

Oracle: Table Cluster with example

Clustering is a method of storing tables that are intimately related and often joined together into the same area on disk. The cluster key is the column or columns by which the tables are usually joined in a query

By storing the field comprising the Cluster Key once instead of multiple times, storage is saved. The arguably more significant advantage to Clustering is to expedite join queries. When a query is fired that joins these 2 tables by Cluster Key, the joined rows would be fetched with a single IO operation.

A cluster is a data structure that improves retrieval performance.

The most important step in creating a cluster is deciding which table or tables to cluster, and how.

Although a clustered table can deliver a terrific performance improvement in the right circumstances, a poorly chosen cluster can decrease performance. Once you have properly selected the table or tables you wish to cluster, you must go through a **three-step process** to create this database structure.

Create the cluster

The following Tooltip illustrates how to create a cluster using SQL:

```
CREATE CLUSTER cluster_name (column_name Datatype)
    SIZE size_value
    storage_clause;
```

Add tables to the cluster

Once you create a cluster, you then create the table or tables that the cluster will contain.

The syntax for creating tables that are a part of a cluster is exactly the same syntax that is used for non-clustered tables, with one exception. The final clause in the CREATE TABLE statement is:

```
CLUSTER cluster_name (column_name)
```

The *cluster_name* is the same name that was given to the cluster in the CREATE CLUSTER command.

The *column_name* is a list of columns in the table being created that match up with the columns in the already created cluster.

Create the cluster key

The final step is to create a cluster index.

Example 1:

```
-----  
create cluster empdept (did number(2));  
-----  
create index empdept_idx on cluster empdept;  
-----  
create table emp  
(  
  eid number(10),  
  ename varchar2(100),  
  did number(2)  
)  
cluster empdept(did);  
-----  
create table dept  
(  
  did number(2),  
  dname varchar2(100)  
)  
cluster empdept(did);  
-----
```

Example 2:

```
CREATE CLUSTER orders (order_id NUMBER) SIZE 512 K;
```

```
CREATE TABLE order_header( order_number NUMBER,  
  customer_number NUMBER)
```

```
CLUSTER orders (order_number);
```

```
CREATE TABLE order_detail(
```

```
  order_number NUMBER,
```

```
  detail_line VARCHAR2(100))
```

```
CLUSTER orders (order_number);
```
