Mittuniversitetet
MID SWEDEN UNIVERSITY

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 $\geq 9p$, D $\geq 13p$, C $\geq 18p$, B $\geq 22p$, A $\geq 27p$. 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: #).

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)* Name at least five usable terminal commands. Give usage examples.

(3p) 2. *(ILO: 1)* What is the difference between loading a driver as a module, and building it directly into the kernel? Reason between the positive and negative parts of both methods of adding a driver.

(3p) 3. *(ILO: 1)* Permissions are a very intricate part of file access in UNIX-like systems, to change the permissions on a file you commonly use the command `chmod` followed by by the desired permission. You can set the permission using both numerals or letters. Explain how they correlate to each other.

(3p) 4. *(ILO: 1)* Your new server is up and running in production. You realized though that you forgot to add a vital security patch to the kernel. However you do not want to restart your server right now, since the company's web site is highly visited at the moment. You do know that at 01:00 in the night no one visits your site. How can you make sure that the server will restart this time tonight without

(3p) 5. *(ILO: 2)* Explain how SPF and DKIM works, and what their purpose are.

(3p) 6. *(ILO: 2)* Reason about syslog. How does it work, what are some good qualities with this style of log managing, and what problems can it lead to?

(3p) 7. *(ILO: 2)* Explain the relationship between UA, MTA, MDA and AA

8. *(ILO: 3)* I can see something called "load average" when checking performance and settings in my computer system:

(1p) (a) What's the use of that information?

(2p) (b) Why is it three values and what's the meaning of them because they seem to be different?

(3p) 9. *(ILO: 3)* In lab 2 you explained how GID and UUID relates to users in the system, but what is the purpose of /etc/skel ?

(3p) 10. *(ILO: 3)* Explain the process of booting a Linux system

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).