Teradata Education Course Catalog

Fall 2017
Teradata Education - International

TERADATA
**OVERVIEW**

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**Teradata Education**

**Strengthen your skills, your career – and your value with world class training**

Teradata® Education designs, develops and delivers education that builds skills and capabilities to enable your company to maximize and expand its Teradata and Teradata Aster investment. Our cost-effective training brings you our highly experienced instructors and a world-class collection of online content that:

- Builds the know-how of technical staff to keep the system running smoothly and efficiently
- Teaches developers how to quickly and effectively implement applications that meet the needs of the business
- Helps business users discover ways to unlock the power of data, increasing your organization’s ROI

**About This Catalog**

We’ve included our most popular course offerings in this catalog – please visit www.Teradata.com/TEN for a complete listing of all courses available.

**Blended Learning Approach**

Teradata offers a variety of formats to suit your needs. The combination of web technology through the Teradata Education Network, along with hands-on instructor-led training, gives each user level a wide range of opportunities to gain knowledge and expand skills. Our flexible education options build upon and complement one another for a cost-effective, robust offering. Covering a broad range of subjects, our training programs present the essential knowledge to achieve swift and smooth information technology implementation at every organizational level.

**Scheduled Classes**

Public, instructor-led training (ILT) classes for the Teradata Database are currently delivered in our Education Centres, or virtually over the web (VILT).

- Hotel reservations are the responsibility of the student.
- Business Casual Attire
On-Site Classroom Training
Any instructor-led class may be taught at your location, and we can customize your training event by combining selected topics from our standard course offerings for technical and business users.

Education Offerings for Technical and Business Users
• Role-based training paths

The Teradata Education Network
• Teradata’s premier online learning portal
• Self-paced learning content via webcasts and web-based courses

Teradata Education Consultants
• Teradata Education Consultants design customized training plans for you and your staff
• Contact your local Teradata representative or email International.TeradataEducation@Teradata.com

Pricing
For detailed price information contact us at International.TeradataEducation@Teradata.com or by contacting your local Teradata Representative.

Benefits of Teradata Education

Flexible Delivery Options
• Teradata offers a variety of training options—self-paced, classroom, and virtual instructor-led

Expert Assessment of Training Requirements Based on Job Roles
• Teradata Education Consultants work with your organization to design a training program based on your specific needs

Decreased Ramp-Up Time
• Training enables you to come up to speed on the new technology quickly and efficiently

The Latest and The Greatest
• Training is available on new software versions, features and products

Quality You Can Count On
• Teradata is the only official provider of Teradata training
REGISTRATION & POLICIES

Registration

Enrollment
Contact your local Teradata Representative or email requests to International.TeradataEducation@Teradata.com or find your local Teradata Contact at www.teradata.com.TEN/contact.

Enrollment Information
Enrollment/Registration/Forms can be downloaded from www.teradata.com.TEN/catalogsandschedules/. Complete all the requested information on the form, scan and follow the instructions on the form to register for the course. If your company requires a Purchase Order, please ensure that this is forwarded with your Enrollment/Registration Form to enable us to complete your registration and confirm your participation on the course.

Cancellations
Enrollments in public classes cancelled 10 or fewer business days prior to the class start will be charged full tuition.

Substitutions
Student substitutions may be made at any time without penalty.
**Teradata Education Plan**

Customized, role-specific learning plans make it easy to decide

Select the Job Role/Function(s) which most closely match your primary job role, and identify the recommended courses to be included in your learning plan by reading down the appropriate column(s).

<table>
<thead>
<tr>
<th>1 day or Self-Paced</th>
<th>DBA</th>
<th>Designer/Architect</th>
<th>ETL/Application Developer</th>
<th>Data Analyst</th>
<th>Business User</th>
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<td></td>
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<td></td>
<td>Teradata SQL for Business Users (+)</td>
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<tr>
<td>2-4 days or Self-Paced</td>
<td></td>
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<td>3-5 days or Self-Paced</td>
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<td>4 days or Self-Paced</td>
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<td>Advanced SQL</td>
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<td>1-3 days</td>
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<td>NEW Teradata Data Modeling Custom Training</td>
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<tr>
<td>3 days or Self-Paced</td>
<td></td>
<td>Application Utilities/Parallel Transporter</td>
<td>Application Utilities/Parallel Transporter</td>
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<td>4 days</td>
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<td>Physical Database Design (+)</td>
<td>Physical Database Design (+)</td>
<td>Physical Database Design (+)</td>
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<tr>
<td>3 days</td>
<td></td>
<td>Warehouse Administration (+)</td>
<td>Warehouse Admin &amp; Management Combo (5 days)</td>
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<td>4 days or Self-Paced</td>
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<td>Application Design &amp; Development</td>
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<td>Application Design &amp; Development</td>
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<td>2 days</td>
<td></td>
<td></td>
<td>Introduction to Teradata Aster</td>
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<tr>
<td>3 days/1 day</td>
<td></td>
<td>Teradata Aster Database Admin</td>
<td>NEW Introduction to Teradata Aster R</td>
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<tr>
<td>4 days</td>
<td></td>
<td>Hadoop Admin</td>
<td>Hadoop Design/Data Science</td>
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<tr>
<td>3 days</td>
<td></td>
<td></td>
<td>NEW Hadoop Decoded</td>
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</table>

Discuss the course options with your Teradata Education Consultant to choose the best course(s) based on your Teradata platform, operating system, technical experience and learning preference.

Alternately contact your local Teradata Representative or email International.TeradataEducation@Teradata.com and ask about training needs analysis program.
Teradata Education Network
Expand your Teradata knowledge at your own pace, on your own schedule

Teradata Education Network (TEN) is a world-class online learning portal that allows you to harness the power of the internet, so you can expand your Teradata and Teradata Aster knowledge at your own pace – anytime, anywhere. View and access the most recent and most popular training courses; register online for web-based training, webcasts, and public classes (classroom and virtual instructor-led) in one comprehensive website.

Self-Paced Online Training
Whether you are new to Teradata and/or Teradata Aster or you are an advanced user, we have the online training needed for every skill level.

Web-Based Training Courses
Web-based courses are formal, self-paced training delivered via TEN. Many of our popular instructor-led courses are also offered in web-based formats, allowing you to save on travel costs and maximize your time.

Webcasts
Attend class from the comfort of your own desk! Webcasts are structured, usually one- to two-hour presentations delivered via TEN.

- Recorded Webcasts – Teradata also offers more than 175 recorded webcasts on a wide variety of technical and business subjects. Recorded webcasts may be accessed via TEN 24 hours a day, 7 days a week.

Learning Library
A collection of learning materials that includes white papers, Orange Books (Highly Technical Papers) and articles on Teradata topics.

Subscriptions
TEN subscriptions provide unlimited, online access to our web-based training courses and webcasts. Five subscription levels are available to meet your ongoing technical and business user training needs. Teradata Education Consultants will work with your organization to determine the right subscription level(s) required to meet your training objectives. Expand your Teradata knowledge and fully utilize your Teradata system with a TEN subscription.

The Right Partner for You
Teradata Education looks forward to bringing you the most advanced and exciting online education experience. To learn how to put the next generation of Teradata education to use, contact your Teradata representative or visit www.Teradata.com/TEN.

Visit www.Teradata.com/TEN/Virtual-Tours to sample a Recorded Webcast.
Teradata Education Network Subscriptions

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<td>Recorded Webcasts</td>
<td>A library of previously recorded live webcast presentations—more than 175 available</td>
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<tr>
<td>Learning Library</td>
<td>A collection of white papers, Orange Books (Highly Technical Papers) and articles from top subject matter experts</td>
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<tr>
<td>Web-based Training</td>
<td>More than 30 structured, self-paced, web-based training courses, many with hands-on labs</td>
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<tr>
<td><em><strong>TERADATA EDUCATION NETWORK — BUSINESS</strong></em></td>
<td><strong>TERADATA EDUCATION NETWORK — BUSINESS UNLIMITED</strong></td>
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<tr>
<td>Recorded Webcasts</td>
<td>More than 20 webcast presentations specially designed for business users</td>
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<tr>
<td>Web-based Training</td>
<td>Two structured, self-paced, web-based training courses: Teradata Fundamentals for Business Users and Teradata SQL for Business Users</td>
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<td><em><strong>TERADATA EDUCATION NETWORK — TERADATA ASTER</strong></em></td>
<td><strong>TERADATA EDUCATION NETWORK — TERADATA ASTER</strong></td>
</tr>
<tr>
<td>Recorded Webcasts</td>
<td>Selecties portfolio presentations specially designed for Teradata Aster Database users</td>
</tr>
<tr>
<td>Web-based Training</td>
<td>Includes access to select Teradata Aster self-paced courses</td>
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## Recorded Webcasts

The newest, most popular webcasts available on the Teradata Education Network

Recorded Webcasts are included in Teradata Education Network Webcasts and Unlimited subscriptions. Recorded webcasts are also available for purchase for Non-subscription customers. Visit www.Teradata.com/TEN for a current listing of all available courses, view webcasts by topic, and current pricing.

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<td>Automating Disaster Recovery Synchronization using Unity Data Mover (Webcast)</td>
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<td>Business Intelligence Optimization with Teradata (Webcast)</td>
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<td>Defense in Depth - Best Practices for Securing a Teradata Data Warehouse (Webcast)</td>
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<td>Implementing QueryGrid in a Mixed Workload Environment (Webcast)</td>
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<td>Performance Diagnostic Methodology (Webcast)</td>
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<td>Performance Testing - when is it time for a System Tune Up? (Webcast)</td>
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<td>Rise of the Disruptive Data Warehouse (Webcast)</td>
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<td>Teradata Active System Management (TASM) with SLES 11 Priority Scheduler (Webcast)</td>
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<td>Teradata Application Performance Tuning: Tips and Techniques (Webcast)</td>
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<td>Teradata Certification, What's New and How to Prepare (Webcast)</td>
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<td>Teradata Data Lab (15.10) Overview (Webcast)</td>
<td>Susan Baskin, Matt Sciccitano</td>
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<td>Teradata Data Warehouse Management Release 15.0/.15.10 for SLES 11 Technical Overview (Webcast)</td>
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<td>Teradata Secure Zones: Implementation Basics (Webcast)</td>
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<td>Teradata Studio: Teradata's Administration Toolkit (Webcast)</td>
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<td>Teradata Unity Director and Unity Loader Architecture (Webcast)</td>
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<td>Teradata Workflow Management Release 15.0/.15.10 for SLES 11 Technical Overview (Webcast)</td>
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<td>The Many Uses of the Teradata Querybanding Feature (Webcast)</td>
<td>Shirly Vera, Francine Grimmer</td>
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<td>The Instant Gratification of Real Time (Webcast)</td>
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<td>What Do I Do First? Aster Text Analytics Step by Step (Webcast)</td>
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<td>Whats New in Viewpoint 15.10 (Webcast)</td>
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LIVE WEBCAST SCHEDULE*

August 24
Explaining the EXPLAIN
Presenters: Larry Carter and Alison Torres – Teradata
Course # 49911

September 7
The Life of a Teradata Ecosystem Query
Presenter: Pat Alvarado – Teradata
Course # 56849

September 21
Implementing MAPS – the Basics
Presenter: Carrie Ballanger – Teradata
Course # 56720

November 9
Teradata Star-Schema Designs
Presenter: Steve Molini – Teradata
Course # 26536

December 7
Teradata Scales Everywhere – Performance Studies on Cloud Platforms
Presenter: Jay Suryamurthy – Teradata
Course # 56981

December 14
Spark 2.0 Optimization
Presenter: Mark Ott – Teradata
Course # 56980

*Schedule is subject to change. Visit www.Teradata.com/TEN for the most current course information.
**WEB-BASED COURSES • OVERVIEW**

### Introduction to the Teradata Database

**Demo Available**

| WBT 26438 | 8 Hours* |

**Audience** – Core Curriculum: Database Administrators, Designers/Architects, Application Developers, Data Analysts

**TCPP Exam Preparation** – TE0-141

**Prerequisites** – None

**Course Overview**

Intended for technical audiences, this course provides a detailed overview of the features, functions and benefits of the Teradata database. Among the topics taught are data distribution, access, storage, and data protection methods. The suite of load, access, and management utilities and tools are also covered, as well as basic Teradata terminology and acronyms.

