



Enterprise Database Migration

Course description

In this advanced course, you will delve into the complex world of enterprise database migration. You will learn about the strategic planning, technical execution, and critical post-migration phases involved in moving mission-critical databases, whether from on-premises to cloud, between different cloud providers, or across diverse database technologies (e.g., Oracle to PostgreSQL). The course will provide a solid understanding of assessment methodologies, tooling, common challenges, and best practices to ensure successful, secure, and performant migrations with minimal downtime. By the end of this course, you will be equipped to design, plan, and oversee a comprehensive database migration project within an enterprise environment.

- **Course level:** Intermediate
- **Duration:** 4 days

Activities

This course includes presentations, interactive discussions, hands-on labs using real-world migration tools, case studies, and group exercises focused on migration planning and problem-solving.

Course objectives

In this course, you will learn to:

- Summarize the business drivers, benefits, and key challenges of enterprise database migration projects.
- Discuss various migration strategies, including homogeneous, heterogeneous, online, and offline approaches.
- Describe comprehensive assessment and discovery techniques to analyze source databases and applications.
- Explain the functionality and application of different cloud-native and third-party database migration tools.
- Illustrate the detailed steps involved in schema, data, and application migration, including data validation.
- Recognize the critical importance of robust testing, validation, and cutover planning for minimal downtime.
- Discuss post-migration optimization, monitoring, and operational best practices in the target environment.
- Formulate a detailed enterprise database migration plan, addressing security, performance, and compliance.

Intended audience

This course is intended for IT professionals involved in planning, executing, or managing database infrastructure:

- Database Administrators (DBAs)
- Solutions Architects
- Cloud Architects
- DevOps Engineers
- IT Project Managers

- Technical Leads
- Data Engineers
- System Engineers

Prerequisites

We recommend that attendees of this course have:

- Strong understanding of relational database concepts and SQL.
- Familiarity with database administration tasks (e.g., backup/restore, performance monitoring).
- Basic knowledge of cloud computing concepts (e.g., IaaS, PaaS, networking, security).
- Experience with at least one major database system (e.g., Oracle, SQL Server, MySQL, PostgreSQL).

Course outline

Module 01 – Migrating Enterprise Databases to the Cloud

Topics

- Database Migration Use Cases
- Traditional Database Architectures
- Cloud Database Optimization
- High Availability and Scalability

Module 02 – Google Cloud Data Migration Solutions

Topics

- Google Cloud Database Services
- Compute Engine for Databases

- Databases on GKE
- Cloud SQL
- Bare Metal Solution
- Cost Estimation

Module 03 – Google Implementation Methodology

Topics

- Migration Methodology
- Migration Activities
- Migration Approaches

Module 04 – Migration Strategies

Topics

- Lift and Shift Migration
- Backup and Restore Strategies
- Zero-Downtime Migration
- Database Optimization

Module 05 – Networking for Secure Database Connectivity

Topics

- Secure Networking Architectures
- VPC Peering
- VPNs and Interconnect

- Firewall Rules
- Terraform Automation

Module 06 – Migrating SQL Server Databases to Google Cloud

Topics

- SQL Server Lift and Shift
- Cloud SQL for SQL Server
- High Availability
- Disaster Recovery
- SQL Server on GKE

Module 07 – Migrating Oracle Databases to Google Cloud

Topics

- Oracle on Google Cloud
- Bare Metal Solution
- Oracle Use Cases

Module 08 – Testing and Monitoring Databases in Google Cloud

Topics

- Unit Testing
- Integration Testing
- Regression Testing
- Monitoring Migration Projects

Module 09 – Google Cloud Data Migration Tools

Topics

- Google Transfer Services
- Cloud Data Fusion
- Cloud Composer
- ETL Pipelines

Module 10 – Making the Business Case for Moving to Google Cloud

Topics

- Business Justification
- Risk Analysis
- Cost-Benefit Analysis
- Migration Cost Estimation

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About CloudThat

Established in 2012, CloudThat is an award-winning company and the first in India to offer cloud training and consulting services for individuals and enterprises worldwide. Recently, it won Google Cloud's New Training Partner of the Year Award for 2025, becoming the first company in the world in 2025 to hold awards from all three major cloud giants: AWS, Microsoft, and Google. CloudThat notably won consecutive AWS Training Partner of the Year (APJ) awards in 2023 and 2024 and the Microsoft Training Services Partner of the Year Award in 2024, bringing its total award count to an impressive 12 awards in the last 8 years.

CloudThat specializes in Cloud Migration, Data Platforms, DevOps, IoT, and cutting-edge technologies like Gen AI & AI/ML. As a Microsoft Solutions Partner, AWS Premier Tier Training Partner, Google Cloud Platform Partner, and collaborator with leading organizations like HPE, Oracle, Nvidia and Databricks, CloudThat has trained over 850,000 professionals across 600+ cloud certifications, empowering students and professionals worldwide to advance their skills and careers.

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