

Advanced Operating System with UNIX Exam

Christian Kniep

24. September 2010

UNIX Test

If there is now value in braces then you will earn 1 point per default

UNIT 1 Review OS

1. What is the purpose of an OS (operating system)?
2. What is the central thing most operating systems have in common?
Even if they called it different.

UNIT 2 File System

1. Please draw an example file-system tree, with at least two standard directorys and one file.
2. What is the swap for?
3. Give a short explanation about the connections between 'Blocks', 'IN-odes', 'Filenames'.
4. Why do we need fsck (File System Check)?

UNIT 3 Processes

1. Explain at least three of this process-attributes:
 - UID
 - EUID
 - PID
 - PPID
 - GID
 - PRI
2. What is a child?
3. What is a zombie State?
4. Explain at least three of the following interprocess communication techniques:
 - Pipes
 - Named Pipes
 - Message queues
 - Semaphores
 - Shared Memory
 - Sockets

UNIT 4 Begining with UNIX

1. Where do you find the central file which holds the basic user information?
2. Why is it clever to have permissions?
3. What is the difference between the output redirection with '>', '>>', '1>' and '2>'?
4. What is the purpose of the environment?

UNIT 5 UNIX File System

1. Write down the commands to... (the names are free to choose)
 - create a directory in your home-directory (make sure you are there)
 - create a file within the created directorys
 - rename the file
 - delete the created directory
2. What are the three types of UNIX files?
3. How to change the permissions of file to the following:
 - (a) `rxwxrw-rw-`: \$
 - (b) `rxw-----`: \$
 - (c) `rw-r--r--`: \$
4. What is the umask?

UNIT 6 Managing Data files in UNIX

1. What is the difference between 'ls' and 'ls -l'?
2. Give a short description of the different blocks of this output:

```
-rwxr-xr-x 2 test test 296 2010-08-03 13:58 file
```
3. PatternMatching:
 - Please list for all files that starts with 'file'.
 - Please list all files that have **one** unknown character in front of 'file' (e.g. '1file').
 - Please create a listing command which includes the files 'file.txt', 'file.doc' and 'file.cfg'.
4. How could you locate files with various search criterias?

UNIT 7 Popular Tools in UNIX

1. Calculate '1+4' with bc (you start in bash and could use a pipe or the command itself).
2. Calculate '2/1' with bc (you have to set one position after decimal point)
3. How could you get the current time and date.
4. What information do you get if you type 'whoami'?
5. What are the two ways to get information about a command and what is the difference?