|  |  | # locations = 400 | # locations = 10 |
| --- | --- | --- | --- |
| PostgreSQL | Line | 107 | 1.53 |
| Polygon | 143 | 2.22 |
| Point | 1.26 | 0.15 |
| Apache Sedona | Line | 880.51 | 481.09 |
| Polygon | 1102.54 | 515.48 |
| Point | 37.07 | 19.22 |

Table: Time comparison (seconds) using PostgreSQL and Apache Sedona

The time comparison in seconds using PostgreSQL and Apache Sedona on two different location datasets are summarized in the above table. Several observations are given below:

* The time consumed using PostgreSQL is much less than time consumed using Apache Sedona.
* The running time of completing the point feature task is less than the time of completing line feature task, and less than the time of completing polygon task. This is expected because in the point feature task, we only need to count the number of featured points in a specific buffer. While in line feature or polygon feature tasks, we need to find the intersected geometric objects, which are much more complicated than points. Calculating the length or the area of the intersected objects also consumes much more time than counting the numbers. The polygon feature task is even more time consuming than the line feature task.
* The time consumed on the larger location dataset (# locations = 400) is much less than the time consumed on the smaller location dataset (# locations = 10). In PostgreSQL, the running times increase by nearly 10 times. In Apache Sedona, the running times increase by nearly 2 times.