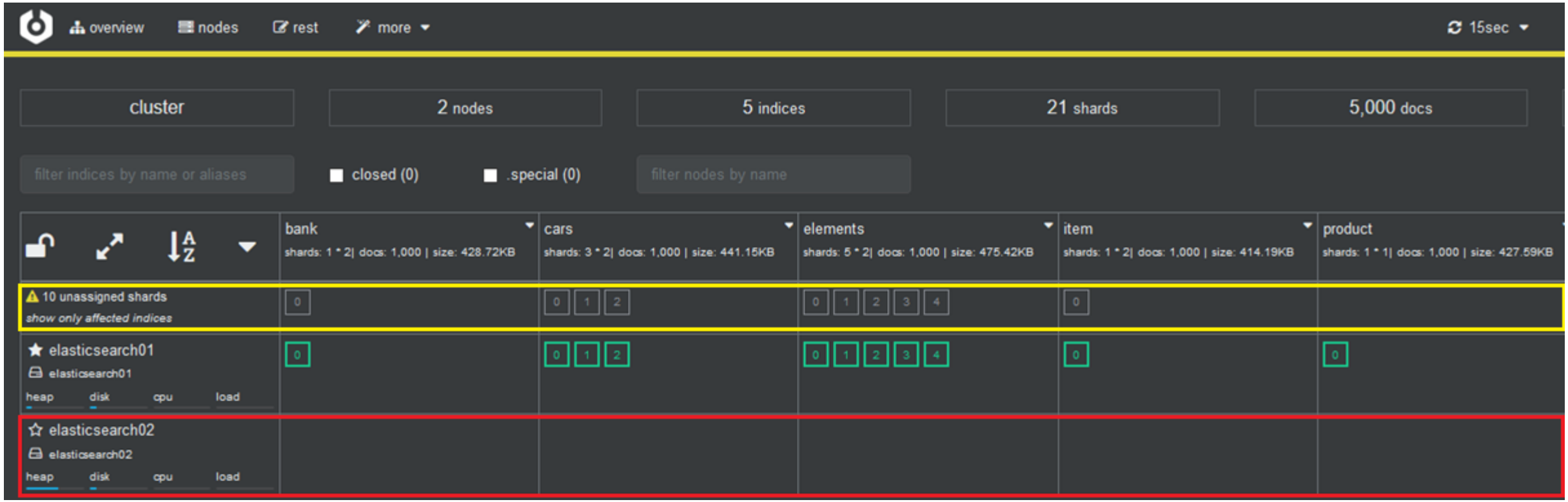
Elasticsearch – Essential Commands

```
$ curl -XPUT http://elasticsearch01:9200/_cluster/settings -H \
> 'Content-Type: application/json' \
> -d '{"transient" :{"cluster.routing.allocation.exclude._name" : "elasticsearch03"}}'
{"acknowledged":true}
```



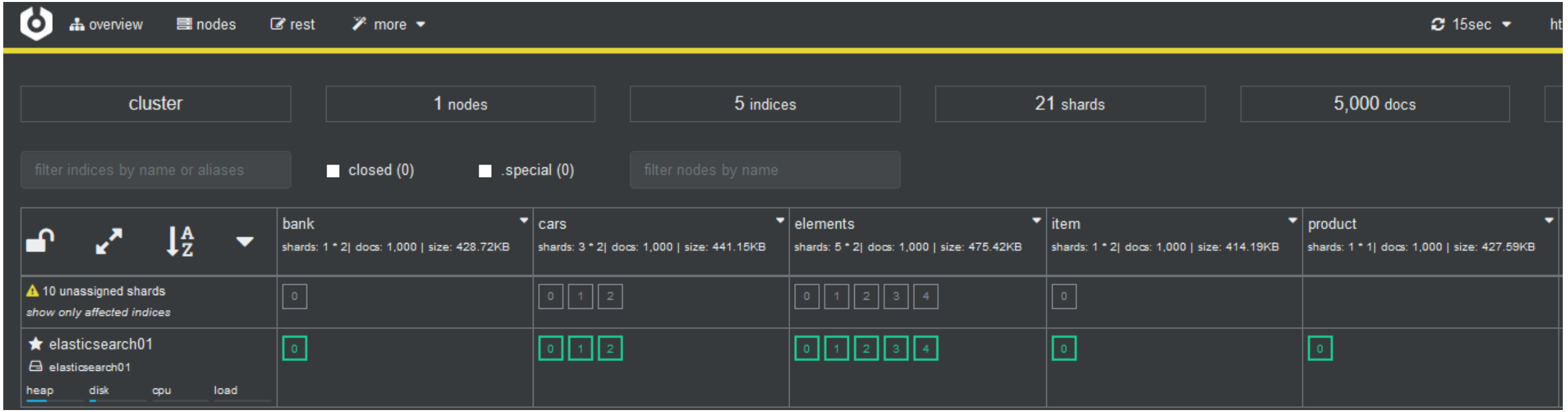
Elasticsearch – Essential Commands

```
$ curl -XPUT http://elasticsearch01:9200/_cluster/settings -H \
> 'Content-Type: application/json' \
> -d '{"transient" :{"cluster.routing.allocation.exclude._name" : "elasticsearch02,elasticsearch03"}}'
{"acknowledged":true}
$ kill $(ps aux | grep '/elasticsearch/cluster/elasticsearch-3' | awk '{print $2}')
-bash: kill: (17094) - No such process
```



Elasticsearch – Essential Commands

```
curl -XPOST 'http://elasticsearch01:9200/_cluster/voting_config_exclusions/elasticsearch02'
curl -XPOST 'http://elasticsearch01:9200/_cluster/voting_config_exclusions/elasticsearch03'
kill $(ps aux | grep '/elasticsearch/cluster/elasticsearch-2' | awk '{print $2}')
-bash: kill: (17668) - No such process
```

