Kyiv College of Communications

Cycle Commission of Computer Engineering

**PERFORMANCE REPORT**

**WORK-CASE №3**

*in discipline: "Operating systems"*

*Topic: "Linux commands for archiving and compressing data"*

Performed by students

RPZ-93A group

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1. **To create a complete copy of an existing machine, follow these steps:**

**The material was prepared by student Khristinchenko**

1. Open the VirtualBox environment.
2. Right-click on the car you want to copy and select the "Copy" button.
3. Enter the machine name and select the path where the copy will be created (Select full copy)
4. Copy created.

**2. For export:**

**The material was prepared by student Khristinchenko**

1. Right-click on the desired machine, select "export".
2. Configure the required parameters.

**3. Network Address Broadcasting (NAT)**

**The material was prepared by student Protsevych**

NAT allows the guest operating system to access the Internet using private IP, which is not available from the external network or for all machines on the local physical network. This network setting allows you to visit web-pages, download files, view e-mail. And all this using a guest operating system. However, it is not possible to connect directly to such a system from the outside if it uses NAT.

The principle of translation of network addresses is as follows. When the guest OS sends packets to a specific address of a remote machine on the network, the NAT service running VirtualBox intercepts these packets, extracts segments containing the address of the sending point (IP address of the guest operating system) and replaces them with IP. host machine address. Then he packs them again and sends them to the specified address.

NAT is useful when it doesn't matter which IP addresses the guest OS on the virtual machine uses, as they will all be unique. However, if you want to configure network traffic redirection, or expand the functionality of the guest OS by deploying a web server (for example), you need additional settings. Features such as sharing folders and files are also not available in NAT mode.

**4. Bridged Bridge**

**The material was prepared by student Protsevych**

In a network bridge connection, the virtual machine works in the same way as other computers on a network. In this case, the adapter acts as a bridge between virtual and physical networks. From the external network it is possible to connect directly to the guest operating system.

The adapter in Network Bridge mode connects, bypassing the host, to a device that distributes IP addresses within the local network for all physical network cards. VirtualBox connects to one of the installed network cards and transmits packets through it directly; the work of the bridge through which data is transferred turns out. Typically, the adapter in the "Network Bridge" model receives a standard address from the range 192.168.x.x from the router. Therefore, a virtual machine on a network looks like a normal physical device that is no different from others.