Tarea para ASGBD04

Sumario

Servidor activo y aceptando conexiones

Saber si el servidor está activo y aceptando conexiones (ping)

Habría que saber si estamos en un entorno linux o windows.

En linux

Referencias:

https://dev.mysql.com/doc/refman/8.0/en/connecting.html

Con un comando ps podríamos ver que procesos están corriendo, y localizar el de mysql. En concreto:

ps -ef | grep mysql

Con un netstat -tlnp podemos ver los puertos a la escucha, y en principio por defecto estaría en el 3306

Si no acepta conexiones desde fuera, es posible que el firewall (ufw u otro) esté capando esas conexiones, y habría que permitirlas (o "a las bravas", en entorno académico, deshabilitar el firewall).

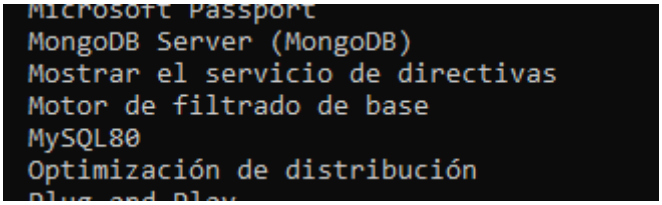
En windows

Referencias:

https://dev.mysql.com/doc/mysql-windows-excerpt/8.0/en/windows-testing.html

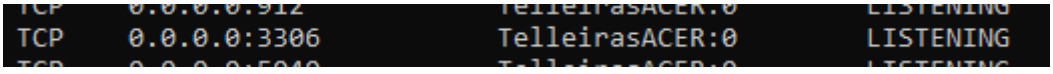
https://phoenixnap.com/kb/connect-to-mysql-windows-command-line

Comando net start:



Si no estuviera, en services.msc podría configurar el arranque del servicio.

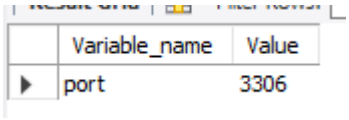
Con un netstat -a, compruebo que está escuchando:



En ambos:

Con una instalación, podemos comprobar que puerto está configurado con:

SHOW GLOBAL VARIABLES LIKE 'PORT';



	Variable_name	Value
▶	port	3306

También:

telnet localhost 3306

Empíricamente, se puede realizar la conexión con cualquiera de las siguientes:

mysql --host=localhost --user=myname --password mydb

mysql -h localhost -u myname -p mydb

También permite especificar puerto:

mysql --host=remote.example.com --port=13306

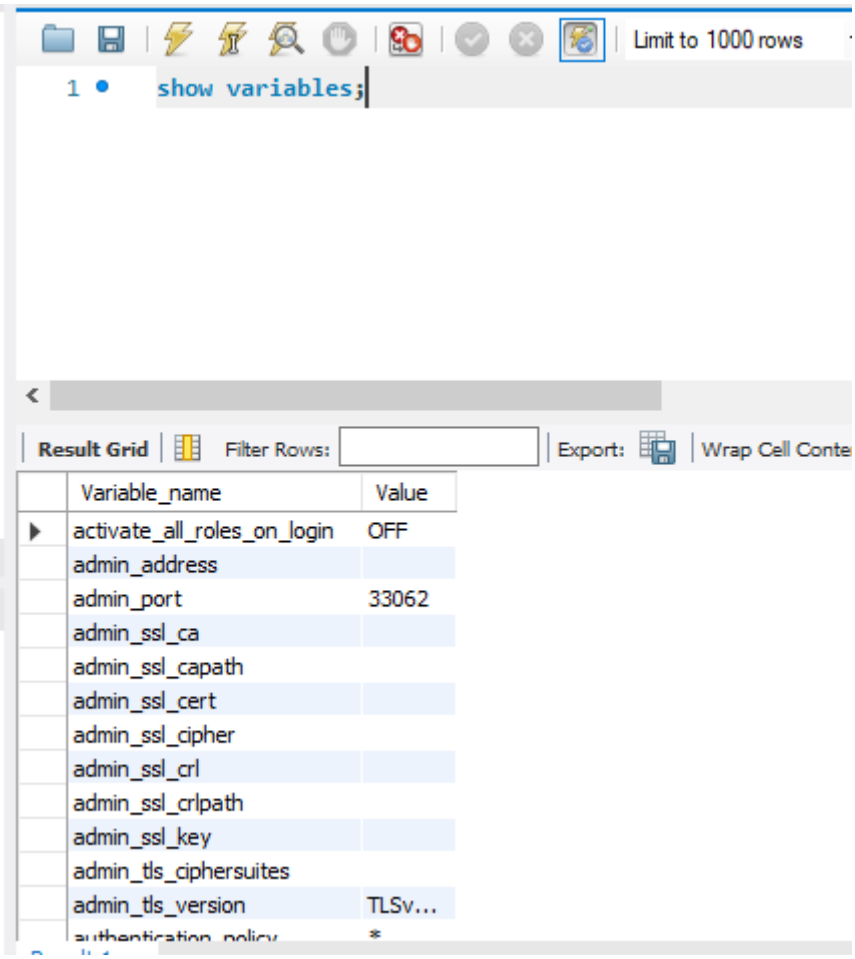
Variables de estado y slow query log

Muestra las variables de estado del servidor

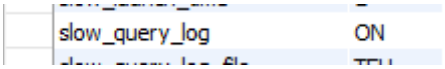
Referencia:

https://dev.mysql.com/doc/refman/8.0/en/show-variables.html

Show variables;



Comprueba si está habilitado SLOW QUERY LOG.



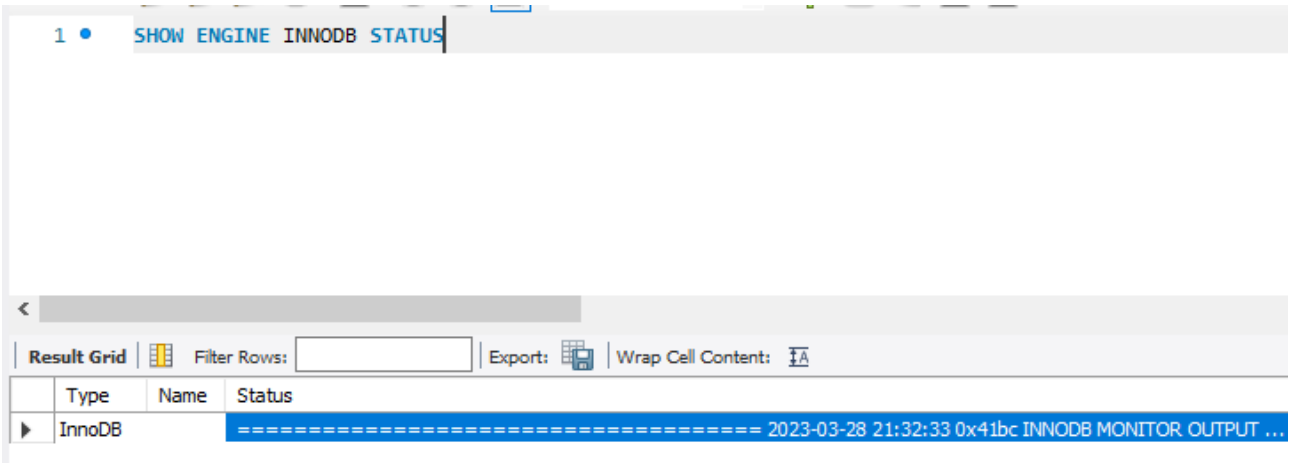
Estado del motor Innodb

Muestra la información de estado del motor Innodb.