**Course Objectives**

After successfully completing this course, you will be able to:

- Describe the purpose and function of the Teradata Database
- Understand relational table structures using Primary Keys and Foreign Keys
- List the principal components of the Teradata Database and describe their functions
- Understand the hierarchy of database objects and space management
- Describe the function of the Primary Index and the Secondary Index
- Know how data distribution and data access mechanics work in the Teradata Database
- Describe the Teradata Database features that provide fault tolerance
- Understand the use and application of the Teradata Tools and Utilities

### Teradata 15.00 Differences

| WBT 51841 | 11 Hours* |

**Audience** – Those familiar with Teradata 14.10

**Prerequisites** – Working knowledge of Teradata 14.10

**Course Overview**

This course provides details on the new features and functions of Teradata 15.00. For each new feature, the course provides a description, business value, and when and how to use it. Configuration is also addressed when applicable.

**Course Objectives**

After successfully completing this course, you will be able to understand and apply the new features and functions of Teradata 15.00:

- JSON Integration
- Big Data & Analytics
- Ecosystem
- Quality & Supportability
- Industry Compatibility

### Teradata 15.10 Differences

| WBT 51843 | 10-12 Hours* |

**Audience** – Those familiar with Teradata 15.00

**Prerequisites** – Working knowledge of Teradata 15.00

**Course Overview**

This course provides details on the new features and functions of Teradata 15.10. For each new feature, the course provides a description, business value, and when and how to use it. Configuration and support issues are also addressed when applicable.

**Course Objectives**

After successfully completing this course, you will be able to understand and apply the new features and functions of Teradata 15.10:

- Analytic Processing & Performance
- Large Memory Leverage
- Concurrency
- Security
- Database and Performance
- Supportability
- Administration
Teradata 16.00 Differences

**WBTP 51761 10-12 Hours**

**Audience** – Those familiar with Teradata 15.00

**Prerequisites** – Working knowledge of Teradata 15.00

**Course Overview**

This course provides details on the new features and functions of Teradata 15.10. For each new feature, the course provides a description, business value, and when and how to use it. Configuration and support issues are also addressed when applicable.

**Course Objectives**

After successfully completing this course, you will be able to understand and apply the new features and functions of Teradata 15.10:

- Analytic Processing & Performance
- Large Memory Leverage
- Concurrency
- Security
- Database and Performance
- Supportability
- Administration

Teradata Data Stream Architecture (DSA)

**WBTP 53054 3-4 Hours**

**Audience** – Database Administrators and BAR operators

**Prerequisites** – Introduction to the Teradata Database (Instructor-led (#25964) or WBT (#26438))

**Course Overview**

This self-paced course covers backup and restore (BAR) and Data Stream Architecture (DSA) architecture/concepts, and provides an overview of the hardware, software, and services components that comprise Teradata BAR solutions.

This knowledge is a prerequisite to meeting with the Teradata implementer for the hands on BAR Training at the client’s site, and is also helpful for onboarding new personnel.

**Course Objectives**

After successfully completing this course, you will be able to:

- Understand the Teradata DSA solution/architecture
  - DSA functions
  - DSA components
  - How the components fit together and what they do
- Explain basic DSA operations
- Know the BAR variables that affect DSA performance and operations
**Teradata SQL**

**Demo Available**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours*</th>
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<tr>
<td>WBT 54458</td>
<td>29</td>
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</table>

**Audience** – Core Curriculum: Database Administrators, Designers/Architects, Application Developers, Data Analysts

**TCPP Exam Preparation** – TE0-142

**Prerequisites** – Introduction to the Teradata Database (Instructor-led (#25964) or WBT (#26438))

**Course Overview**

This course offers practical, hands-on experience with retrieving and manipulating data with Teradata Structured Query Language (SQL) using both ANSI standard conventions and Teradata extensions to the language.

**Course Objectives**

After successfully completing this course, you will be able to:

- Understand basic relational concepts and their implementation using SQL
- Retrieve data using the SELECT statement
- Use logical and arithmetic expressions
- Choose the appropriate Teradata Data Type for column definitions
- Use the HELP and SHOW facilities to obtain information from the Data Dictionary about data structures associated with Teradata databases, users, tables, views, macros, and indexes
- Use Teradata’s DATE data type for date and time-oriented reporting
- Use BTEQ for simple SQL request processing
- Create/modify tables and views using Column Attributes and Check Constraints
- Create secondary indexes, and create/execute macros using run time parameters
- Format query output, and produce reports using joins and subqueries
- Write SQL with INNER, OUTER, LEFT, RIGHT, and CROSS joins
- Use set operators like UNION, INTERSECT, and EXCEPT
- Use WITH and WITH ... BY to produce reports with totals and subtotals
- Produce reports using table Aggregation, and String Manipulation
- Maintain data using INSERT, UPDATE, and DELETE
- Use the CASE statement to tag output and to perform row-level set assignment
- Use Teradata built-in functions, such as RANK and SAMPLE

**Teradata SQL Extensions**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours*</th>
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<tbody>
<tr>
<td>WBT 50584</td>
<td>10</td>
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</table>

**Audience** – Database Administrators, Designers/Architects, Application Developers, and Data Analysts

**Prerequisites** – Prior experience with SQL is mandatory

**Course Overview**

This course offers practical, hands-on experience with retrieving and manipulating data with Teradata Structured Query Language (SQL) using Teradata extensions to the ANSI standard language. Ideally suited for students who have working knowledge of SQL using other relational database(s), the material highlights the additional capabilities Teradata has added to the language.

**Course Objectives**

After successfully completing this course, you will be able to:

- Understand Teradata SQL naming conventions
- Write queries using Teradata SQL functions and operators
- Code inner and outer joins in Teradata SQL
- Know the Teradata-specific syntax structures
- Be able to use advanced SQL constructs and formatting options in Teradata
- Understand the methods for creating new tables from existing structure
Teradata SQL for Business Users

**Course**

**Audience** – Core Curriculum: Business Users

**Prerequisites** – The following software must be installed on your computer in order for you to be able to complete this course:

- Teradata ODBC driver (available from Teradata.com), Teradata SQL Assistant (licensed product, must have been purchased by your company)

**Course Overview**

This course was designed for data analysts and business users of the Teradata system. It provides an overview of the Teradata architecture as well as the features and benefits of the product. It covers data distribution, access, storage, and Teradata terminology and how to use the Teradata utility SQL Assistant to submit Structured Query Language (SQL) statements. This course offers practical, hands-on experience with retrieving and manipulating data with Teradata SQL using both ANSI standard conventions and the Teradata extensions to the language.

**Course Objectives**

After successfully completing this course, you will be able to:

- Understand the architecture and components of the Teradata Database
- Know how the Teradata database uses the Primary and Secondary Indexes
- Write queries in the SQL programming language that access single and multiple tables
- Use SQL Assistant for submitting queries to the Teradata Database
- Be able to convert and format data for reporting purposes, including exports into Excel
- Know how to produce totals and subtotals in reports using aggregation operators
- Understand the use of various join strategies and subqueries to qualify the data to be selected from the database
- Create queries which perform rankings of data and extract data samples from large tables

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Teradata Advanced SQL

**Course**

**Audience** – Core Curriculum: Application Developers, Data Analysts, Optional: Database Administrators, Architects/Designers

**TCP** Exam Preparation – TE0-142

**Prerequisites** – Introduction to the Teradata Database (Instructor-led (#25964) or WBT (#26438)), Teradata SQL (Instructor-led (#25965) or WBT (#54458))

**Course Overview**

This web-based training course offers advanced features and techniques used for retrieving and manipulating data with Teradata Structured Query Language (SQL) using both ANSI standard conventions and Teradata extensions to the language.

**Course Objectives**

After successfully completing this course, you will be able to:

- Create and use volatile and global temporary tables
- Create tables with appropriate constraints for referential integrity and the controlling of data insertion
- Create new tables from existing tables, copying data and table attributes from the source table
- Use the Teradata data types for date and time-oriented queries
- Use the MERGE INTO command for ANSI Upsert processing, and apply ANSI features such as EXISTS statement, correlated subqueries, and derived tables
- Create recursive queries using recursive tables and views
- Create analytical queries using advanced ranking and extended grouping functions
- Create OLAP queries using advanced ranking functions
- Use Ordered Analytic Functions for Group, Sum, Cumulative and Remaining Window Aggregations
- Use RANDOM and SAMPLE functions for generating or extracting samples of data
- Use Teradata extended grouping functions – ROLLUP, CUBE, GROUPING SETS
- Use the Teradata DATE, TIME, TIMESTAMP and TIME WITH ZONE data types for date and time-oriented queries
- Use INTERVAL data types to perform complex data arithmetic in time-oriented queries, and apply internationalized numeric and date/time formatting options

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*Time of completion varies by individual.*
Teradata SQL for Application Development

**WBT 54173**  39 Hours*

**Audience** – Core Curriculum: Application Developers, Optional: Database Administrators, Designers/Architects

**TCPP Exam Preparation** – TE0-142, TE0-145, TE0-147

**Prerequisites** – Introduction to the Teradata Database (Instructor-led (#25964) or WBT (#26438)), Teradata SQL (Instructor-led (#25965) or WBT (#54458)), experience in application development and familiarity with a text editor

**Course Overview**
This course offers practical, hands-on experience with retrieving and manipulating data with Teradata Structured Query Language (SQL) using both ANSI standard conventions and Teradata extensions to the language. The focus of this course will be SQL as used for application design and development.

**Course Objectives**
After successfully completing this course, you will be able to:
- Distinguish among Referential Integrity, Soft Referential Integrity and Batch Referential Integrity
- Manipulate value comparisons with case-sensitive data
- Create and access Large Objects; deploy Array Data Types where appropriate
- Implement Period and Geospatial data types, as well as User Defined Types
- Create JSON documents within Teradata
- Implement normalized periods on tables, and create time-oriented queries
- Use the ANSI MERGE capability in place of Multiload for data loading
- Implement Error Tables for complex error handling
- Collect Statistics on one or on multiple columns
- Implement Column Compression and Columnar Partitioning
- Create and implement Aggregate Join and Hash Indexes
- Create and implement tables with a primary index (NoPI tables), and tables using a single-level or multi-level Partitioned Primary Index
- Build and implement performance improvements with NUSIs and Join Indexes
- Create and implement materialized views, such as Global Join Indexes and Sparse Indexes

Teradata SQL for Active Events

**WBT 54174**  37 Hours*

**Audience** – Database Administrators, Designers/Architects, Application Developers

**TCPP Exam Preparation** – TE0-142, TE0-145, TE0-147

**Prerequisites** – Introduction to the Teradata Database (Instructor-led (#25964) or WBT (#26438)), Teradata SQL (Instructor-led (#25965) or WBT (#54458)), familiarity with a Unix, Linux or Windows environment and a text editor, programming language experience – Java program development will be helpful but not necessary

**Course Overview**
This course offers advanced features and techniques used for implementing and executing active events processing using Teradata Structured Query Language (SQL). Students will create, implement and use Teradata enablers such as stored procedures, queue tables, triggers, and user defined functions for the active event environment.

**Course Objectives**
After successfully completing this course, you will be able to:
- Understand the interactions of events, messages and actions; role of Teradata in event detection and processing
- Create and implement a queue table to be used in an event processing application
- Create triggers and distinguish between the use of row and statement triggers
- Control firing sequence of multiple triggers using ORDER or TIMESTAMP
- Create cascading and recursive triggers and use the SET statement for BEFORE trigger processing
- Recognize the advantages of using stored procedures for conditional trigger logic
- Implement User Defined Functions, Table Functions, and Table Operators
- Create, compile and execute SQL stored procedures
- Define External Stored Procedures (XSPs) and identify their purpose and benefits
- Create Java XSPs with SQL and JDBC
- Create and install an XSP containing SQL requests while recognizing the benefits and restrictions of using SQL via the CLI interface in an XSP
- Use Large Objects (LOBs) in event processing

*Time of completion varies by individual.
Introduction to Temporal Tables

**WBT 49905**

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<tbody>
<tr>
<td>Introduction to Temporal Tables</td>
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**Audience** – Database Administrators, Designers/Architects, and Application Developers

**Prerequisites** – Introduction to the Teradata Database (Instructor-led (#25964) or WBT (#26438)), Teradata SQL (Instructor-led (#25965) or WBT (#54458))

**Course Overview**

This informative course provides hands-on exposure to the features, capabilities, and techniques for creating, propagating, and managing temporal data within the Teradata database.

