WORK-CASE №4

1. В ході роботи досить часто виникає необхідність встановлювати нові програми та додатки. Для цього необхідно в терміналі вміти працювати з менеджерами пакетів:  
- Дайте розгорнуте визначення таким поняттям як «пакет» та «репозиторій».  
- Надайте короткий огляд існуючих менеджерів пакетів у Linux. Охарактеризуйте їх основні можливості.

**What are the packages?**

A package is essentially an archive with an executable file (exe in Windows). It also describes the launch rules, special files, etc. You can compare it to how you installed a program in Windows and its files contain many different incomprehensible folders and files. All of this is managed by a package manager that can install, run, uninstall, and update all packages.

**What is a repository?**

A repository is a place where any data is stored and maintained. Most often, the data in a repository is stored in the form of files available for further distribution over the network. Repositories are divided into official and unofficial. Most Linux distributions have official repositories.

To manage official repositories, use the Programs and Updates (Application Sources) program in the Ubuntu Software tab.

What are Custom (unofficial) repositories for?

Let's say you want to install a program from the Ubuntu Software Manager, but it has a later version to install than the official website of the program, or this program is simply not in the Software Manager.

**Existing Linux packages**

**1. Ubuntu Server**

Ubuntu Server by Canonical is a distribution for both PCs and servers. It takes the first place in all ratings. Although it is often chosen for programs, Ubuntu also allows you to create cloud platforms. To do this, you need to download Ubuntu Cloud Server.

According to Canonical, more than 55% of OpenStack clouds run on Ubuntu, which is often used to create infrastructure cloud services and cloud storage.

**2. Debian Server.**

This is one of the first Linux distributions. Many distributions, such as Ubuntu and RHEL, are based on it. The peculiarity of Debian is its stability: it is important for the server, so it covers all the shortcomings of the distribution. This stability helps to avoid situations where updates may conflict with existing software.

Debian is available in several versions: stable, test, and unstable. The stable version has a standard release cycle with a longer support period; the test version uses a rolling release cycle. And the unstable version is not so much a release as a version of the distro under development that includes the latest Debian packages.

Distro can be installed over the Internet using a bootable image. This will allow you to create a server from scratch. And there is also a cloud image: it can be deployed on various cloud providers, such as Amazon EC2, Azure, OpenStack, and others.

**3. Red Hat Enterprise Linux**

Red Hat Enterprise Linux (RHEL) is the most popular commercial distribution. RHEL has one of the longest long-term support programs. It is best suited for cloud servers and data centers.

Most hosting providers do not provide a ready-made OS image for RHEL. Therefore, you need to use the “Custom ISO” option and download the RHEL iso yourself.

**4. Fedora Server.**

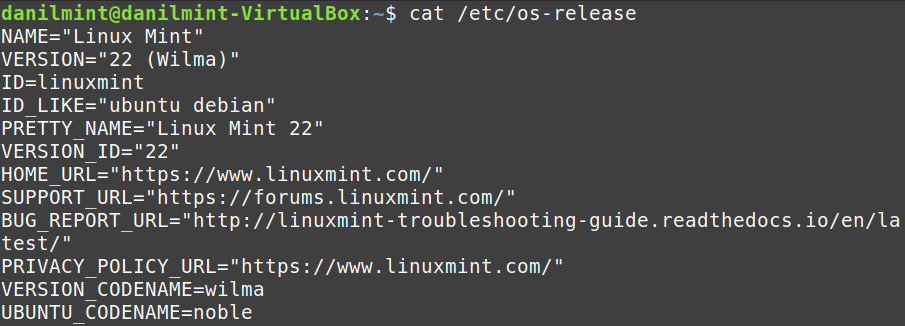
Fedora is a community-developed distribution based on RHEL with the latest software and frequent releases. Fedora is suitable if you want to stick to the yum environment and prefer new software versions. It helps to deploy a server both on bare metal and in the cloud.

