Data Warehousing with IBM Cloud Db2 Warehouse

Cloud Computing

Nalaya Thiran Project

by

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Algorithm:

Step1 : Create an IBM account by providing the necessary details to open an IBM account.

Step2 : Create an IBM Cloud Db2 Warehouse instance.

Step3 : Connect Db2 Warehouse to the data sources. Databases, flat files, cloud storage, APIs, and other similar sources may be used.

Step4 : To move data from source systems to the Db2 Warehouse, use ETL (Extract, Transform, Load) processes.

Step5 : Create and design the data warehouse schema by creating tables, relationships, and data types.

Step6 : Load the data into Db2 Warehouse.

Step7 : To clean, enrich, and prepare data for analysis, use data transformations.

Step8 : Use SQL transformations tools to do the data transformations.

Step9 : Eventhough the IBM Cloud Db2 Warehouse do provisioning or managing infrastructure, perform some configuration and management tasks such as creating users, roles, and schemas.

Step10 : Begin designing and deploying applications for data querying and analysis.

Step11 : Optimize SQL queries and performance with tools such as Db2's query optimization features or by designing efficient data models.

Step12 : Utilize monitoring tools and utilities of IBM Cloud Db2 Warehouse to implement monitoring and alerting to keep an eye on system performance and data quality.

Step13 : Execute maintenance chores like data cleaning, indexing, and backup/restore operations on a regular basis.

Step14 : Create backup and disaster recovery plans to guarantee data integrity and availability in the event of system failures.

Step15 : Adjust the resources allotted to the Db2 Warehouse instance.

Step16 : Ensure that the data warehouse is used in a responsible and ethical manner.

Step17 : Create documentation for all processes, data dictionaries, and data warehouse architecture.

Step18 : Users and administrators should receive training on how to utilize and maintain the data warehouse.

Step19 : Ensure that the data model and queries are performance optimized.

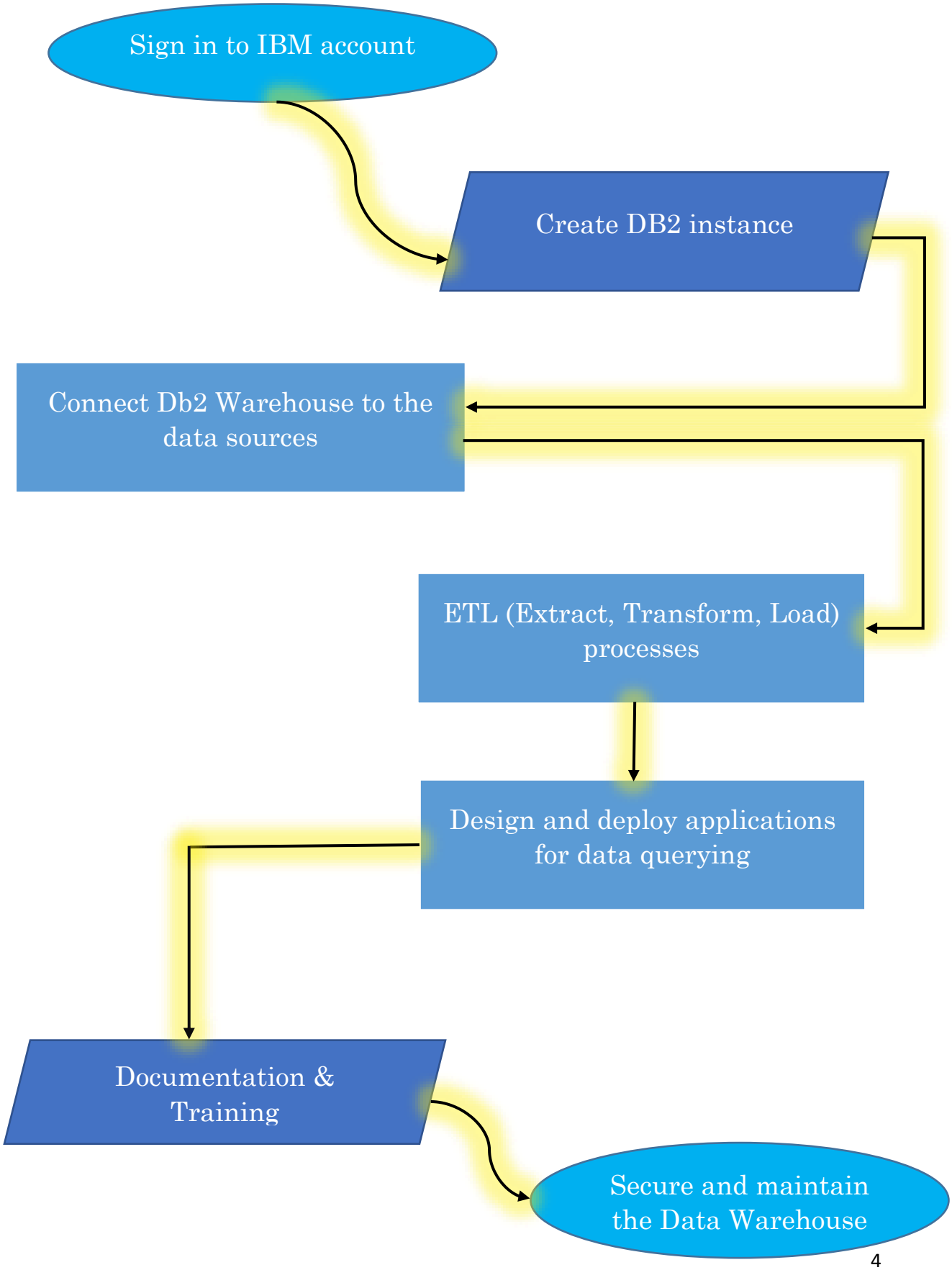
Step20 : As the workload changes, continuously check and optimize the data warehouse's performance.

