

# Problem with MariaDB 10.4 and partial backup restore (IMPORT TABLESPACE)

The default `alter_algorithm` in MariaDB 10.4 is `DEFAULT` which tries to use the fastest way, including the new `INSTANT` algorithm.

Problem: if you `DROP` or `ADD` a column on a table, not being the last one, you'll be later unable to `IMPORT TABLESPACE` when restoring from a partial backup taken with the **`mariabackup`** tool, getting a schema error like the following:

```
ERROR 1808 (HY000) at line 1: Schema mismatch (Index field name xxxxxx
doesn't match tablespace metadata field name yyyyyy for field position X)
```

This belongs to this [MDEV-18543 official issue](#) of MariaDB -where I added a comment- and where you can read: "IMPORT TABLESPACE currently fails to read the mapping of clustered index fields to columns from the hidden metadata record". So the `.cfg` files that `mariabackup --export` generate, are not going to be valid until the bug gets resolved, which is said "not trivial to do".

Anyway **I came up with a solution** after reading [those slides](#) and documentation from MariaDB on the new `INSTANT ALTERs` and new features of MariaDB versions 10.3 and 10.4.

You can *rebuild* the metadata of the schema using this command:

```
ALTER TABLE dbname.dbtable FORCE;
```

Then you can grab again a backup (or manually transport the InnoDB table), `--prepare` and `--export` again, and `IMPORT TABLESPACE` should work now. Note that this seems **not being replicated** to any slaves.

A simple way to rebuild the metadata for all tables (so we fix them), note that it's simple but not quick, depending on your table data:

Getting a list of InnoDB tables on a given "dbname", with the commands to "FORCE" (fix them)

```
mysql --batch --silent --skip-column-names -e \
"SELECT CONCAT('ALTER TABLE ',table_schema,'.',table_name,' LOCK=EXCLUSIVE,
FORCE;') FROM information_schema.tables \
WHERE table_schema = 'dbame' AND engine = 'InnoDB'"
```

Passing the command list to mysql:

```
mysql --batch --silent --skip-column-names -e \
"SELECT CONCAT('ALTER TABLE ',table_schema,'.',table_name,' LOCK=EXCLUSIVE,
FORCE;') FROM information_schema.tables \
WHERE table_schema = 'dbame' AND engine = 'InnoDB'" | mysql
```

Problem is that future `ALTERs` (while the bug is not solved), will again render the schema bugged for the "IMPORT TABLESPACE", so you can:

- Enforce the use of , `ALGORITHM=copy` on each dangerous ALTER statement.
- or SET SESSION `alter_algorithm=copy` (see [alter\\_algorithm](#) system variable) before an ALTER that could cause this “schema mismatch” issue with MariaDB 10.4
- or just setting `alter_algorithm=copy` on your `server.cnf` configuration (check that it survives a mariadb restart using `SELECT @@alter_algorithm`;
- 2020 - Also you can use `innodb_instant_alter_column_allowed=add_last` in server config. as seen [here](#) since an INSTANT `add_last` column works, the problematic ALTER changes are column drop and reorder (reorder being applied when adding a column which will not be the last). This new server variable is only valid starting with MariaDB 10.4.14, 10.5.3, and later versions

The COPY algorithm is going to slow things down when doing ALTER on big tables, but you know...

Hope that helps.

~~DISCUSSION|Comentarios~~

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