**5. OpenSUSE Leap**

OpenSUSE Leap is a stable distro with regular releases every year. It uses older versions of software, but this is what makes it stable. It is also often chosen because of its adaptability and flexibility: it is available not only for servers, but also for desktops and laptops.

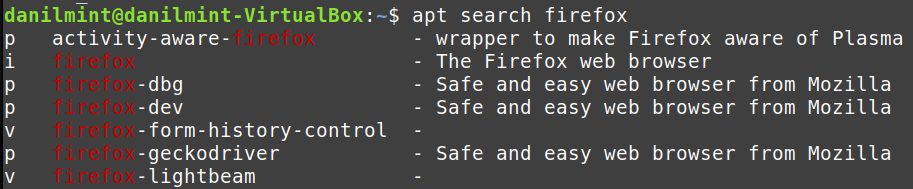
Distro does not have a separate ISO image for servers. You can install the server using the OpenSUSE installer.

2. Визначте який менеджер пакетів використовує ваш дистрибутив Linux. Опишіть основні команди для роботи з ним:  
- Пошук, скачування та установка необхідних пакетів, яких у Вашій системі немає (зі сховища по замовчуванню, з нового репозиторію тощо).  
- Перегляд інформації про встановлені та доступні пакети.  
- Видалення непотрібних або застарілих пакетів.  
- Оновлення менеджера пакетів.  
3. Встановіть у терміналі через менеджер пакетів на свою систему:  
- Новий відео- чи аудіоплейер.  
- Середовище для мови програмування, що ви вивчаєте.

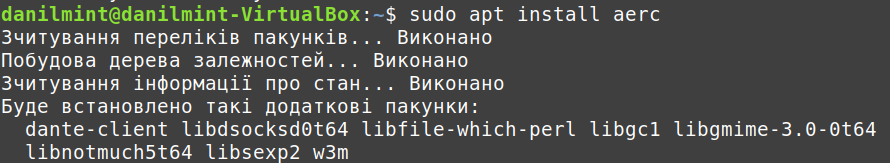
I'm using a Linux Mint distribution. To determine the package manager, you need to write the command: 

Usually Debian/Ubuntu, and their derivatives (Linux Mint), which I use, use the APT (Advanced Package Tool) package manager

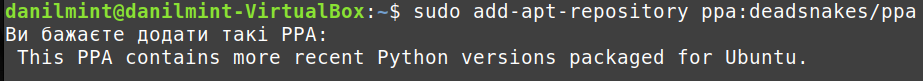
To search for a package, you need to use the apt search command <package-name>, I decided to use a pocket search related to firefox:

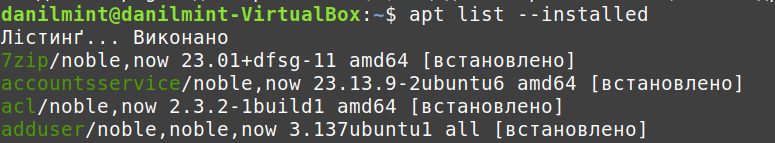


To install the package, I need to use the command sudo apt install <package-name>, I decided to download aerc(Email Client for your Terminal)

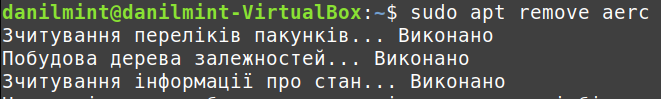


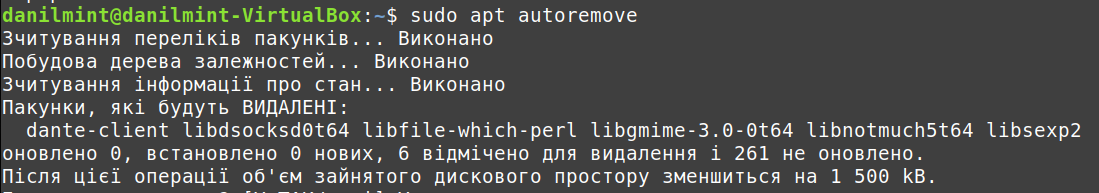
To add a new repository, I need to use the command sudo add-apt-repository <repository-URL>, I decided to add a link using ppa(Personal Package Archive), provided it is available:



