Mittuniversitetet
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Försättsblad Prov Original

Kurskod	Provkod	Tentamensdatum
DT149G	T101	2018-08-28
Kursnamn	Datateknik GR (B), Administration av UNIX-lika system	
Provnamn	Tentamen	
Ort	Sundsvall	
Termin	H18	
Ämne	Datateknik	

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Final Exam

DT149G Administration of UNIX-like systems

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Instructions

Carefully read the questions before you start answering them. Note the time limit of the exam and plan your answers accordingly. Only answer the question. The questions are *not* sorted by difficulty. Clearly show which answer you are giving your solution to. *Always motivate your answers and show your calculations.*

Time 5 hours.

Exam Aids Dictionary, Course Litterature [2] or latest edition.

Maximum points 30

Questions 10

Preliminary grades

The following grading criteria applies: E $\geq$ 30%, D $\geq$ 45%, C $\geq$ 60%, B $\geq$ 75%, A $\geq$ 90%. Scoring will be based on level of depth shown in your answer. To pass this exam you must have shown proficient knowledge in all the intended learning outcomes (ILO) covered in this exam. Each questions ILO affiliation is shown as (ILO: #). The grade limit given is preliminary per ILO. Final grade is set based on your performance on each individual ILO.

Covered ILO

This exam covers the following Intended Learning Outcomes (ILO)

- ILO: 1 – Administer and modify a UNIX-like system and its services
- ILO: 2 – Identify, implement and motivate choice of services
- ILO: 3 – Describe how the upstart process works in a UNIX-like system

Questions

The questions below are not given in any particular order.

(3p) 1. *(ILO: 1)* What is the usage of the fsck program?

(3p) 2. *(ILO: 1)* What is the usage of the setuid and setgid flags

(3p) 3. *(ILO: 1)* Give two reasons why you should build a custom kernel for your system.

(3p) 4. *(ILO: 2)* You are setting up a file server and want to ensure that only a few users are able to access and read the data that is stored in /backup, and even fewer should be able to write to that folder. How would you achieve this using NFS.

(3p) 5. *(ILO: 2)* Your new server is now working like a charm, however since you also removed the old file-server and let your new server handle this service as well. How can you with the help of DNS ensure that all clients will be able to access the new file-server without having to change the settings on all the PCs in the network (assume that they connect to the file-server using a host name instead of an IP-address).

(3p) 6. *(ILO: 2)* You realize that your company network, see Figure 1 on the following page is missing a backup scheme.

All the clients in each department stores the critical business data on their local department server. All emails are stored on the SMTP-server. You want to set up a sturdy backup scheme for this network, where all the data should be backed up to the SAMBA/CIFS file server.

How would you set this up?

(3p) 7. *(ILO: 2)* Compare FTP, NFS and SAMBA/CIFS in terms of how to define what to be shared.

(3p) 8. *(ILO: 3)* Give some different examples on how to create a file in the current directory from the UNIX command line.

(3p) 9. *(ILO: 3)* Discuss the usage and management of swap space in a UNIX-like environment.

(3p) 10. *(ILO: 3)* After a power outage you find that your file server have been rebooted, and that none of the hard drives you recently installed are mounted. Why is this? How can you fix it?

References

[1] *DT149G - Administration of UNIX-like systems.* Course version 1.0. 2015.

[2] Evi Nemeth et al. *UNIX and Linux system administration handbook.* 4th ed. Upper Saddle River, NJ: Prentice Hall, 2011. ISBN: 978-0-13-148005-6 (pbk. : alk. paper).

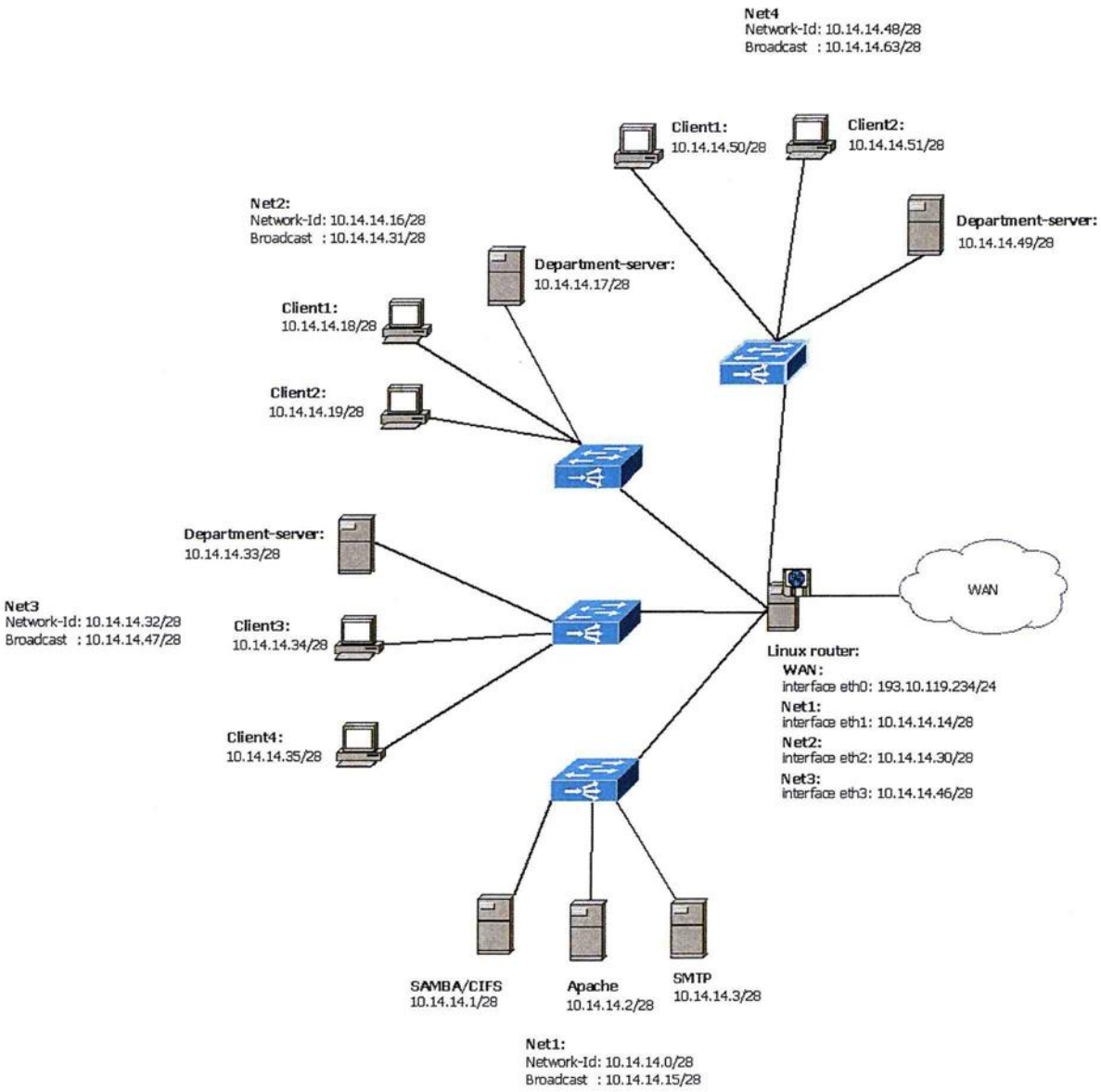

Figure 1: Network topology of a small company network