

## **Output for parallel dbscan algorithm:**

### **For 2 threads:**

```
dharani@dharani:~/Downloads/pdbscan$ export OMP_NUM_THREADS=2
dharani@dharani:~/Downloads/pdbscan$ ./omp_dbscan -i clus50k.bin -b -m 5 -e 25 -t 8 -o output
Number of threads 2
Reading points from file: clus50k.bin
Points 50000 dims 10
Reading input data file took 0.00603123 seconds.
Build kdtree took 0.0218425 seconds.
Local computation took 1.31249 seconds.
Merging took 0.000576828 seconds.
DBSCAN (total) took 1.31345 seconds.
Total points 50000 pt_in_cls 48658 noise 1342
Number of clusters: 21
```

### **For 4 threads:**

```
dharani@dharani:~/Downloads/pdbscan$ export OMP_NUM_THREADS=4
dharani@dharani:~/Downloads/pdbscan$ ./omp_dbscan -i clus50k.bin -b -m 5 -e 25 -t 8 -o output
Number of threads 4
Reading points from file: clus50k.bin
Points 50000 dims 10
Reading input data file took 0.00621913 seconds.
Build kdtree took 0.021173 seconds.
Local computation took 0.639358 seconds.
Merging took 0.00277834 seconds.
DBSCAN (total) took 0.642603 seconds.
Total points 50000 pt_in_cls 49395 noise 605
Number of clusters: 9
```

### **For 8 threads:**

```
dharani@dharani:~/Downloads/pdbscan$ export OMP_NUM_THREADS=8
dharani@dharani:~/Downloads/pdbscan$ ./omp_dbscan -i clus50k.bin -b -m 5 -e 25 -t 8 -o output
Number of threads 8
Reading points from file: clus50k.bin
Points 50000 dims 10
Reading input data file took 0.00659265 seconds.
Build kdtree took 0.0239994 seconds.
Local computation took 0.356402 seconds.
Merging took 0.000809313 seconds.
DBSCAN (total) took 0.357625 seconds.
Total points 50000 pt_in_cls 49743 noise 257
Number of clusters: 2
```

### **For 16 threads:**

```
dharani@dharani:~/Downloads/pdbscan$ export OMP_NUM_THREADS=16
dharani@dharani:~/Downloads/pdbscan$ ./omp_dbscan -i clus50k.bin -b -m 5 -e 25 -t 8 -o output
Number of threads 16
Reading points from file: clus50k.bin
Points 50000 dims 10
Reading input data file took 0.00599547 seconds.
Build kdtree took 0.0195635 seconds.
Local computation took 0.152778 seconds.
Merging took 0.000716603 seconds.
DBSCAN (total) took 0.153907 seconds.
Total points 50000 pt_in_cls 49834 noise 166
```

Number of clusters: 2

**For 1 million data objects:**

**For 2 threads:**

```
dharani@dharani:~/Downloads/pdbscan$ export OMP_NUM_THREADS=2
```

```
dharani@dharani:~/Downloads/pdbscan$ ./omp_dbscan -i test1.txt -m 5 -e 25 -t 8 -o output
```

Number of threads 2

Reading points from file: test1.txt

Points 999999 dimensions 10

Reading input data file took 3.16079 seconds.

Build kdtree took 0.306989 seconds.

Local computation took 1.03322 seconds.

Merging took 0.00297798 seconds.

DBSCAN (total) took 1.04039 seconds.

**For 4 threads:**

```
dharani@dharani:~/Downloads/pdbscan$ export OMP_NUM_THREADS=4
```

```
dharani@dharani:~/Downloads/pdbscan$ ./omp_dbscan -i test1.txt -m 5 -e 25 -t 8 -o output
```

Number of threads 4

Reading points from file: test1.txt

Points 999999 dimensions 10

Reading input data file took 3.22859 seconds.

Build kdtree took 0.301716 seconds.

Local computation took 0.523322 seconds.

Merging took 0.0043031 seconds.

DBSCAN (total) took 0.531793 seconds.

**For 8 threads:**

```
dharani@dharani:~/Downloads/pdbscan$ export OMP_NUM_THREADS=8
```

```
dharani@dharani:~/Downloads/pdbscan$ ./omp_dbscan -i test1.txt -m 5 -e 25 -t 8 -o output
```

Number of threads 8

Reading points from file: test1.txt

Points 999999 dimensions 10

Reading input data file took 3.1622 seconds.

Build kdtree took 0.315804 seconds.

Local computation took 0.26165 seconds.

Merging took 0.00248969 seconds.

DBSCAN (total) took 0.268122 seconds.

**For 16 threads:**

```
dharani@dharani:~/Downloads/pdbscan$ export OMP_NUM_THREADS=16
```

```
dharani@dharani:~/Downloads/pdbscan$ ./omp_dbscan -i test1.txt -m 5 -e 25 -t 8 -o output
```

Number of threads 16

Reading points from file: test1.txt

Points 999999 dimensions 10

Reading input data file took 3.22926 seconds.

Build kdtree took 0.307817 seconds.

Local computation took 0.127701 seconds.

Merging took 0.00271377 seconds.

DBSCAN (total) took 0.134655 seconds.