If using java to talk to Elasticsearch, there are two clients

Node Client, Transport client

Both Java clients talk to the cluster over port 9300, using the native Elasticsearch transport protocol. The nodes in the cluster also communicate with each other over port 9300. If this port is not open, your nodes will not be able to form a cluster.

**What is a B-tree index? Traditional databases use this**

(1)Search Lite - query-string search

curl -XGET 'localhost:9200/megacorp/employee/\_search?q=last\_name:Smith&pretty'

equivalent query DSL to (1)

(2)Search query DSL

curl -XGET 'localhost:9200/megacorp/employee/\_search?pretty' -H 'Content-Type: application/json' -d'

{

"query" : {

"match" : {

"last\_name" : "Smith"

}

}

}

'

Rules for index name in Elasticsearch

All we have to do is choose an index name. This name must be lowercase, cannot begin with an underscore, and cannot contain commas. Let’s use website as our index name.

Rules for type in Elasticsearch

A \_type name can be lowercase or uppercase, but shouldn’t begin with an underscore or period. It also may not contain commas, and is limited to a length of 256 characters. We will use blog for our type name.

Rules for id in Elasticsearch

The ID is a string that, when combined with the \_index and \_type, uniquely identifies a document in Elasticsearch. When creating a new document, you can either provide your own \_id or let Elasticsearch generate one for you.

Retrieving Part of a Documentedit

By default, a GET request will return the whole document, as stored in the \_source field. But perhaps all you are interested in are the title and text fields. Individual fields can be requested by using the \_source parameter. Multiple fields can be specified in a comma-separated list:

GET /website/blog/123?\_source=title,text

Or if you want just the \_source field without any metadata, you can use the \_source endpoint:

GET /website/blog/123/\_source

Checking Whether a Document Existsedit

If all you want to do is to check whether a document exists—you’re not interested in the content at all—then use the HEAD method instead of the GET method. HEAD requests don’t return a body, just HTTP headers:

curl -i -XHEAD http://localhost:9200/website/blog/123

Elasticsearch will return a 200 OK status code if the document exists:

Creating a New Documented

How can we be sure, when we index a document, that we are creating an entirely new document and not overwriting an existing one?

Use POST method

However, if we already have an \_id that we want to use, then we have to tell Elasticsearch that it should accept our index request only if a document with the same \_index, \_type, and \_id doesn’t exist already. There are two ways of doing this, both of which amount to the same thing. Use whichever method is more convenient for you.

The first method uses the op\_type query -string parameter:

PUT /website/blog/123?op\_type=create

{ ... }

And the second uses the /\_create endpoint in the URL:

PUT /website/blog/123/\_create

{ ... }

If the request succeeds in creating a new document, Elasticsearch will return the usual metadata and an HTTP response code of 201 Created.

On the other hand, if a document with the same \_index, \_type, and \_id already exists, Elasticsearch will respond with a 409 Conflict response code,

**Life Inside a Cluster**

A node is a running instance of Elasticsearch, while a cluster consists of one or more nodes with the same cluster.name that are working together to share their data and workload.

**curl -XGET 'localhost:9200/\_cluster/health?pretty'**

**Add Failover**

Starting a second node.

[https://www.elastic.co/guide/en/elasticsearch/guide/master/\_add\_failover.html#\_add\_failover](https://www.elastic.co/guide/en/elasticsearch/guide/master/_add_failover.html" \l "_add_failover)

[https://www.elastic.co/guide/en/elasticsearch/guide/master/important-configuration-changes.html#unicast](https://www.elastic.co/guide/en/elasticsearch/guide/master/important-configuration-changes.html" \l "unicast)

**Data In, Data Out**

What is an inverted index

**What is a Document**

Field names can be any valid string, but may not include periods.

Index naming

this name must be lowercase, cannot begin with an underscore, and cannot contain commas. Let’s use website as our index name.

type naming

A \_type name can be lowercase or uppercase, but shouldn’t begin with an underscore or period. It also may not contain commas, and is limited to a length of 256 characters. We will use blog for our type name.

id

The ID is a **string**

**Retrieving a document**

<https://www.elastic.co/guide/en/elasticsearch/guide/master/get-doc.html>

Checking whether a document exists

If all you want to do is to check whether a document exists—you’re not interested in the content at all—then use the HEAD method instead of the GET method. HEAD requests don’t return a body, just HTTP headers:

curl -i -XHEAD http://localhost:9200/website/blog/123

Elasticsearch will return a 200 OK status code if the document exists:

HTTP/1.1 200 OK

Content-Type: text/plain; charset=UTF-8

Content-Length: 0

And a 404 Not Found if it doesn’t exist:

Search Lite - Query string search

GET /megacorp/employee/\_search?q=last\_name:Smith

Query DSL (domain specific language)

GET /megacorp/employee/\_search

{

"query" : {

"match" : {

"last\_name" : "Smith"

}

}

}

Query to match last name

GET /megacorp/employee/\_search

{

"query" : {

"bool" : {

"must" : {

"match" : {

"last\_name" : "smith" https://www.elastic.co/guide/en/elasticsearch/guide/2.x/images/icons/callouts/1.png

}

},

"filter" : {

"range" : {

"age" : { "gt" : 30 } https://www.elastic.co/guide/en/elasticsearch/guide/2.x/images/icons/callouts/2.png

}

}

}

}

}

Query to match last name AND age greater than 30

Difference between match and match\_phrase

GET /megacorp/employee/\_search

{

"query" : {

"match" : {

"about" : "rock climbing"

}

}

}

Match will return results that contain rock and/or climbing and arrange results by a “relevance” score

Match\_phrase will return exact matches for “rock climbing”

Red, Yellow, Green status – CLUSTER HEALTH

green

All primary and replica shards are active.

yellow

All primary shards are active, but not all replica shards are active.

red

Not all primary shards are active.