Merging patches for Spider into MariaDB 10.4

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The list of patches
The status of merging (in review) for 10.4

01. MDEV-7717 019_mariadb-10.0.15.vp_ref.diff
02. MDEV-7719 021_mariadb-10.0.15.merge_table.diff
03. MDEV-7724 027_mariadb-10.0.15.force_bulk_update.diff
04. MDEV-7735 039_mariadb-10.0.15.child_partition_pruning.diff
05. MDEV-7743 047_mariadb-10.0.15.child_partition_pruning2.diff
06. MDEV-7744 048_mariadb-10.0.15.vp_partition.diff
07. MDEV-7750 054_mariadb-10.0.15.for_vp_pruning.diff
08. MDEV-12970 056_mariadb-10.2.0.partition_top_table_fields.diff
09. MDEV-12971 060_mariadb-10.2.0.partition_reset_top_table_fields.diff
10. MDEV-13000 055_mariadb-10.2.0.for_vp_same_columns.diff
Merging VP storage engine
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VP means Vertical Partitioning. VP merges multiple child tables into a single View. VP chooses efficiently child tables for Each query.
VP structure sample of using different partitioning rules (1/2)

1. request

select ... from tbl_a where col_a = 1

3. response

create table tbl_a1(
    col_a int,
    col_b date,
    col_c int,
    primary key(col_a)
)engine=innodb
partition by ...

create table tbl_a2(
    col_a int,
    col_b date,
    col_c int,
    key idx1(col_a),
    key idx2(col_b)
)engine=innodb
partition by ...
VP structure sample of using different partitioning rules (2/2)

select ... from tbl_a where col_b = '2016-01-01'

create table tbl_a1(
    col_a int,
    col_b date,
    col_c int,
    primary key(col_a)
)engine=innodb
partition by ...

create table tbl_a2(
    col_a int,
    col_b date,
    col_c int,
    key idx1(col_a),
    key idx2(col_b)
)engine=innodb
partition by ...
So, when you use sharded Spider tables which have different partitioning rules for VP child tables, VP chooses sharded Spider tables efficiently.
Structure sample of using different sharding rules (1/2)

1. Request

3. Response

select ... from tbl_a where col_a = 1
Structure sample of using different sharding rules (2/2)

1. Request

3. Response

select ... from tbl_a where col_b = 1

Partition by col_a

Partition by col_b

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DB1

DB2

DB3

DB4

DB5

tbl_a (vp)

tbl_a1(spyder)

tbl_a2(spyder)