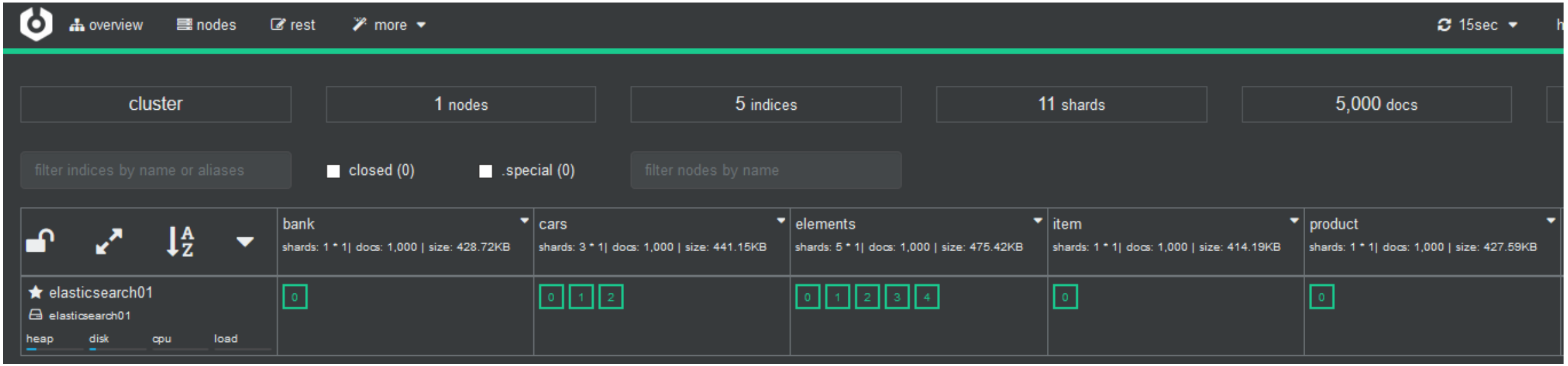


Elasticsearch – Essential Commands

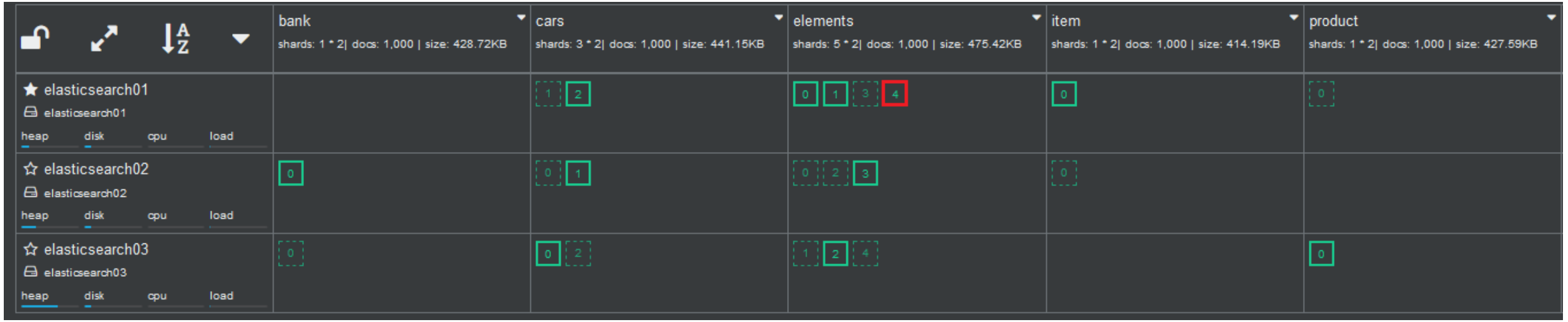
```
$ curl -s -XGET http://elasticsearch01:9200/_cat/shards?h=index,shard,prirep,state,unassigned.reason
cars     2 p STARTED
cars     2 r UNASSIGNED NODE_LEFT
cars     1 p STARTED
cars     1 r UNASSIGNED NODE_LEFT
cars     0 p STARTED
cars     0 r UNASSIGNED NODE_LEFT
bank     0 p STARTED
bank     0 r UNASSIGNED NODE_LEFT
product  0 p STARTED
item     0 p STARTED
item     0 r UNASSIGNED NODE_LEFT
elements 3 p STARTED
elements 3 r UNASSIGNED NODE_LEFT
elements 1 p STARTED
elements 1 r UNASSIGNED NODE_LEFT
elements 2 p STARTED
elements 2 r UNASSIGNED NODE_LEFT
elements 4 p STARTED
elements 4 r UNASSIGNED NODE_LEFT
elements 0 p STARTED
elements 0 r UNASSIGNED NODE_LEFT
```

Elasticsearch – Essential Commands

```
$ curl -XPUT -H 'Content-Type: application/json' 'http://elasticsearch01:9200/_settings' \
> -d '{ "number_of_replicas" : 0 }'
{"acknowledged":true}
```

