data directory. An absolute path is required, and the directory must not exist. The MySQL server must have the necessary write access to create the directory.

When the optional `DATA DIRECTORY [=] 'clone_dir'` clause is not used, a cloning operation removes existing data in the recipient data directory, replaces it with the cloned data, and automatically restarts the server afterward.

- `[REQUIRE [NO] SSL]` explicitly specifies whether an encrypted connection is to be used or not when transferring cloned data over the network. An error is returned if the explicit specification cannot be satisfied. If an SSL clause is not specified, clone attempts to establish an encrypted connection by default, falling back to an insecure connection if the secure connection attempt fails. A secure connection is required when cloning encrypted data regardless of whether this clause is specified. For more information, see Configuring an Encrypted Connection for Cloning.

Note

By default, user-created `InnoDB` tables and tablespaces that reside in the data directory on the donor MySQL server instance are cloned to the data directory on the recipient MySQL server instance. If the `DATA DIRECTORY [=] 'clone_dir'` clause is specified, they are cloned to the specified directory.

User-created `InnoDB` tables and tablespaces that reside outside of the data directory on the donor MySQL server instance are cloned to the same path on the recipient MySQL server instance. An error is reported if a table or tablespace already exists.

By default, the `InnoDB` system tablespace, redo logs, and undo tablespaces are cloned to the same locations that are configured on the donor (as defined by `innodb_data_home_dir` and `innodb_data_file_path`, `innodb_log_group_home_dir`, and `innodb_undo_directory`, respectively). If the `DATA DIRECTORY [=] 'clone_dir'` clause is specified, those tablespaces and logs are cloned to the specified directory.

Remote Cloning Prerequisites

To perform a cloning operation, the clone plugin must be active on both the donor and recipient MySQL server instances. For installation instructions, see Section 5.6.7.1, “Installing the Clone Plugin”.

A MySQL user on the donor and recipient is required for executing the cloning operation (the “clone user”).

- On the donor, the clone user requires the `BACKUP_ADMIN` privilege for accessing and transferring data from the donor, and for blocking DDL during the cloning operation.
- On the recipient, the clone user requires the `CLONE_ADMIN` privilege for replacing recipient data, blocking DDL during the cloning operation, and automatically restarting the server. The `CLONE_ADMIN` privilege includes `BACKUP_ADMIN` and `SHUTDOWN` privileges implicitly.

Instructions for creating the clone user and granting the required privileges are included in the remote cloning example that follows this prerequisite information.

The following prerequisites are checked when the `CLONE INSTANCE` statement is executed:

- The donor and recipient must have the same MySQL server version. The clone plugin is supported in MYSQL 8.0.17 and higher.

```
mysql> SHOW VARIABLES LIKE 'version';
 +---------------+--------+
| Variable_name | Value  |
```