HIVE - PARTITIONING

Hive organizes tables into partitions. It is a way of dividing a table into related parts based on the values of partitioned columns such as date, city, and department. Using partition, it is easy to query a portion of the data.

Tables or partitions are sub-divided into **buckets,** to provide extra structure to the data that may be used for more efficient querying. Bucketing works based on the value of hash function of some column of a table.

For example, a table named **Tab1** contains employee data such as id, name, dept, and yoj $i.e., yearofjoining$. Suppose you need to retrieve the details of all employees who joined in 2012. A query searches the whole table for the required information. However, if you partition the employee data with the year and store it in a separate file, it reduces the query processing time. The following example shows how to partition a file and its data:

The following file contains employeedata table.

/tab1/employeedata/file1

```
id, name, dept, yoj
1, gopal, TP, 2012
2, kiran, HR, 2012
3, kaleel,SC, 2013
4, Prasanth, SC, 2013
```

The above data is partitioned into two files using year.

/tab1/employeedata/2012/file2

```
1, gopal, TP, 2012
2, kiran, HR, 2012
```

/tab1/employeedata/2013/file3

```
3, kaleel,SC, 2013
4, Prasanth, SC, 2013
```

Adding a Partition

We can add partitions to a table by altering the table. Let us assume we have a table called **employee** with fields such as Id, Name, Salary, Designation, Dept, and yoj.

Syntax:

```
ALTER TABLE table_name ADD [IF NOT EXISTS] PARTITION partition_spec
[LOCATION 'location1'] partition_spec [LOCATION 'location2'] ...;

partition_spec:
: (p_column = p_col_value, p_column = p_col_value, ...)
```

The following query is used to add a partition to the employee table.

```
hive> ALTER TABLE employee
> ADD PARTITION (year='2013')
> location '/2012/part2012';
```

Renaming a Partition

The syntax of this command is as follows.

```
ALTER TABLE table_name PARTITION partition_spec RENAME TO PARTITION partition_spec;
```

The following query is used to rename a partition:

```
hive> ALTER TABLE employee PARTITION (year='1203')
   > RENAME TO PARTITION (Yoj='1203');
```

Dropping a Partition

The following syntax is used to drop a partition:

```
ALTER TABLE table_name DROP [IF EXISTS] PARTITION partition_spec, PARTITION
partition_spec,...;
```

The following query is used to drop a partition:

```
hive> ALTER TABLE employee DROP [IF EXISTS]
   > PARTITION (year='1203');
```

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