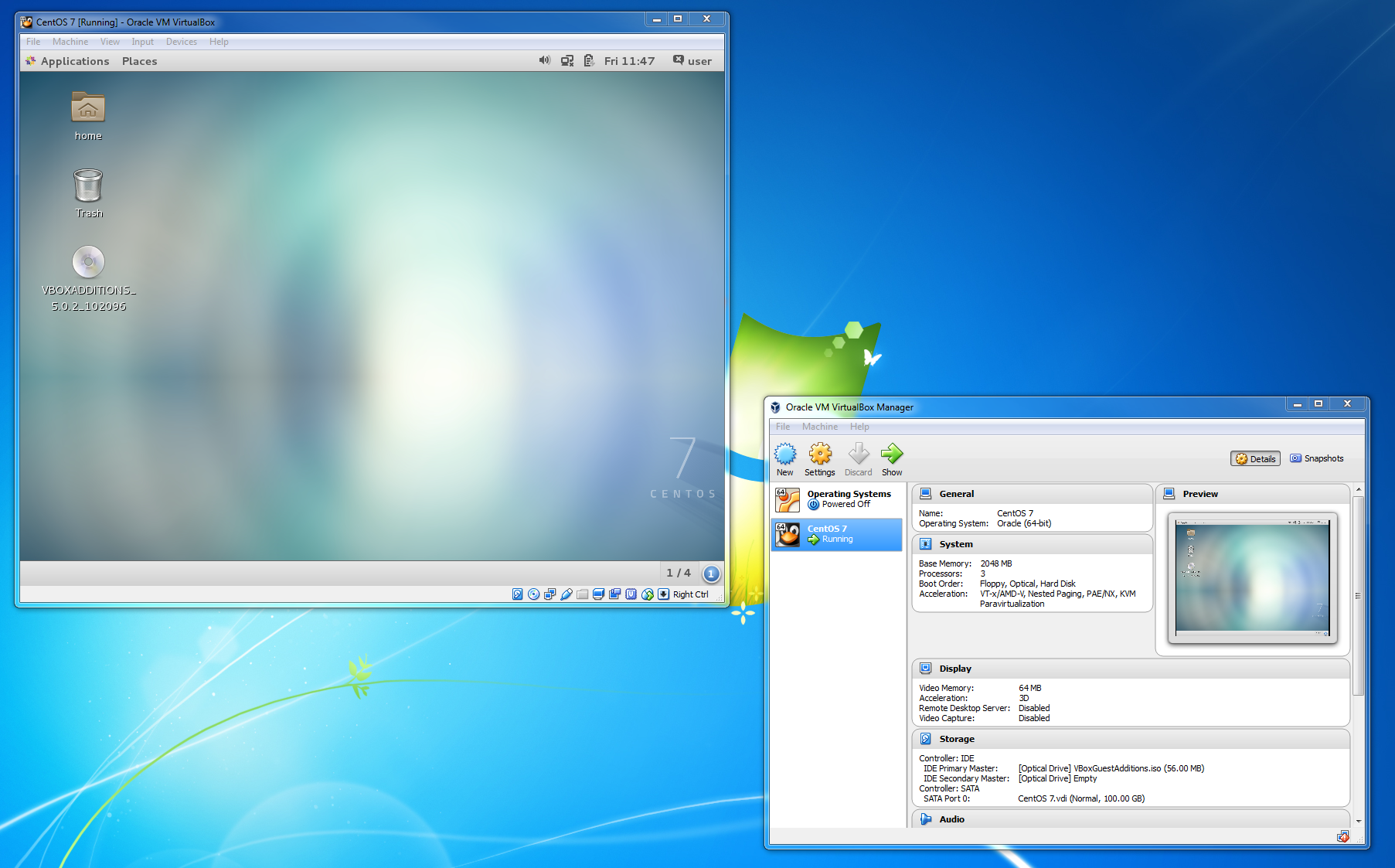
**1. Install CentOS VM and VM Player on your own Desktop or Laptop to do this homework. If not, you can use 304 lab to do this homework on VM.**



**2. Learn about 50 distinct commands of Linux/Unix OS by actually running them on the VM machine. Each command must be a distinct one, not with different options in the same command.**

