Försättsblad Prov Original

<table>
<thead>
<tr>
<th>Kurskod</th>
<th>Provkod</th>
<th>Tentamensdatum</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT149G</td>
<td>T101</td>
<td>2018-08-28</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Kursnamn</th>
<th>Datateknik GR (B), Administration av UNIX-liko system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provnamn</td>
<td>Tentamen</td>
</tr>
<tr>
<td>Ort</td>
<td>Sundsvall</td>
</tr>
<tr>
<td>Termin</td>
<td>H18</td>
</tr>
<tr>
<td>Åmne</td>
<td>Datateknik</td>
</tr>
</tbody>
</table>
Final Exam

DT149G Administration of UNIX-like systems

Nayeb Maleki
nayeb.maleki@miun.se
Phone: 010 142 8853

Lennart Franked
lennart.franked@miun.se
Phone: 010 142 8683

2018-08-28

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.


Maximum points 30

Questions 10

Preliminary grades

The following grading criteria applies: E ≥ 30%, D ≥ 45%, C ≥ 60%, B ≥ 75%, A ≥ 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 startup process works in a UNIX-like system
Questions

The questions below are not given in any particular order.

1. (ILO: 1) What is the usage of the fsck program?
2. (ILO: 1) What is the usage of the setuid and setgid flags
3. (ILO: 1) Give two reasons why you should build a custom kernel for your system.
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?
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).
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?
7. (ILO: 2) Compare FTP, NFS and SAMBA/CIFS in terms of how to define what to be shared.
8. (ILO: 3) Give some different examples on how to create a file in the current directory from the UNIX
   command line.
9. (ILO: 3) Discuss the usage and management of swap space in a UNIX-like environment.
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

Figure 1: Network topology of a small company network