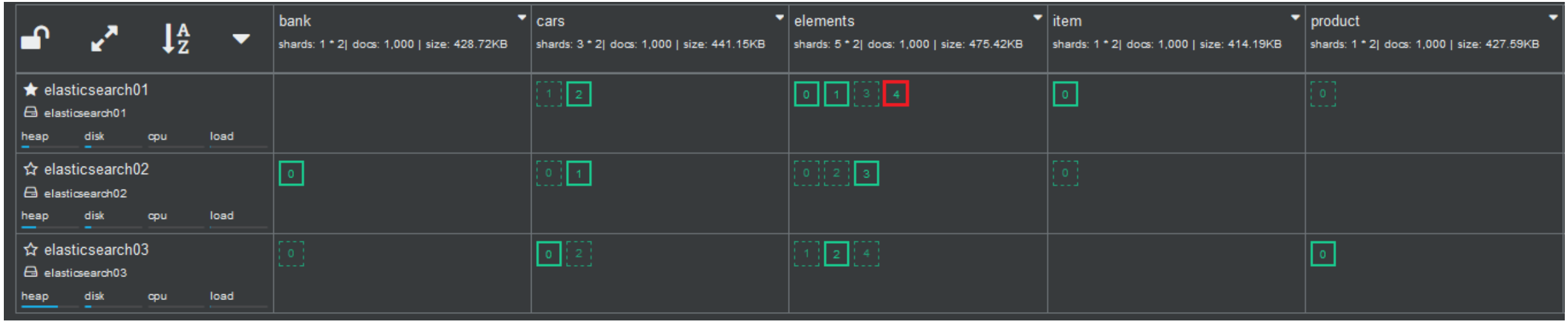


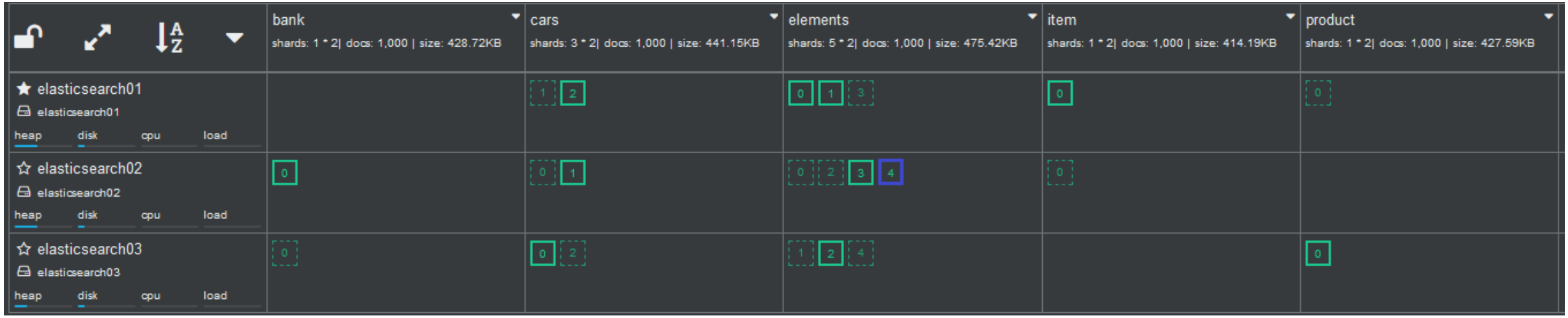
Elasticsearch – Essential Commands




```
$ curl -XPOST 'elasticsearch01:9200/_cluster/reroute' -H 'Content-Type: application/json' -d '{
>     "commands" : [ {
>         "move" :
>             {
>               "index" : "elements", "shard" : 4,
>               "from_node" : "elasticsearch01", "to_node" : "elasticsearch02"
>             }
>         }
>     ]
> }'
{"acknowledged":true}
```

Elasticsearch – Essential Commands





elasticsearch

Elasticsearch Backup/Recovery

Elasticsearch – Backup/Recovery

```
-- Repository Path
$ mkdir -p /elasticsearch/snapshot


path.repo: /elasticsearch/snapshot/

$ vim /elasticsearch/cluster/elasticsearch-1/elasticsearch-7.6.1/config/elasticsearch.yml
$ vim /elasticsearch/cluster/elasticsearch-2/elasticsearch-7.6.1/config/elasticsearch.yml
$ vim /elasticsearch/cluster/elasticsearch-3/elasticsearch-7.6.1/config/elasticsearch.yml

-- Restart Nodes

-- Repository Configuration
$ curl -H 'Content-Type: application/json' \
> -XPUT 'http://elasticsearch01:9200/_snapshot/backup' \
> -d '{"type": "fs", "settings": {"location": "/elasticsearch/snapshot","compress": true}}'
{"acknowledged":true}

$ curl -XGET http://elasticsearch01:9200/_snapshot?pretty
{
  "backup" : {
    "type" : "fs",
    "settings" : {
      "compress" : "true",
      "location" : "/elasticsearch/snapshot"}}
}
```

