BTEQ

# BTEQ stands for Basic Teradata Query.

# Basic Teradata Query (BTEQ) Language is a general-purpose, command-based tool that enables you to communicate with one or more Teradata Databases.

# BTEQ provides a batch or interactive interface that allows you to submit SQL statements, import and export data, and generate reports.

# Interactive mode – start a BTEQ session, and submit commands to the database as needed.

# Batch mode – prepare scripts or macros, and then submit them to BTEQ for processing.

# The BTEQ Command Set

BTEQ commands enable you to perform data control functions; they do not act directly on data.

The BTEQ command set can be categorized as:

1. Session control commands
2. File control commands
3. Sequence control commands
4. Format control commands

**A. Session Control Commands**

Begin and end BTEQ sessions, and control session characteristics.

* **LOGON** – Start a BTEQ session
* **SESSIONS** - Specify the number of sessions to use with the next LOGON command
* **TDP** - Specify the Teradata server for subsequent logons during the current session
* **LOGOFF** - End the current sessions without exiting BTEQ
* **EXIT** or **QUIT** - End the current sessions and exit BTEQ
* **ABORT** - Abort any active requests and transactions without exiting BTEQ
* **HALT EXECUTION** - Abort any active requests and transactions and exit BTEQ
* **SHOW CONTROLS** - Display the current configuration of the BTEQ control command options
* **SHOW VERSIONS** - Display the release version numbers of BTEQ software modules
* **DEFAULTS** - Reset the BTEQ format command options to their default configuration
* **SESSION CHARSET** - Specify the name of a character set for the current session
* **SESSION SQLFLAG** - Specify the disposition of warnings issued in response to violations of ANSI-compliant syntax
* **SESSION TRANSACTION** - Specify whether transaction boundaries are determined by Teradata SQL semantics or ANSI semantics
* **COMPILE** - Create or replace a Teradata stored procedure

**B. File control commands**

Use the following BTEQ commands to specify the format of incoming and outgoing information and identify the source and destination of input and output streams:

* **TSO** – Execute an MVS TSO command from within the BTEQ environment
* **CMS** - Execute a VM CMS command from within the BTEQ environment
* **OS** - Execute an MS-DOS, PC-DOS, or UNIX command from within the BTEQ environment
* **RUN** - Execute Teradata SQL requests and BTEQ commands from a specified run file
* **IMPORT** - Open a file with a specific format to transfer information to the Teradata RDBMS
* **=** - Resubmit the prior request a specified number of times
* **REPEAT** - Submit the next request a specified number of times
* **HALT EXECUTION** - Abort any active requests and transactions and exit BTEQ
* **FORMAT** - Enable or inhibit the page-oriented format command options
* **QUIET** - Limit BTEQ output displays to error messages and request processing statistics
* **EXPORT** - Open a file with a specific format to transfer information from the Teradata RDBMS
* **INDICDATA** and/or **RECORDMODE** - Specify either Field Mode, Indicator Mode, or Record Mode for data selected from the Teradata RDBMS
* **ERROROUT** - Write error messages to an output file

**C. Sequence Control Commands**

Commands that affect the sequence in which other commands and requests are submitted are most useful in scripts and macros. Use these BTEQ commands to control the sequence in which BTEQ executes commands

* **EXIT** or **QUIT** - End the current sessions and exit BTEQ
* **ABORT** - Abort any active requests and transactions
* **HANG** - Pause BTEQ processing for a specified period of time
* **=** - Resubmit the prior request a specified number of times
* **REMARK** - Place a specified comment string (remark) on the standard output stream
* **GOTO** - Skip all intervening commands and resume processing at the specified label
* **LABEL** - Identify the destination (label) for a prior GOTO command
* **ERRORLEVEL** - Assign severity levels to error numbers
* **MAXERROR** - Specify a maximum allowable error severity level
* **REPEAT** - Submit the next request a specified number of times
* **IF ... THEN ...** - Test a stated condition, and then resume processing according to the results of the test