**Course Objectives**

After successfully completing this course, you will be able to:

- Describe the architecture and components of the Teradata implementation of the temporal tables feature
- Articulate the purpose of creating applications with temporal tables and why customers will use them
- List and differentiate the different types of temporal tables
- List the available temporal qualifiers and the type of result they will produce
- Recognize the benefits and limitations of adding temporal data as an enhancement to traditional data tables

Teradata SQL for Temporal Tables

**WBT 49904**

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<tbody>
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**Audience** – Database Administrators, Designers/Architects, Application Developers

**Prerequisites** – Introduction to the Teradata Database (Instructor-led (#25964) or WBT (#26438)), Teradata SQL (Instructor-led (#25965) or WBT (#54458)), Teradata Advanced SQL (Instructor-led (#25966) or WBT (#54390)), Teradata SQL for Application Development (Instructor-led (#28910) or WBT (#49673)), Teradata SQL for Active Events (WBT (#49674)), Introduction to Temporal Tables (WBT (#49905))

**Course Overview**

This course provides in-depth, hands-on exposure to the features, capabilities, and techniques for creating, propagating, and managing temporal data within the Teradata Database.

**Course Objectives**

After successfully completing this course, you will be able to:

- Create, modify, and implement the following Teradata objects: Valid Time Tables, Transaction Time Tables, Bi-Temporal Tables, and related objects such as Join Indexes, Triggers, Views on Temporal Tables
- Design SQL queries to capture time-dimensional data providing answers to the questions, ‘what did we know’ and ‘when did we know it’
- Implement appropriate temporal qualifiers to the standard SQL statements to maintain and retrieve temporal data
- Implement partitioned primary index tables using recommended temporal design schemes
- Create views, triggers, table constraints and join indexes for tables with temporal time dimensions
- Recognize the impact of temporal tables on other Teradata SQL commands such as MERGE, ABORT, HELP and SHOW
Teradata Application Utilities

**Course Number**
WBT 55069

**Duration**
24 Hours*

**Audience**
- Core Curriculum: Application Developers
  - Recommended: Database Administrators Optional: Designers/Architects
- TCPP Exam Preparation – TE0-144, TE0-145
- Prerequisites – Introduction to the Teradata Database (Instructor-led (#25964) or WBT (#26438)), Teradata SQL (Instructor-led (#25965) or WBT (#54458))

**Course Overview**
This practical course explores the concepts and use of BTEQ, FastLoad, MultiLoad, TPump and FastExport, including writing scripts for importing and exporting data in a Teradata environment. These utilities include performing SELECT, INSERT, UPDATE, DELETE and UPSERT operations in batch and real-time environments using the Teradata application utilities for maximum performance and efficiency. Extensive hands-on labs help reinforce learning.

**Course Objectives**
After successfully completing this course, you will be able to:
- Identify and state the purpose, features and usage of each data LOAD utility (BTEQ, FastLoad, MultiLoad, and TPump)
- Identify and state the purpose, features and usage of each data UNLOAD utility (BTEQ and FastExport)
- Identify where the Application utilities should be installed and configured on a Teradata system
- Code batch scripts to IMPORT data into the Teradata Database and EXPORT data to the host from the Teradata Database using BTEQ
- Understand the features, benefits and usage of the Support Environment commands that are used with the MultiLoad, TPump, and FastExport utilities

Teradata Parallel Transporter

**Course Number**
WBT 55048

**Duration**
24 Hours*

**Audience**
- Core Curriculum: Application Developers
  - Recommended: Designers/Architects, Optional: Database Administrators
- TCPP Exam Preparation – TE0-144, TE0-145
- Prerequisites – Introduction to the Teradata Database (Instructor-led (#25964) or WBT (#26438)), Teradata SQL (Instructor-led (#25965) or WBT (#54458))

**Course Overview**
This course explores and explains the features and functions of the Teradata Parallel Transporter (TPT) product. The Extract/Transform/Load (ETL) capabilities of TPT and its many special purpose “operators” are discussed in detail to support the writing of job scripts that are used to move data from one point to another. The benefits and flexibilities of a single scripting language to support all loading and unloading functions are demonstrated, incorporating examples of practical applications of TPT. Hands-on labs help reinforce learning.

**Course Objectives**
After successfully completing this course, you will be able to:
- Understand the role of TPT in loading/unloading a Teradata Database
- Recognize the different components that make up a TPT script, such as: DEFINE JOB, DEFINE OPERATOR, DEFINE SCHEMA, and APPLY
- Understand how to write TPT scripts with and without Simplicity
- Use and apply TPT Operators: Load, Export, Update, Stream, DataConnector, ODBC, and OS Command
- Execute the TPT Utility commands to manage the job submission and control environment
- Be familiar with advanced TPT features, including Directory Scan and parallel read

Teradata Unity Implementation Overview

**Course Number**
WBT 55371

**Duration**
4 Hours*

**Audience**
Database Administrators

**Prerequisites**
- Introduction to the Teradata Database (Instructor-led (#25964) or WBT (#26438))

**Course Overview**
This course provides a foundational understanding of the Unity products, either in preparation for implementing them or for understanding their role in the Teradata architecture. The products covered in this course are: Teradata Ecosystem Manager 15.10, Teradata Data Mover 15.11, and Teradata Unity (formerly Unity Director/Loader) 15.00. Throughout the course, examples and use cases are presented.

**Course Objectives**
After successfully completing this course, you will be able to:
- Describe the features and functions of the products used to implement Teradata Unity
- Understand the concepts, terminology, and processes needed to implement Unity products

*Time of completion varies by individual.
**Introduction to Logical Data Modeling**

**WBT 23229  4 Hours***

**Audience** – Database Administrators, Designers/ Architects, Application Developers

**Prerequisites** – None

**Course Overview**

This introductory course covers the basics of Logical Data Modeling (LDM). In this course, the student will learn what a LDM is and the theory and rules used in logical data. Also covered is the relationship of a logical data model to a physical data model. This course is intended for both a technical and non-technical audience with little or no experience with logical data models.

**Course Objectives**

After successfully completing this course, you will be able to:

- Understand the major parts of a Logical Data Model and terminology, including Entities, Attributes, Relationships, and Assertions
- Describe the importance of creating a good logical data model
- Describe what normalization is and why it is done
- Read and interpret a simple Logical Data Model (LDM)
Introduction to Big Data and Teradata Aster

**WBT 53334** 2-3 Hours*

**Audience** – Database Administrator, Designer/Architect, Application Developer, Data Analyst, Business User

**TCPM Exam Preparation** – TAA-BSC6.10

**Prerequisites** – None

**Course Overview**
Are you curious about all of the hype about big data and how to embrace/tackle it? In this course, you will learn about how big data is changing analytics and how Teradata Aster can easily meet the challenges of accessing big data in an efficient manner, enabling data scientists/analysts to unleash the power of all of their data for richer business insights.

This course provides an excellent overview of the big data landscape and Teradata Aster features.

**Course Objectives**
After successfully completing this course, you will be able to:
- Understand and be able to discuss how big data is presenting challenges to the current process of data analytics
- Be familiar with the components of the Teradata Aster database in a conceptual and architectural format
- Know the concepts of Teradata's Unified Data Architecture

Introduction to Teradata Aster Analytics

**WBT 55211** 6-8 Hours*

**Audience** – Database Administrators, Designer/Architect, Data Analysts

**TCPM Exam Preparation** – TAA-BSC6.10

**Prerequisites** – Introduction to Big Data and Teradata Aster WBT (#53334)

**Course Overview**
The purpose of this course is to technically acquaint the student with the Teradata Aster database. Key topics include database and schema data modeling, creating tables, data acquisition and preparation, data loading, Map Reduce (SQL-MR), and selected analysis functions. The course is concluded with data visualization using Teradata Aster AppCenter and an overview of Teradata Aster R. Learning is reinforced throughout the course with extensive examples and demos.

**Course Objectives**
After successfully completing this course, you will be able to:
- Create Aster databases and schemas to provide the system’s organizational and management structure
- Create fact and dimension tables in the Aster database
- Create logically partitioned tables from either a fact or dimension table
- Load data into the Aster database using nCluster Loader, and customize nCluster Loader processing
- Explain the design and syntax of SQL-MR functions
- Compare and contrast Map (Row) and Reduce (Partition) functions
- Use data acquisition and preparation functions
- Describe the how eight popular analysis functions work
- Understand why data visualization is important to analytics
- Create and run visualization Apps with Teradata Aster AppCenter
- Know the difference between R and Aster R, and be able to run Aster R commands in RStudio

*Time of completion varies by individual.
Introduction to Teradata Aster Database Administration

WBT 5535 4-5 Hours*

Audience – Database Administrators
TCPP Exam Preparation – TAA-BSC6.10
Prerequisites – Introduction to Big Data and Teradata Aster WBT (#53334)

Course Overview
This introductory course is intended for those who will be performing Teradata Aster database administration functions. Data Modeling in Aster is examined, followed by “how to” instructions for creating Teradata Aster data structures – databases, schemas, and tables. The course concludes with a detailed explanation of strategies for loading data into a Teradata Aster database.

Learning is reinforced throughout the course with extensive examples and demos.

Course Objectives
After successfully completing this course, you will be able to:
- List the best options for Teradata Aster data models
- Describe the differences in data model components between a Teradata Aster Database and a Teradata Database
- Create Teradata Aster Databases and Schemas
- Describe valid column data types and constraints
- Create Fact and Dimension tables in the Teradata Aster Database
- Create Logically Partitioned (LP) tables from either a Fact/Dimension table
- Load data into the Teradata Aster Database using nCluster Loader
- Customize nCluster Loader processing with flags
- Be aware of other tools that may be used to load data into the Teradata Aster Database

Teradata Aster 6.1/6.20 Differences

WBT 55404 5-7 Hours*

Audience – Database Administrators, Designer/Architects, Data Analysts
Prerequisites – None

Course Overview
Are you curious about the new features that were released with the Teradata Aster 6.10 and 6.20 suites of products? Would you like to learn about Aster R? If the answer is yes, this course is intended for you! This course covers what’s new in releases 6.10/6.20 as compared to release 6.0

Course Objectives
After successfully completing this course, you will be able to:
- Create Aster databases and schemas to provide the system’s organizational and management structure
- Be familiar with the new Foreign Server feature, and how to use foreign server with Teradata QueryGrid connectors to load data to and from foreign servers (e.g., Hadoop).
- Use the new and improved Teradata Aster analytic functions
- Understand the differences between R and Aster R
- Know how to use Teradata Aster R key functions and visualization in Rstudio and Teradata Aster AppCenter
- Be able to install Teradata Aster R 6.20

Teradata Aster Analytics 6.21 Most Frequently Used Functions

WBT 53334 2-3 Hours*

Audience – Business Users, Data Analysts, Application Developer
Prerequisites – Introduction to Big Data and Teradata Aster WBT (#53334), Introduction to Teradata Aster Analytics WBT

Course Overview
This course discusses the most frequently used Teradata Aster SQL-MR Analytical Functions. The student will learn how to use AppCenter to create visualization charts using the most common SQL-MR functions. This course is based on Teradata Aster Analytics 6.21.

Course Objectives
After successfully completing this course, you will be able to:
- Understand and be able to discuss how big data is presenting challenges to the current process of data analytics
- Be familiar with the components of the Teradata Aster database in a conceptual and architectural format
- Know the concepts of Teradata’s Unified Data Architecture

*Time of completion varies by individual.
Teradata QueryGrid 2.0 Technical Overview

**WBT 56458** 1-2 Hours*

**Audience** – Database Administrators, Designer/Architects, Application Developers

**Prerequisites** – None

**Course Overview**
This course provides a technical overview of Teradata QueryGrid 2.0. It explains the architecture, components, and new features in this release as well as installation and migration and considerations. It also includes a demo of the administration and monitoring capabilities using Viewpoint.