Elasticsearch – Backup/Recovery

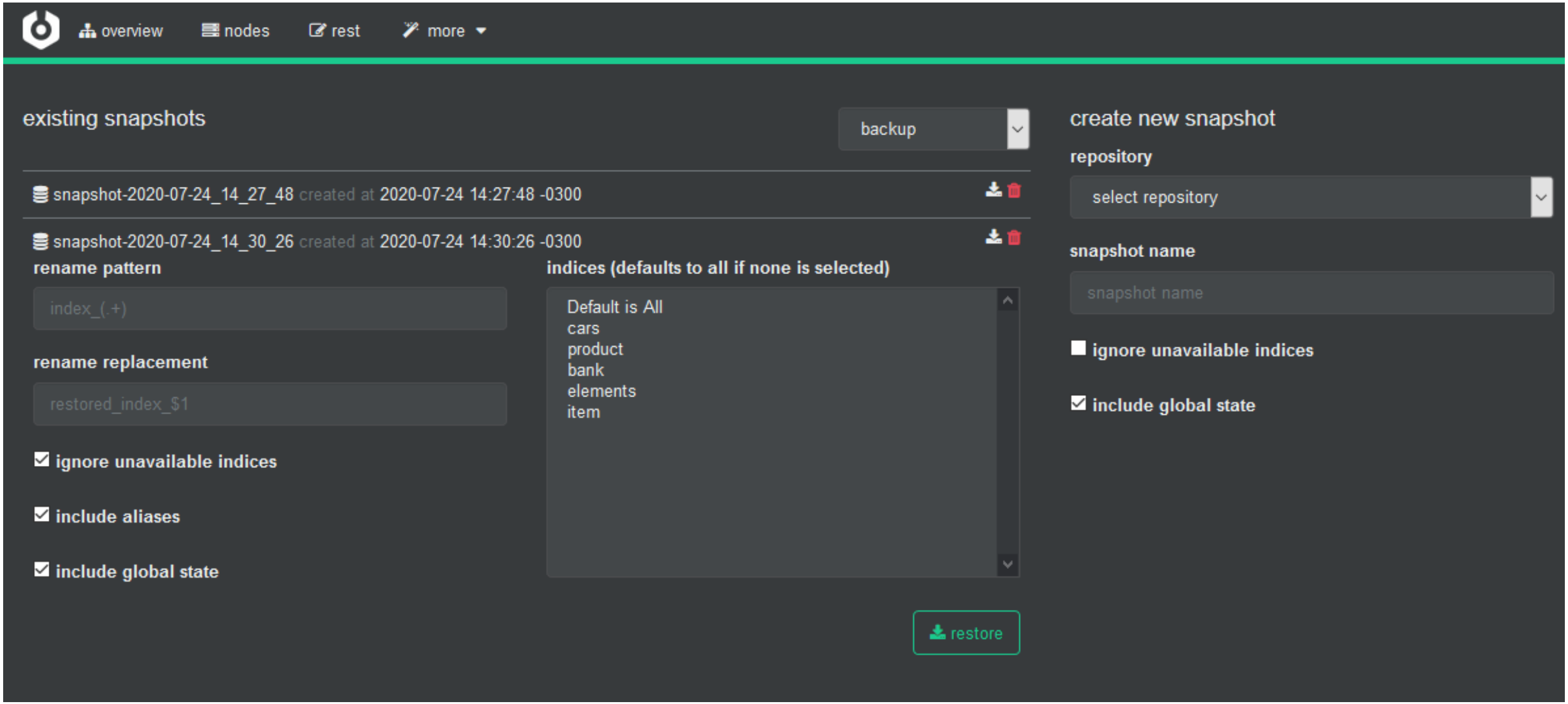
```
$ curl -XPUT http://elasticsearch01:9200/_snapshot/backup/snapshot-"$(date +%Y-%m-%d_%H_%M_%S)"
{"accepted":true}

$ curl -XGET 'http://elasticsearch01:9200/_cat/snapshots/backup?v&s=id'
id                           status start_time end_time duration indices successful_shards failed_shards total_shards
snapshot-2020-07-24_14_27_48 SUCCESS 17:27:48   17:27:48    603ms       5                 11             0            11

curl -XPUT http://elasticsearch01:9200/_snapshot/backup/snapshot-"$(date +%Y-%m-%d_%H_%M_%S)"
{"accepted":true}

$ curl -XGET 'http://elasticsearch01:9200/_cat/snapshots/backup?v&s=id'
id                           status start_time end_time duration indices successful_shards failed_shards total_shards
snapshot-2020-07-24_14_27_48 SUCCESS 17:27:48   17:27:48    603ms       5                 11             0            11
snapshot-2020-07-24_14_30_26 SUCCESS 17:30:26   17:30:26    402ms       5                 11             0            11

$ curl -XGET http://elasticsearch01:9200/_cat/indices?v
health status index    uuid                   pri rep docs.count docs.deleted store.size pri.store.size
green  open   cars     iLMSr-AkR7qxdliCav17JA   3   1       1000            0    882.2kb        441.1kb
green  open   bank     -l2U7PwxTomxUy6Q9MTlVA   1   1       1000            0    857.4kb        428.7kb
green  open   product  yb-2i07RQU6XSgMDmodZUw   1   1       1000            0    855.1kb        427.5kb
green  open   item     8-89M8A8RViwAxn3woJWEQ   1   1       1000            0    828.3kb        414.1kb
green  open   elements Coi4Im1tQLiaX9qB_NJ1YA   5   1       1000            0    950.8kb        475.4kb
```

Will Be Removed

Elasticsearch – Backup/Recovery

```
$ curl -XDELETE http://elasticsearch01:9200/elements
{"acknowledged":true}

$ curl -XGET http://elasticsearch01:9200/_cat/indices?v
health status index    uuid                   pri rep docs.count docs.deleted store.size pri.store.size
green  open   cars     iLMSr-AkR7qxdliCav17JA   3   1       1000            0    882.2kb        441.1kb
green  open   bank     -l2U7PwxTomxUy6Q9MTlVA   1   1       1000            0    857.4kb        428.7kb
green  open   product  yb-2i07RQU6XSgMDmodZUw   1   1       1000            0    855.1kb        427.5kb
green  open   item     8-89M8A8RViwAxn3woJWEQ   1   1       1000            0    828.3kb        414.1kb

$ curl -H 'Content-Type: application/json' \
> -XPOST "http://elasticsearch01:9200/_snapshot/backup/snapshot-2020-07-24_14_30_26/_restore?pretty" \
> -d '{"indices": "elements"}'
{
  "accepted" : true
}

$ curl -XGET http://elasticsearch01:9200/_cat/indices?v
health status index    uuid                   pri rep docs.count docs.deleted store.size pri.store.size
green  open   cars     iLMSr-AkR7qxdliCav17JA   3   1       1000            0    882.2kb        441.1kb
green  open   bank     -l2U7PwxTomxUy6Q9MTlVA   1   1       1000            0    857.4kb        428.7kb
green  open   product  yb-2i07RQU6XSgMDmodZUw   1   1       1000            0    855.1kb        427.5kb
green  open   item     8-89M8A8RViwAxn3woJWEQ   1   1       1000            0    828.3kb        414.1kb
green  open   elements QNTXLFbqSeyR47PNYf88Ew   5   1       1000            0      574kb        287.9kb
```

