ADMIN-435

Troubleshooting Impala on Cloudera On-Premises Base

Course Overview

Course Type
Instructor-led training

Level
Intermediate

Duration
2 days

Platform
Cloudera on Premises Base

Topics Covered

- Troubleshooting & Diagnostics
- Query Plans & Profiles
- Slow & Failing Queries
- Memory & Buffer Pool
- Metadata Management
- Runtime Filters
- Admission Control

About This Training

This training provides a practical, hands-on approach to diagnosing and resolving Impala performance and reliability issues. You'll learn how to interpret query plans and profiles, identify common bottlenecks, troubleshoot memory and metadata problems, analyze runtime filters, and understand key components such as the buffer pool and admission control. Through guided exercises, you'll practice collecting diagnostic data, solving real query issues, and applying proven techniques to keep your Impala workloads running efficiently.

What Skills You Will Gain

During this course, you will learn:

- Ability to identify and diagnose common Impala performance, memory, and query issues
- Skills to read, interpret, and troubleshoot using query plans and profiles
- Techniques for collecting and analyzing diagnostic logs, metrics, and jstack outputs
- Understanding of Impala's memory model, buffer pool, and spill-to-disk behavior
- Experience troubleshooting metadata loading, caching, and propagation problems
- Knowledge of runtime filters and how they impact query performance
- Practical skills in tuning admission control and managing cluster resources
- Hands-on experience applying real troubleshooting methods in lab scenarios

Who Should Take This Course?

This course is ideal for data engineers, system administrators, and support teams who manage or troubleshoot Impala in production environments. A basic understanding of Impala is required to get the most value from the training.

ADMIN-435

Troubleshooting Impala on Cloudera On-Premises Base

Troubleshooting Overview

- Typical Issues and Appropriate Responses
- Methods and Tools for Gathering Diagnostic Information and Logs
- Hands-on Exercise: Collecting jstack of Catalog Server

How to Use Impala Query Plan and Profile to Fix Performance Issues

- What are query plan and profile
- What kind of issues query plan and profile can help you solve
- Structure of query plan and profile
- Basic troubleshooting
- Advanced query tuning and troubleshooting
- Hands-on Exercise: Read the query plan and profile

Impala Query Troubleshooting Guide

- Collecting Data for Diagnosis
- Inspecting Query Profile for Improving/Fixing Slow or Failing Queries
- Metadata Propagation–Related Issues

Troubleshooting Memory Usage and Related Issues in Impala

- Typical Memory Usage Issues
- Hands-on Exercise: Solving OOM issues

Impala Buffer Pool Overview

- Memory reservations: the foundation for better resource management
- Spill-to-disk: improving memory requirements and robustness
- Buffer pool internals
- Observability and Options: plans, query options, metrics and profiles
- Hands-on Exercise: Observing memory usage using CM metrics and Impala native web UI

Impala Metadata Management and Associated Troubleshooting Issues

- Impala Metadata Overview
- Metadata Cached in Catalogd
- Metadata Loading in Catalogd
- Metadata Operations in Catalogd
- Metadata Propagation
- Local Catalog Mode
- Local Catalog in Practice
- HMS Event Processor
- Hands-on Exercise: Checking metadata propagation status using catalog and statestore log

Runtime Filters in Impala

- Introduce Runtime Filters
- Filter Performance Issues
- Hands-on Exercise: Analyzing performance of runtime filters using query plan and profile

Admission Control Overview

- Resource management using admission control
- Hands-on Exercise: Issues from incorrect admission control settings

© 2026 Cloudera, Inc. All rights reserved. Cloudera and the Cloudera logo are trademarks or registered trademarks of Cloudera Inc. in the USA and other countries. All other trademarks are the property of their respective companies.
Information is subject to change without notice.

VERSION:
2.0.0