**Course Objectives**
After successfully completing this course, you will be able to:
- Explain the Teradata QueryGrid 2.0 architecture and feature set
- Articulate how it differs from Teradata QueryGrid Classic
- Use the Teradata QueryGrid 2.0 Grammar
- Describe the Teradata QueryGrid 2.0 components
- Demonstrate how Viewpoint is used to administer and monitor Teradata QueryGrid queries

Implementing Teradata QueryGrid: Teradata-to-Aster

**WBT 55010** 1-2 Hours*

**Audience** – Database Administrators, Designer/Architects, Application Developers

**Prerequisites** – Introduction to the Teradata Database (Instructor-led (#25964) or WBT (#26438)), Teradata SQL (Instructor-led (#25965) or WBT (#54458))

**Course Overview**
This course provides technical information on Teradata QueryGrid: Teradata-to-Aster Database 15.00.

**Course Objectives**
After successfully completing this course, you will be able to:
- Describe Teradata QueryGrid: Teradata-to-Aster
- Understand the use cases, requirements and business value
- Explain how to implement and configure the product
- Describe any potential trade-offs or limitations
- Use SQL to import data from, and export data to, a remote Aster system

Querying with QueryGrid – Teradata-to-Hadoop and Teradata-to-Teradata

**WBT 55068** 3-4 Hours*

**Audience** – Database Administrators, Designer/Architects, Application Developers

**Prerequisites** – Knowledge of SQL

**Course Overview**
This self-paced course features instructional content and demos for key QueryGrid - Teradata-to-Hadoop and Teradata-to-Teradata functions. The course also includes Interactive activities that allow you to practice and assess what you’ve learned.

**Course Objectives**
After successfully completing this course, you will be able to:
- Use SQL to interact and query between target and source systems for Teradata-to-Hadoop and Teradata-to-Teradata
  - Metadata
  - Import and export data
  - Data transfer
  - Partition filtering
  - Push-down processing
- Distinguish Teradata QueryGrid capabilities on Teradata Database 14.10 vs. Teradata Database 15.00
- Describe considerations for when to use Teradata QueryGrid vs. other methods/products

Presto Decoded

**WBT 55568** 1 Hour*

**Audience** – Data Analysts, Database Administrators, Architects/Designers

**Prerequisites** – It is helpful to be familiar with SQL and the command-line interface, but not required.

**Course Overview**
This course provides a technical overview of Presto and how it works with Hadoop and remote data stores. Step-by-step instructions on how to query data on remote data stores from both the Presto command line interface and Teradata Studio are featured.

**Course Objectives**
After successfully completing this course, you will be able to:
- Describe Presto and what you can do with Presto
- Explain how Presto enhances the Teradata Unified Data Architecture (UDA)
- State the key components and advantages of the Presto
Introduction to the Teradata Database

Lecture

ILT 40020     1 Day

Audience – Core Curriculum: Database Administrators, Designers/Architects, Application Developers, Data Analysts

TCPP Exam Preparation – TE0-141

Prerequisites – None

Course Overview

This course provides a detailed overview of the features, functions and benefits of the Teradata database. Among the topics taught are data distribution, access, storage, and data protection methods. The suite of load, access, and management utilities and tools are also covered, as well as basic Teradata terminology and acronyms.

Course Objectives

After successfully completing this course, you will be able to:

• Describe the purpose and function of the Teradata Database
• Understand relational table structures using Primary Keys and Foreign Keys
• List the principal components of the Teradata Database and describe their functions
• Understand the hierarchy of database objects and space management
• Describe the function of the Primary Index and the Secondary Index
• Know how data distribution and data access mechanics work in the Teradata Database
• Describe the Teradata Database features that provide fault tolerance
• Understand the use and application of the Teradata Tools and Utilities
Teradata SQL
Lecture/Lab

ILT 40027  4 Days

Audience – Core Curriculum: Database Administrators, Architects/Designers, Application Developers, Data Analysts
TCP Prep – TE0-142
Prerequisites – Introduction to the Teradata Database (Instructor-led or WBT)

Course Overview
Designed for the student with little or no SQL expertise, this course focuses on retrieving and manipulating data with the Teradata Structured Query Language (SQL). Both ANSI standard conventions and Teradata extensions to the language are covered. Extensive hands-on labs help reinforce the concepts learned.

Course Objectives
After successfully completing this course, you will be able to:
• Work with Teradata Studio Express for submitting queries to the Teradata Database
• Write SELECT statements using SQL operators such as AND, OR, IN, NOT IN, BETWEEN and LIKE, POSITION, and SUBSTRING for data retrieval
• Understand and be able to work with Teradata data types
• Write queries to produce totals and subtotals in reports using aggregation operators
• Write SELECT statements using inner and outer joins
• Write SELECT statements using correlated and non-correlated sub-queries
• Write SQL to modify the database, using the UPDATE, INSERT, and DELETE statements
• Use analytic functions, including SAMPLE, RANDOM, and TOP N
• Work with views, macros, and derived tables

Getting Started With Teradata and SQL
Lecture/Lab

ILT 54872  4 Days

Audience – Core Curriculum: Database Administrators, Architects/Designers, Application Developers, Data Analysts
TCP Prep – TE0-142
Prerequisites – None

Course Overview
Designed for the student with little or no Teradata and SQL expertise, this course provides an introduction to the Teradata Database, and instruction on retrieving and manipulating data with the Teradata Structured Query Language (SQL). Both ANSI standard conventions and Teradata extensions to the language are covered. Extensive hands-on labs help reinforce the concepts learned.

Course Objectives
After successfully completing this course, you will be able to:
• Describe the purpose and function of the Teradata Database
• Be familiar with the Teradata Database architecture and terminology
• Understand relational table structures using Primary Keys and Foreign Keys
• List the principal components of the Teradata Database and describe their functions
• Work with Teradata Studio (Express) for submitting queries to the Teradata Database
• Write SELECT statements using SQL operators such as AND, OR, IN, NOT IN, BETWEEN and LIKE, POSITION, and SUBSTRING for data retrieval
• Understand and be able to work with Teradata data types
• Write queries to produce totals and subtotals in reports using aggregation operators
• Write SELECT statements using inner and outer joins
• Write SELECT statements using correlated and non-correlated subqueries
• Write SQL to modify the database, using the UPDATE, INSERT, and DELETE statements
• Use analytic functions, including SAMPLE, RANDOM, and TOP N
• Work with views, macros, and derived tables
Teradata SQL Features Overview
Lecture/Lab

ILT 40028  2 Days

**Audience** – Core Curriculum: Database Administrators, Architects/Designers, Application Developers, Data Analysts

**TCPP Exam Preparation** – Reference Material for TE0-142, TE0-14B, TE0-145, TE0-147

**Prerequisites** – Introduction to the Teradata Database (Instructor-led or WBT)

**Course Overview**
Designed for the student with little to moderate experience in the use of Structured Query Language (SQL) in an environment other than Teradata, this course introduces key SQL concepts and highlights the differences between ANSI SQL and Teradata SQL. Extensive hands-on labs help reinforce learning in this intensive two-day course.

**Course Objectives**
After successfully completing this course, you will be able to:
- Work with Teradata Studio Express for submitting queries to the Teradata Database
- Understand and be able to work with Teradata data types
- Write SELECT statements, using SQL operators such as AND, OR, IN, NOT IN, BETWEEN, LIKE, POSITION, and SUBSTRING for data retrieval
- Write SELECT statements using inner and outer joins
- Write SELECT statements using correlated and non-correlated sub-queries
- Write queries to produce totals and subtotals in reports using aggregation operators
- Write SQL to modify the database, using the UPDATE, INSERT, and DELETE statements
- Use analytic functions, including SAMPLE, RANDOM, and TOP N
- Work with views, macros, and derived tables

Prerequisites – Introduction to the Teradata Database (Instructor-led or WBT); extensive experience with ANSI SQL

Teradata SQL for Business Users
Lecture/Lab

ILT 40029  5 Days

**Audience** – Core Curriculum: Business Users

**Prerequisites** – None

**Course Overview**
Designed for the Business User of the Teradata Database with little or no previous SQL experience, this course provides an overview of the Teradata architecture as well as the features and benefits. Data distribution, access, storage, and Teradata terminology are covered, followed by a thorough study of Teradata Structured Query Language (SQL). The student will get lots of practical, hands-on experience with retrieving and manipulating data using both ANSI standard conventions and Teradata extensions to the language.

Teradata SQL Advanced Features Overview
Lecture/Lab

ILT 50890  2 Days

**Audience** – Database Administrators, Architects/Designers, Application Developers, Data Analysts

**TCPP Exam Preparation** – Reference Material for TE0-142, TE0-145, TE0-147
INSTRUCTOR-LED COURSES • APPLICATION DESIGN & DEVELOPMENT

Course Objectives
After successfully completing this course, you will be able to:
• Understand the Teradata Database and relational theory at a high level
• Know the architecture and components of the Teradata Database and the benefits of using detail data
• Use Teradata Studio to submit queries to the Teradata Database
• Use Teradata's HELP facilities to retrieve information about your company's data structures
• Write queries in the SQL programming language that access single and multiple tables
• Write SQL to produce totals and subtotals in reports using aggregation operators
• Create queries which perform rankings of data and extract data samples from large tables
• Use SQL analytical functions
• Create and use temporary data structures

Teradata Advanced SQL
Lecture/Lab

Audience – Core Curriculum: Application Developers, Data Analysts, Optional: Database Administrators, Architects/Designers
TCPD Exam Preparation – TE0-142
Prerequisites – Introduction to the Teradata Database (Instructor-led or WBT), Teradata SQL (Instructor-led or WBT)

Course Overview
Designed for senior programmers and data analysts, this course focuses on advanced and analytic SQL features and techniques. Extensive hands-on labs help reinforce learning.

Course Objectives
After successfully completing this course, you will be able to:
• Use various forms of derived, volatile and global temporary tables
• Work with the Window Aggregate and Extended Grouping functions
• Use the ANSI Merge syntax to merge data from source to target
• Write SQL using the RANK, QUANTILE and WIDTH_BUCKET analytic functions
• Work with advanced features, such as recursive subqueries, scalar subqueries, and interval data types
• Understand and use Date, Time and Timestamp

Accelerated Teradata SQL for Business Users
Lecture/Lab

Audience – Core Curriculum: Business Users
Prerequisites – SQL Experience

Course Overview
Designed for Business Users who are familiar with the use of SQL in an environment other than Teradata, this accelerated three-day course with hands-on workshops focuses on the Teradata differences to ANSI SQL and how they function in a parallel processing environment. The course provides an overview of the Teradata architecture and features hands-on practice retrieving and manipulating data.

Course Objectives
After successfully completing this course, you will be able to:
• Understand the Teradata Database and relational theory at a high level
• Know the architecture and components of the Teradata Database and the benefits of using detail data
• Use Teradata Studio to submit queries to the Teradata Database
Teradata Application Design & Development
Lecture/Lab

**ILT 40022** 4 Days

**Audience** – Core Curriculum: Application Developers, Recommended: Database Administrators, Architects/Designers

**TCP Exam Preparation** – TE0-142, TE0-145, TE0-147

**Prerequisites** – Introduction to the Teradata Database (Instructor-led or WBT), Teradata SQL (Instructor-led or WBT)

**Course Overview**
This practical course focuses on the responsibilities of the Application Developer and covers the various tools, utilities, and built-in Teradata features available to assist in application development. Key advanced SQL concepts are also covered in depth. Extensive hands-on labs help reinforce learning.

