

Final Exam

DT149G Administration of UNIX-like systems

Lennart Franked

`lennart.franked@miun.se`

Phone: 010 142 8683

Nayeb Maleki

`nayeb.maleki@miun.se`

Phone: 010 142 8853

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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*) Describe the steps involved in building your custom kernel.
- (3p) 2. (*ILO: 1*) What UMASK values must be set to give the following default permission. Show your calculations. Reason around when/if the particular UMASK values are useful.
- 632
 - 521
 - 123
- (3p) 3. (*ILO: 1*) What information can you get from the following:
- | | | | | | | | | | |
|------------|---|------|------|----|---|-----|----|-------|-----|
| brw-rw— | 1 | root | disk | 8, | 0 | okt | 12 | 08:18 | sda |
| crw-rw-rw- | 1 | root | tty | 5, | 0 | okt | 12 | 08:08 | tty |
- What type of files are shown? What is the difference between them?
- (3p) 4. (*ILO: 2*) For FTP, NFS and SAMBA/CIFS, how do you go about to restrict user access, so that users that belong to the group 'remote' are allowed to read and execute files in your /share folder.
- (3p) 5. (*ILO: 2*) Motivate why it is necessary to reverse the order for the IP-address when setting up reversed DNS. Discuss the scenario where an organisation might not have a full /24 subnet.
- (3p) 6. (*ILO: 2*) Compare three methods for taking backups of the files on your system. For each method, name one scenario when it is *not* a suitable backup method.
- (3p) 7. (*ILO: 2*) Explain all the necessary steps you have to take to set up a fully working e-mail server.
- (3p) 8. (*ILO: 3*) In laboratory assignment three, you experimented with different ways of running a script from the terminal. Compare the different methods, and give examples of when each method is useful, in comparison to the others.
- (3p) 9. (*ILO: 3*) What is the purpose of the ramdisk in the boot process?
- (3p) 10. (*ILO: 3*) What is happening in the system when you are changing between different runlevels?

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).
- [3] Evi Nemeth et al. *Unix and Linux system administration handbook*. Fifth edition. Boston: Addison-Wesley/Pearson, 2017. ISBN: 9780134277554.