**Topic: "Network configuration, system and user protection in Linux"**

Performed by students RPZ-93B group

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**The purpose of the work:**

1. Familiarize yourself with the basic tools for storing system data - processes, memory, log files and kernel status messages.
2. Introduction to the Filesystem Hierarchy Standard.
3. Familiarity with the basic steps when setting up a network.

**Material support of classes**

1. Computer type IBM PC.

2. Windows family of operating systems (Windows 7).

3. Virtual machine - Virtual Box (Oracle).

4. GNU / Linux operating system - CentOS.

5. Cisco Network Academy website netacad.com and its online Linux courses

**Tasks for preliminary preparation.**

1. Read brief theoretical information about laboratory work and make a small glossary of basic English terms on the purpose of team assignments and their parameters.
2. On the basis of the considered material give answers to the following questions:
   1. Explain the concept of "pseudo file system", why does the system need it?
   2. Why do users not so often go directly to the / proc directory, how can I get information from it?
   3. What is the purpose of the / proc / cmdline, / proc / meminfo and / proc / modules files?
   4. What is the purpose of the free team?
   5. Why do you need log files, give examples of their use?
   6. What is the purpose of the / var / log / dmesg file?
   7. What is FHS designed for?
   8. What are the basic commands in Linux for viewing and configuring the network.
   9. In which files is stored information about users and their groups. How to view them.
3. Learn Cisco Academy Online Course Materials:

* NDG Linux Essentials (Chapter 13-15 all Topics)

1. Take the NDG Linux Essentials course on the following topics:

* Chapter 13 Exam
* Chapter 14 Exam
* Chapter 15 Exam

1. Prepare the initial version of the report in electronic form:

* Title page, topic and purpose of the work
* Glossary of terms
* Answers to paragraphs 2.1-2.3 of the tasks for preliminary training

**Progress.**

* 1. Initial work in CLI mode in Linux Linux family:
  2. Start the VirtualBox virtual machine, select CentOS, and start it. Log in under the user: CentOS, login password: reverse ***(if you are performing LR in room 401)*** and lower the terminal.
  3. Start the Ubuntu\_PC virtual machine ***(if you are performing LR tasks through the netacad academy)***
  4. Start your Linux operating system ***(if you are running your own PC and have it installed)*** and start the terminal.
  5. Study all the examples of commands presented in the laboratory work of the ***NDG Linux Essentials course:***
* ***Lab 13: Where Data is Stored***
* ***Lab 14: Network Configuration***
* ***Lab 15: System and User Security***
  1. Create a table of commands studied in paragraph 2 of the work in the following form:

|  |  |
| --- | --- |
| Command name | Its purpose and functionality |
|  |  |
|  |  |
|  |  |
|  |  |

**Test questions**

1. What is the difference between the *ps --forest* and *pstree commands* ?
2. In which directories are the system settings stored?
3. In which directories can you find the programs installed in the system available to the user?
4. In which directories can you find installed system programs and programs designed to run by superuser?
5. Explain the purpose of the ping, ifconfig, traceroute commands.
6. What are the network interfaces in Linux called?
7. How to use the ifconfig command to display the parameters of only one network interface (for example, eth1) and not all?
8. Why aren't passwords explicitly stored in configuration files?
9. Why is it not recommended to perform daily operations using a root account?
10. What is the difference between the mechanisms for obtaining special privileges su and sudo?

**Conclusion:**