"Kyiv Vocational College of Communication"

Cyclic Commission of Computer Engineering

EXECUTION REPORT

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**LABORATORY WORK No. 1**

**Topic: "Getting to know the working environment of virtual machines and the features of the Linux operating system"**

It was performed by students of the RPZ group - 03B

Team 6: Sichkar Maxim,

Brytyuk Bohdan

Kyiv 2023

**The goal of the work:**

1. Familiarity with various types of hypervisors, virtualization when working with operating systems.

2. Familiarity with the main types of modern operating systems, a brief overview of their capabilities.

**Material provision of classes:**

1. IBM PC type computer.

2. OS family Windows (Windows 7).

3. Virtual machine - Virtual Box (Oracle).

4. GNU/Linux operating system - CentOS.

5. Cisco network academy site netacad.com and its online Linux courses

**Tasks for preliminary preparation.**

**The student prepared the material:**  Brytyuk Bohdan.

1. Read the short theoretical information for the laboratory work and make a small dictionary basic English terms on classification of virtual environments.

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| **The term is in English** | **The term is in Ukrainian** |
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2. After reading the material from short theoretical information, answer the following questions:

**The student prepared the material:**  Brytyuk Bohdan

2.1. Describe the concept of "hypervisor". What are their types?

2.2. List the main components and capabilities of hypervisors according to your option (serial number according to the journal), table 1.

Brytyuk Bohdan – 1 version

Sichkar Maxim – 23 version

**Progress:**

**The student prepared the material:**  Brytyuk Bohdan, Sichkar Maxim

***1. Watch introductory videos and demonstration materials from the following areas:***

*1.1. GNU/Linux. Basic information.*

*Access: https://www.youtube.com/watch?v=k4AKMLS2Ac8*

*1.2. Installing CentOS in VirtualBox.*

*Access: https://www.youtube.com/watch?v=W3XTYYoHe9A*

*1.3. Installing CentOS in text mode.*

*Access: https://www.youtube.com/watch?v=gOR-1o3K18Q*

*1.4. Installing the Gnome desktop environment on CentOS.*

*Access: https://www.youtube.com/watch?v=gcEiIH3KF4Y*

*1.5. Installing the KDE desktop environment on CentOS.*

*Access: https://www.youtube.com/watch?v=\_ruIWLExaOY*

*1.6. The Shell (Linux)*

*Access: https://drive.google.com/open?id=0B0PV0\_SM0LoDSVNPWUVRdUxaN2s*

*1.7. An overview of Linux graphical shells*

*Access:* [*https://www.youtube.com/watch?v=lEGplwLXZ78*](https://www.youtube.com/watch?v=lEGplwLXZ78)

**The student prepared the material:**  Brytyuk Bohdan, Sichkar Maxim

***2. After watching the video, answer the following questions.***

2.1. List the steps for deploying an operating system based on a VirtualBox virtual machine.

2.2. Are there any hardware limitations when installing 32-bit and 64-bit OS?

2.3. What are the main steps when installing CentOS in text mode?

2.4. How can you install Gnome and KDE graphical shells on CentOS, if it is already there

installed in text mode (specify necessary commands and packages)?

2.5. Give a brief description of the graphical interfaces used in different

Linux distributions according to their variant (serial number according to the magazine), table 2.

Brytyuk Bohdan – 1 version

Sichkar Maxim – 23 version

**The student prepared the material:**  Brytyuk Bohdan, Sichkar Maxim

**Answers to control questions:**

1. Compare type 1 and type 2 hypervisors, what is the difference between them and their scope?

2. Explain the concept of "GNU GPL", what is its basic concept?

3. What is open source software?

4. What is a distribution?

5. What tasks of system administration can be implemented on the basis of the Linux OS?

6. How are Android OS and Linux related?

7. Main capabilities and scope of use of Embedded Linux?

8. How can you change the type of Linux boot: in text mode (level 3) or graphical (level 5)? What is the difference between CLI and GUI modes?

***Conclusion:***