Elasticsearch – Backup/Recovery



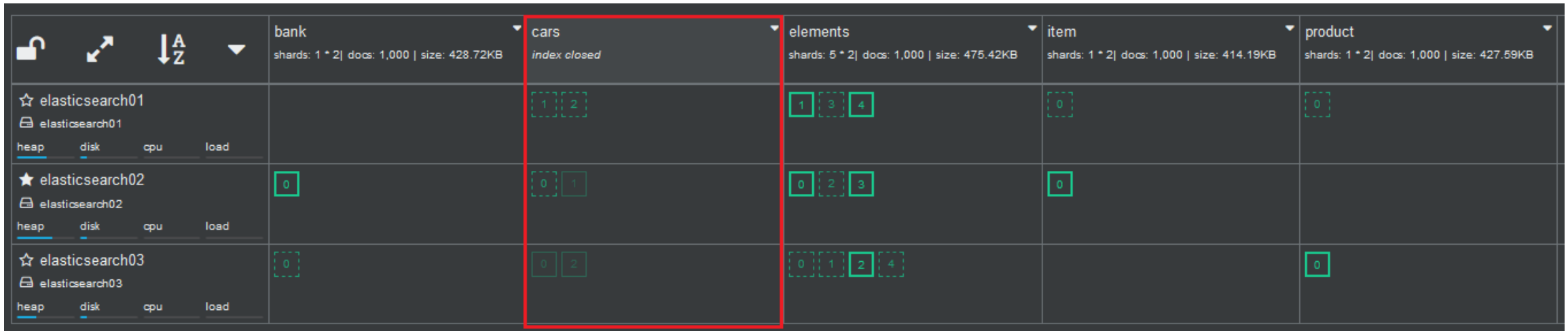
Elasticsearch – Backup/Recovery

```
$ curl -H 'Content-Type: application/json' \
> -XPOST "http://elasticsearch01:9200/_snapshot/backup/snapshot-2020-07-24_14_30_26/_restore?pretty" -d '
> {
>   "indices": "elements",
>   "rename_pattern": "elements",
>   "rename_replacement": "elements2"
> }'
{
  "accepted" : true
}

$ curl -XGET http://elasticsearch01:9200/_cat/indices?v
health status index     uuid                   pri rep docs.count docs.deleted store.size pri.store.size
green  open   cars      iLMSr-AkR7qxdliCav17JA   3   1       1000            0    882.2kb        441.1kb
green  open   product   yb-2i07RQU6XSgMDmodZUw   1   1       1000            0    855.1kb        427.5kb
green  open   bank      -l2U7PwxTomxUy6Q9MTlVA   1   1       1000            0    857.4kb        428.7kb
green  open   item      8-89M8A8RViwAxn3woJWEQ   1   1       1000            0    828.3kb        414.1kb
green  open   elements  QNTXLFbqSeyR47PNYf88Ew   5   1       1000            0    950.8kb        475.4kb
green  open   elements2 PRKyVaarStaEyH_grjy5iw   5   1       1000            0    950.8kb        475.4kb
```

Elasticsearch – Backup/Recovery

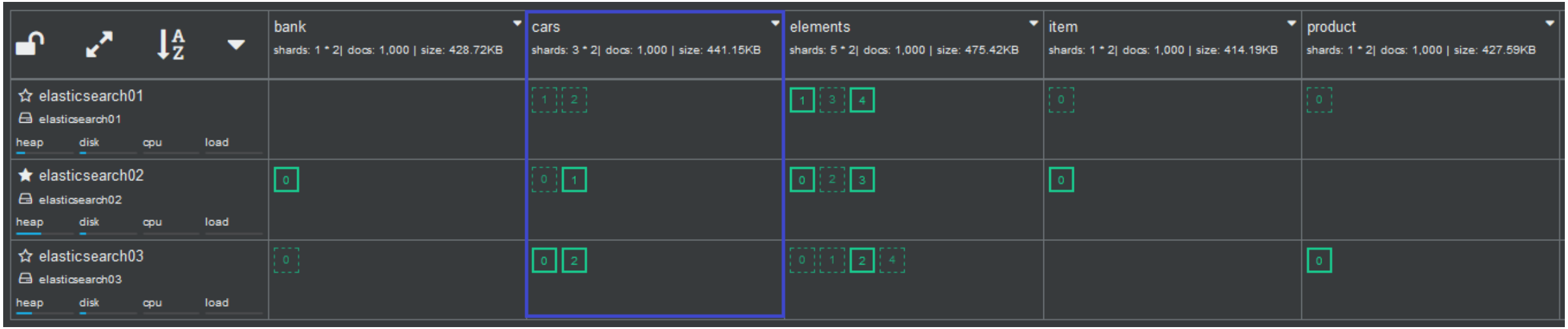
```
$ curl -H 'Content-Type: application/json' \
> -XPOST "http://elasticsearch01:9200/_snapshot/backup/snapshot-2020-07-24_14_30_26/_restore?pretty" \
> -d '{"indices": "cars"}'
{
  "error" : {
    "root_cause" : [
      {
        "type" : "snapshot_restore_exception",
        "reason" : "[backup:snapshot-2020-07-24_14_30_26/DC_53Mg-T5yfNrTjo27zqw] cannot restore index [cars] because an open index with same name already exists in the cluster. Either close or delete the existing index or restore the index under a different name by providing a rename pattern and replacement name"
      }
    ],
"status" : 500
}
```

```
$ curl -XPOST http://elasticsearch01:9200/cars/_close
{"acknowledged":true}
```



