

```
[pict@localhost ~]$ mysql -h 10.10.14.188 -u te31301 -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 353
Server version: 10.4.19-MariaDB MariaDB Server
```

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
MariaDB [(none)]> use te31301db;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A
```

Database changed

```
MariaDB [te31301db]> create table books(accno int,title varchar(20),author varchar(20),publisher
varchar(20),count int);
Query OK, 0 rows affected (0.230 sec)
```

```
MariaDB [te31301db]> create table lib_audit(accno int,title varchar(20),author varchar(20),publisher
varchar(20),count int,action varchar(20));
Query OK, 0 rows affected (0.171 sec)
```

```
MariaDB [te31301db]> describe lib_audit;
```

Field	Type	Null	Key	Default	Extra
accno	int(11)	YES		NULL	
title	varchar(20)	YES		NULL	
author	varchar(20)	YES		NULL	
publisher	varchar(20)	YES		NULL	
count	int(11)	YES		NULL	
action	varchar(20)	YES		NULL	

6 rows in set (0.003 sec)

```
MariaDB [te31301db]> desc books;
```

Field	Type	Null	Key	Default	Extra
accno	int(11)	YES		NULL	
title	varchar(20)	YES		NULL	
author	varchar(20)	YES		NULL	
publisher	varchar(20)	YES		NULL	
count	int(11)	YES		NULL	

5 rows in set (0.004 sec)

```
MariaDB [te31301db]> insert into books values(101,"DBMS","ABC","Technical",5);
Query OK, 1 row affected (0.035 sec)
```

```
MariaDB [te31301db]> insert into books values(102,"CNSL","XYZ","Techknowledge",10);
Query OK, 1 row affected (0.036 sec)
```

```
MariaDB [te31301db]> insert into books values(103,"HCI","PQR","Nirali",15);
Query OK, 1 row affected (0.033 sec)
```

MariaDB [te31301db]> insert into books values(104,"SPOS","IJK","TechNeo",7);  
Query OK, 1 row affected (0.376 sec)

MariaDB [te31301db]> select \* from books;  
+-----+-----+-----+-----+-----+  
| accno | title | author | publisher | count |  
+-----+-----+-----+-----+-----+  
101	DBMS	ABC	Technical	5
102	CNSL	XYZ	Techknowledge	10
103	HCI	PQR	Nirali	15
104	SPOS	IJK	TechNeo	7
+-----+-----+-----+-----+-----+  
4 rows in set (0.002 sec)

MariaDB [te31301db]> select \* from lib\_audit;  
Empty set (0.002 sec)

MariaDB [te31301db]> delimiter \$  
MariaDB [te31301db]> create trigger before\_del  
-> after DELETE on books  
-> for each row  
-> begin  
-> insert into lib\_audit;  
-> set action='delete',  
-> accno=OLD.accno,  
-> title=OLD.title,  
-> author=OLD.author,  
-> publisher=OLD.publisher,  
-> count=OLD.count;  
-> end;  
-> \$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near ';

set action='delete',  
accno=OLD.accno,  
title=OLD.title,  
author=OLD.author,  
p...' at line 5

MariaDB [te31301db]> create trigger before\_del after DELETE on books for each row begin insert into lib\_audit; set action='delete', accno=OLD.accno, title=OLD.title, author=OLD.author, publisher=OLD.publisher, count=OLD.count; end\$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near '; set action='delete', accno=OLD.accno, title=OLD.title, author=OLD.author, p...' at line 1

MariaDB [te31301db]> create trigger before\_del after DELETE on books for each row begin insert into lib\_audit set action='delete', accno=OLD.accno, title=OLD.title, author=OLD.author, publisher=OLD.publisher, count=OLD.count; end;\$  
Query OK, 0 rows affected (0.072 sec)

MariaDB [te31301db]> delete from books where accno=101;  
-> \$  
Query OK, 1 row affected (0.040 sec)

MariaDB [te31301db]> select \* from books;  
-> \$  
+-----+-----+-----+-----+-----+

accno	title	author	publisher	count
102	CNSL	XYZ	Techknowledge	10
103	HCI	PQR	Nirali	15
104	SPOS	IJK	TechNeo	7

3 rows in set (0.002 sec)