Referencia:

https://dev.mysql.com/doc/refman/8.0/en/show-engine.html

SHOW ENGINE INNODB STATUS;



'InnoDB', '', '\n=====================================\n2023-03-28 21:32:33 0x41bc INNODB MONITOR OUTPUT\n=====================================\nPer second averages calculated from the last 42 seconds\n-----------------\nBACKGROUND THREAD\n-----------------\nsrv_master_thread loops: 5 srv_active, 0 srv_shutdown, 23074 srv_idle\nsrv_master_thread log flush and writes: 0\n----------\nSEMAPHORES\n----------\nOS WAIT ARRAY INFO: reservation count 301\nOS WAIT ARRAY INFO: signal count 295\nRW-shared spins 0, rounds 0, OS waits 0\nRW-excl spins 0, rounds 0, OS waits 0\nRW-sx spins 0, rounds 0, OS waits 0\nSpin rounds per wait: 0.00 RW-shared, 0.00 RW-excl, 0.00 RW-sx\n------------\nTRANSACTIONS\n------------\nTrx id counter 22889\nPurge done for trx\'s n:o < 22889 undo n:o < 0 state: running but idle\nHistory list length 0\nLIST OF TRANSACTIONS FOR EACH SESSION:\n---TRANSACTION 284114484875144, not started\n0 lock struct(s), heap size 1128, 0 row lock(s)\n---TRANSACTION 284114484874368, not started\n0 lock struct(s), heap size 1128, 0 row lock(s)\n---TRANSACTION 284114484873592, not started\n0 lock struct(s), heap size 1128, 0 row lock(s)\n---TRANSACTION 284114484872816, not started\n0 lock struct(s), heap size 1128, 0 row lock(s)\n--------\nFILE I/O\n--------\nI/O thread 0 state: wait Windows aio (insert buffer thread)\nI/O thread 1 state: wait Windows aio (log thread)\nI/O thread 2 state: wait Windows aio (read thread)\nI/O thread 3 state: wait Windows aio (read thread)\nI/O thread 4 state: wait Windows aio (read thread)\nI/O thread 5 state: wait Windows aio (read thread)\nI/O thread 6 state: wait Windows aio (write thread)\nI/O thread 7 state: wait Windows aio (write thread)\nI/O thread 8 state: wait Windows aio (write thread)\nI/O thread 9 state: wait Windows aio (write thread)\nPending normal aio reads: [0, 0, 0, 0] , aio writes: [0, 0, 0, 0] ,\n ibuf aio reads:, log i/o\'s:, sync i/o\'s:\nPending flushes (fsync) log: 0; buffer pool: 0\n1913 OS file reads, 843 OS file writes, 349 OS

fsyncs\n0.00 reads/s, 0 avg bytes/read, 0.00 writes/s, 0.00 fsyncs/s\n-------------------------------------\nINSERT BUFFER AND ADAPTIVE HASH INDEX\n-------------------------------------\nIbuf: size 1, free list len 0, seg size 2, 0 merges\nmerged operations:\n insert 0, delete mark 0, delete 0\ndiscarded operations:\n insert 0, delete mark 0, delete 0\nHash table size 2267, node heap has 0 buffer(s)\nHash table size 2267, node heap has 0 buffer(s)\nHash table size 2267, node heap has 0 buffer(s)\nHash table size 2267, node heap has 0 buffer(s)\nHash table size 2267, node heap has 0 buffer(s)\nHash table size 2267, node heap has 0 buffer(s)\nHash table size 2267, node heap has 2 buffer(s)\n0.00 hash searches/s, 0.00 non-hash searches/s\n---\nLOG\n---\nLog sequence number 29125919\nLog buffer assigned up to 29125919\nLog buffer completed up to 29125919\nLog written up to 29125919\nLog flushed up to 29125919\nAdded dirty pages up to 29125919\nPages flushed up to 29125919\nLast checkpoint at 29125919\n212 log i/o\'s done, 0.00 log i/o\'s/second\n----------------------\nBUFFER POOL AND MEMORY\n----------------------\nTotal large memory allocated 0\nDictionary memory allocated 438749\nBuffer pool size 512\nFree buffers 0\nDatabase pages 510\nOld database pages 0\nModified db pages 0\nPending reads 0\nPending writes: LRU 0, flush list 0, single page 0\nPages made young 0, not young 0\n0.00 youngs/s, 0.00 non-youngs/s\nPages read 1886, created 173, written 479\n0.00 reads/s, 0.00 creates/s, 0.00 writes/s\nNo buffer pool page gets since the last printout\nPages read ahead 0.00/s, evicted without access 0.00/s, Random read ahead 0.00/s\nLRU len: 510, unzip_LRU len: 0\nI/O sum[0]:cur[0], unzip sum[0]:cur[0]\n--------------\nROW OPERATIONS\n--------------\n0 queries inside InnoDB, 0 queries in queue\n0 read views open inside InnoDB\nProcess ID=4660, Main thread ID=5824 , state=sleeping\nNumber of rows inserted 41, updated 0, deleted 0, read 4\n0.00 inserts/s, 0.00 updates/s, 0.00 deletes/s, 0.00 reads/s\nNumber of system rows inserted 94, updated 564, deleted 102, read 6874\n0.00 inserts/s, 0.00 updates/s, 0.00 deletes/s, 0.00 reads/s\n----------------------------\nEND OF INNODB MONITOR OUTPUT\n============================\n'