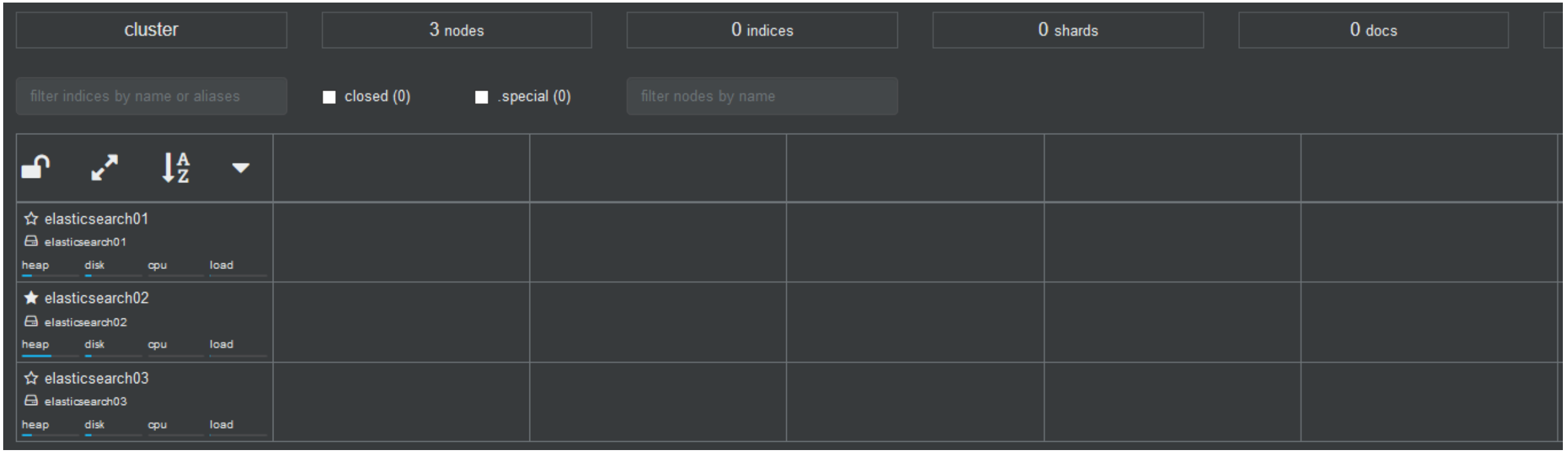
Elasticsearch – Backup/Recovery

```
$ curl -H 'Content-Type: application/json' \
> -XPOST "http://elasticsearch01:9200/_snapshot/backup/snapshot-2020-07-24_14_30_26/_restore?pretty" \
> -d '{"indices": "cars"}'
{
  "accepted" : true
}
```



Elasticsearch – Backup/Recovery

```
$ curl -XDELETE http://elasticsearch01:9200/*
{"acknowledged":true}

$ curl -XGET http://elasticsearch01:9200/_cat/indices?v
health status index uuid pri rep docs.count docs.deleted store.size pri.store.size
```



