

Course Outline

Module 1. Data Virtualization Concepts and Principles

Data Virtualization Basics

- Data Virtualization Defined
- Virtualization vs. Materialization
- Virtualization vs. Synchronization
- Virtualization vs. Federation
- History and Evolution

Why Data Virtualization?

- Business Agility
- The Data Virtualization Business Case
- The Data Virtualization Technical Case

The Data Virtualization Foundation

- Views
- Query Optimization
- Data Services
- A “Bird’s-Eye” View

Virtualize or Materialize?

- Decision Factors
- Business Considerations Discussion

Module 2. Data Integration Architecture

Integration Architecture Concepts

- Integration Architecture Defined
- Data Sources, Middleware, and Data Consumers
- You Have It (Whether Defined or Not)

Reference Architectures

- Forrester’s Data Architecture Reference Model
- Forrester’s IaaS Architecture
- Gartner’s Data Services Layer Architecture
- IBM’s BI Reference Architecture

Integration Architecture Examples

- Example 1 – Ministry Social Services Logical Architecture
- Example 2 – Energy Industry Logical Architecture
- Example 3 – Energy Industry Technical Architecture
- Example 4 – Financial Services Logical Architecture

Virtualize or Materialize?

- Data Source Considerations Discussion

Module 3. Data Virtualization in Integration ArchitectureVirtualization in Data Integration Projects

- Data Virtualization Use Cases

Data Warehousing Use Cases

- Data Warehouse Augmentation
- Data Warehouse Federation
- Hub and Virtual Spoke
- Complement ETL
- Data Warehouse Prototyping
- Data Warehouse Migration

Data Federation Use Cases

- Federated Views
- Data Services
- Data Mashups
- Caches
- Virtual Data Marts
- Virtual Operational Data Store (ODS)

MDM and EIM Use Cases

- Master Data Hub Extension
- Master Data Services
- Virtual Data Layer
- Enterprise Data Services

More Data Virtualization Applications

- Virtualization and Big Data
- Virtualization and Cloud Data

Virtualize or Materialize?

- Data Consumer Considerations Discussion

Module 4. Data Virtualization PlatformsPlatform Requirements

- Data and Information Services
- Development Environment
- Management Functions

Platform Capabilities

- Access
- Delivery
- Transformation
- Abstraction
- Federation
- Query Optimization
- Caching
- Security
- Quality
- Governance

Platform Variations

- Stand-Alone Data Virtualization
- Extension of BI or Data Warehousing Platform
- Embedded and Appliances
- Some Vendors

Module 5. Implementing Data Virtualization

Analysis

- Goals and Purpose
- Scoping
- Data Source Discovery
- Source Data Analysis

Design and Modeling

- Data Source Layer
- Data Integration Layer
- Publish and Access Layer

Development

- Connect to Data Sources
- Build the Views
- Test and Validate
- Publish and Connect Applications

Deployment

- Acceptance Testing and Production

Operation

- Runtime Operations
- Management and Governance

Virtualize or Materialize?

- A Decision Tool

Module 6. Getting Started with Data Virtualization

Skills and Competencies

- Capabilities and Expertise

Human Factors

- People and Data Virtualization

Goals and Expectations

- DV Readiness
- Choosing a First DV Project
- Planning a DV Roadmap

Best Practices

- What Works in DV
- Mistakes to Avoid