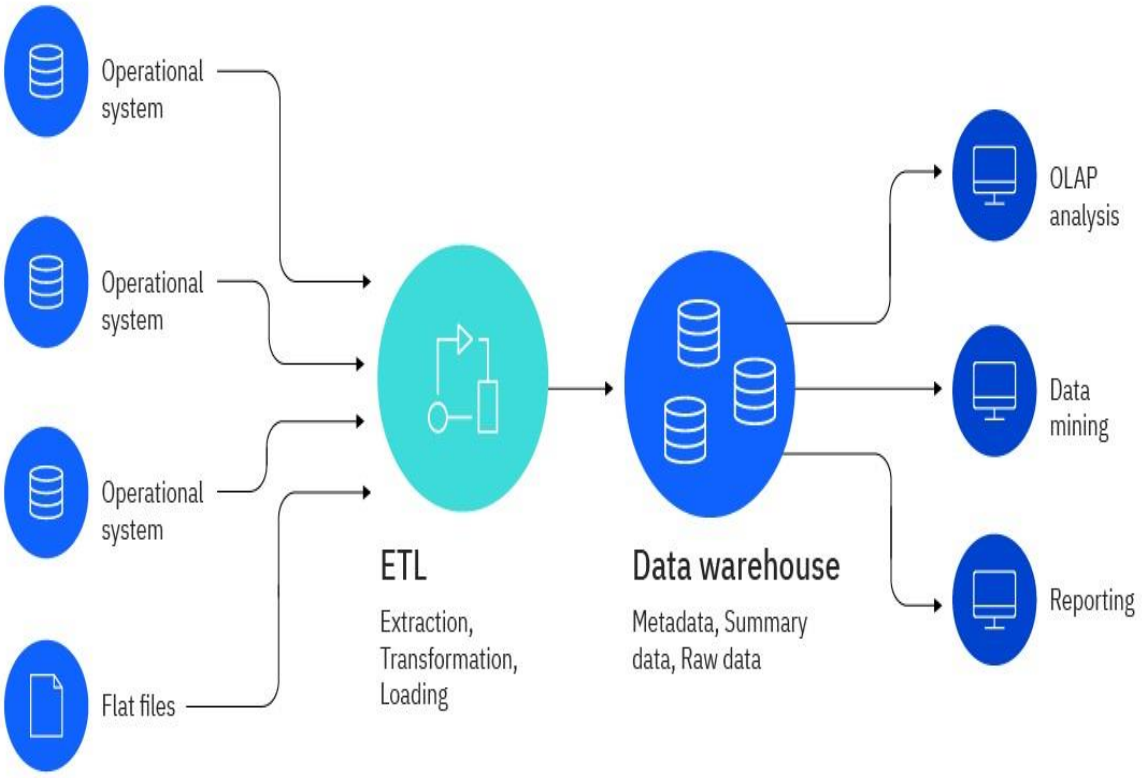
Step21 : Implement adequate security measures to prevent unauthorized access to the data warehouse.

