

NET2003: Linux Administration

Lab 05: Bash Scripting

Lab Objectives:

After this lab students should be able to:

- ✓ Write a bash script
- ✓ Use different Unix utilities as grep, awk, cut, tr to extract information from files
- ✓ Create a hardware and system profile

Part B: Bash Shell Scripting

You are to write a small shell script **sysprofile** to collect hardware, software and system information

sysprofile should:

- ▶ Be properly installed, so it can be executed from any directory without having to specify and absolute / relative path to it
- ▶ Be run only the user root. Any other user should get a **Permission denied** error message
- ▶ Accept different options, the traditional switches - and whitespace are optional
- ▶ Options can be combined in any order
- ▶ Accept the following command options:

-s: **system information** operation

sysprofile will generate a report with the following information:

- ▲ Hostname
- ▲ kernel version
- ▲ Distribution used
- ▲ Time since the system has been up, in days, hours and minutes

```
root@luna:~# ./sysprofile.sh -s
Hostname:  luna
Kernel:    3.5.0-47-generic
Distro:    Ubuntu12.04.5
Running:   17:45
```

-h: **hardware information** operation

sysprofile will generate a report with the following information:

- ▲ Number of CPUS in the system
- ▲ CPU model and speed
- ▲ Total amount of memory in the system in MB
- ▲ Total amount of free and used memory in MB

```
root@luna:# ./sysprofile.sh -s
Num CPUs:      4
CPU Model:     Intel(R) Core(TM) i5-4200U CPU @ 1.60GHz
RAM:           7510 MB
Free RAM:      2640 MB
```

-n: **network information** operation

sysprofile will generate a report with the following information:

- ▲ For each NIC
 - ▲ NIC card name,
 - ▲ IP address and netmask. If an IP has been assigned, it should display NO_IP instead.
 - ▲ MAC address
- ▲ Routing table

```
root@Luna:~# sysinfo -n
NIC Cards:  4
lo          127.0.0.1/8           00:00:00:00:00:00
wlan0       192.168.1.61/24             7c:7a:91:27:1d:20
lxcbr0      10.0.3.1/24                 62:b6:fc:5a:7a:c8
virbr0      192.168.122.1/24           9a:19:64:b1:a8:e5

Destination  Gateway      Genmask      Flags  MSS Window  irtt  Iface
0.0.0.0      192.168.1.1  0.0.0.0      UG     0 0        0     wlan0
10.0.3.0     0.0.0.0     255.255.255.0  U     0 0        0     lxcbr0
169.254.0.0  0.0.0.0     255.255.0.0   U     0 0        0     wlan0
192.168.1.0  0.0.0.0     255.255.255.0  U     0 0        0     wlan0
192.168.122.0 0.0.0.0     255.255.255.0  U     0 0        0     virbr0
```

-a: **all information** operation

sysprofile will generate a report with the following information above

-f: **file report** operation

sysprofile will generate a report using a unique file name