

MariaDB Day Brussels

(Almost) No Downtime MariaDB Upgrades

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Automattic



- Switched from MySQL 5.5 to MariaDB 10.0.13 about 11 years ago
- Lowest version we have running: 10.1
- 1704 MariaDB servers (more instances)

```
aidvu@noc1:~$ /root/bin/global-command.sh '/usr/local/mysql/bin/mysql --version' mysql-base 40 | grep -Eo "[0-9]+\.[0-9]+\.[0-9]+" | cut -d "." -f 1-2 | sort | uniq -c | sort
```

7	10.3
13	10.1
29	10.2
359	11.8
412	10.4
884	11.4

Preparing for upgrades

Backups...

- Are they working? :)
- Have you tried?

Easy way to add/remove hosts from production

- Automattic/HyperDB
- Anycast

Monitoring

- Prometheus (node and mysqld exporter) + Grafana
- Query Response Time Plugin

Persistent AUTO_INCREMENT for InnoDB

MDEV-6076 (Fixed in 10.2.4)

...

```
2025-07-31 17:39:51 426575 [Note] InnoDB: Resetting PAGE_ROOT_AUTO_INC from 411 to  
1244743 on table `phabricator_audit`.`audit_transaction` (created with version 50534)
```

...

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Duplicate entry '...' for key 'PRIMARY'
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```

...

```
Duplicate entry '...' for key 'PRIMARY'
```

```
ALTER TABLE ` $db `.` $table ` AUTO_INCREMENT = $NEW_AC ALGORITHM=INSTANT;
```

Opening all .ibd files on InnoDB startup can be slow

MDEV-32027 (> 10.6.17, 10.11.7)

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MDEV-32027 (> 10.6.17, 10.11.7)

```
[/var/lib/mysql119-4 $ find . -type f -name "*.ibd" | wc -l  
5299895  
[/var/lib/mysql119-4 $
```

Opening all .ibd files on InnoDB startup can be slow

MDEV-32027 (> 10.6.17, 10.11.7)

Filesystem	Inodes	IUsed	IFree	IUse%	Mounted on
udev	4094315	399	4093916	1%	/dev
tmpfs	4101824	997	4100827	1%	/run
/dev/mapper/crypt-root	233568256	152214974	81353282	66%	/
tmpfs	4101824	1	4101823	1%	/dev/shm
tmpfs	4101824	4	4101820	1%	/run/lock
/dev/sda1	32768	361	32407	2%	/boot
tmpfs	820364	20	820344	1%	/run/user/0

Opening all .ibd files on InnoDB startup can be slow

MDEV-32027 (> 10.6.17, 10.11.7)

```
260127 16:46:38 mysqld_safe Starting mysqld daemon with databases from /var/lib/mysql119-0
2026-01-27 16:46:38 0 [Note] Starting MariaDB 10.4.32-MariaDB-log source revision c4143f909528e3fab0677a28631d10389354c491 as process 212645
2026-01-27 16:52:29 0 [Note] /usr/local/mariadb10.4/bin/mysqld: ready for connections.
```

```
260127 16:56:29 mysqld_safe Starting mariadbd daemon with databases from /var/lib/mysql107-3
2026-01-27 16:56:29 0 [Note] Starting MariaDB 11.8.5-MariaDB-log source revision a74edc42d080a73e20d5d94e1dd5beea400b507c server_uid iGwvQxgUodxkER0AgD5iMnvSkM= as process 3682287
2026-01-27 16:57:29 0 [Note] /usr/local/mariadb11.8/bin/mariadbd: ready for connections.
```

Old data formats (temporal and decimal)

```
`date_registered` datetime /* mariadb-5.3 */ NOT NULL DEFAULT '0000-00-00 00:00:00',  
`amount` decimal(5,2) /*old*/ NOT NULL DEFAULT '0.00',
```

Old data formats (temporal and decimal)

```
`date_registered` datetime /* mariadb-5.3 */ NOT NULL DEFAULT '0000-00-00 00:00:00',  
`amount` decimal(5,2) /*old*/ NOT NULL DEFAULT '0.00',
```

-999.99 to 999.99? Nope.

```
[MariaDB [wpmu-global]> SELECT amount FROM store_paypal_transactions WHERE ID = 49417097;  
+-----+  
| amount |  
+-----+  
| 16754.00 |  
+-----+  
1 row in set (0.001 sec)
```

