Utilities

Tuesday, February 07, 2017
1:16 PM

The Teradata Utilities

1. BTEQ – The first Teradata query tool. It imports and exports data and should be used when < 500,000 rows. BTEQ is an excellent report writer.

2. FastLoad performs Inserts into empty Teradata tables in 64K blocks. There can be NO Secondary Indexes, Triggers, Referential Integrity, or Join Indexes on the table.

3. MultiLoad loads to populated Teradata tables in 64K blocks. MultiLoad supports Inserts, Updates, Deletes, and Upserts. There can be NO Unique Secondary Indexes, Triggers, Referential Integrity, or Join Indexes on the table.

4. TPump loads into Empty or Populated Tables and is a lot like MultiLoad except TPump does all of the work at the row level and NOT the blo ck level. It is called TPump because you can turn up or down the pump to increase or decrease the load quantities, and it allows Secondary Indexes, Referential Integrity, Triggers, or Join Indexes.

5. FastExport – Exports data off of Teradata at the block level. It is much faster than a BTEQ Export and is used for exports when there are more than 500,000 rows export ed.

6. TPT – The Teradata Parallel Transport is one scripting language that combines all of the above utilitiesinto one common utility.

Above are the utilities and their specialties.

Block Level Utilities

1. FastLoad performs Inserts into empty Teradata tables in 64K blocks.

2. MultiLoad loads to populated Teradata tables in 64K blocks.

3. FastExport – Exports data off of Teradata at the 64K block level.

> No Secondary Indexes (FastLoad)
> No Unique Secondary Indexes (FastLoad and MultiLoad)
> No Triggers (FastLoad and MultiLoad)
> No Join Indexes (FastLoad and MultiLoad)
> No Referential Integrity (FastLoad and MultiLoad)

Only 30 FastLoad and MultiLoad combinations can run at one time.
Only 60 FastExport jobs can run simultaneously!
The block utilities have limits that prevent too many of them running at the same time. This feature is actually controlled by a new DBS Control parameter named MaxLoadAWT which controls AMP Worker Tasks (AWT). When MaxLoadAWT is set to zero, then it is like going back in time to pre-V2R6.0 where only 15 FastLoad, MultiLoad, and FastExport jobs can run, max.
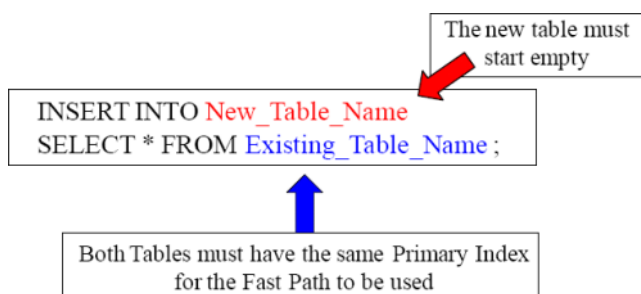
Row Level Utilities

1. BTEQ – The first Teradata query tool. It imports and exports data and should be used when < 500,000 rows. BTEQ is an excellent report writer.

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> Secondary Indexes allowed
> Triggers allowed
> Join Indexes allowed
> Referential Integrity allowed

You can have an unlimited amount of TPump and BTEQ utilities running simultaneously!
Row Level Utilities are not as fast as block level utilities, but they are really flexible and easy to implement. There are almost no restrictions.

Fast Path Inserts Using Insert/Select

The new table must start empty

```
INSERT INTO New_Table_Name
SELECT * FROM Existing_Table_Name ;
```

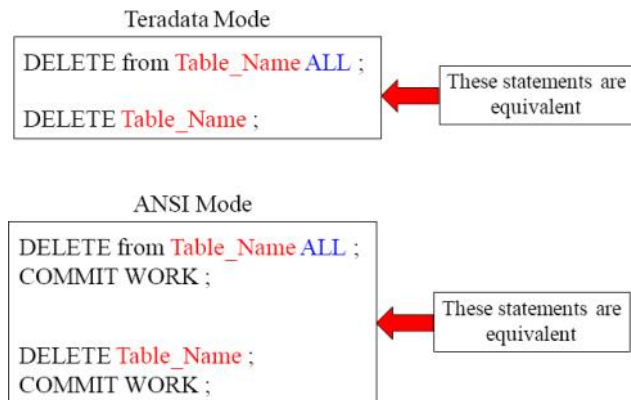Both Tables must have the same Primary Index for the Fast Path to be used

Why is the Fast Path so fast?

- Only one write to the Transient Journal (Now called WAL Journal) because it is easy to Rollback an empty table.
- The Data is copied and written to disk in blocks.
- No Data is redistributed over the BYNET because the tables have the same Primary Index.

Using the Fast Path for Inserts can be really fast.

Fast Path Deletes

Teradata Mode

DELETE from Table_Name ALL ;

DELETE Table_Name ;

These statements are equivalent

ANSI Mode

DELETE from Table_Name ALL ;
COMMIT WORK ;

DELETE Table_Name ;
COMMIT WORK ;

These statements are equivalent

- Data is deleted at the Cylinder Index and Master Index level.
- ANSI syntax requires the COMMIT WORK statement.
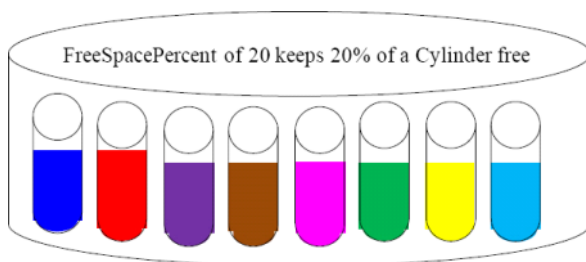
Using the Fast Path for Deletes can be really fast.

Freespace Percent

These Don't Honor Freespace Percent
- SQL Inserts and Updates
- TPump
- MultiLoad Insert and Updates to populated tables.

These DO Honor Freespace Percent
- FastLoad
- Insert/Select into an Empty Table
- MultiLoad into an Empty Table
- SQL that adds Fallback to a Table
- SQL that Creates a Secondary Index

FreeSpacePercent of 20 keeps 20% of a Cylinder free

Freespace Percent commands Teradata not to completely fill up a cylinder. This is actually set in a DBS control parameter called FreeSpacePercent.