Advanced Data Warehousing and ETL Processes Training Course

16 - 20 Nov 2026

Cape town

4600 € (Per Person)

Ref: #DM6506_272639

Course Introduction / Overview:

This comprehensive course provides a deep dive into the principles, architectures, and best practices of modern data warehousing and ETL processes. In an era where data is a critical asset, the ability to effectively collect, store, and transform it into actionable insights is paramount for competitive advantage. This program moves beyond theoretical concepts to offer practical, hands-on knowledge in designing and implementing robust data integration solutions. Drawing upon the foundational methodologies of pioneers like Ralph Kimball, as detailed in his seminal work "The Data Warehouse Toolkit," participants will explore the intricacies of dimensional modeling, data pipeline construction, and performance optimization. BIG BEN Training Center has designed this curriculum to empower professionals with the skills to build scalable and efficient data warehouses that serve as the backbone for business intelligence and data analytics initiatives. The course addresses both traditional on-premise solutions and the evolving landscape of cloud-based data warehousing, ensuring participants are equipped for the challenges of today's data-driven world.

Target Audience / This training course is suitable for:

- Data Engineers.
- Business Intelligence (BI) Developers and Analysts.
- Database Administrators and Architects.
- Data Analysts and Data Scientists.
- ETL Developers.
- IT Professionals involved in data management and integration.
- Solutions Architects.
- Project Managers overseeing data-related projects.

Target Sectors and Industries:

- Financial Services and Banking.
- Healthcare and Pharmaceuticals.
- Retail and E-commerce.
- Telecommunications.
- Manufacturing and Supply Chain.
- Government and Public Sector Agencies.
- Technology and Software.
- Consulting Services.

Target Organizations Departments:

- Information Technology (IT).
- Business Intelligence and Analytics.
- Data Management and Governance.
- Finance and Accounting.
- Marketing and Sales.
- Operations and Logistics.
- Product Development.

Course Offerings:

By the end of this course, the participants will have able to:

- Design and implement effective dimensional models, including star and snowflake schemas.
- Develop robust ETL and ELT pipelines for seamless data integration.
- Apply data quality and cleansing techniques to ensure data integrity.
- Manage and implement various types of Slowly Changing Dimensions (SCDs).
- Optimize ETL processes for performance, scalability, and efficiency.
- Evaluate and understand the architecture of modern cloud data warehouses.
- Establish data governance and master data management principles within a data warehouse environment.
- Troubleshoot common issues in data warehousing and ETL workflows.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be immersive, interactive, and highly practical. We believe that mastering complex topics like data warehousing and ETL requires a blend of theoretical knowledge and hands-on application. The course is structured around a series of expert-led lectures, interactive group discussions, and real-world case study analyses. Participants will engage in practical lab exercises that simulate the challenges of building a data warehouse from the ground up, allowing them to apply concepts like dimensional modeling and ETL pipeline development in a controlled environment. Team-based projects encourage collaborative problem-solving and the sharing of diverse perspectives. Continuous feedback is provided by the instructor to guide learning and ensure a thorough understanding of the material. This approach ensures that participants not only learn the concepts but also develop the confidence and competence to apply them effectively in their professional roles.

Course Agenda (Course Units):

Unit One: Foundations of Data Warehousing

- Introduction to Data Warehousing and Business Intelligence.
- Comparing the Kimball and Inmon approaches to data warehouse architecture.
- Understanding the differences between OLTP and OLAP systems.
- Exploring the components of a modern data architecture.
- The role of data marts, data lakes, and operational data stores.
- Key concepts in data integration and its importance.
- Lifecycle of a data warehouse project.

Unit Two: Dimensional Modeling for Analytics

- Fundamentals of dimensional modeling.
- Designing fact tables and identifying business processes.
- Creating and managing dimension tables and their attributes.
- Understanding star schemas and snowflake schemas.
- Handling complex relationships with bridge tables.
- Implementing Slowly Changing Dimensions (SCD) Types 1, 2, and 3.
- The importance of conformed dimensions and enterprise-wide consistency.

Unit Three: The Extract, Transform, and Load (ETL) Process

- Deep dive into the ETL architecture and workflow.
- Techniques for data extraction from various source systems.
- Core data transformation processes: cleansing, standardization, and enrichment.
- Strategies for loading data into the data warehouse.
- Designing for incremental loads versus full loads.
- Data profiling and its role in the ETL process.
- Introduction to modern ELT (Extract, Load, Transform) patterns.

Unit Four: Advanced ETL Techniques and Performance Tuning

- Implementing robust error handling and logging mechanisms in ETL jobs.
- Strategies for ETL performance optimization and bottleneck analysis.
- Parallel processing and partitioning in data integration.
- Managing data quality and implementing data validation rules.
- Change Data Capture (CDC) techniques and their application.
- Introduction to real-time data ingestion and stream processing.
- Automating and scheduling ETL workflows.

Unit Five: Modern Data Warehousing and Governance

- An overview of cloud data warehousing platforms.
- Architectural differences between traditional and cloud data warehouses.
- Data security considerations in a data warehouse environment.
- Implementing a data governance framework.
- The role of Master Data Management (MDM) in data warehousing.
- Maintaining and evolving the data warehouse over time.
- Future trends in data warehousing and analytics.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

As data architectures shift towards real-time streaming and ELT patterns, what is the evolving role of traditional, structured data warehousing in a modern data ecosystem?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by focusing on the timeless principles of data architecture and design rather than on proficiency in a single, transient software tool. While many programs concentrate on specific ETL platforms, this training provides a vendor-agnostic understanding of the fundamental concepts that underpin all successful data warehousing projects. Participants will learn the strategic 'why' behind the technical 'how,' empowering them to design and implement robust solutions regardless of the technology stack. The curriculum emphasizes critical thinking in dimensional modeling, a skill essential for building analytics systems that are both flexible and scalable. By grounding the learning in foundational methodologies, such as those pioneered by Ralph Kimball, the course ensures that the skills acquired are transferable and will remain relevant even as technologies evolve. This strategic, principle-based approach prepares participants not just to be ETL developers, but to become data architects who can drive data-driven decision-making within their organizations.