**Course Objectives**
After successfully completing this course, you will be able to:
- Understand transaction processing and interactions with locking
- Use secondary indexes and work with data type conversions
- Understand and apply Referential Integrity (RI), including “soft RI” as well as other application techniques including Triggers, and Identity columns
- Use the MERGE function and the associated error tables
- Write application programs using Stored Procedure Language (SPL)
- Know and apply the function and usage of queue tables

Teradata Application Utilities
Lecture/Lab

**ILT 40023** 3 Days

**Audience** – Core Curriculum: Application Developers, Recommended: Database Administrators, Optional: Architects/Designers

**TCP Exam Preparation** – TE0-144, TE0-145

**Prerequisites** – Introduction to the Teradata Database (Instructor-led or WBT), Teradata SQL (Instructor-led or WBT)

**Course Overview**
This practical course explores the concepts and use of BTEQ, FastLoad, MultiLoad, TPump and FastExport, including writing scripts for importing and exporting data in a Teradata environment. These utilities include performing SELECT, INSERT, UPDATE, DELETE and UPsert operations in batch and real-time environments using the Teradata application utilities for maximum performance and efficiency. Extensive hands-on labs help reinforce learning.

**Course Objectives**
After successfully completing this course, you will be able to:
- Understand the role of TPT in loading/unloading a Teradata Database
- Recognize the different components that make up a TPT script, such as: DEFINE JOB, DEFINE OPERATOR, DEFINE SCHEMA, and APPLY
- Understand how to write TPT scripts with and without Simplicity
- Use and apply TPT Operators: Load, Export, Update, Stream, DataConnector, ODBC, and OS Command
- Execute the TPT Utility commands to manage the job submission and control environment

Teradata Parallel Transporter
Lecture/Lab

**ILT 40024** 3 days

**Audience** – Core Curriculum: Application Developers, Recommended: Database Administrators, Optional: Architects/Designers

**TCP Exam Preparation** – TE0-144, TE0-145

**Prerequisites** – Introduction to the Teradata Database (Instructor-led or WBT), Teradata SQL (Instructor-led or WBT)

**Course Overview**
This course explores and explains the features and functions of the Teradata Parallel Transporter (TPT) product. The Extract/Transform/Load (ETL) capabilities of TPT and its many special purpose “operators” are discussed in detail to support the writing of job scripts that are used to move data from one point to another. The benefits and flexibilities of a single scripting language to support all loading and unloading functions are demonstrated, incorporating examples of practical applications of TPT. Hands-on labs help reinforce learning.

**Course Objectives**
After successfully completing this course, you will be able to:
- Understand the role of TPT in loading/unloading a Teradata Database
- Recognize the different components that make up a Teradata Database
- Use and apply TPT Operators: Load, Export, Update, Stream, DataConnector, ODBC, and OS Command
- Execute the TPT Utility commands to manage the job submission and control environment
Teradata Data Modeling Custom Training
Lecture/Lab

ILT 55545 Custom Private class - call for quote

Audience – Data Modelers, Data Architects and Database Administrators (varies by module)
Prerequisites – Varies by module

Course Overview
Teradata Data Model Custom Training is composed of a series of modules that may be selected to build a tailored course that fits your exact business requirements and goals. The horizontal (applicable to all industries) course modules are organized into three tracks:

• Data Architecture & Modeling Theory – Integration Layer Track
• Implementing the Teradata Industry Data Model – Logical Track
• Implementing the Teradata Industry Data Model – Physical Track

In addition, a vertical (industry-specific) Teradata Industry Data Model Overview and Deep Dive Workshop module is also available. This part of the workshop can be designed to cover the specific subject areas within the Teradata Industry Data Model(s).

Teradata data modeling subject matter experts will review the training objectives and help you select the appropriate modules to be delivered. Individual modules may be scheduled as live webcasts, content permitting.

Course Objectives
A summary of the available course modules is as follows – a complete description of all modules is listed on the Teradata Education Network webpage:

Data Architecture & Modeling Theory – Integration Layer Track
• Data Architecture (#71007 – 2 hours) This module provides an overview of the architectural principles utilized in creating effective data architecture. Additionally, the students will gain insight into Teradata’s Reference Information Architecture (RIA), Unified Data Architecture (UDA) and UDA components.

• Data Modeling Concepts (#71006 – 2 hours) This module provides insight on why a data model is important; how to define a data model including information regarding the various types of data models. The student will gain insight into what an Entity-Relationship Diagram (ERD) is and the components that make up an ERD.

• Normalization (#71005 – 1 hour) This module provides insight into normalization; defining what it is and why it’s important. The student will gain an understanding of the levels of normalization and why one might want to de-normalize a database.

Implementing the Teradata Industry Data Model – Logical Track
• Industry Data Model Design Principles, Patterns and Standards (#71012 – 2 hours) This module is intended for those Teradata customers who have licensed one of Teradata’s Industry Data Models (iDM) and wish to understand the underlying design principles, design patterns and standards that drove the design of the iDM.

• Teradata Delivery Approaches (#71013 – 2 hours) This module provides an overview of the Teradata suggested delivery approaches, waterfall and agile. At the end of this module, you will understand common methodologies and delivery approaches, Teradata’s Waterfall approach, Teradata’s Agile approach, Kanban, its value, key principles and how Kanban fits in with the Teradata Agile approach.

• ERWin Techniques (#71004 – 4 hours) This module provides an overview of the ERwin Data Modeler tool. Navigating an ERwin data model, with suggestions for viewing and moving through modeling diagrams is demonstrated. Key ERwin concepts such as subject areas, domains, the explorer pane, themes and how to find model objects and metadata are shown. An explanation of how ERwin splits a single model into both a logical and physical view and the objects and properties that go along with those views is presented. The content also covers the use of the Application Programming Interface (API) to make large scale changes to models using Visual Basic for Applications (VBA) within Excel.

• Introduction to Access Layer Modeling (#71002 – 2 hours) This module provides an overview of concepts and Teradata’s advocated approach for delivering an access layer. Participants will be introduced to practical best practices in building an access layer through project planning, eliciting requirements, scoping business needs, designing both business and technical solutions, implementation tips, and validating to ensure high quality design of the access layer.
• Model Mapping Approaches (#71001 – 2 hours) This module is intended for those Teradata customers who have licensed one of Teradata’s Industry Data Models (iDM) and wish guidance on the approach and steps for mapping data sources and industry standards to the data model. This course enumerates principles and process for mapping, and provides examples of various categories of mappings.

• Customizing the Industry Data Model (#71011 – 2 hours) This module is intended for those Teradata customers who have licensed one of Teradata’s Industry Data Models (iDM) and wish guidance on the next steps with regards to data model customization approaches. This course is especially useful for those customers who are using the iDM as the primary guide and reference for their integrated analytical enterprise or cross functional data model and wish to keep track of their customizations.

Implementing the Teradata Industry Data Model – Physical Track
• Physical Design and Implementation Concepts (#71010 – 4 hours) This module provides an overview of the principles utilized in producing an implementation ready physical data model (PDM) and physical database design (PDD) from an enterprise logical data model (LDM). Additionally, owners of one of Teradata’s Industry Data Models (iDM) will gain insight into overcoming the ERwin Data Modeler’s inability to implement some of the Teradata features introduced in recent releases.

• History, Time Variance and Temporal (#71009 – 4 hours) This module provides an overview of the use of dates and time variance in an integrated data warehouse (IDW) data model. The various patterns associated with the implementation of dates in a data model, both with respect to supporting business rules and implementing the Valid and Transaction Time temporal concepts are covered. The module also reviews how the placement of date fields in data model primary keys can affect the support of business rules and provide guidelines for customizations when full support is not provided.

• Alternate Code and Reference Structures (#71003 – 2 hours) This module provides an overview of the principles utilized in implementing a reference data management solution as a part of an industry data model solution, with specific focus on utilizing the Global Control Framework (GCFR) BMAP solution, as well as the Master Data Management (MDM) Reference Data Management function.

• Generating DDL out of ERwin Using Industry Data Model Accelerators (#71008 – 2 hours) This module provides a methodology for generating implementation ready Data Definition Language (DDL) from an ERwin physical data model (PDM)/physical database design (PDD) using the collateral provided within the Teradata Industry Data Models.

Vertical Industry Data Model Workshop
• Industry Data Model Overview and Deep Dive (#55421 – 1-3 days) This course is intended for Teradata customers who have licensed one of Teradata’s Industry Data Models (iDMs) and wish to gain a deeper understanding of the modeling and how it aligns to the business. This course provides a detailed exploration of subject area content in relationship to business data, business questions or scenarios, and Key Performance Indicators (KPIs).

An iDM subject matter expert will customize each class, working with the client to determine which subject areas should be covered along with business area focus.
Teradata Physical Database Design
Lecture/Lab
ILT 40025  4 Days

Audience – Core Curriculum: Database Administrators and Database Architects/Designers, Recommended: Application Developers
TCPP Exam Preparation – TE0-143, TE0-144, TE0-145, TE0-146, TE0-147
Prerequisites – Familiarity with Relational Database Modeling, Introduction to the Teradata Database (Instructor-led or WBT), Teradata SQL (Instructor-led or WBT)

Course Overview
This course defines the processes and procedures to follow when designing and implementing a Teradata system. It covers Teradata data distribution, access, and use of derived data. Similarities between join and aggregation processing, and the implementation of Referential Integrity are also discussed. Various compression forms are explained in detail. Extensive hands-on labs help reinforce learning.

Course Objectives
After successfully completing this course, you will be able to:
• Know the differences between logical and physical data models
• Understand Teradata data distribution and hashing
  Know how to analyze design criteria and choose primary and secondary indexes
• Apply database sizing criteria, collection of statistics, and the use of the EXPLAIN facility
• Use tools to maximize space usage
• Be familiar with the use of the CREATE TABLE and CREATE INDEX statements along with their available options
• Understand and effectively use Multi-Value Compression
• Know how to use Partitioned Primary Indexes
• Understand the implications of the use of referential integrity

Teradata Physical Database Design Ramp Camp
Lecture/Lab
ILT 49275  5 Days

Audience – Core Curriculum: Database Administrators, Designers/Architects, Application Developers
Prerequisites – Familiarity with Relational Database Modeling, Introduction to the Teradata Database (Instructor-led or WBT), knowledge of ANSI SQL

Course Overview
This fast-paced, hands-on course is designed for students migrating to Teradata from another database platform. Accelerated instruction is provided on the differences between Teradata and ANSI SQL as well as the processes and procedures to follow for designing and implementing a Teradata database. Aspects of table design, Teradata data distribution, access, and use of derived data will be covered. Students should be highly proficient in another SQL language since basic SQL syntax will not be covered in this class. It is mandatory that each student complete the Introduction to the Teradata database WBT or Instructor-led class. Students without prior physical database design and SQL skills should enroll in the standard Teradata SQL, Teradata Advanced SQL, and Teradata Physical database design classes.

Course Objectives
After successfully completing this course, you will be able to:
• Submit SQL requests using BTEQ and Teradata Studio Express
• Understand many of the differences between Teradata and ANSI SQL, and know how to use the Teradata SQL extensions
• Know the differences between logical and physical data models
• Understand Teradata data distribution and hashing
• Know how to analyze design criteria and choose primary and secondary indexes
• Apply database sizing criteria, collection of statistics, and the use of the EXPLAIN facility
• Use tools to maximize space usage
• Be familiar with the use of the CREATE TABLE and CREATE INDEX statements along with their available options
• Understand and effectively use Multi-Value Compression
• Know how to use Partitioned Primary Indexes
• Understand the implications of the use of referential integrity
Teradata Physical Database Tuning
Lecture/Lab

ILT 40026  4 Days

**Audience** – Core Curriculum: Database Administrators, Architects/Designers, Recommended: Application Developers

**TCPP Exam Preparation** – TE0-143, TE0-144, TE0-145, TE0-146, TE0-147

**Prerequisites** – Introduction to the Teradata Database (Instructor-led or WBT), Teradata SQL (Instructor-led or WBT), Teradata Physical Database Design

**Course Overview**

This course builds on concepts learned in the Teradata Physical Database Design course, and provides an in-depth examination of the processes and procedures to follow once a Teradata database has been implemented and is in production. Performance and tuning topics involving advanced indexing strategies and querying topics are investigated. The EXPLAIN facility is utilized to analyze querying techniques and optimizer strategies.

