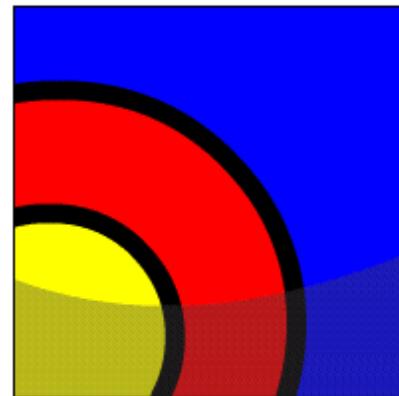


# Managing Triggers

## What Will I Learn?

In this lesson, you will learn to:

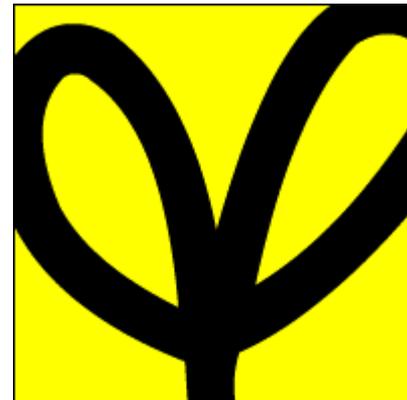
- View trigger information in the Data Dictionary
- Disable and enable a database trigger
- Remove a trigger from the database





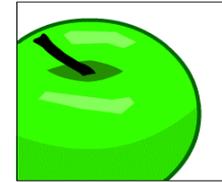
## Why Learn It?

In this lesson, you learn how to manage triggers. There might be times when you want to turn off a trigger that is already turned on, to be able to do something else in the interim. Or, there might be a time when you need to fill in for someone else and to understand what triggers exist in the Data Dictionary you might need to view them. You can do all of this by managing triggers.



# Tell Me / Show Me

## Privileges Needed for Triggers



To create a trigger in your own schema, you need:

- `CREATE TRIGGER` system privilege
- Normal object privileges (`SELECT`, `UPDATE`, `EXECUTE`, and so on) on objects in other schemas that are referenced in your trigger body
- `ALTER` privilege on the table or view associated with the trigger.

Statements in the trigger body use the privileges of the trigger owner, not the privileges of the user executing the operation that fires the trigger. The next slide shows an example.

## Tell Me / Show Me

### Privileges Needed for Triggers Example

User MOE needs to create the following trigger:

```
CREATE OR REPLACE TRIGGER upd_tom_emp
AFTER UPDATE ON tom.employees
BEGIN
    INSERT INTO mary.log_table VALUES(USER,SYSDATE);
    sharon.calledproc;
END;
```

Moe needs:

- CREATE TRIGGER
- ALTER on TOM.EMPLOYEES
- INSERT on MARY.LOG\_TABLE
- EXECUTE on SHARON.CALLEDPROC.

# Tell Me / Show Me

## Viewing Triggers in the Data Dictionary

You can see trigger information in the following Data Dictionary views:

- `USER_OBJECTS`: Object name and object type (as for all other object types in your schema)
- `USER_TRIGGERS`: Detailed code and status of the trigger
- `USER_ERRORS`: PL/SQL syntax errors (compilation errors) of the trigger

 **Tell Me / Show Me****Using USER\_TRIGGERS**

<b>Column</b>	<b>Column Description</b>
<b>TRIGGER_NAME</b>	<b>Name of the trigger</b>
<b>TRIGGER_TYPE</b>	<b>The type is BEFORE, AFTER, INSTEAD OF</b>
<b>TRIGGERING_EVENT</b>	<b>The DML operation firing the trigger</b>
<b>TABLE_NAME</b>	<b>Name of the database table</b>
<b>REFERENCING_NAMES</b>	<b>Name used for :OLD and :NEW</b>
<b>WHEN_CLAUSE</b>	<b>The when_clause used</b>
<b>STATUS</b>	<b>The status of the trigger</b>
<b>TRIGGER_BODY</b>	<b>The action to take</b>

**Not all columns are shown here**

# Tell Me / Show Me

## Viewing Trigger Information Using USER\_TRIGGERS

This example shows the triggering event, timing, type of trigger, status, and detailed body code of the RESTRICT\_SALARY trigger:

```
SELECT trigger_name, trigger_type, triggering_event,
       table_name, status, trigger_body
FROM   USER_TRIGGERS
WHERE  trigger_name = 'RESTRICT_SALARY';
```

TRIGGER_NAME	TRIGGER_TYPE	TRIGGERING_EVENT	TABLE_NAME	STATUS	TRIGGER_BODY
RESTRICT_SALARY	BEFORE EACH ROW	INSERT OR UPDATE	EMPLOYEES	ENABLED	BEGIN IF NOT (:NEW.job_id IN ('AD_PRES', 'AD_VP')) AND :NEW.salary > 15000 THEN RAISE_APPLICATION_ERROR (-20202, 'Employee cannot earn more than \$15,000.');

1 rows returned in 0.05 seconds

[Download](#)



# Tell Me / Show Me

## Changing the Status of Triggers

- Disable or reenables a database trigger:

```
ALTER TRIGGER trigger_name DISABLE | ENABLE;
```

- Disable or reenables all triggers for a table:

```
ALTER TABLE table_name DISABLE | ENABLE ALL TRIGGERS;
```

- Recompile a trigger for a table:

```
ALTER TRIGGER trigger_name COMPILE;
```

## Tell Me / Show Me

### Removing Triggers

To remove a trigger from the database, use the `DROP TRIGGER` statement:

```
DROP TRIGGER trigger_name;
```

Example:

```
DROP TRIGGER secure_emp;
```

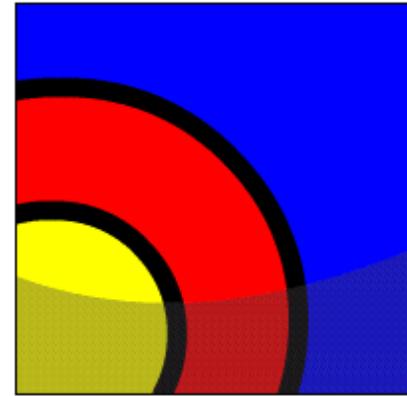
Note: All triggers on a table are removed when the table is removed.



# Summary

In this lesson, you learned to:

- View trigger information in the data dictionary
- Disable and enable a database trigger
- Remove a trigger from the database





## Try It / Solve It

The exercises in this lesson cover the following topics:

- Viewing trigger information in the Data Dictionary
- Altering the status of a trigger
- Removing a trigger

