南昌大学实验报告

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专业班级：**网络工程161班**

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课程名称：**云计算**

实验项目名称

Lab 4 - Live Migration Massively

实验目的

- Understanding the basic techniques for VM migration
- Migrate containers to test your migration skill
- Understanding the concept of checkpoint and restore
- Successfully migrate multiple images either one by one or in a batch

实验基础

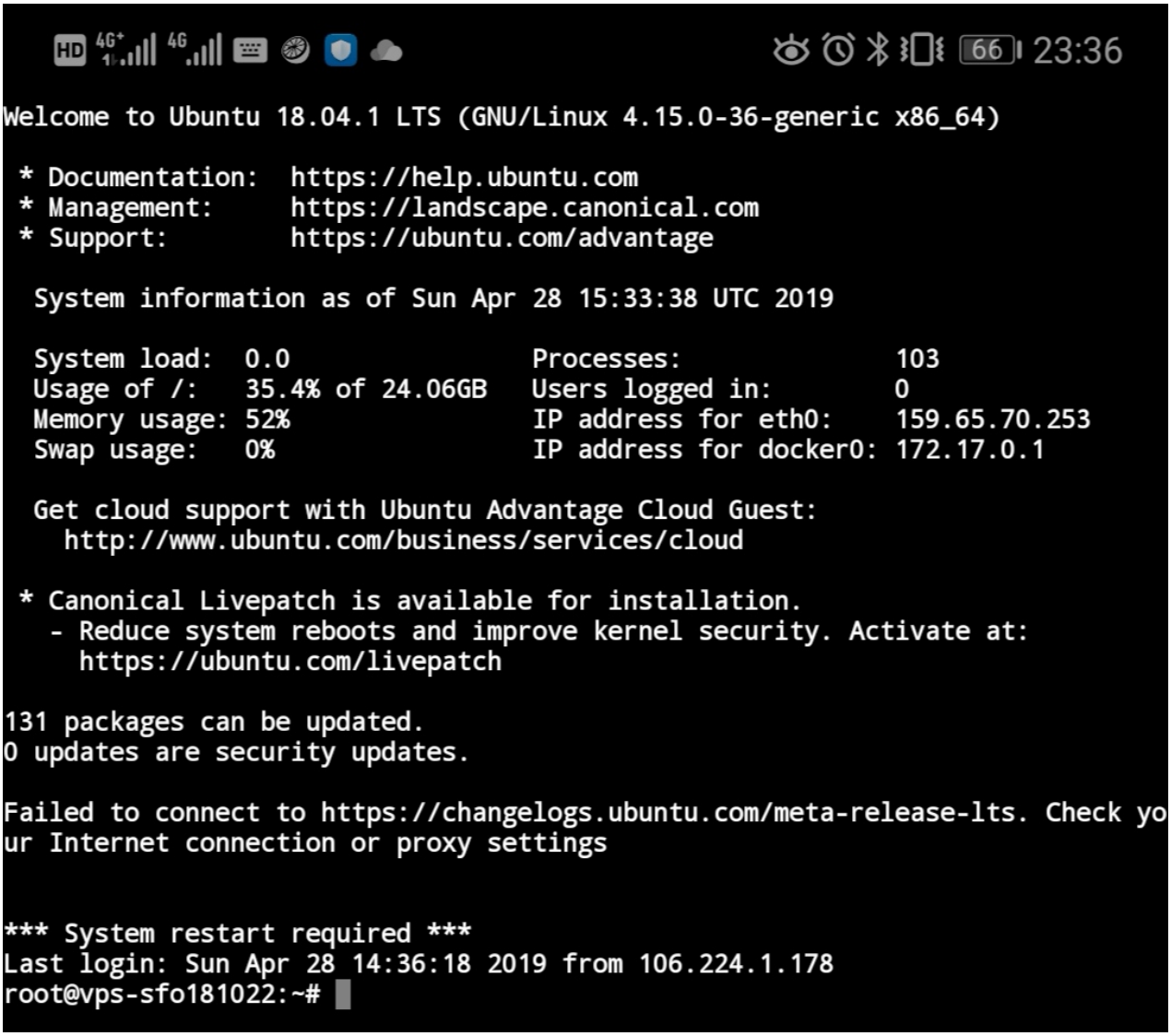
- After migrate your first VM, you now need to move to a place with rich resource
- Migrating many docker images and doing it lively until your system halts
- Analysis why it halts and understand the idea of resource bottleneck

