Chapter 2. Federated Databases: **Integration and Analytical Model**

Federated Database Object Study Case: source directory structure

- Support Software and configuration
  - fdbo_study_case/support/2_AccessModel_NoSQL
- Data Source Simulation Scripts
  - fdbo_study_case/1_DataSources
- Access Model Structures
  - fdbo_study_case/2_AccessModel_SQL
  - fdbo_study_case/2_AccessModel_XLS
  - fdbo_study_case/2_AccessModel_XML_JSON
  - fdbo_study_case/2_AccessModel_NoSQL
- Integration & Analytical Model Structures
  - fdbo_study_case/3_IntegrationAnalyticalModel

PREPARE Source Data and Integration Context

- Using Data Sources for Access Model: minimum configuration
  - Start Oracle Database Server
  - Start PostgreSQL Server
  - Start PostgREST service
  - SQLDeveloper: connect with FDBO on XEPDB1 service
    - fdbo_study_case/2_AccessModel_SQL/
      - 21_AM_ORCL_Link_View.sql: Sales
    - fdbo_study_case/2_AccessModel_SQL/
      - 26_AM_POSTGREST_View.sql: Customers Details
        - (26_AM_POSTGREST_View_Docker.sql with Docker Context)
    - fdbo_study_case/2_AccessModel_XLS/
      - 23_AM_XLS_ExcelTable_View.sql: Customers Categories, Periods
    - fdbo_study_case/2_AccessModel_XML_JSON
      - 24_AM_XML_ExtTbl_View.sql: Locations
- Using Data Sources for Access Model: **NoSQL** configuration
  - Start Oracle Database Server
  - Start PostgreSQL Server
  - Start PostgREST service
  - Start MongoDB Server

- Start RESTHEART Service
- Start Neo4j Server
- SQLDeveloper: connect with FDBO on XEPDB1 service
  - fdbo_study_case/2_AccessModel_SQL/
    - 21_AM_ORCL_Link_View.sql: Sales
  - fdbo_study_case/2_AccessModel_SQL/
    - 26_AM_POSTGREST_View.sql: Customers Details
      - (26_AM_POSTGREST_View_Docker.sql with Docker Context)
  - fdbo_study_case/2_AccessModel_XLS/
    - 23_AM_XLS_ExcelTable_View.sql: Customers Categories, Periods
  - fdbo_study_case/2_AccessModel_NoSQL/
    - 28_AM_JSON_MongoDB_View: Locations
      - (28_AM_JSON_MongoDB_View.sql with Docker Context)
    - 28_AM_JSON_Neo4J_View: Locations
      - (28_AM_JSON_Neo4J_View.sql with Docker Context)
    - 29_AM_JSON_NoSQL_View

CASE STUDY 1: Case Study: SQL ROLAP Multidimensional Database

- Create Multidimensional Integration and analytical Views on FDBO schema
  - SQL Developer (Connect with FDBO on XEPDB1 service)
    - fdbo_study_case/3_IntegrationAnalyticalModel/
      - **31_OLAP_Multidimensional_Analytical.sql**
    - Create
      - *Consolidation Views*
        - *Dimensional Views*
          - *OLAP_DIM_CUSTS_CITIES_DEPTS*
          - *OLAP_DIM_DATA_CALENDAR*
          - *OLAP_DIM_CUST_CTG_TO*
          - *OLAP_DIM_CUST_CTG_EMP*
          - *PRODUCTS_VIEW*
          - *PERIODS_VIEW*
        - *Fact Views*
          - *OLAP_FACTS_SALES_AMOUNT*
      - *Analytical Views*
        - *Aggregation (CUBE, ROLLUP) views*
          - *OLAP_VIEW_SALES_DEP_CIT_CUST*
          - *OLAP_VIEW_SALES_CALENDAR*
          - *OLAP_VIEW_SALES_CTG_CUST_TO*
          - *OLAP_VIEW_SALES_CTG_CUST_EMP*