

# Linux, day 4



# LAB: The shell environment



# Assignment

- Adjust your account's "*~/.bashrc*".
  - Add "*/opt/test*" to *\$PATH*.
- Make the "*/opt/test*" directory.
  - Copy the "*ls*" binary to "*/opt/test/testls*".
- Do a new SSH login (or start a new Bash).
  - Can you now run "*testls*"?

# Solution

```
$ echo 'export PATH=$PATH:/opt/test' \  
>> ~/.bashrc
```

```
$ sudo mkdir -p /opt/test
```

```
$ sudo cp -p /usr/bin/ls /opt/test/testls
```

```
$ . ~/.bashrc; which testls
```

# LAB: Shell scripting: a start



# LAB: Create a simple script

- Create a script which:
  - Runs ;)
  - Reads a name from the first, passed parameter.
  - Asks for a greeting interactively (with *read*).
  - Outputs a greeting to the name.

# Example

```
$ ./greeting.sh Tess  
How would you like to be greeted? Hello  
Hello Tess
```

# Solution

```
#!/bin/bash  
NAME=$1  
  
read -p "What greeting would you like? " GREET  
  
echo "${GREET} ${NAME}"
```



# Solution

```
$ chmod +x greeting.sh
```

```
$ ./greeting.sh Tess
```

```
What greeting would you like? Hello
```

```
Hello Tess
```

# LAB: Shell scripting: I/O & Files



# Assignment 1

- Find all files with "passwd" in their name.
- Find all files, literally and exactly called "passwd".
- Find all world-writable files.

# Assignment 2

- SSH from one VM to the other,
- Use a HEREDOC to run these on the other VM:
  - *touch /tmp/foobar*
  - *ls /tmp*
  - *echo \$(hostname) > /tmp/foobar*
  - *cat /tmp/foobar*

# Solution

```
# passwd in the name:  
$ locate passwd  
$ find / -type f -name "*passwd*"   
  
# name is literally passwd:  
$ locate -b -r ^passwd$  
$ find / -type f -name "passwd"
```

# Solution

```
$ find / -perm -o+w -type f
```

# Solution

```
$ ssh localhost << EOF
touch /tmp/foobar
ls /tmp
echo \$(hostname) > /tmp/foobar
cat /tmp/foobar
EOF
```

# Closing





# Homework

- Reading:
  - Chapter 4: Processing and analyzing text
  - Chapter 25: Shell scripting
- Practice exam
  - Link will be shared in Teams.

# Homework

- Finish the user create/remove script.

# Other resources

- [GNU.org Bash manual](#)
- [Exercism](#): gamified learning programming.
  - 80+ assignments for Bash.
- [TLDP.org](#) has some [fun assignments](#).

# Reference materials



# Resources

- [Creating shell scripts in Enterprise Linux](#) (PluralSight)
- [A roundup of 15 popular Linux shells.](#)
- [Linux shell metacharacters](#)
- [Bash globbing tutorial](#)
- [Bash read command](#)
- [Bash getopts example](#)

# Resources

- [Really in-depth on pipes, forks and more](#)
- [Testing file characteristics in Bash](#)
- [Why you don't read lines with "for"](#)
- [An excellent, in-depth study guide for shell scripting](#)
- [Practice more, take the challenge!](#)
- [Or try Tutorials Ground](#)

# Resources

- [Exercism](#): gamified learning programming.
- [TLDP.org](#) has some [fun assignments](#).
- [Arithmetic in Bash](#)
- [GNU.org Bash manual](#)
- [Shell Scripting tutorial for beginners](#) (YouTube)
- [Pure Bash Bible](#)