



LINNAEUS UNIVERSITY

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# Seminar 1

1DV720 – Server Administration

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## 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 **25th January 2017** 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?