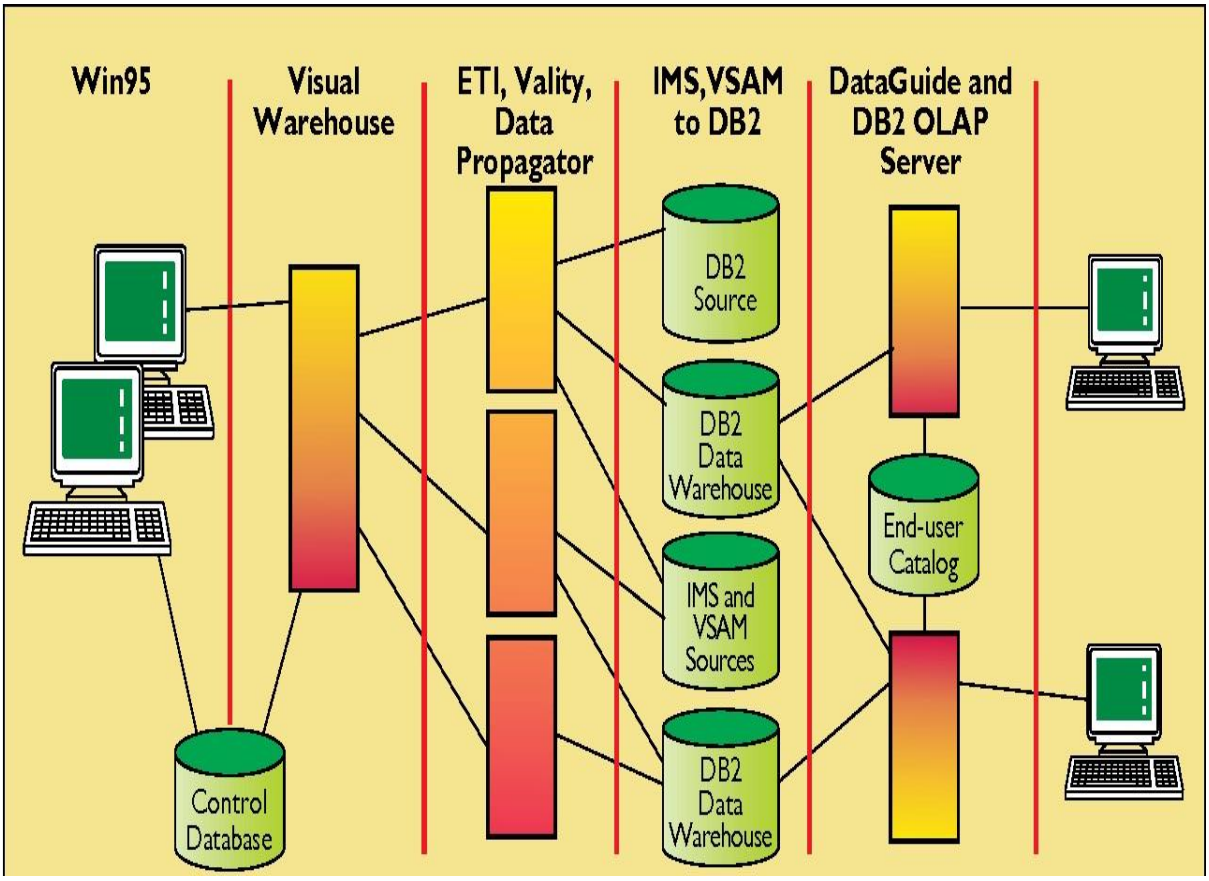
Step22 : Put data archiving and disposal rules into place to manage data preservation and compliance

