



# Core Elasticsearch

## Training Details

Training Time	:	1 Day
Capacity	:	12
Prerequisites	:	Exposure to or interest in Elasticsearch, relational databases, distributed systems, or information retrieval.

## About Training

### About Training

This training will guide you into an in-depth, instructor-led training course with case study discussions held by Elasticsearch developers.

### What You'll Learn

The course aims to provide a solid foundation in search and information retrieval. Starting with fundamental concepts and covers best practices, key features, and distributed search application development with Elasticsearch.

During the course there will be time for discussion as well as attendee case studies. At the end of the training you will have an in-depth understanding of how Elasticsearch works, you will be able to reliably analyze, understand, and solve common problems, and be ready to build state-of-the-art search applications.

### Who Should Attend

Developers who would like to build real-time search solutions and analytics solutions.

### Outline

Introduction

- Terminology, basic concepts, implementation, setup, and basic operations.
- What is Elasticsearch?
- Overview of best practices
- What's in a distribution?
- Understanding Elasticsearch cluster, shards, and replicas
- Discussion of configuration, APIs, and local gateway

### **Multi-Tenancy**

- Value of multiple indices, index aliases, and cross-index operations
- Introduction to data flow

### **Elasticsearch Index**

- In-depth analysis of mappings, indexing, and operations
- Discussion of transaction logs and Lucene indexing
- Understanding configuration options, mappings, APIs, and available settings

### **Search**

- Understanding search Query DSL In-depth understanding of search components: aggregations, search types, highlighting and other options.
- Overview of bitSets, filters and Lucene

### **Advanced Search and Mapping**

- Introduction to aggregations and nested document relations
- Understanding nested objects and parent-child relationships
- The importance of geolocation, mapping, indexing query percolation, relevancy, searching, and more
- Advanced Distributed Model
- Cluster state recovery, low level replication, low-level recovery, and shard allocation
- How to approach data architecture
- Index templates, features, and functionality

### **Big Data Design Pattern**

- In-depth content on multiple indices, overallocation, shard overallocation, node types, routing, replication, and aliases

### **Preparing for Production**

- Discussion on capacity planning and data flow
- Performance tuning, more on data flow, and memory allocation.

### **Running in Production**

- Installation, configuration, memory file descriptions, and hardware
- Monitoring, alerts, thread pools, information and stats API