Access permissions and command find.

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Contents

Discussion of homework

- Use the output from the command ps -eo user,rss,comm.
  How to print the following information for every user that is working
  on the server?

  user_name, nproc=number_of_running_processes,
  rss=size_of_RSS_memory_alocatted_by_these_processes

- Example of output

```
$> ps -eo user,rss,comm | nawk -f ps4.awk

User               NProc       RSS (KB)
--------------------------------
kolensta               2          28888
root                  94         689168
trdlicka               4          24448
klamovik               4          38112
...
```

Discussion of homework

User accout

- What information must the OS remember about every user?

- Where the previous information are stored?

Access permissions

- How to determine effective and real user identity of your shell?
- How to determine effective and real group identity of your shell?
- How to determine the owner and owner group of the file /usr/bin/passwd?
- How to print only access permissions of the directory /etc? What is the meaning of these permissions?

Access permissions

- Login to server `fray1.fit.cvut.cz`.
- What permissions has the directory `/bin` and what does it mean?

Access permissions

- Create the following directory structure in your home directory and setup the same permissions (files passwd and date are copies of /etc/passwd and /bin/date, respectively). You and your primary group will be the owner and owner group.

```
dr-x------ user group ps1-09/
dr-x------ user group ps1-09/A
-r-x------ user group ps1-09/A/date
-r-x------ user group ps1-09/A/passwd
```

Access permissions

Access permissions

- What minimal permissions (minimal sum of permission weights) must be set on files or directories, such that you can successfully execute the following commands?

  - `ls -ld ~/ps1-09/A`

  - `ls ~/ps1-09/A`

  - `ls -l ~/ps1-09/A`

Access permissions

- `ls -l ~/ps1-09/A/passwd`

- `cat ~/ps1-09/A/passwd`

- `echo "aaaaa" >> ~/ps1-09/A/passwd`

Access permissions

- `echo "bbbbb" > ~/ps1-09/A/passwd`

- `~/ps1-09/A/date`

- `rm ~/ps1-09/A/passwd`

Default access permissions

- What access permissions will have new created directory and file? Why?

- What must be done to newly created files/directories should have automatically the following access rights (don't use command chmod)?

  - directory: rwx --- ---   file: rw- --- ---

  - directory: rw- -w- r--   file: rw- -w- r--

Command `find`

- How to print only the number of regular files, which are in the directory `/usr/bin` (recursively) on the standard output?
- How to print only the number of symbolic links, which are in the directory `/usr/bin` (recursively) on the standard output?
- How to print only the number of regular files and symbolic links, which are in the directory `/usr/bin` (recursively) on the standard output?

Command `find`

- Create files and directory by the following commands.

  ```
  mkdir -p A/B/C
  ```

  ```
  touch {A,A/B,A/B/C}/\
  {,a,b,c}{,k,l,m}{,x,y,z}.{c,cpp,tar,gz,txt}
  ```

1. How to print names of regular files, which have a suffix of length 3. (eg. abc.txt or xz.cpp)?
2. How to print names of regular files, which consist of a prefix of length 2 and the suffix .c or .cpp (eg. ab.c or xz.cpp)?
3. How to remove files found in question 1?

Command `find`

- How to print names of regular files from your home directory (recursively), that were modified during today, and how to verify the result by the command `stat`?

- How to print names of regular files from your home directory (recursively), that were modified during last 3 days, and how to verify the result by the command `stat`?

- How to print only names of all regular files, which have set write permission for owner or exec permission for other and are located in the directory `/etc` (recursively)? For every such file run command `ls -l` to verify the permissions.

Command `find`

- How to print only names of regular files, which are shell scripts and are located in the directory /usr/bin (recursively), on the standard output?

  1. Hint: The script is the file with the following first line

     ```
     #! /bin/sh
     ```

  2. Hint: Use the command `file`.

- How to print all hard links of the file /etc/init.d/pppd in directory /etc (recursively) on the serve fray1.fit.cvut.cz.

Homework

- How to print names of regular files from your home directory, that have size bigger then 2 megabytes, and how to verify the result by the command `stat`?

- How to print names of all files from your home directory, that were accessed 7 days ago, and how to verify the result by the command `stat`?

- How to print names of regular files from the directory `/tmp`, that you can read, and how to verify the result by the command `ls`?