

Training Courses



AUTHORIZED
TRAINING CENTER



LARUS

Start small, Think big, Act fast

OUR PROGRAMS

OUR PROGRAMS OFFER ALL LEVELS OF TRAINING FROM BEGINNER TO EXPERT

Our trainings can be held either in the Italian or English language and they are designed to build and accelerate competencies in:

- Database Administration
- Data Architecture
- Data Science
- Application Development

OFFICIAL TRAINING

- INTRODUCTION TO NEO4J 4.X
- BASIC NEO4J DATA MANAGEMENT
- NEO4J GRAPH DATA MODELING
- IMPLEMENTING GRAPH DATA MODELS IN NEO4J 4.X
- BASIC NEO4J 4.X ADMINISTRATION
- CYPHER QUERY TUNING IN NEO4J 4.X
- NEO4J ROLE-BASED ACCESS CONTROL
- INTRODUCTION TO GRAPHS ALGORITHMS

STANDARD BOOTCAMP

The Standard Bootcamp is a comprehensive training, allowing your internal team to learn the fundamentals and create a small Proof of Concept based on a sample dataset you provide. Your team hits the ground running and learns the ins and outs of graph databases for solving your most pressing business problems



LEARN

Graphs awareness
Neo4j Bootcamp
Neo4j Official Training

PoC

Business Case
Identify Benefits of the PoC

EARLY PRODUCTION

Early production use cases

MISSION-CRITICAL

The Graph Platform is tied more closely to the business's overall vision

GLOBAL GRAPH PLATFORM

All the data in an organization is managed through a streaming platform

ADVANCED BOOTCAMP

With this Bootcamp option, our team reviews and validates your existing Proof of Concept environment and provides recommendations on data modeling, query performance tuning and production configuration optimization.



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NEO4J BOOTCAMP

Duration: 1\2 Weeks

The PoC is the stage when YOU are the main character of the Bootcamp.

- Do you have an existing database you want to test Neo4j on?
- Do you have some data too much complicated to query using your traditional relational database?
- Or you have just some information to store and manage in the most efficient way?

After an in-depth briefing from you, our graph experts will help you whiteboard your requirements and get you kick-started on Neo4j during a morning or afternoon session.

You'll reach a full working Neo4j database with your own examples and needs.

THE COMPLETE NEO4J HANDS-ON



Neo4j Bootcamp provide a full immersion into the technology. It usually cover from 1 to 2 weeks between trainings and proof-of-concept (PoC) stages, where we give a demonstration on how Neo4j is the right solution to solve your own problems with your own datasets.

DURING A BOOTCAMP, WE PROVIDE:



- NEO4J FUNDAMENTALS
- NEO4J DATA MODELING
- PROOF OF CONCEPT (POC)

We'll build together a proof of concept in Neo4j with the agreed data model, load some real data (coming from your production databases and extracted in CSV file format) into the graph database and write some Cypher queries and visualizations that will prove the candidate data model works fine for your use case.

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All the teachers are Neo4j Certified Professional Official Trainers.



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INTRODUCTION TO NEO4J 4.X

Duration: 2 days

Course Description

This course introduces you to what a graph database is and the Neo4j Graph Platform.

The main focus of this course is to learn Cypher. You will learn through 8 hands-on exercises how to write Cypher code to retrieve data from the Neo4j database

SKILL LEVEL:

- Beginner

AUDIENCE FOR THIS COURSE:

- Developers
- Architects
- Administrators
- Data Scientists
- Data Analysts

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GOALS



- Describe what a graph database is and the graph property model.
- Describe the features of Neo4j and the components of the Neo4j Graph Platform.
- Write basic Cypher queries to retrieve nodes and relationships from the Neo4j database.
- Write advanced Cypher queries where you control the query processing and how results are returned.
- Use some Cypher query best practices and monitor queries.

COURSE MODULES



- Neo4j is a Graph Database
- The Neo4j Graph Platform
- Introduction to Cypher
- Using Where to Filter Queries
- Working with Patterns
- Working with Cypher Data
- Controlling the Query Chain
- Controlling Results Returned

DETAILS



Depending on the choice of the quantity of modules and on the type of the focus required, the timing may vary.

The course is completely adaptable to the client's needs.

Our courses are available in English or in Italian and can be held in person or remotely.

The price is defined on the basis of requests and the number of participants



LARUS

BASIC NEO4J DATA MANAGEMENT

Duration: 2 days

Course Description

This course introduces how to create and modify graph data in Neo4j. You will learn through 10 exercises how to create, update, and delete data using Cypher, as well as how to import files wholesale. You will also learn how to use indexes and constraints to ease data management and enforce good data governance.

SKILL LEVEL:

- Beginner

AUDIENCE FOR THIS COURSE:

- Developers
- Architects
- Administrators
- Data Scientists
- Data Analysts

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GOALS



- Write Cypher statements to create, update, and delete nodes, relationships and properties in the Neo4j database.
- Create and use indexes.
- Import data into the Neo4j database using Cypher, APOC, neo4j-admin tool, a Java application, and the Neo4j ETL Tool.