**Course Objectives**

After successfully completing this course, you will be able to:

- Understand how transaction protocols interact with locking strategies and query parsing
- Optimize the use of Partitioned Primary Indexes (PPI)
- Apply efficient methods and strategies for the collection of statistics
- Be familiar with the strategies for the optimal use of Join Indexes, Hash Indexes and Aggregate Join Indexes
- Understand various EXPLAIN terminology using the EXPLAIN function
- Know and apply techniques to optimize SQL performance
Teradata Warehouse Administration
Lecture/Lab

ILT 40031 3 Days

Audience – Core Curriculum: Database Administrators

TCPP Exam Preparation – TE0-144, TE0-145

Prerequisites – Introduction to the Teradata Database (Instructor-led or WBT), Teradata SQL (Instructor-led or WBT), Teradata Physical Database Design

Course Overview
This hands-on course provides a comprehensive view of the administrative activities required to successfully manage a Teradata data warehouse. The Teradata system environment, including Databases, Users, space allocation, and client software interfaces, is covered in detail. Also included are administrative functions: access rights, roles, profiles, session accounting, and data archive/recovery. Various administrative utilities are covered including the Database Window, Ferret, CheckTable, and the Recovery Manager. This is a “must take” course for Database Administrators.

Course Objectives
After successfully completing this course, you will be able to:
• Build and maintain the database environment
• Set up users, accounts, account IDs, and profiles
• Understand the Data Dictionary and dictionary views
• Know how database space is allocated and used
• Implement access rights and roles
• Use the System and Maintenance utilities
• Apply the Teradata data security and protection features
• Perform archive and restore functions

Teradata Warehouse Management
Lecture/Lab

ILT 40033 3 Days

Audience – Core Curriculum: Database Administrators

TCPP Exam Preparation – TE0-144, TE0-145, TE0-147

Prerequisites – Introduction to the Teradata Database (Instructor-led or WBT), Teradata SQL (Instructor-led or WBT), Teradata Physical Database Design, Teradata Warehouse Administration

Course Overview
This course focuses on how a Teradata Database Administrator can effectively manage their Teradata Warehouse using Viewpoint, including an in-depth study of how to set up the tool. The use and function of Viewpoint portlets is discussed in detail. Also featured is a thorough study of Teradata Workload Management, including components of a Ruleset (states, sessions, filters, throttles, workloads and exceptions). Topics covered will include workload management using Integrated Workload Management (IWM) and Teradata Active System Management (TASM). The course is concluded with an explanation of memory utilization and the DBS Control Utility. Learning is reinforced throughout the course with hands-on exercises.

Course Objectives
After successfully completing this course, you will be able to:
• Understand how to set up and use Viewpoint
• Be acquainted with the various Viewpoint portlets and their use
• Set up Alerts using Viewpoint
• Know how to use the Viewpoint Workload Monitor
• Understand Teradata Workload Management capabilities (Includes TIWM and TASM)
• Define and set up filters and throttles
• Define, set up and monitor workloads
• Use resource prioritization techniques and system regulation
• Understand how memory is managed, and how to use the DBS Control utility
Teradata Viewpoint
Lecture/Lab

ILT 50527 2 Days

Audience – Core Curriculum: Database Administrators
Prerequisites – Introduction to the Teradata Database
(Instructor-led or WBT), Teradata SQL (Instructor-led
or WBT), Teradata Physical Database Design,
Teradata Warehouse Administration

Course Overview
This hands-on course focuses on the effective use of
Teradata Viewpoint. Included is an in-depth study of
how to set up Viewpoint portlets, how to set up and
monitor Viewpoint alerts, and how to use various
portlets to monitor system performance by monitoring
active queries and system metrics. A brief overview
of workload management is included in this course.

Course Objectives
After successfully completing this course, you will be able to:
• Understand how to set up and use Viewpoint
• Be able to set up and manage Viewpoint users and roles
• Understand the configuration and metrics of
  Viewpoint alerts
• Be acquainted with Business User, Technical User, and
  Administrative User Viewpoint portlets
• Be familiar with Teradata’s workload management
capabilities

Enterprise Data Management and Data Governance Workshop
Lecture/Lab

ILT 55546 2.5 Days

Audience – Business and IT teams wishing to understand
Enterprise Data Management and Data Governance
practices and applicability to their organization
Prerequisites – None

Course Overview
This workshop provides an understanding of core concepts
in Enterprise Data Management and Data Governance. In-
cluded in the workshop are discussions of best practices,
business value, and technology enablers (vendor agnostic).
Custom exercises will enable students to have a head start
toward implementing or improving Enterprise Data Manage-
ment and Data Governance within their own organization.

Course Objectives
After successfully completing this course, you will be able to:
• Describe Enterprise Data Management and Data Governance
  and explain why they are important
• Know how to align Enterprise Data Management and Data
  Governance to achieve real business value
• Understand the core components of Enterprise Data Man-
  agement including Data Quality Management, Metadata
  Management, Data Integration, Security/Privacy, Master
  Data Management, and Data Architecture and Modeling
• Explain Data Governance and Stewardship, including the
  role played within EDM components, governing bodies
  and roles, and practical implementation strategies
• Describe the role of Business Intelligence in delivering
  consistent and actionable information
• Design and leverage organizational processes including
  Enterprise Architecture, Project Portfolio Management,
  Solution Development Life Cycle, and existing corporate
  strategies to make EDM a part of the way the organization
does business
• Understand practical steps for implementing Enterprise
  Data Management within the organization with value at
  each step
**Teradata Multisystem Implementation Workshop**

**Lecture/Lab**

ILT 56320 4 Days

**Audience** – Database Administrators  
**Prerequisites** – Teradata Multisystem Overview WBT

**Course Overview**  
This four-day hands-on course leads student teams through a series of lab-exercises to build a working configuration of Teradata Ecosystem Manager 15.11, Teradata Data Mover 15.11 and Teradata Unity 15.10. Each student team will have their own lab environment. This course also uses Teradata Viewpoint 16.00 as the graphical user interface.

**Course Objectives**  
After successfully completing this course, you will be able to:  
- Configure Ecosystem Manager, Data Mover, and Unity so they interoperate in a high availability (HA Environment.  
- Validate the high availability environment for Viewpoint, Ecosystem Manager, Data Mover, and Unity  
- Set up Unity user mapping, passive routing, and managed routing  
- Manage workflows for three load use cases: direct to Teradata, direct to Unity with passive routing, and direct to Unity with managed routing  
- Fulfill customer implementation requirements with Teradata multisystem products

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**Teradata Multisystem Operational Workshop**

**Lecture/Lab**

ILT 56321 4 Days

**Audience** – Database Administrators  
**Prerequisites** – Teradata Multisystem Overview WBT (#56501)

**Course Overview**  
This four-day hands-on lab intensive course uses multisystem products (Unity 15.10, Data Mover 15.11, and Ecosystem Manager 15.11) to keep data and objects synchronized on multiple systems for high availability (HA) and disaster recovery (DR). Students work in teams to set up workflows to load tables, automatically copy the data to another system, set up mappings for passive routing workflows for reporting, enable user mappings for managed routing for data synchronization, and troubleshoot common issues. This course also uses Teradata Viewpoint 16.00 as the graphical user interface.

**Course Objectives**  
After successfully completing this course, you will be able to:  
- Manage two data centers using Teradata multisystem products  
- Create, edit, delete, run and monitor workflows with Ecosystem Manager  
- Create, edit, delete, and run jobs that copy databases and data with Teradata Data Mover  
- Muse Teradata Unity to configure passive routing with user mappings, create and deploy Unity Dictionaries, and configure managed routing with user mappings  
- Identify and troubleshoot common operational scenarios, tasks, and/or issues users might encounter in normal daily operations
Building Big Data Analytics in the Hadoop Ecosystem
Lecture/Lab
Developed and presented by Think Big

ILT 73000 3 Days

Audience – Analytic Developers and Data Engineers
Prerequisites – Programming experience in Java, Scala, Python or R experience is helpful; Linux shell and editor experience is recommended; experience with SQL Database

Course Overview
This course provides the essential grounding in the principles of Hadoop, the Hadoop Distributed File System (HDFS) storage engine, the roles of the new Hadoop computation models such as Spark, and how to write applications effectively using these tools. If your developers are new to Hadoop, they’ll learn the skills necessary to start using Hadoop and integrating it with your existing capabilities.

During this course, each student will have access to their own Amazon Web Services Elastic MapReduce (AWS EMR) cluster to gain hands-on experience with Hadoop. We will also provide students with configuration information necessary for them to create and use identically configured AWS EMR clusters.

Course Objectives
After successfully completing this course, you will be able to:

- Use the Hadoop command line tools and the web consoles
- Create Hadoop applications using the MapReduce Java and Streaming APIs
- Use Hive to analyze unstructured and structured data at a large scale in Hadoop
- Avoid cluster bottlenecks
- Write Spark code to do in-memory analyses
- Use SparkSQL to integrate with the Hive metastore
- Analyze small to large data sets with Hive and Spark
- Use datasets and Spark Streaming for near-real-time analyses
- Automate data ingestion using Apache NiFi and Kylo
- Integrate queries across databases using Presto

Introduction to Apache NiFi / Kylo
Lecture/Lab
Developed and presented by Think Big

ILT 73001 2 Days

Audience – Software Engineers, Data Scientists, and Analysts
Prerequisites – Understanding of core technologies such as HDFS, Hive, and the Linux command line are helpful; Linux shell and editor experience (recommended); SQL experience for understanding Hive queries and Kylo (recommended)

Course Overview
This two-day hands-on class teaches students about the underlying concepts and overview of the Apache NiFi and Kylo technologies, including use cases and data ingestion patterns.

Course Objectives
After successfully completing this course, you will be able to:

- Define Data Lakes concepts
- Understand both Apache NiFi and Kylo and the problems they solve
- Use the Apache and NiFi user interface
- Create Apache NiFi Data Flows, Templates, and Process Groups
- Automate data ingestion using Apache NiFi and Kylo
**Introduction to Data Science in the Big Data World**

**Lecture/Lab**
Developed and presented by Think Big

**ILT 73002** 3 Days

**Audience** – Analytics Developers and Data Engineers wanting to learn how to apply Big Data tools in their analyses.

**Prerequisites** – None

**Course Overview**
This three-day hands-on course introduces the methods and tools of data science in a big data context. Students will be introduced to a variety of machine learning algorithms and how to use them in practical examples of real-world problems.

**Course Objectives**
After successfully completing this course, you will be able to:
- Understand big data and an introduction to the concepts of distributed computing
- Understand the field of data science and the skills required by its practitioners
- Describe an introduction to Python, including basic functionality and the most useful libraries for analyzing and manipulating data
- Gain knowledge on statistics, the foundation of data science
- Understand machine learning describing the general approaches when building a data model
- Explain and implement, by way of example, of several of the most widely used machine learning algorithms
- Understand graph analysis

**Big Data Concepts and Apache Hadoop Essentials**

**Lecture**
Developed and presented by Think Big

**ILT 73003** 1 Day

**Audience** – Anyone who is looking at adopting a big data solution, anyone involved in data-driven business change, and everyone who needs an overview of the Apache Hadoop technology ecosystem.

**Prerequisites** – None

**Course Overview**
This one-day lecture-only course is designed to help attendees understand the concepts and benefits of big data, Apache Hadoop, and how this technology can help meet business goals.

**Course Objectives**
After successfully completing this course, you will have a better understanding of:
- What are Big Data, Analytics, and Machine Learning, and why they are important
- How Big Data is disrupting business and society
- Technology changes that support Big Data: distributed computing, data locality, NoSQL, Cloud computing
- How Hadoop works and supports big data, analytics and business transformation
- An overview of some of the tools used with Hadoop
- Common Apache Hadoop tools: HDFS, YARN, Sqoop, Spark, HBase
- Introduction to common Hadoop distributions such as Cloudera, Hortonworks, and Map R
Building Big Data Analytics with Spark

Lecture/Lab
Developed and presented by Think Big

ILT 73004  3 Days

Audience – Analytics Developers and Data Engineers wanting to learn how to apply Spark to their analyses.

Prerequisites – Programming experience in Java, Scala, Python, or R experience is helpful; Linux shell and editor experience is recommended; Experience with SQL Databases

Course Overview
This three day hands-on course provides students with the essential skills to develop analytical applications using Spark and Spark SQL. Also discussed are the essential grounding in the principles of Hadoop, the MapReduce computation model and the Hadoop Distributed File System (HDFS) storage engine, the role of Spark, SparkSQL, and SparkHL, and how to write applications using these tools. If your developers are new to Hadoop, they’ll learn the skills necessary to start using Hadoop and integrating it with your existing capabilities.