Multi-instance table cache

MDEV-10296 (> 10.2.2)

```
table_open_cache=10000
```

Multi-instance table cache

MDEV-10296 (> 10.2.2)

```
table_open_cache=10000
```

```
table_open_cache_instances=1
```



Change default charset from latin1 to utf8mb4

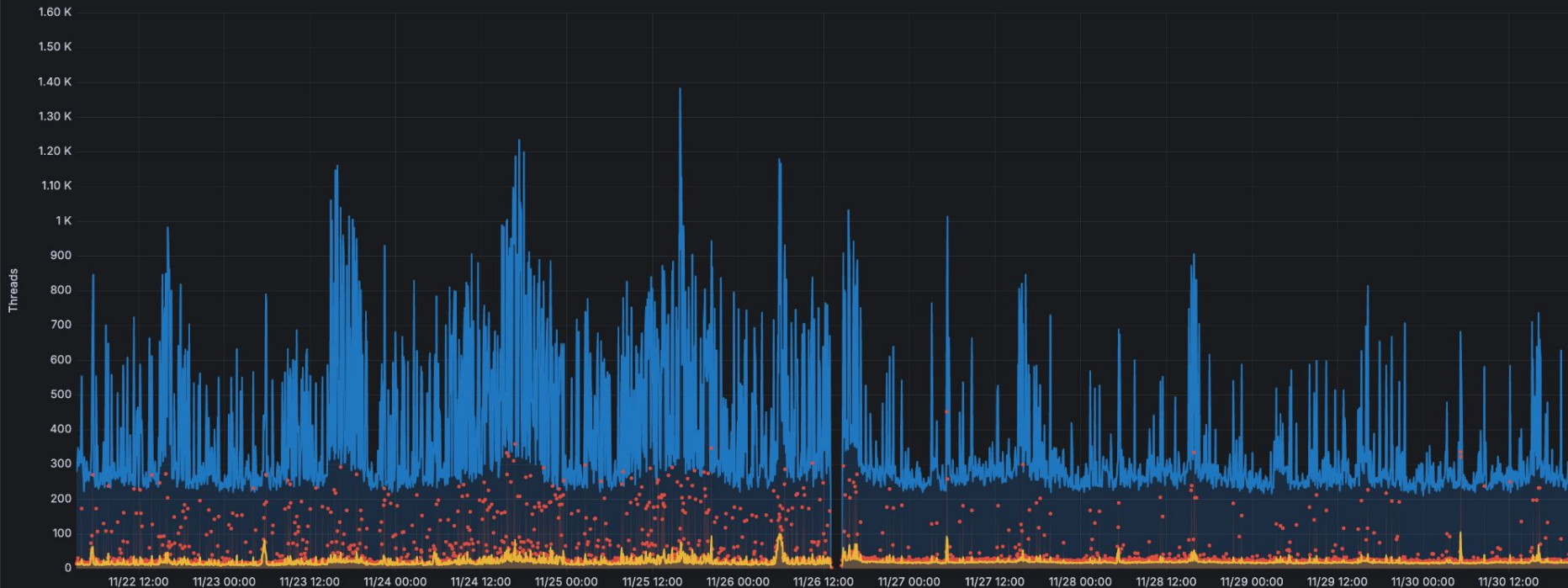
MDEV-19123 (> 11.6)

We're running into an intermittent double encoding issue with GlotPress:

Was auch immer deine Neujahrsvorsätze sind – vom Starten eines Newsletters bis hin zur Gründung eines mutigen neuen Unternehmens – nutze die leistungsstarke Plattform, mit deren Hilfe du deine Pläne schneller verwirklichen kannst.