COURSE MODULES



- Create nodes
- Create relationships
- Delete nodes and relationships
- Merge the data into the graph
- Define data constraint
- Define indexes on data
- Best Practice for Queries
- Data import into Neo4j
 - By UPLOAD CSV
 - Through the APOC library
 - Via the neo4j-admin tool
 - Through the Neo4j ETL tool

DETAILS



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LARUS

NEO4J GRAPH DATA MODELING

Duration: 2 days

Course Description

This course introduces you to model data as a graph that will be implemented as a Neo4j database. First you will learn the terminology used for Neo4j. You will learn how to identify your domain entities that are used to define the nodes of the graph. Then you will learn how to identify the connections between the entities based upon the questions related to the domain. You will learn about common modeling patterns for a graph data model and the best practices you should follow to create your graph data model. You will also explore some existing graph data modeling use cases.

SKILL LEVEL:

- Beginner

AUDIENCE FOR THIS COURSE:

- Developers
- Architects
- Administrators
- Data Scientists
- Data Analysts

GOALS



- Describe what a graph data model is for a Neo4j database.
- Design an initial graph data model using Neo4j best practices.
- Describe the core principles used for Neo4j graph data modeling.
- Describe the common structures used in a Neo4j graph data model.
- Refactor and evolve a graph data model.

COURSE MODULES



- Introduction to Graph Data Modeling
- Designing the Initial Graph Data Model
- Graph Data Modeling Core Principles
- Common Graph Structures
- Refactoring and Evolving a Model

DETAILS



In this course, you will perform hands-on exercises using the Arrow tool for modeling nodes and relationships.

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IMPLEMENTING GRAPH DATA MODELS IN NEO4J 4.X

Duration: 2 days

Course Description

This course teaches you how to create a graph from an existing data model using Neo4j Best practices. You will learn how to import data into the graph for the model. Then you will learn how to analyze the performance of queries against the graph. Your goal is to implement the data model so that all application queries have the best performance possible. Most of this course focuses on evolving the graph as the data model changes so that it can be more performant. In this course, you will perform 7 hands-on exercises in Neo4j Browser against a Neo4j instance.

SKILL LEVEL:

- Experienced

AUDIENCE FOR THIS COURSE:

- Developers
- Architects

GOALS



- Write Cypher code to populate a database with sample data for the starting data model.
- Use Cypher to import data into the graph for a given data model.
- Analyze query execution.
- Refactor a graph by adding intermediate nodes.
- Refactor a graph by adding relationships.
- Perform a refactoring on a large database.

COURSE MODULES



- Implementing your first model.
- Importing data
- Profiling queries
- Refactoring graphs

DETAILS



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BASIC NEO4J 4.X ADMINISTRATION

Duration: 2 days

Course Description

This course introduces you to the common administration tasks for managing Neo4j Enterprise Edition, either in a development environment or in a production environment. First, you learn about what Neo4j is. Next you learn about the various architectures where Neo4j is used and you learn about the versions and editions of Neo4j where you install Neo4j Enterprise Edition. Then you learn the basics of managing a Neo4j instance and how to perform both offline and online backups as well as using the cypher-shell utility for accessing the database from a terminal. You will also learn how to manage plugins to be used by the Neo4j instance and how to load a database using the import tool.

SKILL LEVEL:

- Beginner

AUDIENCE FOR THIS COURSE:

- Developers
- Architects
- Administrators
- Data Scientists
- Data Analysts

GOALS



- Determine which deployment option to use.
- Start a Neo4j instance.
- Stop the Neo4j instance.
- Set the password for the `neo4j` user.
- Copy a Neo4j database.
- Modify the location for a Neo4j database.
- Check the consistency of a Neo4j database.
- Create scripts for modifying a Neo4j database.
- Manage plugins for a Neo4j database.
- Configure the HTTP port used by the Neo4j instance.
- Perform an online backup of a Neo4j database.
- Create a database with the import tool.

COURSE MODULES



- Neo4j administration overview
- Configuration parameters
- Use the cypher-shell to manage Neo4j
- Database backup
- Change the database location
- Check the consistency of the database
- Implement scripts for database management
- Plugins configuration
- Fine tuning

DETAILS



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CYPHER QUERY TUNING IN NEO4J 4.X

Duration: 2 days

Course Description

This course teaches you how to utilize basic Cypher skills to create queries that perform optimally for your application. You will learn the components that go into a query when it executes and how to profile queries. Most of this course delves into a collection of best practices for making your queries more efficient.