```
MariaDB [te31301db]> select * from lib_audit;
-> $
```

accno	title	author	publisher	count	action
101	DBMS	ABC	Technical	5	delete

1 row in set (0.002 sec)

```
MariaDB [te31301db]> delimiter $
MariaDB [te31301db]> create trigger before_book_update
-> before update on books
-> for each row
-> begin
-> insert into lib_audit
-> set action ='update',
-> accno=NEW.accno;
-> title=NEW.title,
-> author=NEW.author,
-> count=NEW.count;
-> end$
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near '=NEW.title, author=NEW.author, count=NEW.count; end' at line 8

```
MariaDB [te31301db]> create trigger before_book_update before UPDATE on books fo
r each row begin insert into lib_audit set action ='update', accno=NEW.accno; title=NEW.title,
author=NEW.author, count=NEW.count; end;$
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near '=NEW.title, author=NEW.author, count=NEW.count; end' at line 1

```
MariaDB [te31301db]> create trigger before_book_update before UPDATE on books for each row begin
insert into lib_audit set action ='update', accno=NEW.accno, title=NEW.title, author=NEW.author,
count=NEW.count; end;$
Query OK, 0 rows affected (0.058 sec)
```

```
MariaDB [te31301db]> update books set count=7 where accno=102;
-> $
Query OK, 1 row affected (0.025 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

```
MariaDB [te31301db]> select * from boooks;
-> $
ERROR 1146 (42S02): Table 'te31301db.boooks' doesn't exist
MariaDB [te31301db]> select * from books;
-> $
```

accno	title	author	publisher	count
-------	-------	--------	-----------	-------

```
+-----+-----+-----+-----+-----+
| 102 | CNSL | XYZ | Techknowledge | 7 |
| 103 | HCI | PQR | Nirali | 15 |
| 104 | SPOS | IJK | TechNeo | 7 |
+-----+-----+-----+-----+-----+
3 rows in set (0.002 sec)
```

```
MariaDB [te31301db]> select * from lib_audit;
-> $
+-----+-----+-----+-----+-----+-----+
| accno | title | author | publisher | count | action |
+-----+-----+-----+-----+-----+-----+
| 101 | DBMS | ABC | Technical | 5 | delete |
| 102 | CNSL | XYZ | NULL | 7 | update |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.002 sec)
```

```
MariaDB [te31301db]> create table bookcount(countb int);
-> $
Query OK, 0 rows affected (0.185 sec)
```

```
MariaDB [te31301db]> delimiter $
MariaDB [te31301db]> create trigger before_insert
-> before insert on books
-> for each row
-> $
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near " at line 3

```
MariaDB [te31301db]> create or replace trigger before_insert
-> declare
-> exce EXCEPTION;
-> begin$
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'declare exce EXCEPTION; begin' at line 2

```
MariaDB [te31301db]> create or replace trigger before_insert
-> before INSERT on books
-> for each row
-> if count>5 then
-> raise exce;
-> EXCEPTION
-> WHEN exce
-> dbms_output.put_line("A student can have only 5 books");
-> end;
-> $
```

ERROR 1327 (42000): Undeclared variable: count

```
MariaDB [te31301db]> create or replace trigger before_insert before INSERT on books declare exce
EXCEPTION; for each row if count>5 then raise exce; EXCEPTION W
HEN exce dbms_output.put_line("A student can have only 5 books"); end;$
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'declare exce EXCEPTION; for each row if count>5 then raise exce; EXCEPTION WH...' at line 1