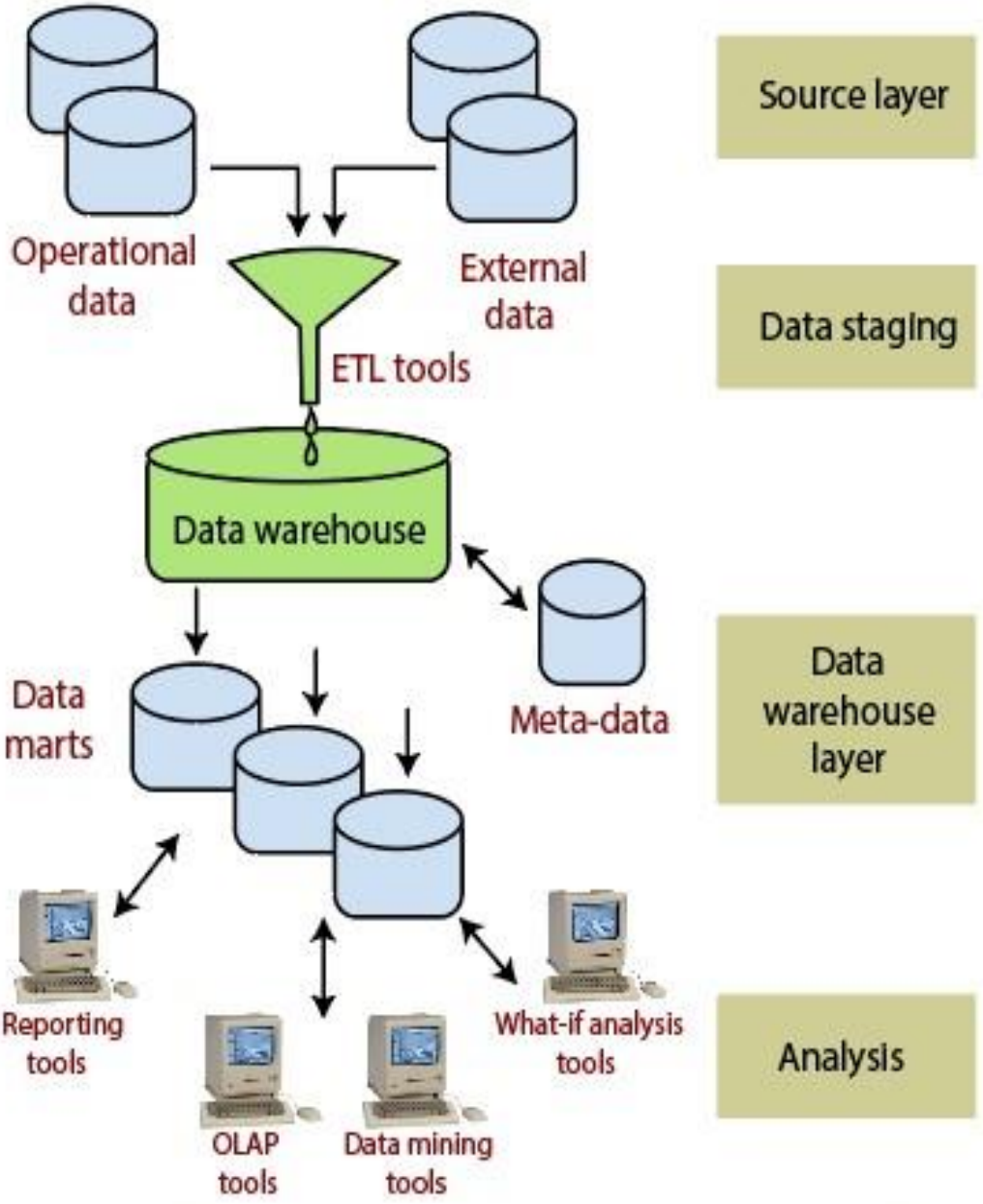
Step23 : Prepare to scale up or down the Db2 Warehouse setup as needed.

Flow Chart :


Sign in to IBM account
Create DB2 instance
Connect Db2 Warehouse to the data sources
ETL (Extract, Transform, Load) processes
Design and deploy applications for data querying
Documentation & Training
Secure and maintain the Data Warehouse


Operational system
Operational system
Operational system
Flat files
ETL
Extraction, Transformation, Loading
Data warehouse
Metadata, Summary data, Raw data
OLAP analysis
Data mining
Reporting


Win95
Visual Warehouse
ETI, Vality, Data Propagator
IMS,VSAM to DB2
DataGuide and DB2 OLAP Server
DB2 Source
DB2 Data Warehouse
IMS and VSAM Sources
DB2 Data Warehouse
End-user Catalog
Control Database


Source layer
Operational data
External data
Data staging
ETL tools
Data warehouse
Data warehouse layer
Data marts
Meta-data
Reporting tools
What-if analysis tools
Analysis
OLAP tools
Data mining tools