



## TERADATA EDUCATION OUTLINE

*Coffing Data Warehousing has provided quality Teradata education, products and services for over a decade. We offer customized solutions to maximize your warehouse.*

Toll Free: 1-877-TERADAT  
Business Phone: 1-937-855-4838  
Email: <mailto:CDWSales@CoffingDW.com>  
Website: <http://www.CoffingDW.com>

*In addition to the course material listed in this outline, we also offer Teradata classes in Teradata Basics, Implementation, SQL, Database Administration, Design and Utilities. Please contact us so we can customize a course to fit your specific needs.*

## PURPOSE

Coffing Data Warehousing has been providing quality Teradata education for over a decade. We offer customized courses to maximize the effectiveness of each class. The purpose of this proposal is to build a lasting relationship with your company. To this end, we have combined our comprehensive Teradata education services in a unique package that we feel best suits the diverse needs of your company while offering our high quality product at competitive pricing.

Coffing Data Warehousing is excited to offer you, our preferred partner, an innovative new way to look at training at the CoffingDW Teradata University (CDW-TU). This approach provides the ability to maximize learning potential. Our goal is to make your employees the most educated data warehouse experts in the industry.

## CURRICULUM:

Coffing Data Warehousing will provide an experienced and highly qualified resource to deliver this customized educational seminar on the following topic(s):

### Teradata Education

- **Teradata Basics**

## COURSE DESCRIPTION

<b>COURSE PREREQUISITES</b>	There is no prerequisite for this course.
<b>COURSE DURATION/FORMAT</b>	This course is designed to be highly interactive with the audience.
<b>COURSE AUDIENCE</b>	The audience will consist of a mix of beginning, intermediate and advanced Teradata users.
<b>OBJECTIVES</b>	This course is designed to provide in-depth knowledge of Teradata Basics.

# **Tera-Tom on Teradata Basics for V2R6**

## **Chapter 1 — The Rules of Data Warehousing**

Teradata Facts and Certification  
Teradata: Brilliant by Design  
The Teradata Parallel Architecture  
A Logical View of the Teradata Architecture  
The Parsing Engine (PE)  
The Parsing Engine in Detail  
The Parsing Engine Knows All  
The Access Module Processors (AMPs)  
The BYNET  
A Visual for Data Layout  
Teradata is a shared nothing Architecture  
Teradata has Linear Scalability  
How Teradata handles data access  
The PE uses Statistics to come up with the Plan  
When there are NO Statistics Collected on a Table  
Teradata Cabinets, Nodes, VPROCs, and Disks  
A Node and its Memory Allocations  
LAN Connection for Network Attached Clients  
Mainframe Connection to Teradata

## **Chapter 2 — Data Distribution Explained**

Rows and Columns  
The Primary Index  
Two Types of Primary Indexes (UPI or NUPI)  
Unique Primary Index (UPI)  
Non-Unique Primary Index  
How Teradata Turns the Primary Index Value into the Row Hash  
The Row Hash determines the Rows Destination  
The Row is Delivered to the Proper AMP  
The AMP will add a Uniqueness Value  
An Example of an UPI Table  
An Example of an NUPI Table  
How Teradata Retrieves Rows with the Primary Index

Row Distribution  
A Visual for Data Layout  
Teradata accesses data in three ways  
Data Layout Summary

### **Chapter 3 — Teradata Space**

How Permanent Space is calculated  
How Permanent Space is Given  
The Teradata Hierarchy  
How Spool Space is calculated  
A Spool Space Example  
PERM, SPOOL and TEMP Space  
Spool Space controls system time  
A quiz on Perm and Spool Space  
Another quiz on Perm and Spool Space

### **Chapter 4 — V2R5 Partition Primary Indexes**

V2R4 Example  
V2R5 Partitioning  
Partitioning doesn't have to be part of the Primary Index  
Partition Elimination can avoid Full Table Scans  
The Bad NEWS about Partitioning on a column that is not part of the  
Primary Index  
Two ways to handle Partitioning on a column that is not part of the  
Primary Index  
Partitioning with CASE\_N  
Partitioning with RANGE\_N  
NO CASE, NO RANGE, or UNKNOWN

### **Chapter 5 — Data Protection**

Transaction Concept & Transient Journal  
How the Transient Journal Works  
FALLBACK Protection  
How Fallback Works  
Fallback Clusters  
Down AMP Recovery Journal (DARJ)

## Redundant Array of Independent Disks (RAID)

### Cliques

Cliques – A two node example

Cliques – A four node example

### Permanent Journal

Table create with Fallback and Permanent Journaling

### Locks

Teradata has 4 locks for 3 levels of Locking

Locks and their compatibility

## **Chapter 6 — Loading the Data**

### FastLoad

FastLoad Picture

### Multiload

Multiload Picture

### TPump

TPump Picture

### FastExport

FastExport Picture

## **Chapter 7 — Secondary Indexes**

### Unique Secondary Index (USI)

USI Subtable Example

How Teradata retrieves an USI query

NUSI Subtable Example

How Teradata retrieves a NUSI query

Value Ordered NUSI

How Teradata retrieves a Value Ordered NUSI query

Secondary Index Summary

Chart for Primary and Secondary Access

## **Chapter 8 — The Active Data Warehouse**

### OLTP Environments

The DSS environment

Mixing OLTP and DSS environments

Detail Data

Easy System Administration  
Data Marts  
Logical and Dependent Data Marts  
Teradata Tools - SQL Assistant  
TDQM  
Index Wizard  
Archive Recovery  
Teradata Analyst Suite