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ClickHouse Quickstart

Turbocharge Your Data Analysis in two days

FA-0130

Data & Analytics

Introduction

Welcome to the ClickHouse crash course! ClickHouse has emerged as a leading open-source column-oriented database management system, known for its blazing-fast performance and scalability.

In this intensive one-day training, we'll dive into the fundamentals of ClickHouse, exploring its architecture, query language, and practical applications.

Learning outcomes

By the end of this training, participants will:

- Understand the basics of ClickHouse and its advantages over traditional databases.
- Gain insights into ClickHouse's architecture and data storage model.
- Learn to write efficient queries using ClickHouse SQL.
- Explore advanced features such as materialized views and table functions.
- Discover best practices for optimizing performance and managing ClickHouse clusters.

Prerequisites

- Basic understanding of SQL and database concepts.
- Familiarity with data warehousing and analytics is beneficial but not required.

Training outline

1. Introduction to ClickHouse

1. Overview of ClickHouse and its key features
2. Use cases and advantages of ClickHouse in data analytics

2. ClickHouse Architecture

1. Understanding ClickHouse's column-oriented storage model
2. Overview of ClickHouse components: ClickHouse Server, ClickHouse Client, and ClickHouse Zookeeper

3. ClickHouse Query Language (ClickHouse SQL)

1. Basic SELECT queries for data retrieval
2. Filtering, sorting, and aggregating data
3. Joins and subqueries in ClickHouse SQL

4. ClickHouse Data Types and Schemas

1. Overview of supported data types in ClickHouse
2. Creating and managing tables in ClickHouse
3. Schema design best practices for optimal performance

5. Advanced ClickHouse Features

1. Materialized views for pre-aggregated data
2. Table functions for custom data processing
3. Using dictionaries for efficient lookups

6. ClickHouse Performance Optimization

1. Indexing strategies to improve query performance
2. Partitioning and data distribution for scalability
3. ClickHouse configuration tuning for resource optimization

7. ClickHouse Clustering

1. Overview of ClickHouse clustering architecture
2. Setting up and managing ClickHouse clusters
3. High availability and fault tolerance considerations

8. ClickHouse Integration and Ecosystem

1. Integrating ClickHouse with other data tools (e.g., Apache Kafka, Apache Spark)
2. Exploring ClickHouse ecosystem tools and libraries
3. Use cases for ClickHouse in real-time analytics and reporting

This one-day intensive / two-day comprehensive training will equip participants with the knowledge and skills needed to harness the power of ClickHouse for efficient data storage, analysis, and reporting. Get ready to unleash the full potential of ClickHouse in your data-driven projects!

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