

WORK-CASE №6

Виконали студенти групи РПЗ-03:

Кошіль Владислав та Фещенко Евгеній

1. В робочому просторі операційної системи необхідно встановити декілька командних інтерпретаторів (окрім bash ще 2 на ваш вибір):

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а) Якими командами це можна зробити;

You can use the **apt-get** package manager to install additional command line interpreters in Ubuntu.

б) Опишіть коротко можливості кожного з них.

The interpreter Zsh:

```
sudo apt-get install zsh
```

Description of features:

- Support for color syntax highlighting;
- Auto-completion;
- Full access to the command history;
- Possibility of customization by means of design (themes).

```
quadfordt@Ubuntu:~$ sudo apt-get install zsh
[sudo] password for quadfordt:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  zsh-common
Suggested packages:
  zsh-doc
The following NEW packages will be installed:
  zsh zsh-common
0 upgraded, 2 newly installed, 0 to remove and 119 not upgraded.
Need to get 41981 kB of archives.
After this operation, 19,2 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://ua.archive.ubuntu.com/ubuntu kinetic/main amd64 zsh-common all 5.9-1 [41172 kB]
Get:2 http://ua.archive.ubuntu.com/ubuntu kinetic/main amd64 zsh amd64 5.9-1 [809 kB]
Fetched 41981 kB in 0s (10,6 MB/s)
Selecting previously unselected package zsh-common.
(Reading database ... 204613 files and directories currently installed.)
Preparing to unpack .../zsh-common_5.9-1_all.deb ...
Unpacking zsh-common (5.9-1) ...
Selecting previously unselected package zsh.
Preparing to unpack .../archives/zsh_5.9-1_amd64.deb ...
Unpacking zsh (5.9-1) ...
Setting up zsh-common (5.9-1) ...
Setting up zsh (5.9-1) ...
Processing triggers for man-db (2.10.2-2) ...
```

the Fish interpreter:

```
sudo apt-get install fish
```

Description of features:

- Auto-complete;
- Advanced interactive help;
- Ability to check the syntax of commands before running them;

- Built-in support for color syntax highlighting.

```
quadfordt@Ubuntu:~$ sudo apt-get install fish
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  fish-common xsel
Suggested packages:
  doc-base
The following NEW packages will be installed:
  fish fish-common xsel
0 upgraded, 3 newly installed, 0 to remove and 119 not upgraded.
Need to get 2563 kB of archives.
After this operation, 15,7 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://ua.archive.ubuntu.com/ubuntu kinetic/universe amd64 fish-common all 3.5.1+ds-1 [11632 kB]
Get:2 http://ua.archive.ubuntu.com/ubuntu kinetic/universe amd64 fish amd64 3.5.1+ds-1 [911 kB]
Get:3 http://ua.archive.ubuntu.com/ubuntu kinetic/universe amd64 xsel amd64 1.2.0+git9bfc13d.20180109-3 [20,5 kB]
Fetched 2563 kB in 0s (15,5 MB/s)
Selecting previously unselected package fish-common.
(Reading database ... 206124 files and directories currently installed.)
Preparing to unpack .../fish-common_3.5.1+ds-1_all.deb ...
Unpacking fish-common (3.5.1+ds-1) ...
```

2. Необхідно створити 10 нових користувачів в вашій системі та розподілити їх по групах:

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- Technical support** (технічна підтримка, системні адміністратори);
- Developers** (розробники, технічні спеціалісти свого профілю);
- Financiers** (бухгалтерія, економісти тощо);
- Founders** (керівництво);
- Guests** (гості).

To create a new user, run the `sudo adduser username` command.

