

# HPC Instalar Galera 4 Cluster con MariaDB en Linux

# **Estudiante:**

Melanie Abigail Calderón Flores

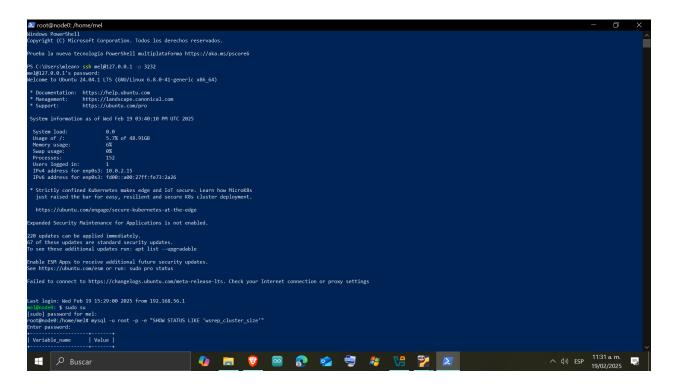
**Programa Educativo:** IDeIO

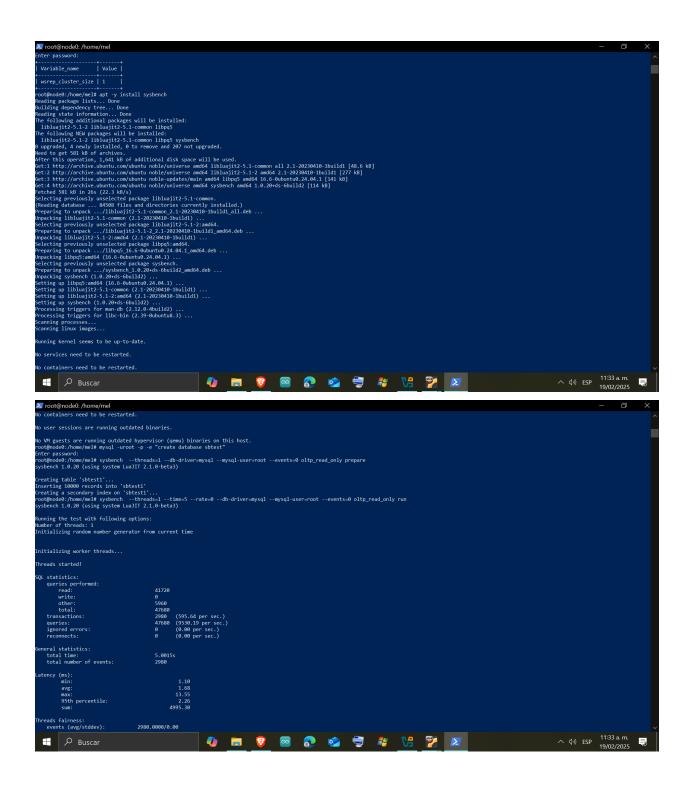
Presentado a:

Ismael Jiménez Sánchez

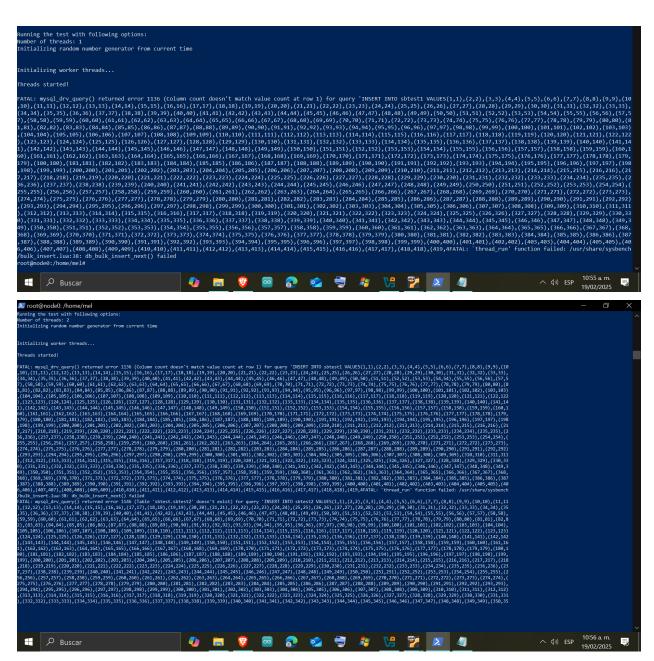
Cancún, Quintana Roo, 19 de febrero de 2025

