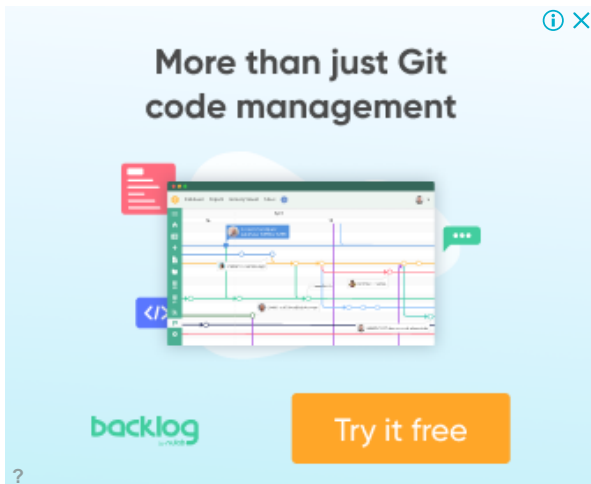


# MySQL INSERT ON DUPLICATE KEY UPDATE

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**Summary:** in this tutorial, you will learn how to use MySQL `INSERT ON DUPLICATE KEY UPDATE` statement to update data if a duplicate in the `UNIQUE` index or `PRIMARY KEY` error occurs when you insert a row into a table.

## Introduction to the MySQL INSERT ON DUPLICATE KEY UPDATE statement

The `INSERT ON DUPLICATE KEY UPDATE` is a MySQL's extension to the SQL standard's `INSERT` statement.

When you insert a new row into a table if the row causes a duplicate in `UNIQUE` index or `PRIMARY KEY` , MySQL will issue an error.

However, if you specify the `ON DUPLICATE KEY UPDATE` option in the `INSERT` statement, MySQL will **update** the existing row with the new values instead.

The syntax of `INSERT ON DUPLICATE KEY UPDATE` statement is as follows:

```
INSERT INTO table (column_list)
VALUES (value_list)
ON DUPLICATE KEY UPDATE
  c1 = v1,
```



```
c2 = v2,  
...;
```

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The only addition to the `INSERT` statement is the `ON DUPLICATE KEY UPDATE` clause where you specify a list of column-value-pair assignments in case of duplicate.

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Basically, the statement first tries to insert a new row into the table. If a duplicate error occurs, it will update the existing row with the value specified in the `ON DUPLICATE KEY UPDATE` clause.

MySQL returns the number of affected-rows based on the action it performs:

If the new row is inserted, the number of affected-rows is 1.

If the existing row is updated, the number of affected-rows is 2.

If the existing row is updated using its current values, the number of affected-rows is 0.

To use the values from the `INSERT` clause in the `DUPLICATE KEY UPDATE` clause, you use the `VALUES()` function as follows:

```
INSERT INTO table_name(c1)  
VALUES(c1)  
ON DUPLICATE KEY UPDATE c1 = VALUES(c1) + 1;
```

The statement above sets the value of the `c1` to its current value specified by the expression `VALUES(c1)` plus 1 if there is a duplicate in `UNIQUE` index or `PRIMARY KEY`.

## MySQL INSERT ON DUPLICATE KEY UPDATE example

Let's take a look at an example of using the `INSERT ON DUPLICATE KEY UPDATE` to understand how it works.

First, [create a table](#) named `devices` to store the network devices.

```
CREATE TABLE devices (  
  id INT AUTO_INCREMENT PRIMARY KEY,  
  name VARCHAR(100)  
);
```

Next, [insert](#) rows into the `devices` table.



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```
VALUES('Router F1'),('Switch 1'),('Switch 2');
```



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Then, [query the data](#) from the `devices` table to verify the insert:

```
SELECT
  id,
  name
FROM
  devices;
```



	id	name
▶	1	Router F1
	2	Switch 1
	3	Switch 2

Now, we have three rows in the `devices` table.

After that, insert one more row into the `devices` table.

```
INSERT INTO
  devices(name)
VALUES
  ('Printer')
ON DUPLICATE KEY UPDATE name = 'Printer';
```



	id	name
▶	1	Router F1
	2	Switch 1
	3	Switch 2
	4	Printer

Because there is no duplicate, MySQL inserts a new row into the `devices` table. The statement above has the same effect as the following statement:

```
INSERT INTO devices(name)
VALUES ('Printer');
```



Finally, insert a row with a duplicate value in the `id` column.



INSERT INTO devices(id,name) HOME START HERE BASIC ADVANCED  
VALUES  
(4,'Printer')  
ON DUPLICATE KEY UPDATE name='Central Printer';



MySQL issues the following message:

2 row(s) affected



Because a row with id 4 already exists in the `devices` table, the statement updates the name from `Printer` to `Central Printer`.

	id	name
▶	1	Router F1
	2	Switch 1
	3	Switch 2
	4	Central Printer

In this tutorial, you have learned how to insert or update data in a table using the `ON DUPLICATE KEY UPDATE` option of the `INSERT` statement.

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