```
MariaDB [te31301db]> create or replace trigger before_insert before INSERT on books begin for each
row if count>5 then raise exce; EXCEPTION WHEN exce dbms_output.put_line("A student can have
only 5 books"); end;$
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'begin for each row if count>5 then raise exce; EXCEPTION WHEN exce dbms\_outpu...' at line 1

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books begin for each row if count>5 then raise exce; EXCEPTION WHEN exce dbms\_output.put\_line("A student can have only 5 books"); end;\$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'begin for each row if count>5 then raise exce; EXCEPTION WHEN exce dbms\_outpu...' at line 1

MariaDB [te31301db]>

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books begin for each row if count>5 then raise exce; EXCEPTION WHEN exce dbms\_output.put\_line("A student can have only 5 books"); end;\$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'begin for each row if count>5 then raise exce; EXCEPTION WHEN exce dbms\_outpu...' at line 1

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books begin for each row if NEW.count>5 then raise exce; EXCEPTION WHEN exce dbms\_output.put\_line("A student can have only 5 books"); end;\$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'begin for each row if NEW.count>5 then raise exce; EXCEPTION WHEN exce dbms\_o...' at line 1

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books begin for each row if NEW.count>5 then raise exce; EXCEPTION WHEN exce dbms\_output.put\_line("A student can have only 5 books"); end;\$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'begin for each row if NEW.count>5 then raise exce; EXCEPTION WHEN exce dbms\_o...' at line 1

MariaDB [te31301db]>

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'begin for each row if NEW.count>5 then raise exce; EXCEPTION WHEN exce dbms\_o...' at line 1

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books begin for each row if NEW.count>5 then raise exce; EXCEPTION WHEN exce dbms\_output.put\_line("A student can have only 5 books"); end;\$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'begin for each row if NEW.count>5 then raise exce; EXCEPTION WHEN exce dbms\_o...' at line 1

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books begin for each row if NEW.count>5 then dbms\_output.print\_line("A student can have minimum 5 books only"); end;\$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'begin for each row if NEW.count>5 then dbms\_output.print\_line("A student can ...' at line 1

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books begin for each row if NEW.count>5 then dbms\_output.print\_line("A student can have ER

MariaDB [te31301db]> have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'begin for eac

MariaDB [te31301db]> then dbms\_output.print\_line("A student can ...' at line 1

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books begin for each row if OLD.count>5 then signal sqlstate '45000' SET MESSAGE\_TEXT=""

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books begin for each row if NEW.count>5 then signal sqlstate '45000' SET MESSAGE\_TEXT="A s

tudent can have minimum 5 books";end;\$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'begin for each row if NEW.count>5 then signal sqlstate '45000' SET MESSAGE\_TE...' at line 1

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books begin for each row if NEW.count>5 then signal sqlstate '45000' SET MESSAGE\_TEXT='A student can have minimum 5 books';end;\$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'begin for each row if NEW.count>5 then signal sqlstate '45000' SET MESSAGE\_TE...' at line 1

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books begin for each row if NEW.count>5 then signal sqlstate '45000' SET MESSAGE\_TEXT='A student can have minimum 5 books';end;\$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'begin for each row if NEW.count>5 then signal sqlstate '45000' SET MESSAGE\_TE...' at line 1

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books for each row begin if NEW.count>5 then signal sqlstate '45000' SET MESSAGE\_TEXT='A student can have minimum 5 books';end;\$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near " at line 1

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books for each row begin if NEW.count>5 then SIGNAL SQLSTATE '45000' SET MESSAGE\_TEXT='A student can have minimum 5 books';end;\$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near " at line 1

MariaDB [te31301db]> create or replace trigger before\_insert before INSERT on books for each row begin if NEW.count>5 then SIGNAL SQLSTATE '45000' SET MESSAGE\_TEXT="A student can have minimum 5 books";end;\$