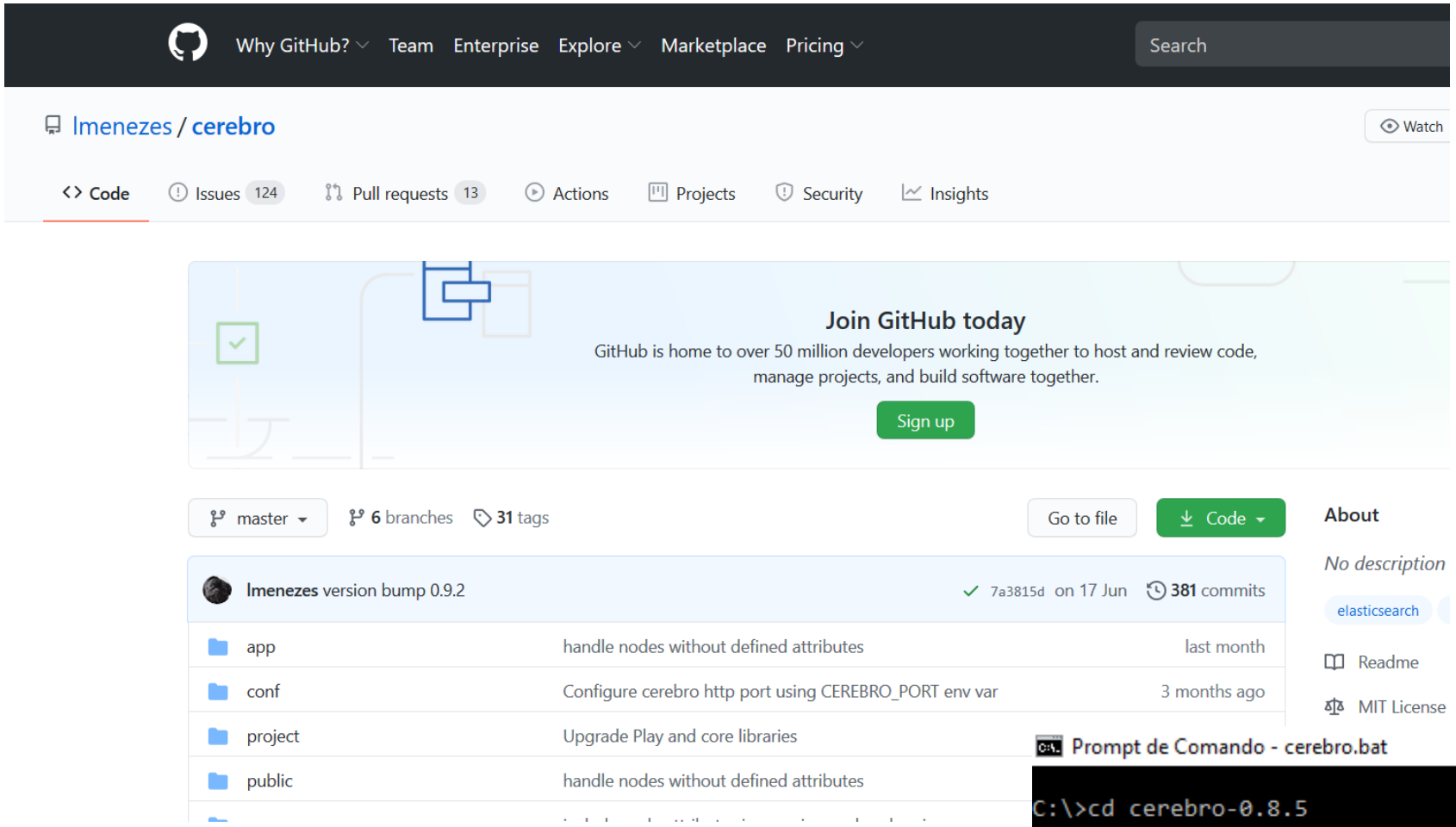
Elasticsearch – Backup/Recovery

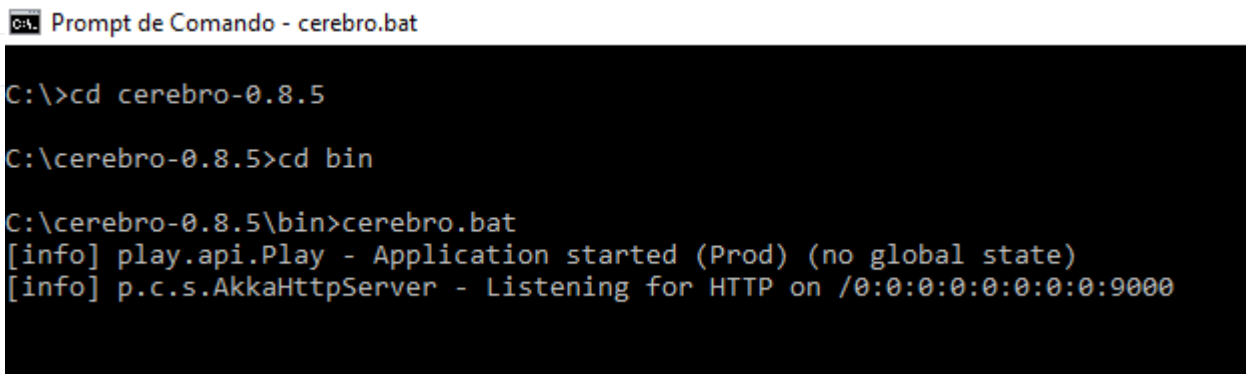
```
$ curl -H 'Content-Type: application/json' \
> -XPOST "http://elasticsearch01:9200/_snapshot/backup/snapshot-2020-07-24_14_30_26/_restore?pretty" \
> -d '{"indices": "*"}'
{
  "accepted" : true
}
```

elasticsearch

Elasticsearch
Graphical Interface Clients

Elasticsearch – Graphical Interface Clients





Elasticsearch – Graphical Interface Clients

Postman API Client

Send requests, inspect the response, and easily debug.

Download the App

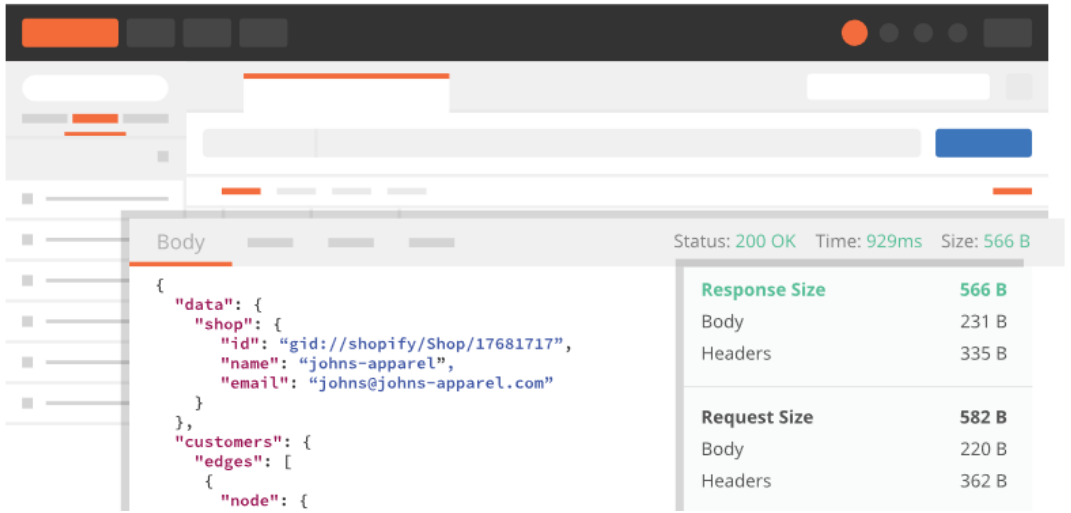
Send Requests and View Responses

Create and execute any REST, SOAP, and GraphQL queries from within Postman.