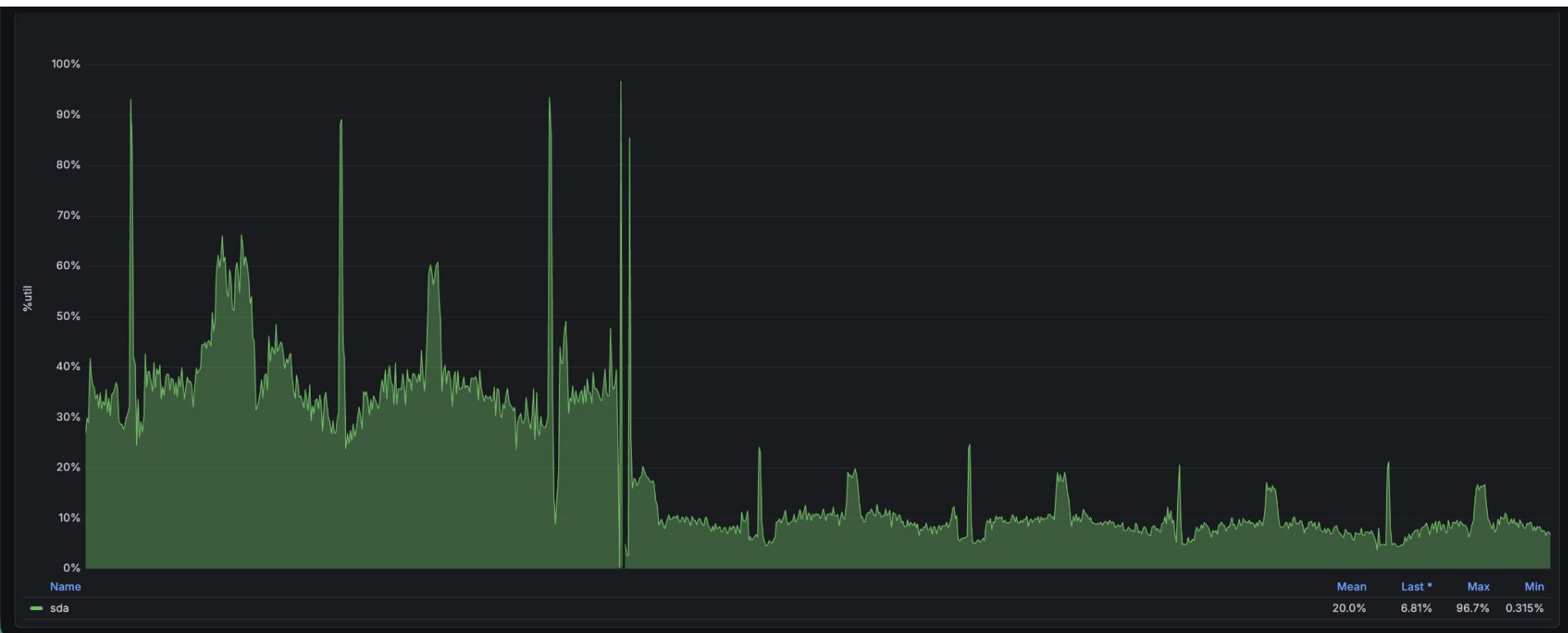
The Curious Case of the Crashing Server

MySQL Client Thread Activity



Name	Mean	Max	Min
Peak Threads Connected	359	1.38 K	2
Peak Threads Running	47.4	451	3
Avg Threads Running	18.9	103	3

The Curious Case of the Crashing Server



The Curious Case of the Crashing Server

```
MariaDB [esjobs]> EXPLAIN SELECT es_indexable_sites_id FROM es_indexable_sites WHERE index_name = 'global'  
AND state NOT IN ( 'inactive', 'permanently-active' ) AND updated < '2025-10-10 00:00:00' LIMIT 250\G
```

The Curious Case of the Crashing Server

```
MariaDB [esjobs]> EXPLAIN SELECT es_indexable_sites_id FROM es_indexable_sites WHERE index_name = 'global'  
AND state NOT IN ( 'inactive', 'permanently-active' ) AND updated < '2025-10-10 00:00:00' LIMIT 250\G  
***** 1. row *****  
      id: 1  
select_type: SIMPLE  
      table: es_indexable_sites  
      type: range  
possible_keys: index_name_updated,idx_index_name_state_updated_blog_id  
      key: idx_index_name_state_updated_blog_id  
      key_len: 132  
      ref: NULL  
      rows: 34147714  
      Extra: Using where; Using index  
1 row in set (0.001 sec)
```

The Curious Case of the Crashing Server

```
MariaDB [esjobs]> EXPLAIN SELECT es_indexable_sites_id FROM es_indexable_sites WHERE index_name = 'global'
AND state IN ( 'active', 'active-query' ) AND updated < '2025-10-10 00:00:00' LIMIT 250\G
***** 1. row *****
      id: 1
select_type: SIMPLE
      table: es_indexable_sites
      type: range
possible_keys: index_name_updated,idx_index_name_state_updated_blog_id
      key: idx_index_name_state_updated_blog_id
      key_len: 137
      ref: NULL
      rows: 2
      Extra: Using where; Using index
1 row in set (0.001 sec)
```

