

## 7.3.1 Group Management

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Group Management 0:00-0:08

In this lesson, we're going to discuss how you can manage Linux groups from the shell prompt.

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Add Groups 0:09-2:16

We're going to begin by looking at how you create new groups on the Linux system. You do this using the `groupadd` command.

As its name implies, `groupadd` is used to add groups to your Linux system. The syntax is pretty straight forward. We enter '`groupadd`' and then specify any options we want to use followed by the name of the group we want to create.

In this case, we're going to add a group named `RandD`.

When I do, a group is added to the `/etc/groupfile`. And because I didn't use any options in this command, the default parameters specified in the `/etc/login.defs` file are automatically applied.

An example of that file is shown here. For example, you can see the group ID numbers that are going to be used by default for a standard user group that we create with the `groupadd` command.

Just as when you are creating new users with `useradd`, when you create new groups with `groupadd`, you can override the defaults in the `login.defs` file--basically, customizing the way the group is created--using options at the command line. For example, if we use the `-g` option, we can manually specify a group ID number for the group instead of using the next available one. If we want to create a password for the group, we can use the `-p` option. And, just as with the `useradd` command, you have to use the `openssl` command, `openssl passwd -crypt`, to first encrypt the password that we want to use and then paste it into the command line in quotations with the `-p` option. By default, if we use `groupadd` it's going to create a standard user group. If we need to create a system group, we use the `-r` option to specify that we're creating a system group.

With this in mind, let's now look at modifying existing Linux groups. You may have noticed that when we use the `groupadd` command, it did not add one very important component to the new group that we defined. What did we miss? Users! That's right. What good is a group if you don't have any users in it? In order to modify a group, including adding users to the group membership, you can use one of two different utilities.

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Modify Groups 2:17-5:59

The most common utility that we're going to use to add users to a group is actually not a group command, but it's a user command. We're going to use `usermod`.

This trips a lot of new Linux system administrators because we're essentially using a user management utility to modify a group. If you think about it, it really is counterintuitive. Our first inclination is to edit the group and add individual users to it, making them members of the group. Well, that's not what we're doing. Instead, what we're doing is editing individual users and assigning that individual user to a particular group.

To do this, there are two very important options that you have to be familiar with the `usermod` command. The first is one is `-gm` which sets the user's default group. Also, `-G`, which specifies additional groups that the user is to be a member of. In this example, we are using the `-g` option to set the default group for the `kmorgan` user to a group named `Users`. As you can see from the output of the `tail` command when it's looking at the password file, the default group ID number for the `kmorgan` user is now set to 100. If we look at the group file, right here, and we look for the user's record, we see that the GID of users is, indeed, 100.

Before we go any further, we need to talk about the `-G` option. As we said a minute ago, `-G` is used to assign additional groups besides the default group that the user is to be made a member of.

You have to be very careful with `-G` because, by default, whatever group you specify-- say I specify '`-G RandD`' with the `usermod` command-- it would erase all of the existing additional group memberships for that user account and replace them with this just one group membership. You need to find out what user accounts the user is already a member of and include them right here, in the command line, so that the user retains existing group memberships and just has this added to the list rather than replacing the list.

The usermod command is fairly well supported across most Linux distributions. In fact, I haven't encountered one yet that didn't support the usermod command. There is a second command that you can use to modify groups called groupmod. It's not as well supported. It's available on some Linux distributions and not on others.

groupmod operates from a different perspective than usermod. With usermod, we edit individual users and make them members of groups. groupmod goes the other direction. It edits the group itself and adds user accounts to it as members. The syntax is shown here. We enter 'groupmod' followed by whatever options we want to use and then the name of the group. There are several different options we can use with this command. -g changes the group's ID number. -p changes the group's password. Again, remember, we have to use the openssl passwd -crypt command to encrypt the password first.

Here is the one we need to focus on: -A adds a user account to the group. For example, down here, we enter 'groupmod -A'. Then we specify the name of the user account, 'emcarthur'. And then the name of the group that we want to add that user account to, 'RandD'. We can do the opposite with -R, which simply removes a user account from membership in the group.

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#### Delete Groups 6:00-6:19

Finally, let's look at deleting groups. If, for some reason, you need to delete an existing group from your system, you can do so using the groupdel command at the shell prompt. The syntax is shown here, 'groupdel' followed by the name of the group you want to get rid of. For example, if we wanted to remove the RandD group, we would enter 'groupdel RandD'.

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#### Summary 6:20-6:30

That's it for this lesson.

In this lesson, we discussed the process for managing Linux groups. We first looked at adding groups. We talked about modifying groups, including modifying group membership. And then we ended this lesson by talking about how to delete a group from the system.

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