1. На базі розглянутого матеріалу дайте відповіді на наступні питання:
   1. Розкрийте поняття UPG, коли їх доцільно використовувати?

UPG refers to a user privilege management system. This system determines the access rights of users to various resources and functionality of the system.

When it is appropriate to use UPG:

Security: UPG allows administrators to control which users have access to sensitive data and system resources. This helps to avoid unauthorized access and reduce the risk of data leakage.

Privilege restrictions: UPG allows you to limit user privileges depending on their role in the organization. For example, an administrator can grant administrative rights to only a limited group of users, thereby reducing the risk of errors or abuse.

Access audit: The UPG system can be used to maintain an access log, which allows you to track which users accessed which resources, and, if necessary, analyze this information to detect abnormal or unauthorized activity.

Resource management: With UPG, you can effectively manage access to various resources, including files, directories, network resources, and other assets.

Compliance: UPG can help organizations meet compliance requirements (e.g., GDPR, HIPAA, PCI DSS, etc.) by controlling access to personal or sensitive data.

* 1. \*Якими командами можна створити групи користувачів? Наведіть приклади

To create user groups on most Unix-like operating systems, special system administration commands are used.

groupadd developers

This command will create a new group named "developers."

addgroup: Some Linux distributions may also have the 'addgroup' command, which performs the same function as' groupadd'.

usermod: Sometimes you can use the 'usermod' command to add a user to a group. Syntax for adding a user to a group:

usermod -aG developers john

This command will add a user named "john" to the "developers" group.

vigr: This command opens a text editor that allows you to edit the file '/etc/group 'directly. Adding a new entry to this file can also create a new group. However, the use of this command requires caution, since incorrect changes can lead to problems in the system.

These commands allow administrators to create and manage user groups in the system, which helps organize access to resources and set rights to use them.

* 1. \*\*Якими командами можна змінити налаштування груп користувачів? Наведіть приклади

Various system administration commands are used to modify user groups on Unix-like operating systems.

This command allows you to modify the attributes and parameters of existing user groups. Command syntax: groupmod -g 1001 developers

This command will change the group identifier (GID) of the group "developers" to 1001.

Vigr: This command opens a text editor to edit the file where user group data is stored. Editing this file allows you to change various group parameters, such as the group identifier (GID), the list of users in the group, etc. But be careful when making changes directly to this file, you should be careful, since incorrect changes can lead to problems in the system.

Password: This command allows administrators to manage group passwords and group membership. It can also be used to modify other attributes of groups. Command syntax: gpasswd -M user1, user2 developersThis command changes the list of users in the developers group to user1 and user2.

**Хід роботи:**

1. Початкова робота в CLI-режимі в Linux ОС сімейства Linux:
2. Запустіть віртуальну машину VirtualBox, оберіть CentOS та запустіть її. Виконайте вхід в систему під користувачем: CentOS, пароль для входу: reverse ***(якщо виконуєте ЛР у 401 ауд.)*** та запустіть термінал.
3. Запустіть віртуальну машину Ubuntu\_PC ***(якщо виконуєте завдання ЛР через академію netacad)***
4. Запустіть свою операційну систему сімейства Linux ***(якщо працюєте на власному ПК та її встановили)*** та запустіть термінал.
5. Опрацюйте всі приклади команд, що представлені у лабораторних роботах курсу ***NDG Linux Essentials - Lab 15: System and User Security*** та ***Lab 16: Creating Users and Groups.*** Створіть таблицю для опису цих команд

|  |  |
| --- | --- |
| Назва команди | її призначення та функціональність |
| Su | While switching to the root user is what the su command is used for most frequently, it can also switch to other users as well. |
| exit | return to your original shell |
| sudo | command allows users to execute commands as another user |
| getent | is a versatile command used in Unix-like operating systems to retrieve information from various databases |
| id | is used to print user and group information for a specified user. |
| who | command displays a list of users who are currently logged into the system, where they are logged in from, and when they logged in. |
| w | command is identical to that of the uptime command |
| last | command reads the entire login history from the /var/log/wtmp file and displays all logins and reboot records by default. |
| groupadd | command can be executed by the root user to create a new group. |
| groupmod | can be used to either change the name of a group with the -n option or change the GID for the group with the -g option. |
| groupdel | be aware that any files that are owned by that group will become orphaned. |
| useradd | creating users |
| useradd -D | can also be viewed or updated by manipulating the |
| -k | option to specifies a different skeleton directory. |
| -s | option at the time of account creation |
| -m | option is used, the /home/jane directory is created with permissions only permitting the jane user access, and the contents of the /etc/skel directory would be copied into the directory |
| passwd | command providing the username as an argument, or graphical tools are also available. |
| passwd jane | provides the administrator a prompt to set the password for the jane account. If completed successfully, then the /etc/shadow file will be updated with the user's new password. |
| chage | command provides many options for managing the password aging information found in the /etc/shadow file. |
| userdel | command is used to delete users. When you delete a user account, you also need to decide whether to delete the user's home directory. |