

define a [RESTRICT](#) type constraint, and there is a child row with several parent rows, [InnoDB](#) does not permit the deletion of any of the parent rows.

- If [ON UPDATE CASCADE](#) or [ON UPDATE SET NULL](#) recurses to update the *same table* it has previously updated during the same cascade, it acts like [RESTRICT](#). This means that you cannot use self-referential [ON UPDATE CASCADE](#) or [ON UPDATE SET NULL](#) operations. This is to prevent infinite loops resulting from cascaded updates. A self-referential [ON DELETE SET NULL](#), on the other hand, is possible, as is a self-referential [ON DELETE CASCADE](#). Cascading operations may not be nested more than 15 levels deep.
- In an SQL statement that inserts, deletes, or updates many rows, foreign key constraints (like unique constraints) are checked row-by-row. When performing foreign key checks, [InnoDB](#) sets shared row-level locks on child or parent records that it must examine. MySQL checks foreign key constraints immediately; the check is not deferred to transaction commit. According to the SQL standard, the default behavior should be deferred checking. That is, constraints are only checked after the *entire SQL statement* has been processed. This means that it is not possible to delete a row that refers to itself using a foreign key.
- No storage engine, including [InnoDB](#), recognizes or enforces the [MATCH](#) clause used in referential-integrity constraint definitions. Use of an explicit [MATCH](#) clause does not have the specified effect, and it causes [ON DELETE](#) and [ON UPDATE](#) clauses to be ignored. Specifying the [MATCH](#) should be avoided.

The [MATCH](#) clause in the SQL standard controls how [NULL](#) values in a composite (multiple-column) foreign key are handled when comparing to a primary key in the referenced table. MySQL essentially implements the semantics defined by [MATCH SIMPLE](#), which permits a foreign key to be all or partially [NULL](#). In that case, a (child table) row containing such a foreign key can be inserted even though it does not match any row in the referenced (parent) table. (It is possible to implement other semantics using triggers.)

- MySQL requires that the referenced columns be indexed for performance reasons. However, MySQL does not enforce a requirement that the referenced columns be [UNIQUE](#) or be declared [NOT NULL](#).

A [FOREIGN KEY](#) constraint that references a non-[UNIQUE](#) key is not standard SQL but rather an [InnoDB](#) extension. The [NDB](#) storage engine, on the other hand, requires an explicit unique key (or primary key) on any column referenced as a foreign key.

The handling of foreign key references to nonunique keys or keys that contain [NULL](#) values is not well defined for operations such as [UPDATE](#) or [DELETE CASCADE](#). You are advised to use foreign keys that reference only [UNIQUE](#) (including [PRIMARY](#)) and [NOT NULL](#) keys.

- MySQL parses but ignores “inline [REFERENCES](#) specifications” (as defined in the SQL standard) where the references are defined as part of the column specification. MySQL accepts [REFERENCES](#) clauses only when specified as part of a separate [FOREIGN KEY](#) specification. For storage engines that do not support foreign keys (such as [MyISAM](#)), MySQL Server parses and ignores foreign key specifications.

For information about foreign key constraints, see [Section 13.1.20.5, “FOREIGN KEY Constraints”](#).

1.7.2.4 '--' as the Start of a Comment

Standard SQL uses the C syntax `/* this is a comment */` for comments, and MySQL Server supports this syntax as well. MySQL also support extensions to this syntax that enable MySQL-specific SQL to be embedded in the comment, as described in [Section 9.7, “Comments”](#).

Standard SQL uses “`--`” as a start-comment sequence. MySQL Server uses `#` as the start comment character. MySQL Server also supports a variant of the `--` comment style. That is, the `--` start-comment sequence must be followed by a space (or by a control character such as a newline). The space is required