

Last login: Wed Mar 18 23:16:25 on ttys001  
192-168-1-103:~ keziataufikrachmat\$ ssh -i  
busa8090\_s1\_2020\_45530226.pem ubuntu@ec2-13-211-41-97.ap-  
southeast-2.compute.amazonaws.com  
Welcome to Ubuntu 18.04.2 LTS (GNU/Linux 4.15.0-1032-aws x86\_64)

- \* Documentation: <https://help.ubuntu.com>
- \* Management: <https://landscape.canonical.com>
- \* Support: <https://ubuntu.com/advantage>

System information as of Wed Mar 18 12:18:30 UTC 2020

System load:	0.0	Processes:	101
Usage of /:	25.3% of 7.69GB	Users logged in:	1
Memory usage:	43%	IP address for eth0:	172.31.28.8
Swap usage:	0%		

\* Latest Kubernetes 1.18 beta is now available for your laptop,  
NUC, cloud  
instance or Raspberry Pi, with automatic updates to the final GA  
release.

`sudo snap install microk8s --channel=1.18/beta --classic`

\* Multipass 1.1 adds proxy support for developers behind enterprise  
firewalls. Rapid prototyping for cloud operations just got  
easier.

<https://multipass.run/>

Get cloud support with Ubuntu Advantage Cloud Guest:  
<http://www.ubuntu.com/business/services/cloud>

- \* Canonical Livepatch is available for installation.
  - Reduce system reboots and improve kernel security. Activate at:  
<https://ubuntu.com/livepatch>

116 packages can be updated.  
3 updates are security updates.

\*\*\* System restart required \*\*\*

Last login: Wed Mar 18 12:16:35 2020 from 110.175.70.80  
ubuntu@ip-172-31-28-8:~\$ vi foo  
ubuntu@ip-172-31-28-8:~\$ chmod u+x foo  
ubuntu@ip-172-31-28-8:~\$ vi newer.sh  
ubuntu@ip-172-31-28-8:~\$ chmod u+x newer.sh  
ubuntu@ip-172-31-28-8:~\$ cat newer.sh  
#!/bin/sh  
ls -t | head -n1  
ubuntu@ip-172-31-28-8:~\$ vi goo  
ubuntu@ip-172-31-28-8:~\$ chmod u+x goo  
ubuntu@ip-172-31-28-8:~\$ ./newer.sh goo  
goo

```

ubuntu@ip-172-31-28-8:~$ ./newer.sh foo goo
goo
ubuntu@ip-172-31-28-8:~$ vi hoo
ubuntu@ip-172-31-28-8:~$ chmod u+x hoo
ubuntu@ip-172-31-28-8:~$ ./newer.sh foo goo hoo
hoo
ubuntu@ip-172-31-28-8:~$ vi test_me.sh
ubuntu@ip-172-31-28-8:~$ cat test_me.sh
#!/bin/sh
input="$1"
if [ "$input" != "" ]
then
    echo "This is a TEST"
else
    echo "This is NOT a test"
fi
ubuntu@ip-172-31-28-8:~$ chmod u+x test_me.sh
ubuntu@ip-172-31-28-8:~$ ./test_me.sh foo
This is a TEST
ubuntu@ip-172-31-28-8:~$ ./test_me.sh
This is NOT a test
ubuntu@ip-172-31-28-8:~$ ./test_me.sh goo
This is a TEST
ubuntu@ip-172-31-28-8:~$ ./test_me.sh hoo
This is a TEST
ubuntu@ip-172-31-28-8:~$ cd ~/bin
ubuntu@ip-172-31-28-8:~/bin$ curl https://www.staff.hs-mittweida.de/~wuenschi/data/media/compbiolbook/chapter-10-shell-programming--
time-signal.sh > time-signal.sh
% Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                Dload  Upload  Total  Spent
Left  Speed
100  224  100    224    0    0   180      0  0:00:01  0:00:01
--:--:--   180
ubuntu@ip-172-31-28-8:~/bin$ cat time-signal.sh
#!/bin/bash
# save as time-signal.sh
# gives a time signal every hour when connected to cron
time=$(date +%I)
count=0
while test $count -lt $time; do
    echo -e "\a"
    sleep 1 # sleep for one second
    count=$((count+1))
done

```

ubuntu@ip-172-31-28-8:~/bin\$ Question\_3B="No because the while..do function is a loop. Loops execute one and more actions again and again so we always need the information back to execute the loop. For this reason, we need to have the reference count preceded by a dollar sign to save the information."

ubuntu@ip-172-31-28-8:~/bin\$ Question\_3C="Because expr command is able to take numerous arguments to execute it and print the result"

by default. So in this case, by executing `count=$(expr $count + 1)`, we are just passing the argument to the `expr` command. That's why it will print the same output as `count=${count+1}` expression does.

```
> "
```

```
ubuntu@ip-172-31-28-8:~/bin$ Question_3D="Because the dollar sign  
functions as the anchor of the loop, matching the end of the line.  
On the other hand, ( ) enables the expression to memorize the match  
for the loop. This is why count=$((count+1)) will give the same  
output as count=${count+1}."
```

```
> "
```

```
ubuntu@ip-172-31-28-8:~/bin$ vi time-signal.sh
```

```
ubuntu@ip-172-31-28-8:~/bin$
```

```
ubuntu@ip-172-31-28-8:~/bin$ chmod u+x time-signal.sh
```

```
ubuntu@ip-172-31-28-8:~/bin$ ./time-signal.sh
```

```
ubuntu@ip-172-31-28-8:~/bin$ cat time-signal.sh
```

```
#!/bin/bash
```

```
# save as time-signal.sh
```

```
# gives a time signal every hour when connected to cron
```

```
time=$(date +%I)
```

```
min=$(date +%M)
```

```
count=0
```

```
while test $count -lt $time; do
```

```
    sleep 3 # sleep for three seconds
```

```
    count=$((count+1))
```

```
if (($min >= 15 && $min < 30)); then
```

```
    echo -e "\a"
```

```
elif (($min >= 30 && $min < 45)); then
```

```
    echo -e "\a"; echo -e "\a"
```

```
elif (($min >= 45 && $min < 60)); then
```

```
    echo -e "\a"; echo -e "\a" ; echo -e "\a"
```

```
else
```

```
    exit
```

```
fi
```

```
done
```

```
ubuntu@ip-172-31-28-8:~/bin$
```