



GRANT to Assign Users

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WHAT'S COVERED

This lesson explores adding users to group roles in a database, in two parts. Specifically, this lesson will cover:

1. [Introduction](#)
2. [Examples](#)

1. Introduction

As you learned in the previous lesson, you can create group roles to make it easier to assign privileges to user roles (that is, user accounts). You have already learned how to create a group role, and in this lesson, you will learn how to assign users to groups. A user can be a member of as many groups as needed; there is no limitation.



KEY CONCEPT

Groups can also be members of other groups. In other words, you can have one group "nested" within another. For example, you might have a group called Employees, and one of the members of that group might be another group called Managers. In database systems that support **multiple inheritance**, roles can inherit privileges from multiple groups. In such a system, people in the Managers group would have all the privileges assigned to Employees plus all the privileges assigned to Managers. However, PostgreSQL doesn't support multiple inheritance, so you would need to assign a user to each group individually rather than relying on nested groups.

The statement we use to assign users and privileges to a group is called **GRANT**. In the next section, you will learn how to use GRANT to assign users to a group, and in the following lesson, you will learn how to use GRANT to assign privileges.



TERMS TO KNOW

Multiple Inheritance

In the context of database roles, the ability to inherit attributes or privileges from more than one role.

GRANT

A statement used to grant permission to use or access a role, or to assign privileges to a role.

2. Examples

Let's look at an example of creating a group role and then assigning users to it.

First, we'll create a user role for an account named myadmin:

```
CREATE ROLE myadmin  
LOGIN  
PASSWORD 'mypassword';
```

Next, we'll create a group role called adminrole. As we create it, we use attributes of the CREATE ROLE statement to assign it two important privileges: CREATEDB and CREATEROLE.

```
CREATE ROLE adminrole  
CREATEDB  
CREATEROLE;
```

Then, we will grant the adminrole role to the myadmin user role using the GRANT command:

```
GRANT adminrole TO myadmin;
```

You can add multiple users at once by listing the users separated by commas:

```
GRANT adminrole TO myadmin1, myadmin2, myadmin3;
```

Now, suppose we wanted to separate out the admin role into one that could create roles and a separate one that could create databases:

```
CREATE ROLE adminrole_cr  
CREATEROLE;  
CREATE ROLE adminrole_db  
CREATEDB;
```

We can grant permissions separately to myadmin by doing the following:

```
GRANT adminrole_cr TO myadmin;  
GRANT adminrole_db TO myadmin;
```

The opposite of GRANT is **REVOKE**. Suppose we now want to take away the permission to create databases from myadmin. Here's what that would look like:

```
REVOKE adminrole_db FROM myadmin;
```

Since both of those roles are group roles, you could grant them to each other, but only in one direction because the database will not allow you to set up circular membership loops:

```
GRANT adminrole_cr TO adminrole_db;
```

or

```
GRANT adminrole_db TO adminrole_cr;
```



TRY IT

Your turn! Open the SQL tool by clicking on the LAUNCH DATABASE button below. Then, enter one of the examples above and see how it works. Next, try your own choices for which columns you want the query to provide.



TERM TO KNOW

REVOKE

A statement used to revoke a privilege.



SUMMARY

In this lesson's **introduction**, you learned how to assign users to a group by using the GRANT statement. This statement is used to assign both users and privileges.

You explored some **examples** of creating a user role and a group role, and then assigning the user to the group. You also learned how to remove a user from a group via the REVOKE statement.



TERMS TO KNOW

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REVOKE

A statement used to revoke a privilege.