- 1. Montar una base de datos en MariaDB
- 2. Pruebas con sysbench
- 3. Lanzar una prueba de cada set de pruebas en sysbench utilizando 1 core y 2 cores
- 4. Medir el número de transacciones que soporta su infraestructura en un periodo de 1 minuto para cada set de pruebas.





- 5. Set de pruebas de sysbench:
- 6. bulk\_insert



7. - oltp\_delete

```
unning the test with following options:
umber of threads: 1
nitializing random number generator from current time
 QL statistics:
   statistics:
queries performed:
read:
write:
other:
total:
transactions:
queries:
ignored errors:
reconnects:
   eral statistics:
total time:
total number of events:
  reads fairness:
events (avg/stddev):
execution time (avg/stddev):
59.6509/0.00
  ot@node0:/home/mel# _
                                                                   ₩ D Buscar
   eads fairness:
events (avg/stddev): 737217.0000/0.00
execution time (avg/stddev): 59.6509/0.00
 ot@node0:/home/mel# sysbench --threads=2 --time=60 --rate=0 --db-driver=mysql --mysql-user=root --events=0 oltp_delete run
sbench 1.0.20 (using system Lua]IT 2.1.0-beta3)
unning the test with following options:
umber of threads: 2
nitializing random number generator from current time
50L statistics:
queries performed:
read:
write:
other:
total:
transactions:
queries:
ignored errors:
reconnects:
                                               0
491
1358855
1359346 (22654.54 per sec.)
1359346 (22654.54 per sec.)
0 (0.00 per sec.)
0 (0.00 per sec.)
   eral statistics:
total time:
total number of events:
  reads fairness:
events (avg/stddev):
execution time (avg/stddev):
59.6393/0.00
                                                                  ₩ D Buscar
```

8. - oltp insert

```
reads fairness:
events (avg/stddev): 670673.0000/12919.00
execution time (avg/stddev): 59.6393/0.00
  ot@node0:/home/mel# sysbench --threads=1 --time=60 --rate=0 --db-driver=mysql --mysql-user=root --events=0 oltp_insert run
sbench 1.0.20 (using system LuaJIT 2.1.0-beta3)
 unning the test with following options:
umber of threads: 1
nitializing random number generator from current time
GQL statistics:
queries performed:
read:
write:
other:
total:
transactions:
queries:
ignored errors:
reconnects:
   eral statistics:
total time:
total number of events:
  ot@node0:/home/mel# _
                                                                  ₩ D Buscar
                                                      3.30
59903.56
 unning the test with following options:
umber of threads: 2
nitializing random number generator from current time
 reads started!
 QL statistics:
queries performed:
read:
write:
other:
total:
transactions:
queries:
ignored errors:
reconnects:
  neral statistics:
total time:
total number of events:
  reads fairness:
events (avg/stddev): 17534.0000/4.00
execution time (avg/stddev): 59.9167/0.00
                                                                  🚺 🚺 📷 🦁 🔯 🚱 🤡 🥞 🏕 😘 🁺 🗵 🐠
                                                                                                                                                                                                                              へ (小) ESP 11:03 a. m. 19/02/2025
```