To view installed packages, use the apt list –installed command: 

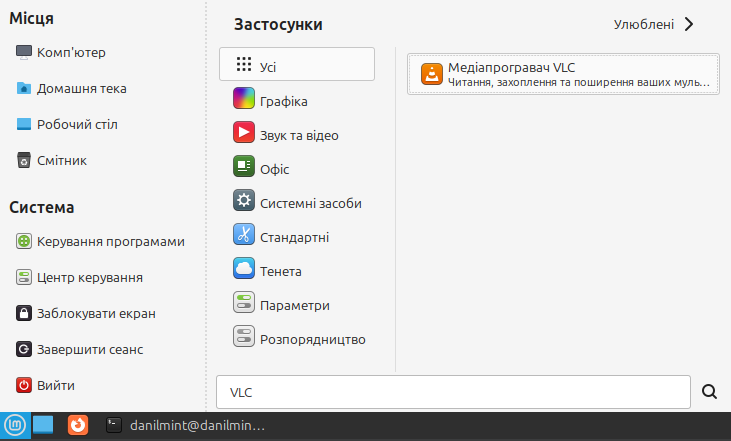
To view the removal of packages(package) using the command sudo apt remove <package-name>, I decided to delete what I downloaded at the very beginning of aerc:

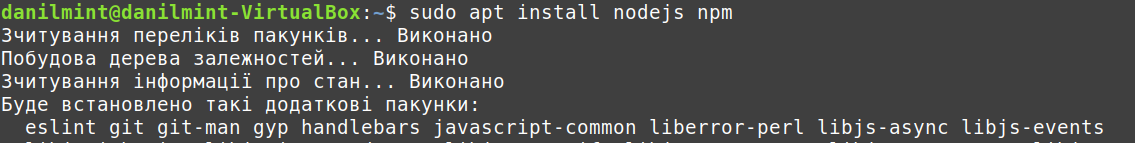


We can clean up unnecessary packages using the command sudo apt autoremove: 

To update the package manager, use the command: 

Before installing the audio player, you have to choose which one you want to download, I choose VLC sudo apt install vlc:



I'm actively passionate about learning JavaScript. Linux doesn't have full JS support, so I downloaded its framework Node.js: 

***Виконала студентка Коваленко С.***

4In Ubuntu, you can install new applications through the graphical app stores, as well as from the command line using the APT package manager.

I'm going to show you how to install apps through the Ubuntu Software graphical app store.

First, you need to open Ubuntu Software. I click on the “Activities” icon or just press the Super key on the keyboard, which is usually the key with the Windows logo. In the upper left corner of the screen, you need to enter “Ubuntu Software” in the search bar. I click on the “Ubuntu Software” icon to open the store. In the Ubuntu Software window, you can see several tabs, such as “Installed”, “Updates”, “Open Programs”, “Applications” and “Games”. Then go to the Applications tab to see the available programs. You can also select categories such as Productivity, Graphics, Multimedia, and others. For example, if I want to install the VLC program, I type it in the search bar at the top right. The search results will appear below the search bar. I click on the name of the program to open its page. On the program page, you can see a description, ratings, user reviews, and version information. After checking the information about the program, click the Install button, which is usually located in the upper right corner of the program window. If the program requires additional access rights, you may need to enter your password. After the installation process is complete, I will receive a message that the program has been successfully installed. Then I close the Ubuntu Software window. To launch the new program, I go back to “Activities” and enter its name in the search bar, or find it in the program menu. I click on the program icon to open it.

This process provides a convenient way to install new programs on an Ubuntu system without having to use a terminal.