实验步骤

- Learn to do live migration in docker
- Using Checkpoint and Restore (CRIU) tool in docker to do this job
- https://criu.org/Live_migration is your source to check

- Ask one of our friend/roommate and migrate your Golang job (with your ID or name) to his/her place
- Measure the duration of migration and collect all other runtime statistics
- **New stuff: Write a script to move docker image automatically**

0. 连接云端服务器



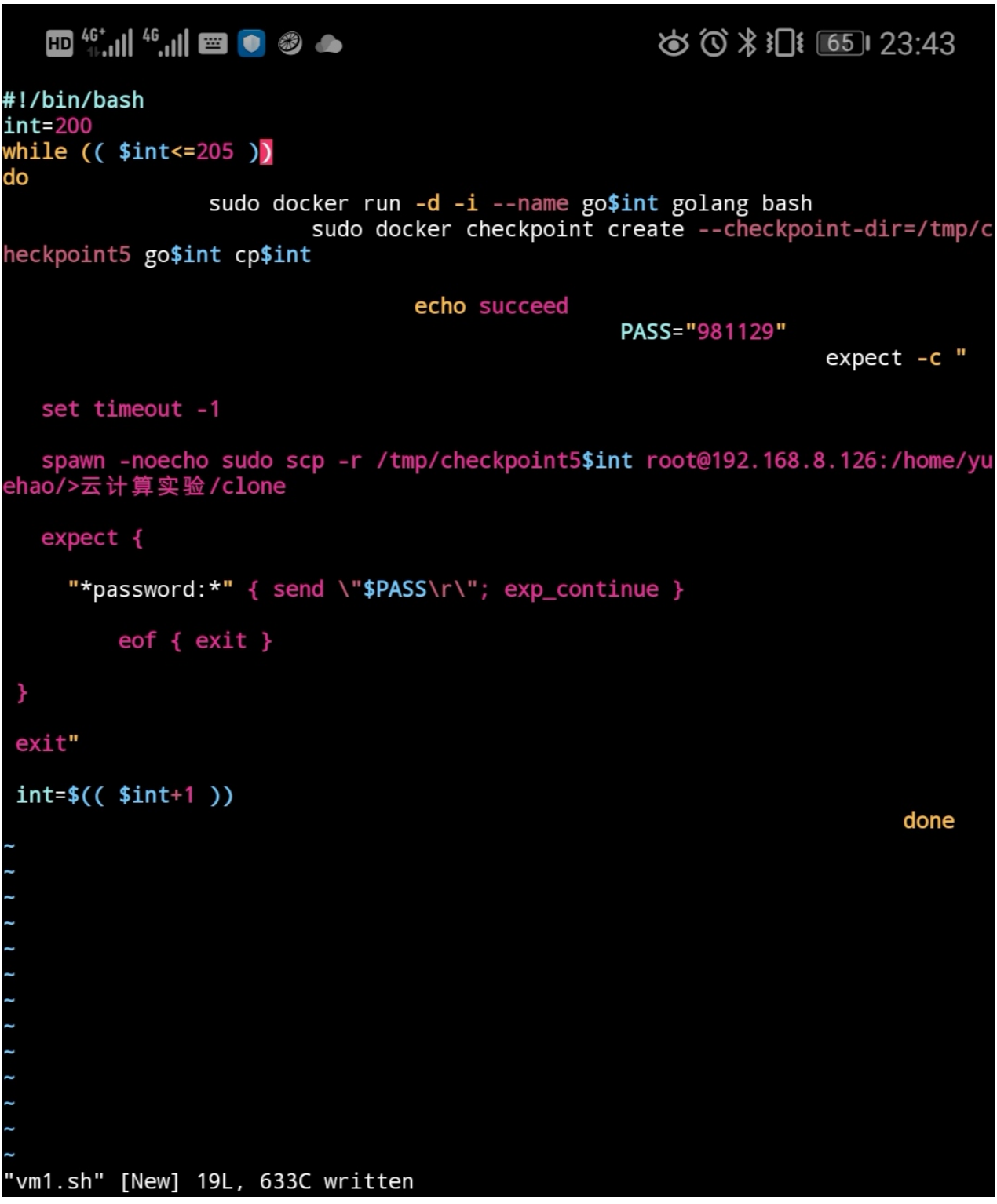
1. 启动 docker 服务。

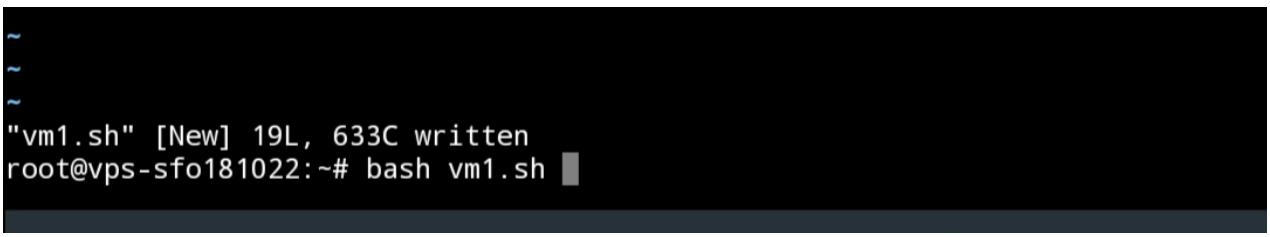
2. 检查CRIU是否安装成功，正常情况下会显示looks good。