# 9. - oltp point select

```
reads fairness:
events (avg/stddev):
execution time (avg/stddev):
59.9167/0.00
 ot@node0:/home/mel# sysbench --threads=1 --time=60 --rate=0 --db-driver=mysql --mysql-user=root --events=0 oltp_point_select run
sbench 1.0.20 (using system LuaJIT 2.1.0-beta3)
 unning the test with following options:
umber of threads: 1
nitializing random number generator from current time
GQL statistics:
queries performed:
read:
write:
other:
total:
transactions:
queries:
ignored errors:
reconnects:
   eral statistics:
total time:
total number of events:
                                                                           🕠 📻 🦁 🗟 📀 🤡 🥞 🎉 况 🤚
                                                                                                                                                                                                                            ヘ (小) ESP 11:05 a. m. 19/02/2025
   eads fairness:
events (avg/stddev): 788853.0000/0.00
execution time (avg/stddev): 59.5956/0.00
 ob@node0:/home/mel# sysbench --threads=2 --time=60 --rate=0 --db-driver=mysql --mysql-user=root --events=0 oltp_point_select run
sbench 1.0.20 (using system LuaJIT 2.1.0-beta3)
unning the test with following options:
umber of threads: 2
nitializing random number generator from current time
50L statistics:
queries performed:
read:
write:
other:
total:
transactions:
queries:
ignored errors:
reconnects:
                                                      0
1346638
1346638 (22443.29 per sec.)
1346638 (22443.29 per sec.)
0 (0.00 per sec.)
0 (0.00 per sec.)
   eral statistics:
total time:
total number of events:
 atency (ms):
min:
avg:
max:
95th percentile:
sum:
  reads fairness:
events (avg/stddev):
execution time (avg/stddev):
59.6463/0.01
                                                                         ₩ D Buscar
```

10. - oltp read only

```
reads fairness:
events (avg/stddev): 673319.0000/16861.00
execution time (avg/stddev): 59.6463/0.01
  ot@node0:/home/mel# sysbench --threads=1 --time=60 --rate=0 --db-driver=mysql --mysql-user=root --events=0 oltp_read_only run
sbench 1.0.20 (using system Lua)IT 2.1.0-beta3)
 unning the test with following options:
umber of threads: 1
nitializing random number generator from current time
GQL statistics:
queries performed:
read:
write:
othen:
total:
transactions:
queries:
ignored errors:
reconnects:
  ot@node0:/home/mel#
                                                                    ₩ D Buscar
   eads fairness:
events (avg/stddev): 55225.0000/0.00
execution time (avg/stddev): 59.9302/0.00
 ot@node0:/home/mel# sysbench --threads=2--time=60--rate=0--db-driver=mysql--mysql-user=root--events=0oltp_read_only run
sbench 1.0.20 (using system LualIT 2.1.0-beta3)
tunning the test with following options:
tumber of threads: 2
initializing random number generator from current time
50L statistics:
queries performed:
read:
write:
other:
total:
transactions:
queries:
ignored errors:
reconnects:
                                                 1727-0
9
175020
175020
1400160
87510 (1458.41 per sec.)
1400160 (23334.48 per sec.)
0 (0.00 per sec.)
0 (0.00 per sec.)
   eral statistics:
total time:
total number of events:
                                           43755.0000/244.00
59.9230/0.00
                                                                     ₩ D Buscar
```