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near " at line 1

## **BEFORE INSERT:**

```
MariaDB [te31301db]> create or replace trigger before_insert before INSERT on books for each row
begin if NEW.count>5 then SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT="A student can have
minimum 5 books";END IF;end;$
Query OK, 0 rows affected (0.049 sec)
```

```
MariaDB [te31301db]> insert into books(9,"SQE","LKJ","UYH",7);
-> $
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your
MariaDB server version for the right syntax to use near '9,"SQE","LKJ","UYH",7)' at line 1
MariaDB [te31301db]> insert into books values(9,"SQE","LKJ","UYH",7);
-> $
ERROR 1644 (45000): A student can have minimum 5 books
MariaDB [te31301db]> desc bookcount;
-> $
```

```
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| countb | int(11) | YES  |     | NULL    |      |
+-----+-----+-----+-----+-----+
1 row in set (0.003 sec)
```

```
MariaDB [te31301db]> select * from books;
-> $
+-----+-----+-----+-----+-----+
| accno | title | author | publisher | count |
+-----+-----+-----+-----+-----+
| 102 | CNSL | XYZ   | Techknowledge | 7 |
| 103 | HCI  | PQR   | Nirali      | 15 |
| 104 | SPOS | IJK   | TechNeo     | 7 |
+-----+-----+-----+-----+-----+
3 rows in set (0.001 sec)
```

```
MariaDB [te31301db]> update table books set count="5" where title="HCI";
-> $
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your
MariaDB server version for the right syntax to use near 'table books set count="5" where title="HCI"' at
line 1
```

```
MariaDB [te31301db]> update books set count=5 where title="HCI";
-> $
Query OK, 1 row affected (0.026 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

```
MariaDB [te31301db]> update books set count=4 where title="SPOS";
-> $
```

Query OK, 1 row affected (0.045 sec)  
Rows matched: 1 Changed: 1 Warnings: 0

MariaDB [te31301db]> update books set count=2 where title="CNSL";

-> #

-> \$

Query OK, 1 row affected (0.031 sec)  
Rows matched: 1 Changed: 1 Warnings: 0

MariaDB [te31301db]> select \* from books;

-> \$

accno	title	author	publisher	count
102	CNSL	XYZ	Techknowledge	2
103	HCI	PQR	Nirali	5
104	SPOS	IJK	TechNeo	4

3 rows in set (0.015 sec)

MariaDB [te31301db]> insert into bookcount values(11);

-> \$

Query OK, 1 row affected (0.030 sec)

## **before update:**

MariaDB [te31301db]> create or replace trigger before\_update before INSERT on books for each row  
begin if NEW.count>5 then SIGNAL SQLSTATE '45000' SET MESSAGE\_TEXT='A student can have  
minimum 5 books';END IF;end;\$

Query OK, 0 rows affected (0.056 sec)

MariaDB [te31301db]> select \* from bookcount;

-> \$

countb
11

1 row in set (0.001 sec)



### **AFTER INSERT:**

```
MariaDB [te31301db]> create or replace trigger after_insert after INSERT on books for each row begin
update bookcount set countb=countb-NEW.count;end;$
Query OK, 0 rows affected (0.057 sec)
```

```
MariaDB [te31301db]> insert into books values("105","HGF","IUH","GFD",1);
-> $
Query OK, 1 row affected (0.041 sec)
```

```
MariaDB [te31301db]> select * from bookcount;
-> $
+-----+
| countb |
+-----+
|    10 |
+-----+
1 row in set (0.001 sec)
```

### **AFTER DELETE:**

```
MariaDB [te31301db]> create or replace trigger after_delete after DELETE on books for each row begin
update bookcount set countb=countb+OLD.count;end;$
Query OK, 0 rows affected (0.117 sec)
```

```
MariaDB [te31301db]> delete from books where count=1;
-> $
Query OK, 1 row affected (0.032 sec)
```

```
MariaDB [te31301db]> select * from bookcount;
-> $
```

```
+-----+  
| countb |  
+-----+  
|    11 |  
+-----+
```

1 row in set (0.001 sec)

MariaDB [te31301db]>