



Elasticsearch

BI101

16

Academic Hours

Elasticsearch

Outline

This Elasticsearch Training intends to provide a solid foundation in search and information retrieval. It starts with fundamental concepts and follows with internals, best-practices and key features. Each topic is followed by a hands-on lab. At the end of the training, attendee will have deep understanding of how Elastic search works, will be able to reliably analyze data and will be ready to build search applications.



Target Audience

- Architects
- DBAs
- Developers



Prerequisites

Basic knowledge of database concepts and development environments





Content

Module 01

Introduction to Elasticsearch

- | The Story of Elasticsearch
- | The Components of Elasticsearch
- | Documents
- | Indexes
- | Indexing Data
- | Searching Data
- | The Bulk API

Module 03

Text Analysis

- | What is Analysis?
- | Building an Inverted Index
- | Analyzers
- | Custom Analyzers
- | Character Filters
- | Tokenizers
- | Token Filters
- | Defining Analyzers
- | Synonyms
- | How to Choose an Analyzer
- | Segments

Module 02

The Search API

- | Introduction to the Search API
- | URI Searches
- | Request Body Searches
- | The match Query
- | The match phrase Query
- | The range Query
- | The Bool Query
- | Source Filtering

Module 04

Mappings

- | What is a Mapping?
- | Dynamic Mappings
- | Defining Explicit Mappings
- | Adding Fields
- | Dive Deeper into Mappings
- | Specifying Analyzers
- | Dynamic Templates
- | Index Templates



Module 05

More Search Features

- | Filters
- | Term Filters
- | The match_phrase_prefix Query
- | The multi_match_Query
- | Fuzziness
- | Highlighting
- | More Like This

Module 06

The Distributed Model

- | Starting a Node
- | Creating an Index
- | Starting a Second Node
- | Shards: Distribution of an Index
- | Distributing Documents
- | Replication
- | Split Brain
- | Other Node Types
- | Development vs. Production Mode

Module 07

Working with Search Results

- | The Anatomy of a Search
- | Relevance
- | Boosting Relevance
- | DFS Query-then-fetch
- | Sorting Results
- | Doc Values and Fielddata
- | Pagination
- | Scroll Searches
- | Choosing a Search Type

Module 08

Aggregations

- | What are Aggregations?
- | Types of Aggregations
- | Buckets and Metrics
- | Common Metrics Aggregations
- | The range Aggregation
- | The date range Aggregation
- | The terms Aggregation
- | Nesting Buckets

Module 09

More Aggregations

- | Global Aggregation
- | The missing Aggregation
- | Histograms
- | Date Histograms
- | Percentiles
- | Top Hits
- | Significant Terms
- | Sorting Buckets

Module 10

Handling Relationships

- | The Need for Data Modeling
- | Denormalization
- | The Need for Nested Types
- | Nested Types
- | Querying a Nested Type
- | Sorting on a Nested Type
- | The Nested Aggregation
- | Parent/Child Types
- | The has child Query
- | The has_parent Query

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