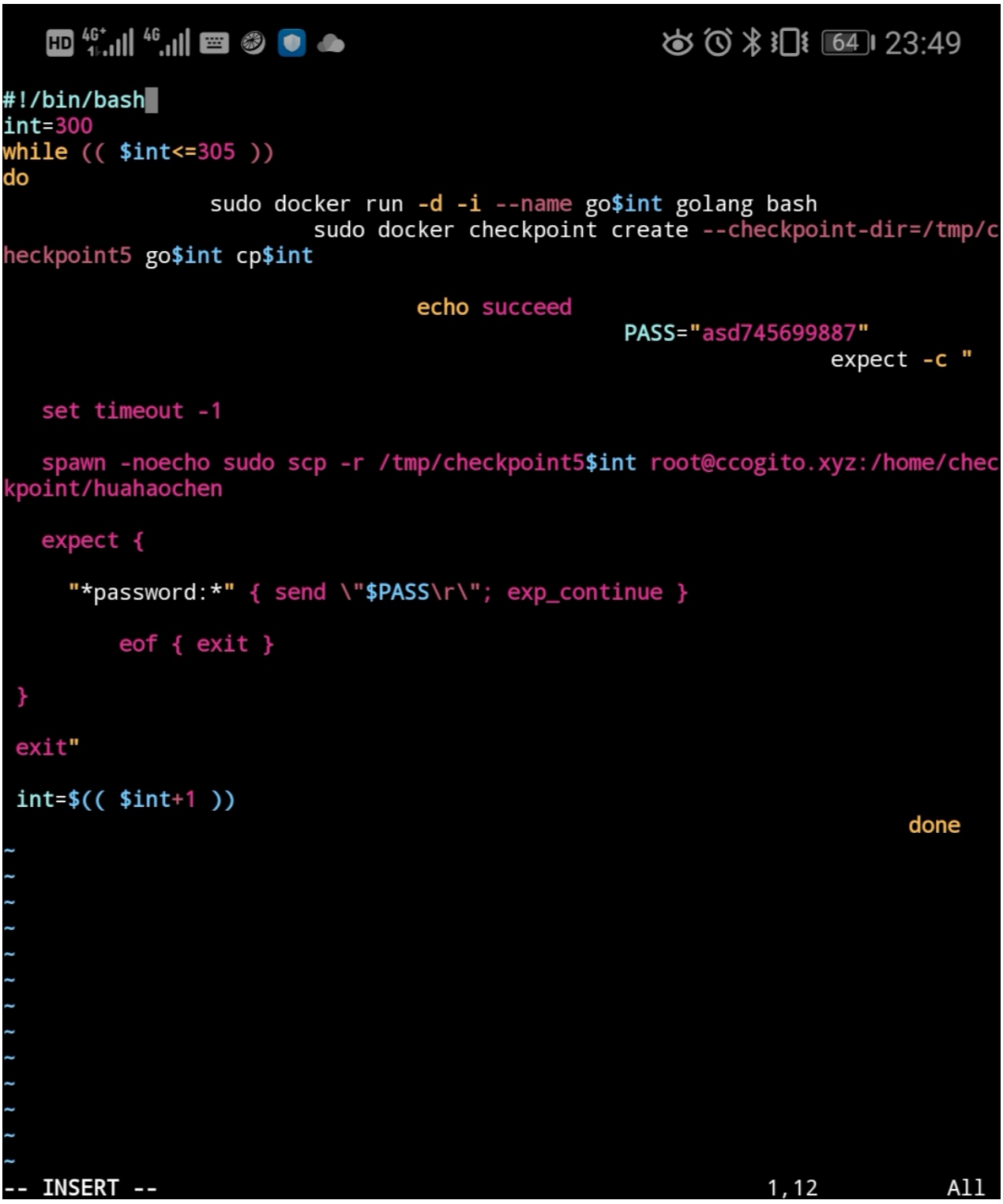
3. 编写批量生成 golang 容器及其检查点以及将检查点文件传至目标主机的脚本 vm1.sh。

```
>#!/bin/bash
int=300
while (( $int<=305 ))
do
    sudo docker run -d -i --name go$int golang bash
    sudo docker checkpoint create --checkpoint-dir=/tmp/checkpoint5 go$int cp$int

    echo succeed
            PASS="asd745699887"
            expect -c "
            set timeout -1
spawn -noecho sudo scp -r /tmp/checkpoint5$int root@ccogito.xyz:/home/checkpoint/huahaochen
expect {
 "*password:*" { send \"$PASS\r\"; exp_continue }
eof { exit }
}
exit"
int=$(( $int+1 ))
done
```


