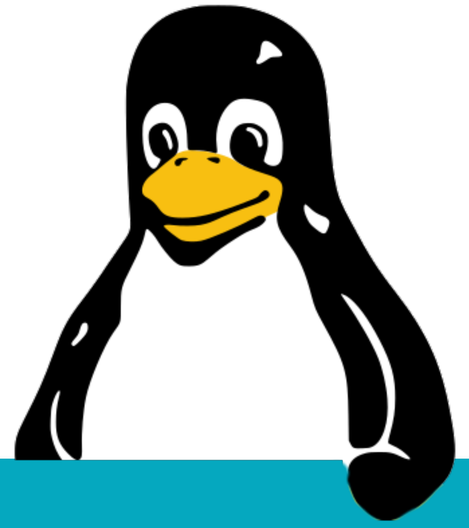
Linux, day 16



Objectives covered

Objective	Summary	Boek
4.4	Troubleshoot user and permission issues	22
4.5	Troubleshoot common issues	6

LAB: User issues

Verbose logging on SSH

- Setup a user account with password.
- SSH to localhost as that user, but add "-v".
  - Read the detailed logging. What's SSH doing?
  - Enter the password incorrectly, then correctly.
- Setup SSH key auth for this test-user, then repeat.
  - Does the logging show which keyfile is used?

Verbose logging on SSH

- Let's make it fail.
  - Replace the client-side key pair,
  - But do NOT fix the *authorized_keys* file.
  - Can you spot the errors in "*ssh -v .....*"?

Failed actions

- Do a few failed logins, on SSH, FTP, console. Whatever.
- Do a few failed sudo attempts.
- Check the relevant log files in */var/log* and *journalctl*.

Variable scope

- In your running shell, do "*TESTVAR=testing".*
- Does it show up with "*echo $TESTVAR*"?
- Now run "*sh*" in that shell.
  - Does "*echo $TESTVAR*" work now?
- Exit "*sh*", then run "*export TESTVAR*". Start "*sh*" again.
  - Does "*echo $TESTVAR*" work now?

Mess up your $PATH

- Run: *unset PATH*
- Can you run "*ls*" or other commands?
  - Which commands CAN you run without problems?
  - How would you run "*ls*" in this situation?
- What's the quickest way to restore your $PATH?
  - Refer to the next slide :)

How is $PATH set?

- It is combined from many sources:
  - */etc/login.defs*
  - *pam_env*
  - */etc/environment, ~/.environment*
  - */etc/profile, ~/.profile*
  - */etc/bashrc, ~/.bashrc*

See: this Stack Exchange thread

LAB: Application issues

Downgrading OpenSSL: APT

- Check the current and available versions:
  - *apt update*
  - *apt list -a*
  - *apt-cache policy openssl*
- Do not remove OpenSSL, but downgrade.
  - *apt install openssl=<older version>*

Downgrading OpenSSL: YUM

- Check the current and available versions:
  - *yum --showduplicates list openssl | expand*

- Do not remove OpenSSL, but downgrade:
  - *yum install openssl-<version>*

LAB: Hardware issues

"Hidden" data

- You may run into disk usage that you cannot trace!
  - Let's do a demo.
  - You will need a spare volume to mount.
    - Like */dev/sdc* from our previous labs...

- Take a note of your current usage on /

"Hidden" data (2)

- Make a directory, "*/testdir/*".
- Run:

```
$ sudo dd if=/dev/random \
  of=/testdir/testfile bs=10M count=100
```

- Check your disk usage. It should have increased.

"Hidden" data (3)

- Now take the extra storage device (like */dev/sdc*),
  - Make a file system on it, if there isn't one yet.
  - Now mount the file system on */testdir*.

- Compare "*df*" for / and */testdir*. Also check with "*du*".
  - The big, hidden file is still there, but invisible.

Closing

Homework

- Repeat / go over lesson 008.
  - Freshen up your Vagrant and Docker.

- Re-read chapters 28, 29 and 30.

Homework

- Reading:
  - CompTIA Linux+ Exam Objectives

- Go do:
  - One or more CertDepot "daily tasks".
  - Or the more advanced exercises (see day 11).

Reference materials

Resources

- 7 Great apps to view disk usage
- CompTIA Linux+ Exam Objectives