InnoDB

— *2018/05/01 08:48*

open files

mysqld.log   .

```
2018-04-28T15:00:07.538122Z 0 [Warning] Changed limits: max_open_files: 5000
(requested 8410)
2018-04-28T15:00:07.538270Z 0 [Warning] Changed limits: table_open_cache:
2295 (requested 4000)
```

open files

```
$ ulimit -Sa | grep "open files"
open files                      (-n) 1200

$ ulimit -Ha | grep "open files"
open files                      (-n) 8192
```

MySQL

```
mysql> show variables like 'open_files_limit';
+------------------+-------+
| Variable_name    | Value |
+------------------+-------+
| open_files_limit | 1200  |
+------------------+-------+

mysql> show variables like 'table_cache';
+------------------+-------+
| Variable_name    | Value |
+------------------+-------+
| table_cache      | 512   |
+------------------+-------+

mysql> show variables like 'max_connections';
+------------------+-------+
| Variable_name    | Value |
+------------------+-------+
| max_connections  | 100   |
+------------------+-------+
```

open files   .   .

1. mysql   ulimit   . /etc/security/limits.conf

```
*         soft    nofile          1048576
*         hard    nofile          1048576
```

2. sysctl   fs.file-max   . /etc/sysctl.conf

```
fs.file-max = 401483
```

3. RHEL/CentOS 7.x   .   mysql
                    . /usr/lib/systemd/system/mysqld.service

```
LimitNOFILE=65535
```

NO_ZERO_DATE, ERROR_FOR_DIVISION_BY_ZERO

mysql   .

```
2018-04-28T15:00:07.778409Z 0 [Warning] TIMESTAMP with implicit DEFAULT
value is deprecated. Please use --explicit_defaults_for_timestamp server
option (see documentation for more details).
2018-04-28T15:00:07.778444Z 0 [Warning] 'NO_ZERO_DATE', 'NO_ZERO_IN_DATE'
and 'ERROR_FOR_DIVISION_BY_ZERO' sql modes should be used with strict mode.
They will be merged with strict mode in a future release.
```

                                                          .
                                                                              .
          mysql strict   .

            NOT NULL
                                              . mysqldump
                                                          ALTER
               NOT NULL   .

/var/log/mysql/mysqld.log

```
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```

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and 'ERROR_FOR_DIVISION_BY_ZERO' sql modes should be used with strict mode.
They will be merged with strict mode in a future release.
2018-04-28T15:00:07.780726Z 0 [Note] /usr/sbin/mysqld (mysqld 5.7.18-
enterprise-commercial-advanced-log) starting as process 12984 ...
2018-04-28T15:00:07.784978Z 0 [Note] InnoDB: PUNCH HOLE support available
2018-04-28T15:00:07.785014Z 0 [Note] InnoDB: Mutexes and rw_locks use GCC
atomic builtins
2018-04-28T15:00:07.785017Z 0 [Note] InnoDB: Uses event mutexes
2018-04-28T15:00:07.785020Z 0 [Note] InnoDB: GCC builtin
__atomic_thread_fence() is used for memory barrier
2018-04-28T15:00:07.785029Z 0 [Note] InnoDB: Compressed tables use zlib
1.2.3
2018-04-28T15:00:07.785032Z 0 [Note] InnoDB: Using Linux native AIO
2018-04-28T15:00:07.785857Z 0 [Note] InnoDB: Number of pools: 1
2018-04-28T15:00:07.786072Z 0 [Note] InnoDB: Using CPU crc32 instructions
2018-04-28T15:00:07.789404Z 0 [Note] InnoDB: Initializing buffer pool, total
size = 32G, instances = 8, chunk size = 128M
2018-04-28T15:00:10.086029Z 0 [Note] InnoDB: Completed initialization of
buffer pool
2018-04-28T15:00:10.320733Z 0 [Note] InnoDB: If the mysqld execution user is
authorized, page cleaner thread priority can be changed. See the man page of
setpriority().
2018-04-28T15:00:10.333461Z 0 [Note] InnoDB: Highest supported file format
is Barracuda.
2018-04-28T15:00:10.498365Z 0 [Note] InnoDB: Log scan progressed past the
checkpoint lsn 51460910261
2018-04-28T15:00:10.498413Z 0 [Note] InnoDB: Doing recovery: scanned up to
log sequence number 51460910574
2018-04-28T15:00:10.662444Z 0 [Note] InnoDB: Doing recovery: scanned up to
log sequence number 51460910574
2018-04-28T15:00:10.662776Z 0 [Note] InnoDB: Database was not shutdown
normally!
2018-04-28T15:00:10.662786Z 0 [Note] InnoDB: Starting crash recovery.
2018-04-28T15:00:10.773535Z 0 [Note] InnoDB: Starting an apply batch of log
records to the database...
InnoDB: Progress in percent: 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72
73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97
98 99
2018-04-28T15:00:12.286193Z 0 [Note] InnoDB: Apply batch completed
2018-04-28T15:00:12.398027Z 0 [Note] InnoDB: Removed temporary tablespace
data file: "ibtmp1"
2018-04-28T15:00:12.398056Z 0 [Note] InnoDB: Creating shared tablespace for
temporary tables

