

Teradata13 Course Content:35-40hours

Course Outline

1. Introduction to DBMS and RDBMS

- File and File system
- Database Models
- Hierarchal Model
- Network Model
- Relational Model
- Disadvantages of DBMS
- Advantages of RDBMS
- EF Codd Rules and ACID Properties
- Normalization Methods(1st,2nd,3rd)
- Integrity Constraints (P.K, FK, Check, Not null)

2. Introduction to Teradata

- What is Teradata?
- History of Teradata
- Versions of Teradata
- Teradata and other RDBMS technologies
- Advantages of Teradata

3. Introduction to Data warehousing

- What is Data warehousing?
- Definition of Data warehouse
- Who needs Data warehouse?
- Advantages of Data warehouse
- Architecture of Data warehouse
- Types of Systems(OLTP, OLAP, DSS, ODS)

4. Logical data warehouse modeling

- Dimension, Fact, Fact less Fact tables
- Star Schema Model
- Snow flake Schema Model
- Slowly changing dimension (SCD1, SCD2, SCD3)
- ETL Process diagram

- *Interview Questions on DW*

5. Teradata Architecture and Components

- Parallel data Extension (PDE)
- Virtual Processor (V Procs)
- Parsing Engine (PE), AMP, MPP, Node, Clique, CLI
- AMP, MPP Architecture, Shared Nothing Architecture
- Trusted Parallel Application (TPA)
- Parsing Engine Parts, ByNet
- Fault tolerance

6. Teradata Indexes

- Differences between Primary Key and Primary Indexes
- Primary Index (UPI, NUPI)
- Secondary Index (USI, NUSI)
- Partitioned Primary Index (PPI)
- Join Index, Hash Index
- Accessing records through indexes
- Secondary Index and Full table Scan
- Full real time scenarios and FAQs

7. Teradata Data distribution and Access

- Teradata data distribution Process
- Primary Key and Primary Indexes
- Data distribution through Hashing
- Row Hash, Hasp map and hashing algorithm
- Hash bucket, DSW(destination selection word)

8. Data protection and Recovery Methods

- Locks(Read, Write, Access, Exclusive locks)
- Fall back Protection levels (AMP, Node, Clique)
- Journals (Transient, Permanent)
- Raids(Raid1,Raid5,Raid S)

9. Introduction to Teradata SQL

- SQL Fundamentals, Data types
- Data definition language(DDL)
- Data manipulation Language(DML)
- Teradata exclusive Commands(Help, Show)
- Teradata SQL Assistant

10. SQL Operators and Functions

- Arithmetic functions
- String manipulation functions
- Caste functions

- Aggregating functions
- Set operators and other operators
- *Interview Questions SQL*

11. Teradata joins and join strategies

- Cross join, Self join, Inner Join
- Outer join(left, Right, Full outer)
- Join Strategies
- Product, Nested, Hash, Merge join strategies
- *Excellent examples and FAQs on Joins*

12. Teradata objects

- Normal tables (Set, Multi set)
- Derived tables, Volatile tables
- Global temporary tables
- Views, Macros, Stored procedures, Triggers

13. Teradata database space and Users

- Defining user and database
- Teradata database space
- Permanent space
- Temporary space
- Spool space

14. Performance Tuning Concepts

- Why we need to Tune the query?
- What is Tuning?
- Explain plan
- Confidence levels
- Collect statistics

15. Teradata client tools and utilities

- Teradata query submitting tools
- SQL assistant, BTEQ (basic teradata query)
- Difference between BTEQ and SQL assistant

16. Teradata data loading utilities

- BTEQ, Fast load, Multiload, TPUMP
- Comparison of all utilities
- Fast load Phases
- Multi load Phases
- Limitations of utilities
- Creation of error and work tables
- Advantages of error and work tables
- Debugging of error tables



- Sample scripts of all utilities

17. Teradata unloading utilities

- BTEQ and Fast export
- Differences of BTEQ, Fast export, SQL assistant
- Sample scripts

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