Course Objectives
After successfully completing this course, you will be able to:
• Understand Hadoop and the problems it solves
• Use the Hadoop command line tools and the web consoles
• Create Hadoop applications using the MapReduce Java and Streaming APIs
• Understand the Hive Metastore and why it’s key to Spark
• Identify cluster bottlenecks and how to avoid them
• Use Spark and SparkSQL to perform in-memory analyses
• Use SparkML and SparkMLLib to automate machine learning over Big Data
Introduction to Teradata Aster

Lecture/Lab

ILT 50618  2 Days

Audience – Database Administrators, Designers/Architects, Data Analysts
Prerequisites – None

Course Overview
The purpose of this course is to technically acquaint the student with the Teradata Aster database. Key topics include database and schema data modeling, creating tables, data acquisition and preparation, data loading, Map Reduce (SQL-MR), and selected analysis functions. The course is concluded with data visualization using Teradata Aster AppCenter and an overview of Teradata Aster R. Learning is reinforced throughout the course with hands-on exercises.

Course Objectives
After successfully completing this course, you will be able to:
• Create Aster databases and schemas to provide the system’s organizational and management structure
• Create fact and dimension tables in the Aster database
• Create logically partitioned tables from either a fact or dimension table
• Load data into the Aster database using nCluster Loader, and customize nCluster Loader processing
• Explain the design and syntax of SQL-MR functions
• Compare and contrast Map (Row) and Reduce (Partition) functions
• Use data acquisition and preparation functions
• Describe the how eight popular analysis functions work
• Understand why data visualization is important to analytics
• Create and run visualization Apps with Teradata Aster AppCenter
• Know the difference between R and Aster R, and be able to run Aster R commands in RStudio

Teradata Aster Database Administration

Lecture/Lab

ILT 50892  3 Days


Course Overview
This practical course is designed for Teradata Aster Database Administrators, and covers building, loading, configuring and managing the Aster cluster. Hands-on exercises and case studies reinforce real-world implementation and best practices.

Course Objectives
After successfully completing this course, you will be able to:
• Create databases, schemas, and tables
• Know the rules of Aster modeling
• Load data
• Manage tables and connectors
• Create users, assign privileges and roles
• Configure workloads based on predicates of your choice
• Back-up and restore Aster tables
• Use the Data Dictionary, selected Aster scripts, and Ganglia
• Identify bottlenecks and resolution strategies
• Read and interpret Log Files
Teradata Aster Analytics Workshop - Basic
Lecture/Lab

ILT 56375  2 Days

Audience – Caster Database Administrators, Designer Architects, Application Developers, Data Analysts

Prerequisites – Experience with the Teradata Database, Hadoop, Teradata Aster Analytics 6.21 Most Frequently Used Functions (WBT - #56503), and Introduction to Teradata Aster Analytics (WBT - #55211)

Course Overview
This course is the first course in a two-course series on Teradata Aster Analytics. It includes basic SQL-MR concepts, how to write SQL-MR syntax and how to create and load tables from various sources. Also reviewed are core concepts on the most popular SQL-MR functions including Teradata Query Grid Connectors, Sessionize, nPath, Naïve Bayes, Decision Trees, and AdaBoost. This course is based on Teradata Aster 6.21.

Course Objectives
After successfully completing this course, you will be able to:
• Use Teradata QueryGrid Connectors via Foreign Server to join to remote databases for Teradata and Hadoop databases, schemas, and tables
• Write SQL-MR code for the top 10 more advanced Aster Analytics functions
• Describe valid column data types and constraints
• Create Fact and Dimension tables in the Aster DB
• Create Logically Partitioned (LP) tables from either a Fact/Dimension table
• Set permissions on tables
• Configure workloads based on predicates of your choice
• Use the load_from_teradata and load_from_hcatalog connectors with CREATE TABLE AS
• Load data using ncluster_loader.exe bulk utility
• Know where SQL-MR is located on your Aster cluster
• Differentiate between MR and Aster's SQL-MR
• Use SQL-MR with SELECT, INSERT, CREATE TABLE
• Understand the Naïve Bayes Classifier, Decision Trees among others

Teradata Aster Analytics Workshop - Advanced
Lecture/Lab

ILT 56376  2 Days

Audience – Caster Database Administrators, Designers/Architects, Application Developers, Data Analysts

Prerequisites – Experience with the Teradata Database, Hadoop, Teradata Aster Analytics 6.21 Most Frequently Used Functions (WBT - #56503), and Introduction to Teradata Aster Analytics (WBT - #55211), Teradata Aster Analytics Workshop - Basic (#56375)

Course Overview
This course is the second course in a two-course series on Teradata Aster Analytics. The primary focus is on more advanced functions. This course is based on Teradata Aster 6.21.

Course Objectives
After successfully completing this course, you will be able to build an application using AppCenter and write code for the following Aster functions:
• Collaborative Filtering
• Apache_log_parser with Use Case
• Text Analytics (Text_parser, nGram, and Sentiment)
• Streaming API using Python and Perl
• Clustering
• Canopy (Canopy, KMeans, KModes)
• Normalize, Correlation, KNN, Histograms and Multi_Case
• LARS, GLM, and RandomSample
• AllPairsShortestPath
• Betweenness
• Closeness
• EigenvectorCentrality
• LocalClusteringCoefficient
• PageRank
Introduction to Teradata Aster R

Lecture/Lab

ILT 55548  1 Day

Audience – Data Analysts
Prerequisites – Familiarity with SQL

Course Overview
This fast-paced hands-on workshop gives you all the knowledge you need to get up and running quickly on Teradata Aster R. After a brief explanation of the differences between ‘regular’ R and ‘Teradata Aster R’, we dive right into core R concepts and terminology. Basic R commands are explained along with in-line labs by the Instructor.

You first will learn the difference between R vectors, matrices, factors, and data frames. Once R is mastered, we will move onto Teradata Aster R concepts and commands. Dozens of Teradata Aster R functions are covered (e.g., ta.connect, ta.Query, ta.load.csv, ta.summary, ta.kmeans, ta.sentiment.extract, etc.)

Rounding out the course will be a detailed examination of running visualizations in both RStudio and Teradata Aster AppCenter. Labs will be performed using ggplot, circlize, rattle, rpart.plot and RColorBrewer functions in RStudio using base Aster objects. This is followed by building Teradata AppCenter applications and creating both Tree and Sankey charts as well as a Sigma chart

Course Objectives
After successfully completing this course, you will be able to:
• Navigate the RStudio interface to both query and execute code
• Know how to use basic ‘R’ commands, including how to set up variables and enter data from the keyboard, how to create vectors, matrices, lists, factors and data frames
• Be able to select elements from a vector
• Access and use built-in R datasets
• Know how to clean R data prior to Teradata Aster R ingestion
• Use Teradata Aster R packages
  o Utility and Management functions
  o Data Access and Preparation functions
  o Parallel Analytic functions
  o Aster R MapReduce runners
• How to create visualization charts with both RStudio and Teradata Aster AppCenter

Hadoop Decoded (Hortonworks)

Lecture/Lab

ILT 55549  3 Days

Audience – Data Analysts, Database Administrators, Architects/Designers
Prerequisites – Familiarity with the basics of Hadoop, and experience with a command-line interface

Course Overview
Hadoop Decoded is an intensive three-day workshop that will enable you to better understand the different projects available with Hadoop, and was developed using real-life examples and hands-on labs. This course will walk you through the most popular Hadoop projects (Hive, Pig, HBase, Solr, Spark, Storm, etc.) to provide a working knowledge of their capabilities and when to use them. In addition, Teradata integration for Hadoop (Teradata QueryGrid, Teradata Connector for Hadoop, Presto, etc.) will be discussed, with hands-on labs as well.

This class will assist you in deciding which components to utilize, from both open source projects and Teradata technology, to support a Hadoop ecosystem.

Course Objectives
After successfully completing this course, you will be able to:
• Describe the Hadoop architecture and core components including master nodes, slave nodes and edge nodes
• Describe the YARN framework, where it fits in the Hadoop ecosystem, core components, and how it supports diverse big data workloads
• Load data into Hadoop using various methods (HDFS, Hue, Flume, TD connector for Hadoop, etc.)
• Articulate the Hadoop tools and projects which are available:
  o HDFS and MapReduce
  o Hive
  o Pig
  o Spark
  o HBase and Phoenix
  o Ingestion Utilities (Sqoop, Flume, Teradata QueryGrid connectors, etc.)
  o Other projects including Kafka, Storm, HBase, Solr, RStudio and Falcon
Hadoop Decoded (Cloudera)
Lecture/Lab
ILT 56336 3 Days

Audience – Data Analysts, Database Administrators, Architects/Designers
Prerequisites – Familiarity with the basics of Hadoop, and experience with a command-line interface

Course Overview
Hadoop Decoded is an intensive three-day workshop that will enable you to better understand the different projects available with Hadoop, and was developed using real-life examples and hands-on labs. This course will walk you through the most popular Hadoop projects (Hive, Pig, HBase, Phoenix, Solr, Spark, Storm, etc.) to provide a working knowledge of their capabilities and when to use them. In addition, Teradata integration for Hadoop (Teradata QueryGrid, Teradata Connector for Hadoop, Presto, etc.) will be discussed, with hands-on labs as well.

This class will assist you in deciding which components to utilize, from both open source projects and Teradata technology, to support a Hadoop ecosystem.

Course Objectives
After successfully completing this course, you will be able to:
• Cloudera Manager
• Core components of Hadoop: HDFS, YARN & MapReduce
• Hive project and SerDe
• Ingest methods including Flume, Scoop, WebHDFS
• Integration with TD applications including: TD Unified Data Architecture (UDA), Loom and Presto
• Pig project
• Spark project
• R and RStudio
• HBase and Phoenix projects
• Solr
• Kafka and Storm projects
• Falcon projects

Hadoop Decoded (Spark)
Lecture/Lab
Developed and presented by Think Big
ILT 56317 3 Days

Audience – Spark Developers and those wanting to learn to write Spark applications
Prerequisites – Experience in Hadoop preferred with prior knowledge of Hadoop Distributed File system (HDFS), YARN (Yet Another Resource Manager) and MapReduce processing engine. Familiarity with both Scala and Python is preferred. Also Linux command terminal.

Course Overview
This three-day hands-on course enables the student to develop applications using batch, streaming, and interactive queries via Hadoop Spark project/application. This course is based upon HDP 2.5 version and Spark 1.6.2 and 2.0.

Course Objectives
After successfully completing this course, you will have exposure to:
• How Spark ties into HDFS and YARN components
• Resilient Distributed Datasets (RDD), Data Frames, Tables, and DataSet objects
• Spark operators (Transformations and Actions)
• Working with Pair RDD including Joins, Unions
• Zeppelin visualizations of Spark output
• Performance tuning
• Creating applications using 'spark-submit'
• Spark 2.0 machine learning (ML) including Pipeline architecture
Cloudera Training
Lecture/Lab – Developed and Presented by Cloudera

ILT  1-4 Days

Audience – Cloudera Developers, Administrators, and Analysts
Prerequisites – Vary by audience and class

Course Overview
With our partner Cloudera, Teradata offers a full curriculum of courses for Cloudera developers, administrators, and analysts. Scheduling is flexible, including virtual attendance options.

Sample Courses
Cloudera Developer Training
• Developer Training for Spark and Hadoop (4 days)
• Designing and Developing Big Data Applications (4 days)
• Data Science at Scale using Spark and Hadoop (3 days)
• Search Training (3 days)
• HBase Training (3 days)
• Spark Training (3 days)
• MapReduce for Developers (4 days)
• Introduction to Machine Learning (1 day)
• Just Enough Python (1 day)
• Just Enough Scala (1 day)

Cloudera Administrator Training
• Cloudera Administrator Training (4 days)

Cloudera Analyst Training
• Data Science at Scale using Spark and Hadoop (3 days)
• Data Analyst Training (4 days)
Hortonworks Training
Lecture/Lab – Developed by Hortonworks

ILT 2-4 Days

Audience – Hortonworks Developers, Administrators and Analysts
Prerequisites – Vary by audience and class

Course Overview
With our partner Hortonworks, Teradata offers a full curriculum of courses for Hortonworks developers, systems administrators, and analysts. Scheduling is flexible, including virtual attendance options.