Información de los flujos

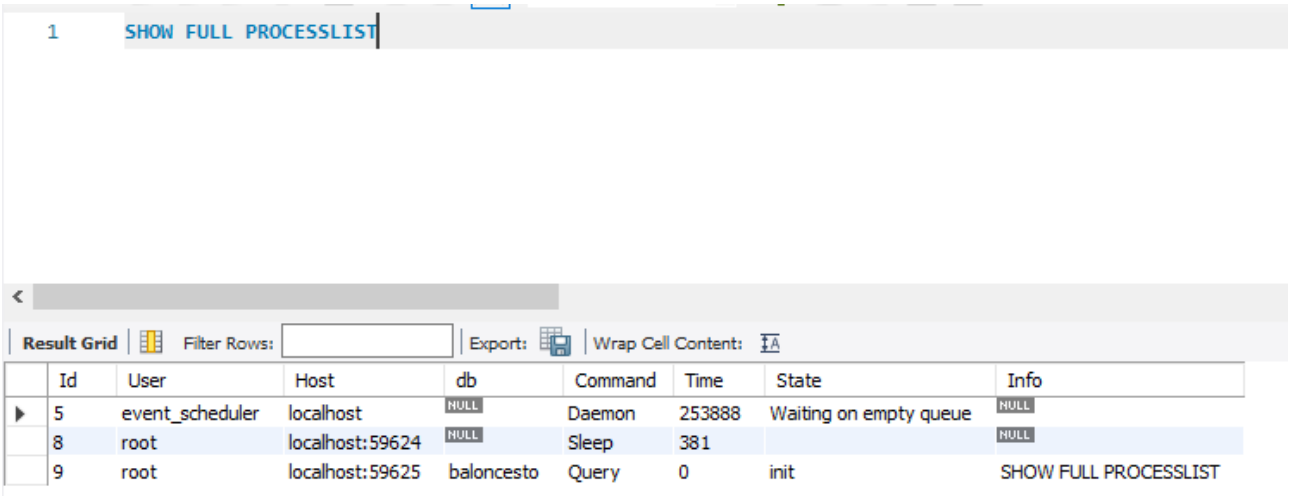
Muestra la información de los flujos que están en ejecución, pero para más de 100 caracteres. No uses mysqladmin.

Referencia:

https://dev.mysql.com/doc/refman/8.0/en/show-processlist.html

Para ver más de 100 caracteres:

SHOW FULL PROCESSLIST



Id	User	Host	db	Command	Time	State	Info
5	event_scheduler	localhost	NULL	Daemon	253888	Waiting on empty queue	NULL
8	root	localhost:59624	NULL	Sleep	381		NULL
9	root	localhost:59625	baloncesto	Query	0	init	SHOW FULL PROCESSLIST

Índices

Añade un índice a la columna 'apellidos' de la tabla jugadores.

Referencias:

https://dev.mysql.com/doc/refman/8.0/en/create-index.html

https://popsql.com/learn-sql/mysql/how-to-create-an-index-in-mysql

https://www.w3schools.com/mysql/mysql_create_index.asp

CREATE INDEX idx_lastname ON jugadores (apellido);

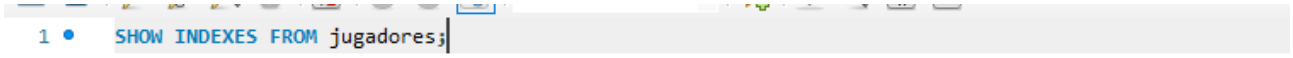
Muestra los índices que existen para la tabla 'Jugadores'.

