TechMaster
Học là có việc

ElasticSearch

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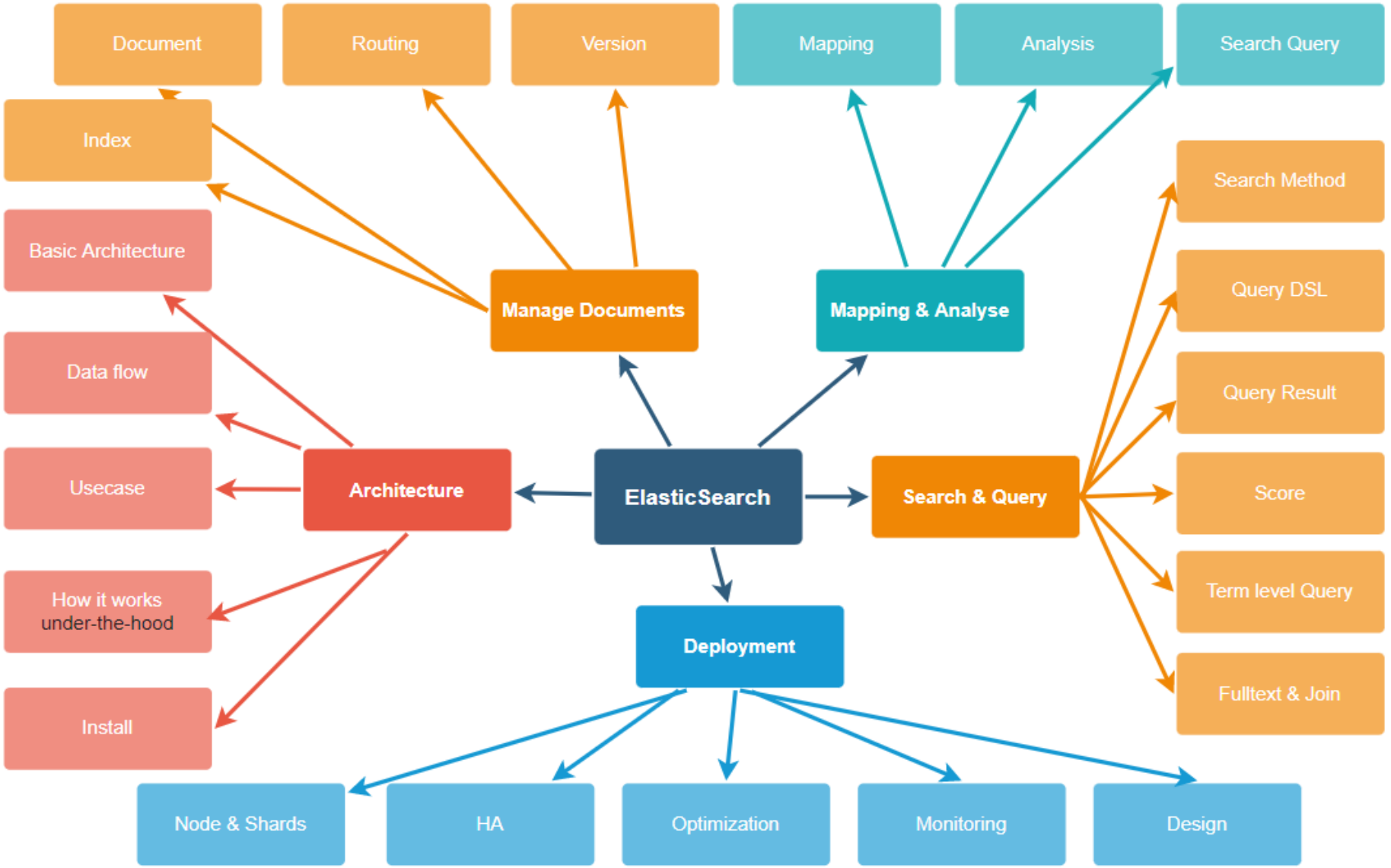
Nội dung

Summary and Troubleshoots on  elasticsearch

- **Summary what you just learned**
- **Troubleshoots errors**
- **Future works**

Nội dung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Summary

- **What is ELK Stack ?**
- **Relevance of your search**
- **Full text queries and combined queries**
- **Aggregations**
- **Data management**
- **Security your clusters**

Getting information about cluster and nodes

- Syntax:
  - GET _API/parameter

Get info about cluster health

- GET _cluster/health

Get info about nodes in a cluster

- GET _nodes/stats

Performing CRUD operations

- C - Create an index
- R - Read a document
- U - Update a document
- D - Delete a document

Exercises

1. Create an index called places.
2. Pick five of the places you want to visit after the pandemic is over. For each place, index a document containing the name and the country.
3. Read(GET) each document to check the content of the document.