```
2018-04-28T15:00:12.398093Z 0 [Note] InnoDB: Setting file './ibtmp1' size to
12 MB. Physically writing the file full; Please wait ...
2018-04-28T15:00:12.428109Z 0 [Note] InnoDB: File './ibtmp1' size is now 12
MB.
2018-04-28T15:00:12.429357Z 0 [Note] InnoDB: 96 redo rollback segment(s)
found. 96 redo rollback segment(s) are active.
2018-04-28T15:00:12.429369Z 0 [Note] InnoDB: 32 non-redo rollback segment(s)
are active.
2018-04-28T15:00:12.429685Z 0 [Note] InnoDB: Waiting for purge to start
2018-04-28T15:00:12.479836Z 0 [Note] InnoDB: 5.7.18 started; log sequence
number 51460910574
2018-04-28T15:00:12.481130Z 0 [Note] InnoDB: Loading buffer pool(s) from
/data/mysql/ib_buffer_pool
2018-04-28T15:00:12.481253Z 0 [Note] Plugin 'FEDERATED' is disabled.
2018-04-28T15:00:12.481730Z 0 [Note] InnoDB: Buffer pool(s) load completed
at 180429  0:00:12
2018-04-28T15:00:12.487741Z 0 [Note] Found ca.pem, server-cert.pem and
server-key.pem in data directory. Trying to enable SSL support using them.
2018-04-28T15:00:12.487768Z 0 [Note] Skipping generation of SSL certificates
as certificate files are present in data directory.
2018-04-28T15:00:12.488307Z 0 [Warning] CA certificate ca.pem is self
signed.
2018-04-28T15:00:12.488361Z 0 [Note] Skipping generation of RSA key pair as
key files are present in data directory.
2018-04-28T15:00:12.488710Z 0 [Note] Server hostname (bind-address): '*';
port: 3306
2018-04-28T15:00:12.488786Z 0 [Note] IPv6 is available.
2018-04-28T15:00:12.488803Z 0 [Note]   - '::' resolves to '::';
2018-04-28T15:00:12.488822Z 0 [Note] Server socket created on IP: '::'.
2018-04-28T15:00:12.499018Z 0 [Note] Event Scheduler: Loaded 5 events
2018-04-28T15:00:12.499129Z 1 [Note] Event Scheduler: scheduler thread
started with id 1
2018-04-28T15:00:12.499222Z 0 [Note] /usr/sbin/mysqld: ready for
connections.
Version: '5.7.18-enterprise-commercial-advanced-log'  socket:
'/var/lib/mysql/mysql.sock'  port: 3306  MySQL Enterprise Server - Advanced
Edition (Commercial)
```

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Last update: **2020/12/10 03:33**