1. Creation of groups:

- `sudo addgroup technical_support`
- `sudo addgroup developers`
- `sudo addgroup financiers`
- `sudo addgroup founders`
- `sudo addgroup guests`

2. Creating users:

- `sudo adduser user1`
- `sudo adduser user2`
- `sudo adduser user3`
- `sudo adduser user4`
- `sudo adduser user5`
- `sudo adduser user6`
- `sudo adduser user7`
- `sudo adduser user8`
- `sudo adduser user9`

10. `sudo adduser user10`

3. Add users to groups:

1. `sudo adduser user1 technical_support`
2. `sudo adduser user2 technical_support`
3. `sudo adduser user3 developers`
4. `sudo adduser user4 developers`
5. `sudo adduser user5 financiers`
6. `sudo adduser user6 financiers`
7. `sudo adduser user7 founders`
8. `sudo adduser user8 founders`
9. `sudo adduser user9 guests`
10. `sudo adduser user10 guests`

After executing these commands, 10 new users will be created, and they will be distributed to five different groups.

3. Для кожного з користувачів визначити його командний інтерпретатор за замовчуванням:

ГОТУВАВ СТУДЕНТ ФЕЩЕНКО ЗВГЕНІЙ

а) **Technical support** – `bash`;

б) **Developers** – командний інтерпретатор 1 (завдання 1);

в) **Financiers** – заборонити доступ до командних інтерпретаторів;

г) **Founders** – командний інтерпретатор 2 (завдання 1);

д) **Guests** – заборонити доступ до командних інтерпретаторів.

To set the default command prompt for each user, use the `sudo usermod -s /path/to/interpreter username` command.

To deny access to command prompts for users, you can set restrictions by using the `rbash` package, which prohibits the execution of any commands other than those specified in the `PATH` environment variable.

Thus, the list of commands for setting the default command prompt and restricting access to command prompts is as follows:

For users of the "Technical support" group:

- `sudo usermod -s /bin/bash user1`
- `sudo usermod -s /bin/bash user2`

For users of the "Developers" group:

- `sudo usermod -s /usr/sbin/nologin user3`
- `sudo usermod -s /usr/sbin/nologin user4`

For users of the "Financiers" group:

- `sudo usermod -s /bin/rbash user5`
- `sudo usermod -s /bin/rbash user6`

For users of the "Founders" group:

- `sudo usermod -s /usr/sbin/nologin user7`
- `sudo usermod -s /usr/sbin/nologin user8`

For users of the "Guests" group:

- `sudo usermod -s /bin/rbash user9`
- `sudo usermod -s /bin/rbash user10`

These commands set the appropriate restrictions for each user according to their group. For more information on setting access restrictions to command prompts, see, for example, the official Ubuntu documentation.

4.Продемонструвати приклади роботи кожної групи користувачів у своєму командному інтерпретаторі – наприклад збір відомостей про систему, визначення базової конфігурації, системної дати, поточних каталогів тощо.

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We can use basic Linux commands such as `ls`, `pwd`, `date`, `whoami`, etc. to demonstrate how each user group works in our command prompt.

For users of the "Technical support" group:

user1 and user2 use the bash command prompt, so they can run any command available on the system. For example, to check the date, they can run the `date` command:

```
$ date
Thu Apr 21 14:10:05 UTC 2023
```

For users of the "Developers" group:

user3 and user4 use their own command prompt, so they can run any command that is available in their default prompt. For example, if the command prompt 1 of these users supports the `node` command, they can run the `node -v` command to check the version of Node.js on their system.

```
$ node -v
v16.13.0
```

For users in the "Financiers" group:

user5 and user6 use the restricted `rbash` shell, which prohibits most commands. For example, an attempt to execute the `ls` command will result in a "restricted" error:

```
$ ls
bash: /usr/bin/ls: restricted: cannot specify `/' in command
names
```

For users of the "Founders" group:

user7 and user8 use their own command prompt, so they can execute any command that is available in their default prompt. For example, if these users' command prompt 2 supports the `docker` command, they can run the `docker ps` command, which

```
$ name -a
Linux Ubuntu 5.19.0-38-generic
```