23:43
#!/bin/bash
int=200
while (($int<=205))
do
sudo docker run -d -i --name go$int golang bash
sudo docker checkpoint create --checkpoint-dir=/tmp/checkpoint5 go$int cp$int
echo succeed
PASS="981129"
expect -c "
set timeout -1
spawn -noecho sudo scp -r /tmp/checkpoint5$int root@192.168.8.126:/home/yuehao/>云计算实验/clone
expect {
"*password:*" { send \"$PASS\r\"; exp_continue }
eof { exit }
}
exit"
int=$(($int+1))
done
"vm1.sh" [New] 19L, 633C written


"vm1.sh" [New] 19L, 633C written
root@vps-sfo181022:~# bash vm1.sh


23:49
#!/bin/bash
int=300
while (($int<=305))
do
sudo docker run -d -i --name go$int golang bash
sudo docker checkpoint create --checkpoint-dir=/tmp/checkpoint5 go$int cp$int
echo succeed
PASS="asd745699887"
expect -c "
set timeout -1
spawn -noecho sudo scp -r /tmp/checkpoint5$int root@ccogito.xyz:/home/checkpoint/huahaochen
expect {
"*password:*" { send \"$PASS\r\"; exp_continue }
eof { exit }
}
exit"
int=$(($int+1))
done
-- INSERT -- 1,12 All

4. 运行脚本 vm1.sh。

5. 编写批量还原接受到的检查点文件的脚本 vm2.sh。

```
>#!/bin/bash

echo "请输入对方目录的地址"
read DIR
for f in $(ls $DIR)
do
    int=1
    sudo docker create --name go-clone$int golang bash
```

```
    docker start --checkpoint-dir=$DIR --checkpoint=$f go-clone
    int=$(($int+1))
done
```

~

6. 运行脚本 vm2.sh

实验数据或结果

在上述步骤中

实验思考

参考资料