

# QC Replication Tips

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A conformance QC Framework was developed for Redshift. There are three variations:

- [the installation variation](#) generates tables, procedures, views, and functions;
- [the ingredient variation](#) runs QC tests, posts results on the wiki, and sends emails;
- [the backup variation](#) uploads QC test parameters to S3 to be able to restore them in the future.

Redshift does not compile the code of the procedure/function when it gets created. It needs to be run in order to validate. There are **two QC Framework test steps** to run [procedures for each type of QC tests](#) and [master procedure](#).

There are three types of common mistakes during framework validation:

- variation code was partially updated. **[Tip]:** *all steps and nodes should be reviewed and compared with the original version;*
- tables structure is not up-to-date. **[Tip]:** *an erroring table needs to be manually updated [alter table add/modify/drop column](#) or recreated if possible;*
- there are several copies of the same procedure. If a procedure parameter gets modified (added, updated, dropped), a Database will create a new procedure. There is no option to replace the procedure. Also, there is no option to drop automatically the old procedure because it requires all existing parameters with their datatypes to be listed. **[Tip]:** *the old copy of the procedure needs to be manually dropped.*

DataGrip is not 100% compatible with Redshift:

- If procedure/function gets updated in DataGrip, all string parameters would be modified to text/varchar(256) datatype. **[Tip]:** *use a DK variation to create and modify procedures;*
- If there are several procedures with the same names and different sets of parameters, DataGrip generates an error during calling the procedure. **[Tip]:** *each procedure name should have only one version per schema;*
- DataGrip Database Window Tool does not show all existing procedures often. **[Tip]:** *views [pg\\_proc](#) and [pg\\_proc\\_info](#) allow double-checking existing procedures.*

**Both QC Framework test steps need to be run manually in DataGrip** to eliminate possible errors occurring while using DataGrip.