**D. Format Control Commands**

* **RETCANCEL** - Cancel a request when the value specified by the RETLIMIT command option is exceeded
* **SHOW CONTROLS** - Display the current configuration of the format control command options
* **ECHOREQ** - Enable the echo required function that returns a copy of each Teradata SQL request and BTEQ command to the standard output stream
* **TITLEDASHES** - Display a row of dash characters before each report line summarized by a WITH clause
* **UNDERLINE** - Display a row of dash characters whenever the value of a specified column changes
* **FORMAT** - Enable the page-oriented format command options
* **PAGEBREAK** - Eject a page whenever the value of a specified column changes
* **OMIT** - Exclude (omit) specified columns from a report
* **SKIPLINE** - Insert a blank line in a report whenever the value of a specified column changes
* **SUPPRESS** - Replace all consecutively repeated values with all-blank character strings
* **DEFAULTS** - Reset the BTEQ format command options to their default configurations
* **RETRY** - Resubmit requests that fail under certain error conditions
* **NULL** - Specify a character or character string to represent null field values returned from the Teradata RDBMS
* **RETLIMIT** - Specify the maximum number of rows displayed or written in response to a Teradata SQL request
* **PAGELENGTH** - Specify the page length of printed reports, in lines per page
* **WIDTH** - Specify the width of screen displays and printed reports, in characters per line

**Submitting a BASIC BTEQ Script:**

**.LOGON TDPID/USER, password;**

**/\*Enter your BTEQ/SQL Request or BTEQ Command\*/**

**DATABASE STUDY;**

**SELECT \* FROM EMPLOYEE\_TABLE;**

**.LOGOFF**

C:/> BTEQ < BatchScript.txt > Output.txt

BTEQ is invoked and takes instructions from a file called BatchScript.txt. The output file is called Output.txt.

**Export Data using BTEQ:**

* BTEQ allows data to be exported directly from Teradata to a file on a mainframe or network-attached computer.
* Data can be exported to a flat file format composed of variety of characteristics i.e.. Data Mode, Report Mode and Indicator Mode.
* Syntax of Export Mode:
* The optional LIMIT is to tell BTEQ to stop returning rows after a specific number (n) of rows.

**Export using Data Mode:**

Data Mode:

* This is set by .EXPORT DATA.
* This will bring data back as a flat file. Each parcel will contain a complete record.
* Since it is not a report, there are no headers or white space between the data contained in each column and the data is written to the file in native format.
* For example, this means that INTEGER data is written as a 4-byte binary field.
* Therefore, it cannot be read and understood using a normal text editor

**Export Data using Report Mode:**

* This is set by .EXPORT REPORT.
* This is the default mode for BTEQ and brings the data back as if it was a standard SQL SELECT statement.
* The output of this BTEQ export would return the column headers for the fields, white space, expanded packed or binary data and can be understood using a text editor.

**Export Data using Indicator Mode:**

**Indicator Mode:**

* This is set by .EXPORT INDICDATA.
* This mode writes the data in data mode, but also provides host operating systems with the means of recognizing missing or unknown data (NULL) fields.
* This is important if the data is to be loaded into another Relational Database System (RDBMS).
* INDICATA puts a bitmap at the front of every record written to the disk to identify NULL values. This bitmap contains one bit per field/column.
* When a Teradata column contains a NULL, the bit for that field is turned on by setting it to a ‘1’.
* Likewise, if the data is not NULL, the bit remains a zero.
* Therefore, the loading utility reads these bits as indicators of NULL data and identifies the column s as NULL when data is loaded back into the table, where appropriate.

**BTEQ Import:**

* BTEQ can also read a file from the hard disk and incorporate the data into SQL to modify the contents of one or more tables.
* Syntax for the IMPORT command:
* The SKIP option is used when you wish to bypass the first records in a file.
* For example, a mainframe tape may have header records that should not be processed.

**Bteq Import in Data Mode:**

**Same is for INDICDATA mode. .LOGON dbc/dbc,dbc;**

**.IMPORT DATA FILE = C:\BTEQ\OUTPUT\DATA\_MODE\_EXPORT\_OP.TXT**

**DATABASE STUDY;**

**DELETE FROM STUDY.BTEQ\_IMPORT\_TAB;**

**.REPEAT 50**

**USING**

**(**

**SORT\_ORDER INTEGER,**

**COMMON\_NAME VARCHAR(30),**

**FORMAL\_NAME VARCHAR(30),**

**CTYPE VARCHAR(30),**

**SUBTYPE VARCHAR(30),**

**CAPITAL VARCHAR(30),**

**CURRENCY\_CODE CHAR(3)**

**)**

**INSERT INTO STUDY.BTEQ\_IMPORT\_TAB**

**( SORT\_ORDER,**

**COMMON\_NAME,**

**FORMAL\_NAME ,**

**CTYPE ,**

**SUBTYPE,**

**CAPITAL,**

**CURRENCY\_CODE**

**)**

**VALUES ( :SORT\_ORDER,**

**:COMMON\_NAME,**

**:FORMAL\_NAME ,**

**:CTYPE ,**

**:SUBTYPE,**

**:CAPITAL,**

**:CURRENCY\_CODE**

**) ;**

**.QUIT**