



LINNAEUS UNIVERSITY

Seminar 1

1DV020 – Server Administration

Jacob Lindehoff

16 januari 2015



1 Introduction

During this seminar, we will address the following topics:

- Server vs. Client
- Installation of various server operating systems
- Basic configuration
- Administrative Tools

2 Deadline

The seminar is on the **28th January 2015** and it is compulsory. If you cannot participate, it must be notified in advance and a written report of the seminar must be submitted no later than **3 days** after the seminar. The written report should contain detailed answers to all questions in the seminar.

3 Seminar Questions

3.1 General

1. What is it that makes a computer to a server (hardware)?
2. What is meant by a Server when talking about software?
3. What are the major historical milestones for:
 - a. Microsoft Windows Server
 - b. Linux
4. Describe the different types of System administrator roles and which you are most interested in working as?
5. You have a client who has 50 clients, they want a new file server.
 - a. How do you find appropriate hardware for the company?
 - b. What hardware do you recommend?
6. What is important to consider before installing a server operating system?
7. What is a HCL and why should it be checked before you install server operating system?

3.2 Microsoft Windows Server

8. Client Access Licenses
 - a. What are the different CALs that Microsoft has?
 - b. How do the different CALs work?
 - c. How would you do to choose the right CAL, in which scenarios does the different CALs fit?
9. Windows Server Core
 - a. What is Windows Server Core?
 - b. In which scenarios is a Server Core installation appropriate?
 - c. What advantages does a Windows Server Core installation compared with a “Server with a GUI”?

10. Windows Powershell and Windows Command Prompt
 - a. What is Windows Powershell?
 - b. What is the difference between Windows Command Prompt and Powershell?
 - c. Name and explain 10 useful command prompt tools/commands.
 - d. Name and explain 10 useful Powershell cmdlets.
11. How does Windows Advanced Firewall work?

3.3 Linux

12. There are a lot of different Linux distributions, choose three of the major distributions and answer the following questions:
 - a. What are the 5 biggest differences between the distributions?
 - b. What did you choose these distributions?
13. What should you consider when you are choosing a Linux distribution for a project?
14. What does the following Bash programs do, explain 2-3 [options] on each and how to use them:
 - a. man
 - b. echo
 - c. sudo
 - d. cat
 - e. ls
 - f. mv
 - g. cp
 - h. alias
15. Look into how to handle a texteditor such as nano(recommended), vim or emacs. You should be able to edit/create files and search for patterns.
16. How can you search for - and install software on your distribution?

17. Locate the logfiles of your Linux distribution does it have a specific folder that stores it or does it use a command such as `journalctl`?
18. What is a pipe? `'|'`
19. IPTables
 - a. What is IPTables?
 - b. How do you manage IPTables?
 - c. Name some basic IPTables commands?
 - d. What do the following two lines do together and separate. What would be the difference if we had `ACCEPT` instead of `DROP` using both settings?

```
sudo iptables --policy INPUT DROP
sudo iptables -A INPUT -m conntrack --ctstate ESTABLISHED,RELATED -j ACCEPT
```
 - e. What is the difference between inserting(`iptables -A [...]`) a rule and appending it? Does it matter where the rule is put?