Sample Courses
Hortonworks Developer Training
• HDP Developer: Enterprise Apache Spark 1 (4 days)
• HDP Developer: Java (4 days)
• HDP Developer: Apache Pig and Hive (4 days)
• HDP Developer: Windows (4 days)
• HDP Developer: Custom YARN Applications (2 days)
• HDP Developer: Storm and Trident (2 days)

Hortonworks Systems Administrator Training
• HDP Operations: Migrating to the Hortonworks Data Platform (2 days)
• HDP Operations: Apache HBase Advanced Management (4 days)
• HDP Operations: Hadoop Administration I (4 days)
• HDP Operations: Hadoop Administration II (3 days)
• HDP Operations: Security (3 days)
• HDP Operations: Hortonworks Data Flow (3 days)

Hortonworks Analyst Training
• HDP Analyst: Data Science (3 days)
• HDP Analyst: Apache HBase Essentials (2 days)

MapR Training
Lecture/Lab – Developed and Presented by MapR

ILT 1-3 Days

Audience – MapR Developers, Administrators, and Data Analysts
Prerequisites – Prerequisites vary by audience and class

Course Overview
With our partner MapR, Teradata offers a full curriculum of courses for MapR developers, administrators, and data analysts. Scheduling is flexible, including virtual attendance options.

Sample Courses
MapR Hadoop Training
• MapR Academy – Hadoop Cluster Administration on MapR (3 days)

MapR Developer Training
• Developing Hadoop Applications (3 days)
• HBase for Analysts and Architects (1 day)
• HBase Applications Design and Build (3 days)
• Real-time Stream Processing with MapR (1 day)
• Developing Apache Spark Applications (3 days)
• Self-service SQL Analytics with Apache Drill (2 days)

MapR Administrator Training
• Cluster Administration (3 days)

MapR Analyst Training
• HBase Applications Design and Build (1 day)
• Self-service SQL Analytics with Apache Drill (2 days)
• Data Analysis with Apache Pig and Apache Hive (2 days)

Other Partner Training
Lecture/Lab

Apache Cassandra Training
• Apache Cassandra 2.x Core Internals (3 days)

Databricks: Apache Spark Training
• Spark Essentials (1 day)
• Spark Development Bootcamp (3 days)
### Teradata Implementation Mentoring

**Lecture/Lab**

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ILT 75075</td>
<td>5 Days</td>
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</table>

**Audience** – Core Curriculum: Database Administrators, Designers/Architects, Application Developers, Data Analysts, and Business Analysts

**TCPM Exam Preparation** – N/A

**Prerequisites** – None

**Course Overview**

You’ve invested in Teradata technology, and you want to leverage Teradata to provide new business insights. But how do you move ahead *quickly and effectively*? Implementation Mentoring is a customized blend of mentoring and instructor-led approaches focused on bringing client use cases into production. In addition, this program is designed to quickly ramp-up your team on your Teradata efforts. There are three base *mentoring packages* which include:

- Mentoring Package 1: Database Design, Administration, and Performance Tuning
- Mentoring Package 2: BI Best Practices and ETL Development Strategies
- Mentoring Package 3: Aster Big Data / Hadoop Best Practices and Integration

### Teradata Customer Interaction Manager (CIM) 10.20 Essentials

**Lecture/Lab**

<table>
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<th>Course Code</th>
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<tr>
<td>ILT 56405</td>
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</tr>
</tbody>
</table>

**Audience** – Business Users who create marketing programs

**Prerequisites** – None

**Course Overview**

This course provides students with knowledge and hands-on practice using Teradata Customer Interaction Manager 10.20.

**Course Objectives**

After successfully completing this course, you will be able to:

- Create and submit segments for processing
- Create a segment plan and communication plan
- Access previously run segment plans and view them across Gantt charts
- Import a segment plan and communication plan into a communication
- Assign collateral to segments and assign output
- Create measures for use in analyses
- Target customers via analysis reports to create segments
- Create users, roles, and groups
- Perform basic administrative functions
Teradata Certified Professional Program

A Teradata Certification is a differentiator in today’s quickly changing and competitive IT environment. Maximize your competitive advantage – become certified in the leading Data Warehouse DBMS or Teradata Aster technology. Teradata certification is available globally to customers, partners, associates, and students. Over 65,000 Teradata Certifications have been awarded and are recognized by major global organizations as an industry-standard measure of technical competence for IT professionals using Teradata technology and Teradata Aster.

Tell Your Professional Story With a Digital Badge!

Sharing your achievement is easier than ever with a Teradata Certification badge. Your digital badge is secure, verifiable and easily shared to LinkedIn and other social media.

Did you know, LinkedIn Profiles with certifications are viewed 6X more often as those that do not? Earn a certification and you will receive an email from our badging partner, Acclaim, with instructions on how to claim and share your badge.

COMING SOON – Teradata Database Certification Track

The Teradata Certified Professional Program is excited to announce the Teradata Database Certification Track, a new certification track that offers both entry and advanced level certifications specific to job roles. Progression through this new track has been simplified and many transition paths have been added for all Teradata 14 Certification holders.

The first exam, Teradata Database Associate, will be released in October 2017. The recommended training course for this exam, Introduction to the Teradata Database, is FREE. Become a Teradata Database Certified Associate and you’ll receive a digital badge to showcase your achievement!

Bookmark Teradata.com/Certification and check back often for updates on the release of additional certification exams.
What's New about the Teradata Database Certification Track

- The Teradata Database Certification Track enables career track progression and includes 1 foundational certification and 6 job role certifications. Candidates can find specific details on which Teradata Database release each exam is based upon by reviewing the exam objectives on www.Teradata.com/Certification.
- Provisional exam results will be issued at the test center.
- Digital badges are awarded to all certification holders to use and share on social networking sites to communicate the achievement.
- All certifications have a 5-year expiration date.
- Candidates maintain their certification by either passing the same exam OR an advanced certification exam for the same job role prior to the expiration date of the certification. Earning an advanced certification extends the expiration date of all other Teradata Certifications associated with that job role.

Teradata Aster Certification
Data scientists, DBAs and Analysts will benefit from Teradata Aster Certification. The Teradata Aster Certification Track consists of one exam that covers the features and functionality of Teradata Aster 6.10. Recommended courses can be found on page 18 or visit www.Teradata.com/certification/aster.

Teradata 14 Certification
The Teradata 14 Technical Certification track includes exams based on the following database releases: Teradata Database 13.0, Teradata Database 13.1, and Teradata Database 14.0 (including SLES 11). Detailed information about this Certification track is available at www.Teradata.com/Certification.

Making it Easy to Keep Your Certification Current
Stay current with our easy upgrade path to Teradata 14: Teradata 14 Bridge from Teradata 12 Exam (Exam ID: TEO-14B). Candidates in good standing that have achieved any of the following Teradata 12 Certification(s) are eligible to take the Teradata 14 Bridge from Teradata 12 exam:
- Teradata 12 Certified Technical Specialist
- Teradata 12 Certified Database Administrator
- Teradata 12 Certified Solutions Developer
- Teradata 12 Certified Enterprise Architect

The Bridge exam is a hybrid of the 3 Teradata baseline Certification exams, and covers content changes (between Teradata 12 and Teradata 14) to the Teradata Basics, Teradata SQL and Teradata Physical Design and Implementation exams. A passed exam result on the Bridge exam will yield the “Teradata 14 Certified Technical Specialist” designation. A candidate may then continue on the Teradata 14 track until achieving the desired Certification level.

Teradata 12 Masters Update
Teradata 12 Certified Masters will take one exam to update to Teradata 14 Certified Master (TEO-147: Teradata 14 Comprehensive Mastery Exam).
Pursue Teradata Certification With Confidence

Teradata Authorized Study Guides And Ebooks
The Teradata Certified Professional Program (TCPP) offers exam study guides to support your Teradata Certification goals. Each guide is designed as a study companion that may be combined with recommended Teradata training courses and practical experience using Teradata technology.
- These study guides may be purchased through
  o Hard copy books: Amazon and Greenleaf
  o Electronic books: Apple iBook store (apple.com/iTunes) or, for Android devices, Kobo Books (kobo.com)

General Program Information

Exam Registration
For information on how to register for exams, visit www.Teradata.com/Certification.

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Teradata Certifications Ranked #1 & #2 for Top Big Data Certs by Salary

UNITED STATES

1. Teradata 14 Certified Technical Specialist - $120,830
2. Teradata 14 Certified Professional - $111,460
3. Big Data Science School Certified Big Data Professional - $95,000
4. SAS Certified Predictive Modeler Using SAS Enterprise Miner - $91,250
5. (SAS Certified Statistical Business Analyst - $75,830

ALL OTHER COUNTRIES

1. Hortonworks HDP Certified Administrator - $68,330
2. Teradata 14 Certified Professional - $57,510
3. Hortonworks HDP Certified Developer - $57,000
4. Cloudera Certified Administrator for Apache Hadoop - $42,000
5. IBM Certified SAAdvanced Developer for BI - $24,600

The Teradata 14 Certified Technical Specialist and Certified Professional Certifications are the leaders out of over 60 certifications tracked in the CertMag Top Big Data Certs by Salary Survey for 2017.

Salaries ranked by average based salary in 2017
Source: CertMag July 2017
### Teradata 14 Certification Track

#### Traditional Path: Recommended Preparation Courses

- Introduction to the Teradata Database
- Teradata SQL
- Advanced Teradata SQL
- Physical Database Design
- Physical Database Tuning
- Teradata Application Utilities
- Teradata Parallel Transporter
- Teradata Warehouse Management
- Teradata Warehouse Administration
- Teradata Application Design and Development

#### Certification Exams (To Be Taken In Sequential Order)

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<thead>
<tr>
<th>Certified Professional</th>
<th>Certified Technical Specialist</th>
<th>Certified Database Administrator</th>
<th>Certified Solutions Developer</th>
<th>Certified Enterprise Architect</th>
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#### Upgrade Path From Teradata 12: Recommended Preparation Courses

- Teradata Warehouse Differences: 13.0, 13.10, and 14.0 (including SLES 11)
- Teradata Application Utilities
- Teradata Parallel Transporter
- Teradata Warehouse Management
- Teradata Warehouse Administration
- Teradata Application Design and Development

#### Certification Exams

<table>
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#### Upgrade Path For Teradata 12 Masters

- TEO-147 - Teradata 14 Comprehensive Mastery*

<table>
<thead>
<tr>
<th>Recommended Experience</th>
<th>Certified Professional</th>
<th>Certified Technical Specialist</th>
<th>Certified Database Administrator</th>
<th>Certified Solutions Developer</th>
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*TEO-148 and TEO-147 are eligibility based exams. Please refer to Teradata.com/Certification for additional information.

Temporal topics are covered on the Teradata 14 SQL exam (TEO-142). Please refer to Teradata.com/Certification for a list of specific Temporal objectives.

Teradata Corporation's official certification exams and credentials are developed, copyrighted, and managed solely by the Teradata Certified Professional Program (TCP). To achieve your training and certification goals, pursue only authorized courses of study and use only authorized study materials as outlined on the official TCP web site: www.Teradata.com/Certification.
What Our Satisfied Customers Are Saying

 “[The instructor] had an extensive knowledge of the course and kept the subject areas interesting. Went the extra mile to answer questions regarding scenarios we’ve experienced at our job sites.”

 “[The instructor] was extremely well prepared and very well knowledgeable on the subject. He kept the class well engaged and interactive.”

 “The course content is very well documented and relevant to my job.”

 “[The instructor] is amazing. We had a shorter schedule and he sped up the pace of the lectures while giving us plenty of practice time. He obviously has a passion for the subject and a very wide and deep knowledge of it. This is definitely conveyed when he teaches.”

 “The course really helped fill in a lot of gaps in my knowledge of workloads.”

 Visit www.Teradata.com/TEN/catalogsandschedules for a complete list of Teradata class offerings/schedules.