Exercises

4. Update a field of a document.
5. Read(GET) the updated document to ensure that the field has been updated.
6. Delete a document of one place.
7. Copy and paste the following request to return all documents from the places index. This is a great way to check whether all the CRUD operations you have performed thus far have worked!

```
GET places/_search
{ "query": { "match_all": {} } }
```

Relevance of your search

- Search for information
  - Queries
  - Aggregations

Queries

- **Retrieve information about documents in an index**
  - GET enter_name_of_the_index_here/_search

```
GET news_headlines/_search
```

Queries

- **Get the exact total number of hits**
  - GET enter_name_of_the_index_here/_search

{ "track_total_hits": true }

```
GET news_headlines/_search
{ "track_total_hits": true }
```

Queries

- **Search for data within a specific time range**

```
GET enter_name_of_the_index_here/_search
{
  "query": {
    "Specify the type of query here": {
      "Enter name of the field here": {
        "gte": "Enter lowest value of the range here",
        "lte": "Enter highest value of the range here"
      }
    }
  }
}
```

```
GET news_headlines/_search
{ "query": { "range": { "date": { "gte":
"2015-06-20", "lte": "2015-09-22" } } } }
```

Aggregations

- **Analyze the data to show the categories of news headlines in our dataset**

```
GET enter_name_of_the_index_here/_search
{
  "aggs": {
    "name your aggregation here": {
      "specify aggregation type here": {
        "field": "name the field you want to aggregate here",
        "size": state how many buckets you want returned here
      }
    }
  }
}
```

```
GET news_headlines/_search
 { "aggs": { "by_category": { "terms":
{ "field": "category", "size": 100 } } }
}
```

Aggregations

- **A combination of query and aggregation request**

```
GET enter_name_of_the_index_here/_search
{
  "query": {
    "match": {
      "Enter the name of the field": "Enter the value you are looking for"
    }
  },
  "aggregations": {
    "Name your aggregation here": {
      "significant_text": {
        "field": "Enter the name of the field you are searching for"
      }
    }
  }
}
```

```
GET news_headlines/_search
{ "query": { "match": { "category":
"ENTERTAINMENT" } },
"aggregations": {
"popular_in_entertainment": {
"significant_text": { "field":
"headline" } } } }
```

Precision and Recall

- **Increasing Recall (OR logic)**

```
GET enter_name_of_index_here/_search
{
  "query": {
    "match": {
      "Specify the field you want to search": {
        "query": "Enter search terms"
      }
    }
  }
}
```

GET news_headlines/_search
{ "query": { "match": { "headline": { "query": "Khloe Kardashian Kendall Jenner" } } } }

Precision and Recall

- **Increasing Precision (AND logic)**

```
GET news_headlines/_search
{
  "query": {
    "match": {
      "headline": {
        "query": "Khloe Kardashian Kendall Jenner",
        "operator": "and"
      }
    }
  }
}
```

GET news_headlines/_search
{ "query": { "match": { "headline": { "query": "Khloe Kardashian Kendall Jenner", "operator": "and" } } } }

Precision and Recall

- **minimum_should_match**

```
GET enter_name_of_index_here/_search
{
  "query": {
    "match": {
      "headline": {
        "query": "Enter search term here",
        "minimum_should_match": Enter a number here
      }
    }
  }
}
```

GET news_headlines/_search
{ "query": { "match": { "headline": {
"query": "Khloe Kardashian Kendall
Jenner", "minimum_should_match": 3 } }
} }

Full Text Queries

- **Searching for search terms**

```
GET Enter_name_of_index_here/_search
{
  "query": {
    "match": {
      "Specify the field you want to search": {
        "query": "Enter search terms"
      }
    }
  }
}
```

GET news_headlines/_search
{ "query": { "match": { "headline": {
"query": "Khloe Kardashian Kendall Jenner" } } } }

Full Text Queries

- **Searching for a phrase using match query**

```
GET news_headlines/_search { "query": { "match": { "headline": { "query": "Shape of you" } } } }
```

Full Text Queries

- **Searching for phrases using the match_phrase query**

```
GET Enter_name_of_index_here/_search
{
  "query": {
    "match_phrase": {
      "Specify the field you want to search": {
        "query": "Enter search terms"
      }
    }
  }
}
```