SKILL LEVEL:

- Intermediate

AUDIENCE FOR THIS COURSE:

- Developers
- Architects
- Administrators
- Data Scientists
- Data Analysts

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GOALS



- Describe the components of query processing in Neo4j.
- Prepare your application for a query tuning task.
- Modify queries to reduce cardinality:
 1. Aggregate early.
 2. Use pattern comprehension.
 3. Use labels for anchor node selectivity.
 4. Use indexes to your advantage.
 5. Use full-text schema indexes.
 6. Use query hints for index usage.
 7. Use LIMIT early in the query.
 8. Use DISTINCT early in the query.
 9. Use UNWIND to your advantage.
 10. Avoid cartesian products.
- Describe how property access affects query performance.
- Modify queries to reduce property access.
- Monitor running queries.
- Configure query logging.
- Monitor queries with the Query Log Analyzer tool.

COURSE MODULES



- Introduction to Query Tuning
- How Queries Work in Neo4j
- Controlling Row Cardinality
- Optimizing Property Access
- Node Degree Shortcuts
- Monitoring Queries

DETAILS



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NEO4J ROLE-BASED ACCESS CONTROL

Duration: 1 Day

Course Description

The aim of this course is to explain how to manage role-based access control and fine-grained security in the Neo4j database. Starting from basic concepts of authentication and authorization we take an introduction on how to manage users in Neo4j. Then, we illustrate an in-depth explanation of user role management. Built-in roles are a useful starting point to explore how they are limited in a real scenario. We discuss how our focus should be oriented to take advantage of privileges to build a fine-grained access to specific portions of a graph. All sections are fully covered with practical exercises.

SKILL LEVEL:

- Intermediate

AUDIENCE FOR THIS COURSE:

- Full Stack Developer
- Backend Developer
- Data Engineer
- System Administrator
- Data Scientist
- Project Manager
- Product Owner

GOALS



Improve and test the knowledge about

- Basics of authentication and authorization in Neo4j
- User role management in Neo4j
- Role-based Access Control in Neo4j
- Fine-grained access control in Neo4j

COURSE MODULES



Introduction

- Authentication
- Auth Providers

User and User Role Management

- Listing current user
- Listing users
- Creating users
- Renaming users
- Modifying users
- Change the current user's password
- Drop user

Role-based Access Control

- Built-in roles
- Fine-grained Access Control



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INTRODUCTION TO GRAPH ALGORITHMS

Duration: 2 days

Course Description

This course introduces you to how graph algorithms are used in applications and the types of graph algorithms that you can use to analyze your graph data. You will learn about the Neo4j Graph Data Science Library and how it has implemented many useful graph algorithms. You will also learn about the recommended workflow when you are using graph algorithms for your analysis. You will also gain some experience using the Neo4j Data Science Playground as a UI to help you understand the data in your graph. You will learn how to execute graph algorithms on a couple of datasets and how the generated code can be executed in Cypher.

SKILL LEVEL:

- Advanced

AUDIENCE FOR THIS COURSE:

- Developers
- Architects
- Administrators
- Data Scientists
- Data Analysts

GOALS



- Describe the types of graph algorithms used for analysis.
- Describe how to use the Graph Data Science Library for your analysis.
- Set up your environment for Graph Data Science analysis.
- Describe the workflow you typically use for using the graph algorithms.
- Estimate how much memory an algorithm will require for a particular dataset.
- Use some Community Detection algorithms:

Weakly Connected Components

Label Propagation

Louvain Modularity

Triangle Counting

Local Clustering Coefficient

- Use some Centrality algorithms:

PageRank

Betweenness Centrality

- Use the Node Similarity algorithm (Jaccard Index).
- Perform an analysis using multiple algorithms to answer questions.
- Describe some best practices for using graph algorithms.

DETAILS



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The course is completely adaptable to the client's needs.

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Price List

THE COURSES ARE STRUCTURED FOR A MAXIMUM NUMBER OF 8 (EIGHT) PARTICIPANTS AND THEY INCLUDE THE ISSUANCE OF AN OFFICIAL CERTIFICATE OF PARTICIPATION.

THE COURSES ARE HELD BY CERTIFIED LARUS PERSONNEL QUALIFIED FOR TRAINING ON NEO4J.

COURSE	PRICE
INTRODUCTION TO NEO4J	4.500 €
BASIC NEO4J DATA MANAGEMENT	4.500 €
GRAPH DATA MODELING	4.500 €
IMPLEMENTING GRAPH DATA MODELS IN NEO4J	4.500 €
BASIC NEO4J 4.0 ADMINISTRATION	4.500 €
QUERYING WITH CYPHER IN NEO4J	4.500 €
INTRODUCTION TO GRAPHS ALGORITHMS	4.500 €
BOOTCAMPS	12.500 €

LARUS helps clients to build custom data solutions in order to optimize their decision-making process, boost profits and stay competitive.

In LARUS we create your exclusive software for business and we help companies all over the world by designing big data-driven platforms, based on the most innovative open-source technologies, thanks to a solid experience gained in different areas: governance, insurance, finance, industry, commercial and telco.

Do You Have Any Questions?

Contact us around the globe:

- +39 041 50 60 149
- info@larus-ba.it



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The courses are structured for a maximum number of 8 (eight) participants and they include the issuance of an official certificate of participation.

The courses are held by certified LARUS personnel qualified for training on Neo4j.

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