Referencias:

https://dev.mysql.com/doc/refman/8.0/en/show-index.html

https://www.mysqltutorial.org/mysql-index/mysql-show-indexes/

SHOW INDEXES FROM jugadores;



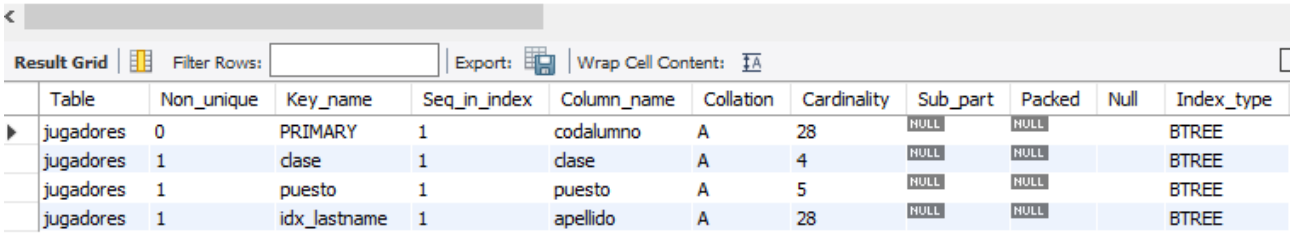


Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type
jugadores	0	PRIMARY	1	codalumno	A	28	NULL	NULL		BTREE
jugadores	1	clase	1	clase	A	4	NULL	NULL		BTREE
jugadores	1	puesto	1	puesto	A	5	NULL	NULL		BTREE
jugadores	1	idx_lastname	1	apellido	A	28	NULL	NULL		BTREE

Comando explain y optimización de índice

Utiliza el comando EXPLAIN para analizar la siguiente consulta.

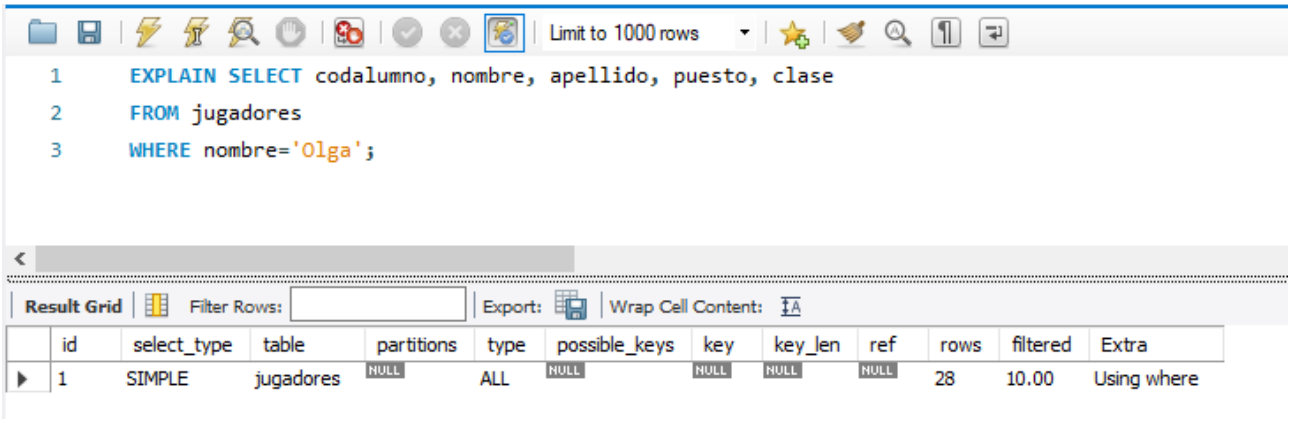
SELECT codalumno, nombre, apellido, puesto, clase

FROM jugadores

WHERE nombre='Olga';

Referencia:

https://dev.mysql.com/doc/refman/8.0/en/using-explain.html



Después optimízala creando el índice adecuado y comprueba la mejora obtenida.

Referencia:

https://www.w3schools.com/mysql/mysql_create_index.asp

CREATE INDEX idx_firstname ON jugadores (nombre);