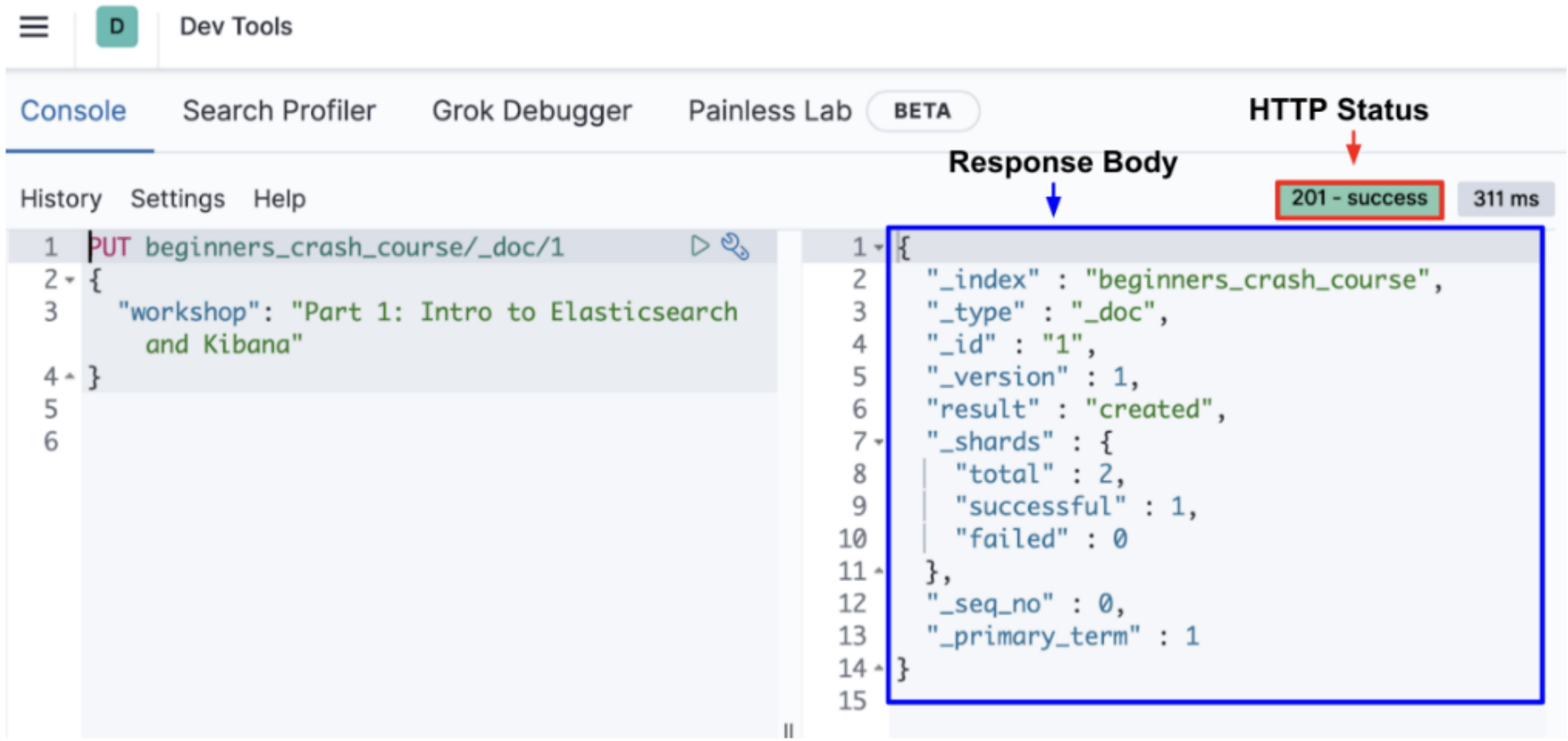
GET news_headlines/_search { "query": { "match": { "headline": { "query": "Shape of you" } } } }