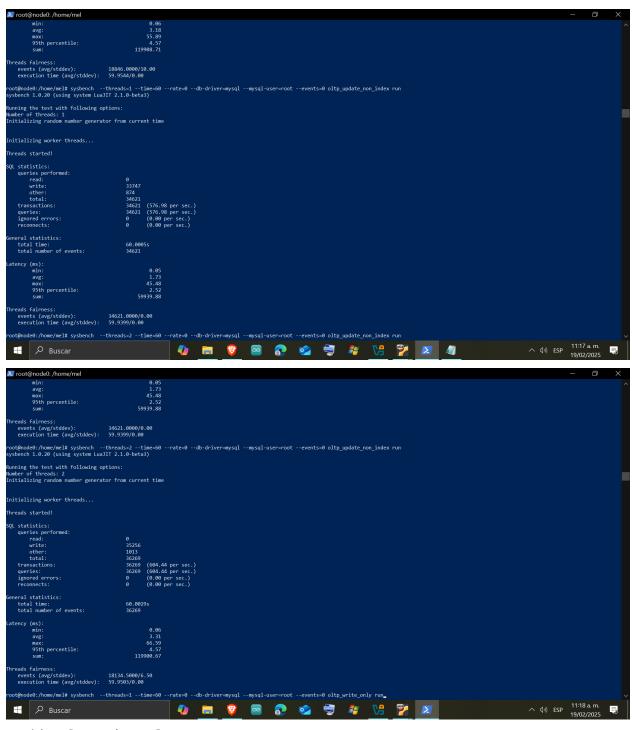
## 11. - oltp read write

```
eads fairness:
events (avg/stddev): 43755,0000/244.00
execution time (avg/stddev): 59.9230/0.00
  ot@node0:/home/mel# sysbench --threads=1 --time=60 --rate=0 --db-driver=mysql --mysql-user=root --events=0 oltp_read_write run
sbench 1.0.20 (using system Lua)IT 2.1.0-beta3)
 unning the test with following options:
umber of threads: 1
nitializing random number generator from current time
QL statistics:
queries performed:
read:
write:
other:
total:
transactions:
  ot@node0:/home/mel# _
                                                                      ₩ D Buscar
    eads fairness:
events (avg/stddev): 14206.0000/0.00
execution time (avg/stddev): 59.9576/0.00
  ot@node0:/home/mel# sysbench --threads=2 --time=60 --rate=0 --db-driver=mysql --mysql-user=root --events=0 oltp_read_write run
sbench 1.0.20 (using system Lua)IT 2.1.0-beta3)
 unning the test with following options:
umber of threads: 2
nitializing random number generator from current time
SQL statistics:
queries performed:
read:
write:
other:
total:
transactions:
queries:
ignored errors:
reconnects:
                                               326284
89899
49931
466114
23304 (388.36 per sec.)
2 (0.03 per sec.)
2 (0.00 per sec.)
    eral statistics:
total time:
total number of events:
                                                        2.39
5.15
280.89
7.30
119923.04
                                            11652.0000/213.00
59.9615/0.00
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  ₩ D Buscar
```

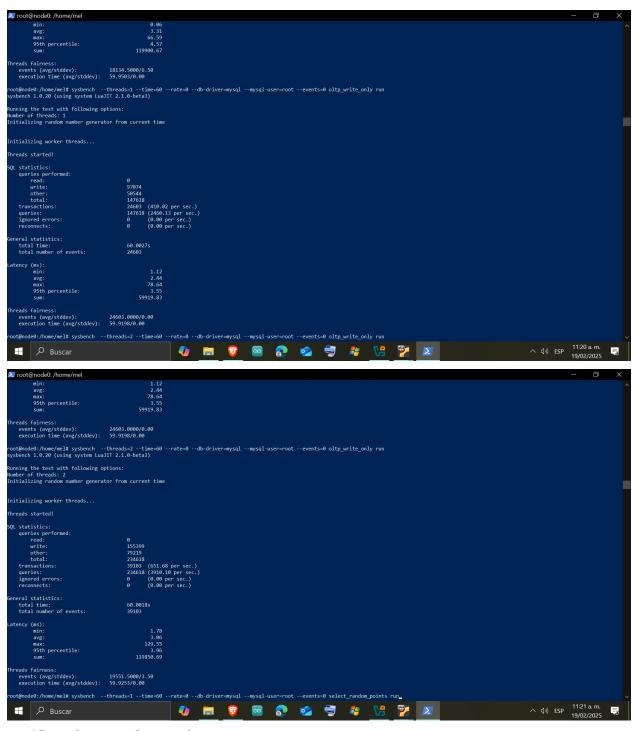
## 12. - oltp update index

```
reads fairness:
events (avg/stddev):
execution time (avg/stddev): 59.9615/0.00
  ot@node0:/home/mel# sysbench --threads=1 --time=60 --rate=0 --db-driver=mysql --mysql-user=root --events=0 oltp_update_index run
sbench 1.0.20 (using system LuaJIT 2.1.0-beta3)
  mber of threads: 1
uitializing random number generator from current time
 nitializing worker threads...
   meral statistics:
total time:
total number of events:
   eads fairness:
events (avg/stddev):
execution time (avg/stddev):
                                                                  ₩ D Buscar
   eads fairness:
events (avg/stddev): 32760.0000/0.00
execution time (avg/stddev): 59.9448/0.00
  ot@node0:/home/mel# sysbench --threads=2 --time=60 --rate=0 --db-driver=mysql --mysql-user=root --events=0 oltp_update_index run
sbench 1.0.20 (using system LuaJIT 2.1.0-beta3)
 unning the test with following options:
umber of threads: 2
nitializing random number generator from current time
SQL statistics:
queries performed:
read:
write:
other:
total:
transactions:
queries:
ignored errors:
reconnects:
   eral statistics:
total time:
total number of events:
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  ₩ D Buscar
```