- **Define complex requests**

  Send any type of request in Postman. Create and save custom methods and send requests with the following body types:

  - URL-encoded—The default content type for sending simple text data
  - Multipart/form-data—For sending large quantities of binary data or

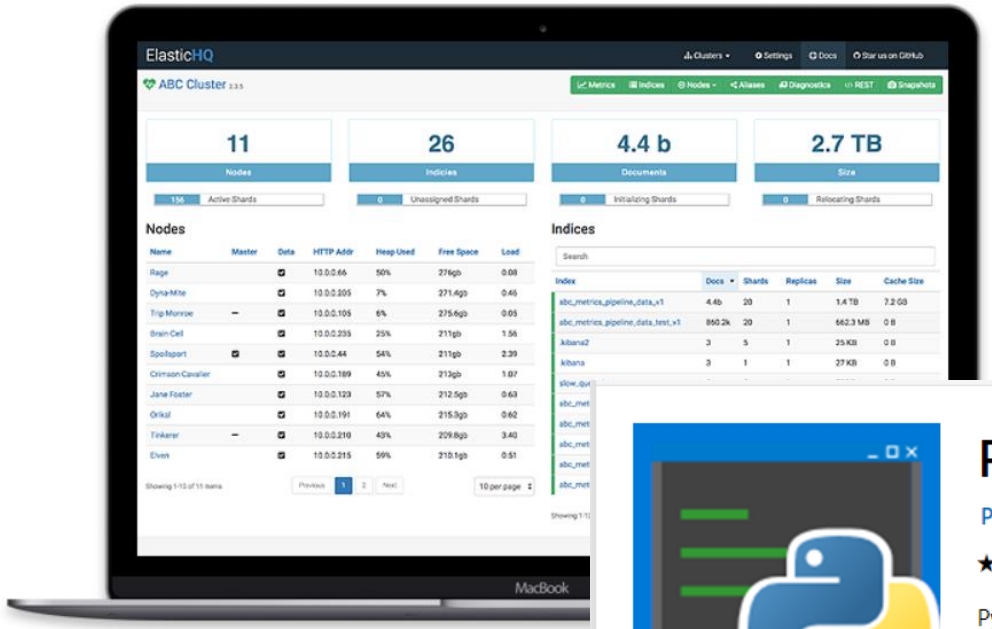


Elasticsearch – Graphical Interface Clients

ElasticHQ

Management and Monitoring for Elasticsearch.

Get Started Features



Python 3.8

Python Software Foundation • Ferramentas de desenvolvedor > Kits de desenvolvimento

★★½☆☆ 6 Compartilhar

Python is an easy to learn, powerful programming language. It has efficient high-level data structures and a simple but effective approach to object-oriented programming. Python's elegant syntax and dynamic typing, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas on most platforms.

Mais

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Elasticsearch – Graphical Interface Clients

KIBANA

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Kibana is a free and open user interface that lets you visualize your Elasticsearch data and navigate the Elastic Stack. Do anything from tracking query load to understanding the way requests flow through your apps.

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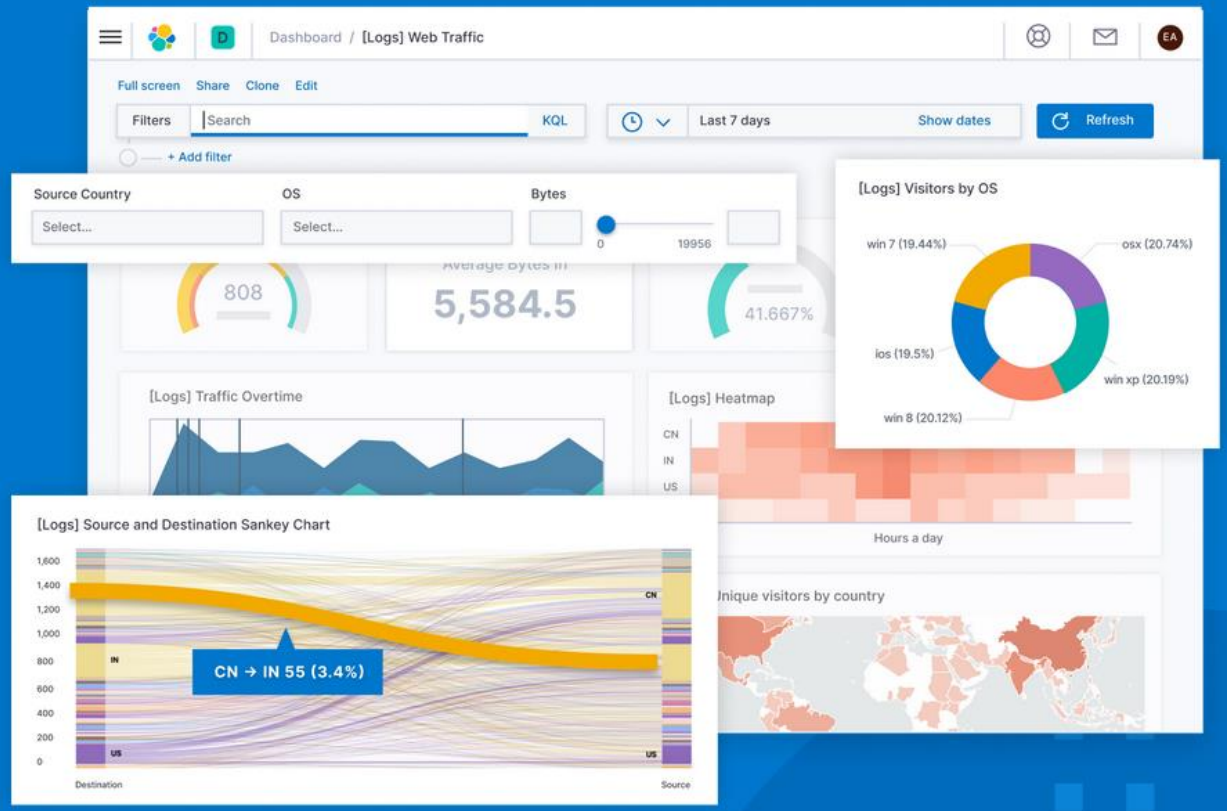

END