Troubleshooting

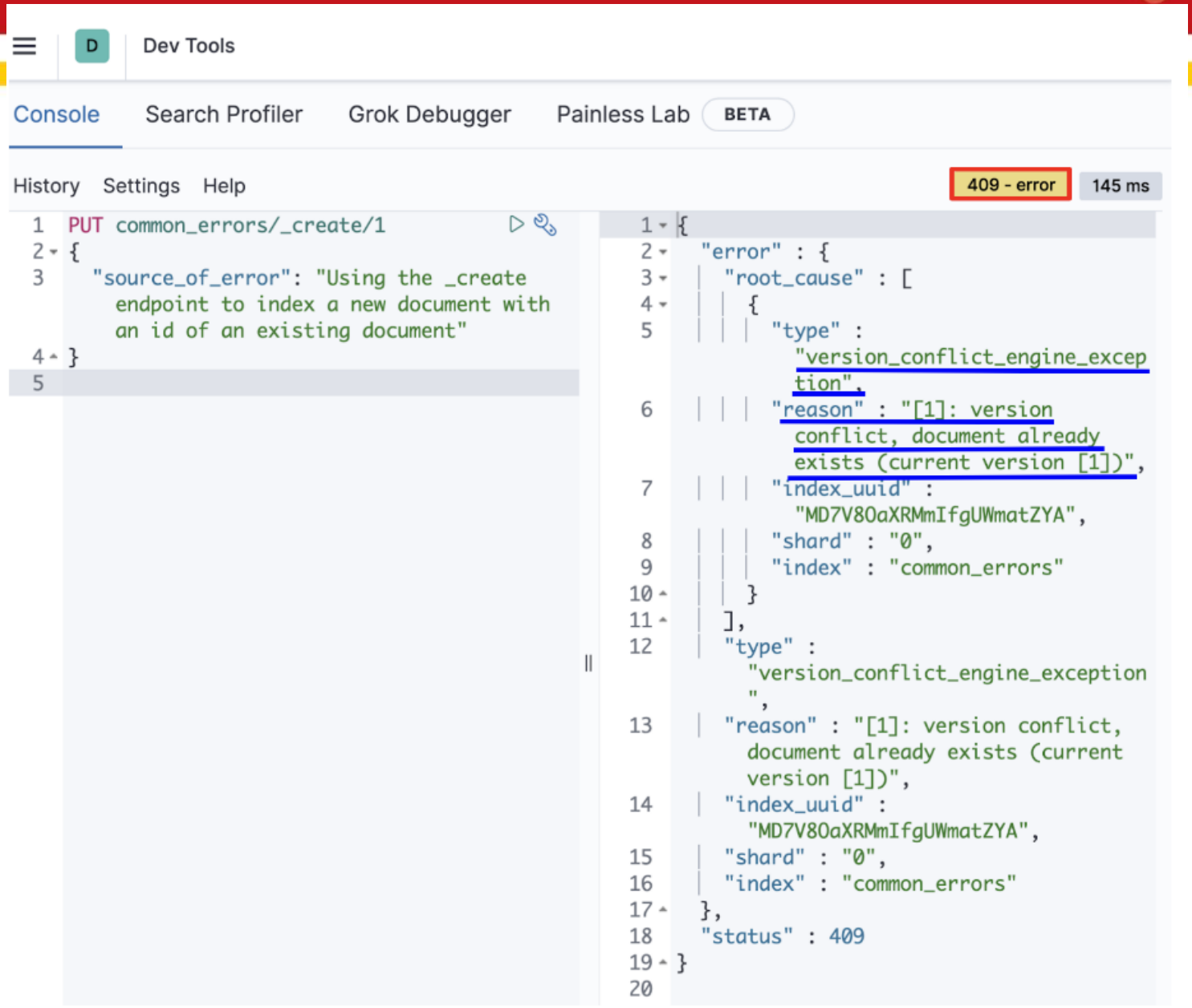
Want To Troubleshoot Your Errors? Follow The Clues!

Whenever you perform an action with Elasticsearch and Kibana, Elasticsearch responds with an HTTP status and a response body.

The request below asks Elasticsearch to index a document and assign it an id of 1.



Troubleshooting



Common Errors

- **Unable to connect**
  - The cluster may be down or it may be a network issue. Check the network status and cluster health to identify the problem.
- **Connection unexpectedly closed**
  - The node may have died or it may be a network issue. Retry your request.
- **5XX Errors**
  - Errors with an HTTP status starting with 5 stems from internal server error in Elasticsearch. When you see this error, take a look at the Elasticsearch log and identify the problem.
- **4XX Errors**
  - Errors with an HTTP status starting with 4 stems from client errors. When you see this error, correct the request before retrying.
  - As beginners, we are still familiarizing ourselves with the rules and syntax required to communicate with Elasticsearch. Majority of the error messages we encouter are likely to have been caused by the mistakes we make while writing our requests(4XX errors).

Thought Process For Troubleshooting Errors

- What number does the HTTP status start with(4XX? 5XX?)
- What does the response say? Always read the full message!
- Use the Elasticsearch documentation as your guide. Compare your request with the example from the documentation. Identify the mistake and make appropriate changes.

Trip Down Memory Lane

- Throughout the series, we learned how to send requests related to the following topics:
    1. CRUD operations
    2. Queries
    3. Aggregations
    4. Mapping
- We will revisit each topic and troubleshoot common errors you may encounter as you explore each topic.

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