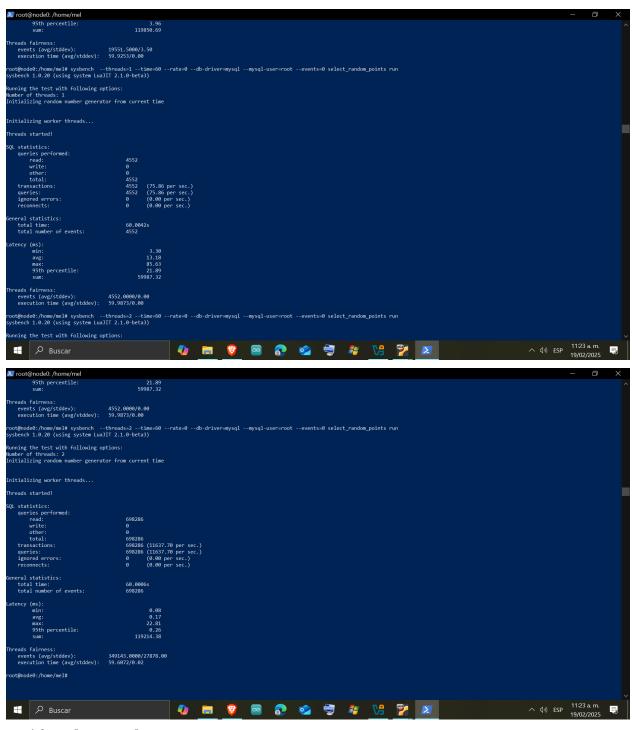
## 13. - oltp update non index



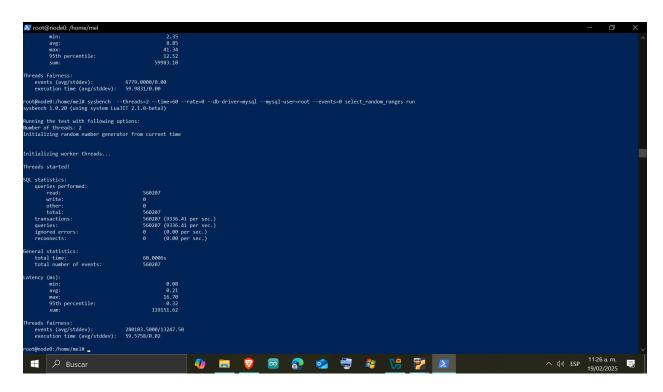
14. - oltp\_write\_only



15. - select random points



16. - select random ranges



#### Conclusiones: