Privileges

Grant Statement

Grant

- Grant privileges or roles to accounts
- Prerequisites: you must have :
    - GRANT OPTION privilege
    - The privileges that you are granting

Syntax

Grant priv_type on priv_level to user_specification;

Priv_type

- ALL PRIVILEGES: Grants all available privileges

- Administrative Privileges: SUPER, PROCESS, RELOAD, SHUTDOWN

- Database and Table Privileges: SELECT, INSERT, DELETE, CREATE…

Example

- GRANT SELECT, INSERT ON mydb.mytable TO 'myuser'@'myhost';

Privilege Levels

- Global privileges: *.*

- Database privileges: database_name.*

- Table privileges: database_name.table_name

- Column privileges

- Function and Procedure privileges: database_name.routine_name

Global privileges

- GRANT ALL ON *.* TO 'myuser'@'localhost' [with grant option];

Database Privileges

Privilege	Description
CREATE	Create a database using the CREATE DATABASE statement, when the privilege is granted for a database. You can grant the CREATE privilege on databases that do not yet exist. This also grants the CREATE privilege on all tables in the database.
CREATE ROUTINE	Create Stored Programs using the CREATE PROCEDURE and CREATE FUNCTION statements.
CREATE TEMPORARY TABLES	Create temporary tables with the CREATE TEMPORARY TABLE statement. This privilege enable writing and dropping those temporary tables
DROP	Drop a database using the DROP DATABASE statement, when the privilege is granted for a database. This also grants the DROP privilege on all tables in the database.
EVENT	Create, drop and alter EVENTs.
GRANT OPTION	Grant database privileges. You can only grant privileges that you have.
LOCK TABLES	Acquire explicit locks using the LOCK TABLES statement; you also need to have the SELECT privilege on a table, in order to lock it.
SHOW CREATE ROUTINE	Permit viewing the SHOW CREATE definition statement of a routine, for example SHOW CREATE FUNCTION, even if not the routine owner. From MariaDB 11.3.0.

Database Privileges

- GRANT SELECT ON mydatabase.* TO 'myuser'@'localhost';

Privilege	Description
ALTER	Change the structure of an existing table using the ALTER TABLE statement.
CREATE	Create a table using the CREATE TABLE statement. You can grant the CREATE privilege on tables that do not yet exist.
CREATE VIEW	Create a view using the CREATE_VIEW statement.
DELETE	Remove rows from a table using the DELETE statement.
DELETE HISTORY	Remove historical rows from a table using the DELETE HISTORY statement. Displays as DELETE VERSIONING ROWS when running SHOW GRANTS until MariaDB 10.3.15 and until MariaDB 10.4.5 (MDEV-17655), or when running SHOW PRIVILEGES until MariaDB 10.5.2, MariaDB 10.4.13 and MariaDB 10.3.23 (MDEV-20382). From MariaDB 10.3.4. From MariaDB 10.3.5, if a user has the SUPER privilege but not this privilege, running mariadb-upgrade will grant this privilege as well.
DROP	Drop a table using the DROP TABLE statement or a view using the DROP VIEW statement. Also required to execute the TRUNCATE TABLE statement.
GRANT OPTION	Grant table privileges. You can only grant privileges that you have.
INDEX	Create an index on a table using the CREATE INDEX statement. Without the INDEX privilege, you can still create indexes when creating a table using the CREATE TABLE statement if the you have the CREATE privilege, and you can create indexes using the ALTER TABLE statement if you have the ALTER privilege.
INSERT	Add rows to a table using the INSERT statement. The INSERT privilege can also be set on individual columns; see Column Privileges below for details.
REFERENCES	Unused.
SELECT	Read data from a table using the SELECT statement. The SELECT privilege can also be set on individual columns; see Column Privileges below for details.
SHOW VIEW	Show the CREATE VIEW statement to create a view using the SHOW CREATE VIEW statement.
TRIGGER	Required to run the CREATE TRIGGER, DROP TRIGGER, and SHOW CREATE TRIGGER statements. When another user activates a trigger (running INSERT, UPDATE, or DELETE statements on the associated table), for the trigger to execute, the user that defined the trigger should have the TRIGGER privilege for the table. The user running the INSERT, UPDATE, or DELETE statements on the table is not required to have the TRIGGER privilege.
UPDATE	Update existing rows in a table using the UPDATE statement. UPDATE statements usually include a WHERE clause to update only certain rows. You must have SELECT privileges on the table or the appropriate columns for the WHERE clause. The UPDATE privilege can also be set on individual columns; see Column Privileges below for details.

- GRANT SELECT, INSERT ON mydatabase.mytable TO 'myuser'@'localhost`;

Column Privileges

Privilege	Description
INSERT (column_list)	Add rows specifying values in columns using the INSERT statement. If you only have column-level INSERT privileges, you must specify the columns you are setting in the INSERT statement. All other columns will be set to their default values, or NULL.
SELECT (column_list)	Read values in columns using the SELECT statement. You cannot access or query any columns for which you do not have SELECT privileges, including in WHERE, ON, GROUP BY, and ORDER BY clauses.
UPDATE (column_list)	Update values in columns of existing rows using the UPDATE statement. UPDATE statements usually include a WHERE clause to update only certain rows. You must have SELECT privileges on the table or the appropriate columns for the WHERE clause.

Column Privileges

- GRANT SELECT (column1, column2) ON mydatabase.mytable TO 'myuser'@'localhost'

Routine Privileges

Privilege	Description
ALTER ROUTINE	Change the characteristics of a stored routine
EXECUTE	Execute a stored routine using
GRANT OPTION	Grant procedure privileges

Routine Privileges

- GRANT EXECUTE ON PROCEDURE mysql.create_db TO 'user1'@'host';

FLUSH PRIVILEGES;

- It reloads the in-memory privilege tables

- When is it really needed?

    - ~~INSERT INTO mysql.user (Host, User, Password) VALUES ('localhost', 'new_user', PASSWORD('password'));~~

Show grants

- List privileges of the current user:
  - SHOW GRANTS;
  - SHOW GRANTS FOR CURRENT_USER;
  - SHOW GRANTS FOR CURRENT_USER();

- List privileges of a User or Role:
  - SHOW GRANTS FOR USER;

Revoke

- REVOKE priv_type on priv_level from user;

Revoke

- REVOKE SELECT ON database1.table1 FROM 'username'@'localhost';

Connect to MariaDB

mariadb -u your_username -p -h your_host -P your_port