10.1 < 10.4 < 10.11 == 11.4 == 11.8

MariaDB 10.4

MyISAM

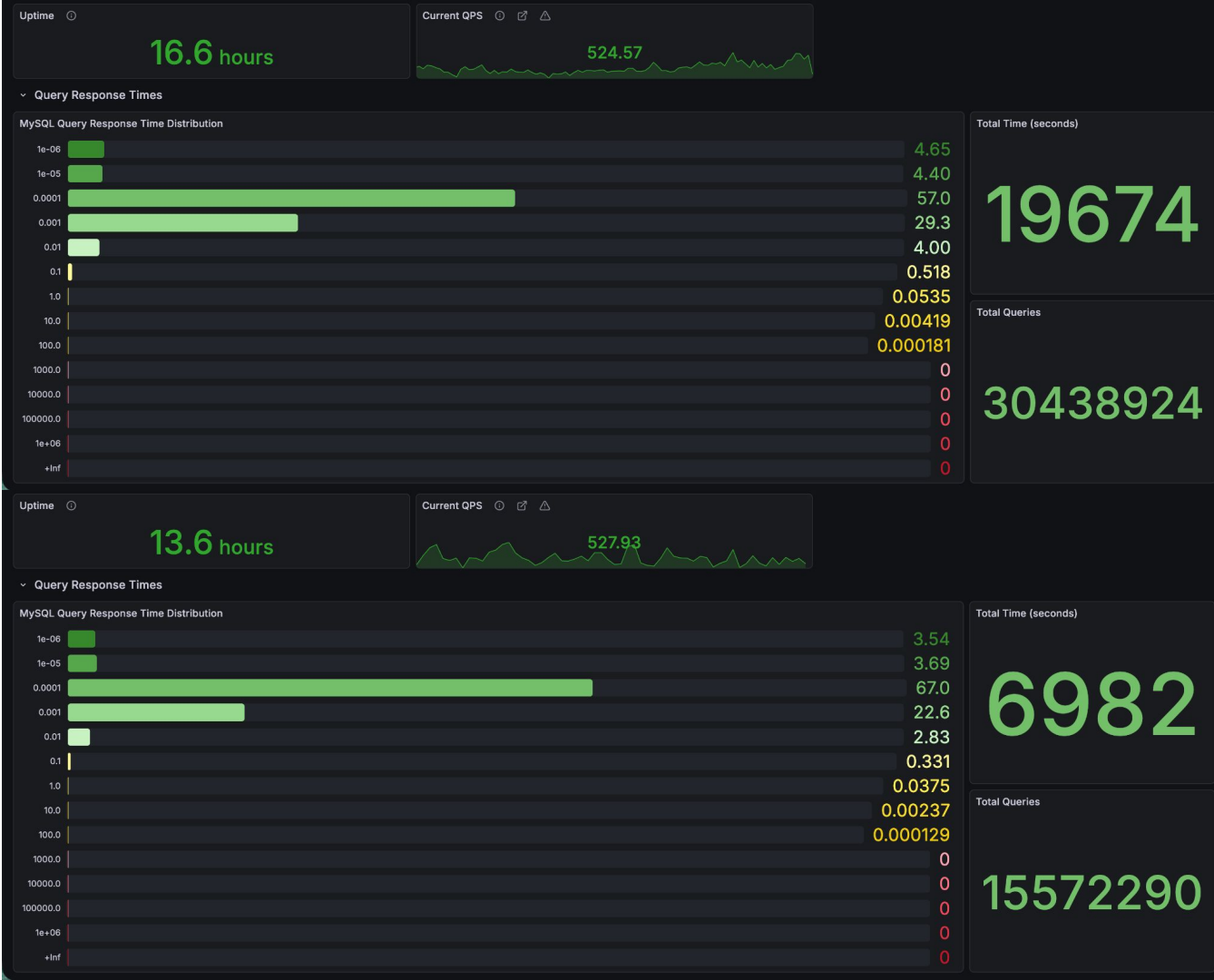
MariaDB 11.8



MariaDB 10.4

InnoDB

MariaDB 11.8



Can you upgrade 10.1 -> 11.8?

Yes (with minor caveats).

Should you upgrade?

Yes.

Thank you!

@aidvu