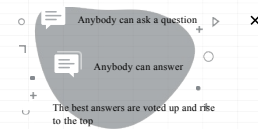


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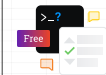
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Difference between On Delete Cascade & On Update Cascade in mysql

Asked 6 years, 9 months ago Active 3 years, 6 months ago Viewed 179k times

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I have two tables in MySQL database- parent , child . I'm trying to add foreign key references to my child table based on the parent table. Is there any significant difference between ON UPDATE CASCADE and ON DELETE CASCADE

My Parent Table

```
CREATE TABLE parent (
  id INT NOT NULL,
  PRIMARY KEY (id)
)ENGINE=INNODB;
```

My Question is: What is the difference between the following sql queries.

1. ON DELETE CASCADE

```
CREATE TABLE child (
  id INT,
  parent_id INT,
  INDEX par_ind (parent_id),
  FOREIGN KEY (parent_id)
  REFERENCES parent(id)
  ON DELETE CASCADE
)ENGINE=INNODB;
```

2. ON UPDATE CASCADE

```
CREATE TABLE child (
  id INT,
  parent_id INT,
  INDEX par_ind (parent_id),
  FOREIGN KEY (parent_id)
  REFERENCES parent(id)
  ON UPDATE CASCADE
)ENGINE=INNODB;
```

3. ON UPDATE CASCADE ON DELETE CASCADE

```
CREATE TABLE child (
  id INT,
  parent_id INT,
  INDEX par_ind (parent_id),
  FOREIGN KEY (parent_id)
  REFERENCES parent(id)
  ON UPDATE CASCADE ON DELETE CASCADE
)ENGINE=INNODB;
```

Are there any errors in the queries? What do these queries (1,2 & 3) mean?? Are they same???

[mysql](#) [innodb](#) [mysql-5.5](#) [foreign-key](#)

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edited Nov 22 '17 at 18:55

asked Aug 22 '14 at 6:22

BDS Israel is an Apartheid State**Loneswolf**

20.3k 32 178 375

901 1 7 8

2 p.s. <nitpick> for completeness, what you are talking about above are DDL (Data Definition Language) **statements**, and not queries. A query is generally considered to be DML (Data Manipulation Language SELECT, INSERT, UPDATE, DELETE) <nitpick> – [Vérace](#) Aug 22 '14 at 9:34 ✓

Another p.s. again for completeness, I wondered what the default was. So I created a child with no on update or on delete. What happens then is that you can neither update nor delete a parent that has a dependent child. That makes perfect sense, however MySQL is not always a model of that particular characteristic :-> – [Vérace](#) Aug 22 '14 at 12:53

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3 Answers

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A very good thread on this subject is to be found [here](#) and also [here](#). The definitive guide for MySQL is, of course, the documentation, to be found [here](#).

In the SQL 2003 standard there are 5 different referential actions:

1. CASCADE
2. RESTRICT
3. NO ACTION
4. SET NULL
5. SET DEFAULT

To answer the question:

1. CASCADE

- ON DELETE CASCADE means that if the parent record is deleted, any child records are also deleted. This is **not** a good idea in my opinion. You should keep track of all data that's ever been in a database, although this can be done using TRIGGER s. (However, see caveat in comments below).
- ON UPDATE CASCADE means that if the parent primary key is changed, the child value will also change to reflect that. Again in my opinion, not a great idea. If you're changing PRIMARY KEY s with any regularity (or even at all!), there is something wrong with your design. Again, see comments.
- ON UPDATE CASCADE ON DELETE CASCADE means that if you UPDATE OR DELETE the parent, the change is cascaded to the child. This is the equivalent of AND ing the outcomes of first two statements.

2. RESTRICT

- RESTRICT means that any attempt to delete and/or update the parent will fail throwing an error. This is the default behaviour in the event that a referential action is not explicitly specified.

For an ON DELETE or ON UPDATE that is not specified, the default action is always RESTRICT .

3. NO ACTION

- NO ACTION : From the [manual](#). A keyword from standard SQL. In MySQL, equivalent to RESTRICT . The MySQL Server rejects the delete or update operation for the parent table if there is a related foreign key value in the referenced table. Some database systems have deferred checks, and NO ACTION is a deferred check. In MySQL, foreign key constraints are checked immediately, so NO ACTION is the same as RESTRICT .

4. SET NULL

- SET NULL - again from the manual. Delete or update the row from the parent table, and set the foreign key column or columns in the child table to NULL . This is not the best of ideas IMHO, primarily because there is no way of "time-travelling" - i.e. looking back into the child tables and associating records with NULL s with the relevant parent record - either CASCADE or use TRIGGER s to populate logging tables to track changes (but, see comments).

5. SET DEFAULT

- SET DEFAULT . Yet another (potentially very useful) part of the SQL standard that MySQL hasn't bothered

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