

Organisation

- Work in a team of 2-3 students
- The duration of this lab is 4 periods (2 weeks)

Pedagogical objectives

- Become familiar with `sudo`
- Become familiar with Unix account management files and tools
- Learn how to grant and revoke `sudo` rights

Context

In this lab you will manage user accounts on the Linux machine on your personal workstation.

Task 0: Examine the setup of your own account

- Examine your account by using the command `id` and by looking into the files `/etc/passwd` and `/etc/group`. What is its principal group? What other groups is the account a member of? What is the UID of the account and the GID of the principal group?
- Which skeleton files have been copied?

Task 1: Create user accounts

In this task you will use command-line tools to manage user accounts.

Perform the following steps and give in the lab report the commands you used. Use the tools `useradd` and `groupadd`.

1. Create the groups `jedi` and `rebels`. Before creating them verify that they do not yet exist.
2. Create the following user accounts with default home directories and login shell (for example account `luke` should have home directory `/home/luke` and a `bash` shell).

Note: For fear of overwriting something the `useradd` tool is very cautious about creating the home directory for an account.

- What option do you need to specify to have `useradd` create a home directory?
- What is the default login shell for users created with `useradd`? What command should we use to change the default login shell from `/bin/sh` to `/bin/bash`?

Before creating them verify that they do not yet exist.

- Account `luke`, assigned to groups `jedi` (principal) and `rebels`.
- Account `vader`, assigned to group `jedi` (principal).
- Account `solo`, assigned to group `rebels` (principal).

3. Set a password for the account `luke`.
4. Test the account `luke`. Verify that the user can log in and create files. Verify that the user cannot access sensitive system information such as the file `/etc/shadow`.
5. Use `su` to change your account to that of `vader`. Test if the user `vader` has access to the files in the home directory of user `luke`.

Task 2: Change group membership

Perform the following steps and give in the lab report the commands you used. Use the tool `usermod`.

1. Create the account `leia` without assigning it a principal group. After it was created, which principal group did it get assigned?
2. Make `leia` member of the group `rebels` (as secondary group).
3. Make `leia` leave the group `rebels` and join the group `jedi` instead.
4. Make `leia` leave any secondary group.

Task 3: Give a user sudo rights

To give a user access to `sudo` one must normally manually edit the file `/etc/sudoers` by using the `visudo` command and list all the users there. In many Linux distributions (among them Ubuntu) though touching the file is not necessary. Out of the box the file `/etc/sudoers` is configured to give `sudo` access to all users that are members of the group named `sudo`. Instead of modifying the `/etc/sudoers` file, one can simply make users members of the `sudo` group.

Questions:

- a) Which line in `/etc/sudoers` gives the members of the group `sudo` the right to execute any command?
- b) How would you have to modify this line so that users can use `sudo` without typing a password (this is in general not recommended, but can be handy sometimes).

Perform the following steps and give in the lab report the commands you used.

1. Give the account `luke` `sudo` rights.
2. Test the new rights. Verify that `luke` can read the file `/etc/shadow` using `sudo`.
3. Remove `sudo` rights from the account `luke`.

Task 4: Remove a user account

Perform the following steps and give in the lab report the commands you used. Use the tool `userdel`.

1. Remove the account `leia`, but do not delete the home directory yet.
2. Inspect the home directory (look at the file metadata). What has changed?

3. Suppose the user `leia` has created other files on the system, but you do not know where they are. How would you systematically scan the whole system to find them?
4. Remove the home directory manually.