1. [user@localhost Desktop]$ **man** script
2. [user@localhost Desktop]$ **ifconfig**

enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500

ether 08:00:27:92:19:cf txqueuelen 1000 (Ethernet)

RX packets 0 bytes 0 (0.0 B)

RX errors 0 dropped 0 overruns 0 frame 0

TX packets 0 bytes 0 (0.0 B)

TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

1. [user@localhost Desktop]$ **whatis** ifconfig

ifconfig (8) - configure a network interface

1. [user@localhost Desktop]$ **whereis** ifconfig

ifconfig: /usr/sbin/ifconfig /usr/share/man/man8/ifconfig.8.gz

1. [user@localhost Desktop]$ **ls**

kevin.tar output.txt testfile1.txt

1. [user@localhost Desktop]$ **mkdir** testFolder

[user@localhost Desktop]$ ls

kevin.tar output.txt testfile1.txt testFolder

1. [user@localhost Desktop]$ **cd** testFolder/
2. [user@localhost testFolder]$ **pwd**

/home/user/Desktop/testFolder

1. [user@localhost testFolder]$ **vim** testFile2.text

[user@localhost testFolder]$ pwd

/home/user/Desktop/testFolder

[user@localhost testFolder]$ ls

testFile2.text

1. [user@localhost testFolder]$ **mv** testFile2.text /home/user/Desktop

[user@localhost testFolder]$ ls

[user@localhost testFolder]$ pwd

/home/user/Desktop/testFolder

[user@localhost testFolder]$ cd ..

[user@localhost Desktop]$ ls

kevin.tar output.txt testfile1.txt testFile2.text testFolder

1. [user@localhost Desktop]$ **cp** testFile2.text testFolder/

[user@localhost Desktop]$ cd testFolder/

[user@localhost testFolder]$ ls

testFile2.text

1. [user@localhost Desktop]$ ls

kevin.tar output.txt testfile1.txt testFile2.text testFolder

[user@localhost Desktop]$ **rm -rf** testFolder/

[user@localhost Desktop]$ ls

kevin.tar output.txt testfile1.txt testFile2.text

1. [user@localhost Desktop]$ **cat** testfile1.txt

This is a test file for Homework #1.

1. [user@localhost Desktop]$ ls -ll

total 80

-rw-rw-r--. 1 user user 10240 Sep 14 18:00 kevin.tar

-rw-rw-r--. 1 user user 62502 Sep 14 18:08 output.txt

-rw-rw-r--. 1 user user 37 Sep 16 *08:26* testfile1.txt

-rw-rw-r--. 1 user user 0 Sep 16 08:00 testFile2.text

[user@localhost Desktop]$ **touch** testfile1.txt

[user@localhost Desktop]$ ls -ll

total 80

-rw-rw-r--. 1 user user 10240 Sep 14 18:00 kevin.tar

-rw-rw-r--. 1 user user 62502 Sep 14 18:08 output.txt

-rw-rw-r--. 1 user user 37 Sep 16 *08:27* testfile1.txt

-rw-rw-r--. 1 user user 0 Sep 16 08:00 testFile2.text

1. [user@localhost Desktop]$ **date**

Wed Sep 16 08:28:17 EDT 2015

1. [user@localhost Desktop]$ **top**

top - 08:29:11 up 53 min, 3 users, load average: 0.01, 0.02, 0.05

Tasks: 194 total, 1 running, 193 sleeping, 0 stopped, 0 zombie

%Cpu(s): 2.1 us, 0.1 sy, 0.0 ni, 97.8 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st

KiB Mem : 1884264 total, 896732 free, 455364 used, 532168 buff/cache

KiB Swap: 2097148 total, 2097148 free, 0 used. 1239844 avail Mem

1. [user@localhost Desktop]$ **history**

1 su

2 exit

1. [user@localhost Desktop]$ **env**

XDG\_VTNR=1

XDG\_SESSION\_ID=1

DBUS\_STARTER\_ADDRESS=unix:abstract=/tmp/dbus-w8GtZ4DNuO,guid=e51c55b1d57a29b9af53508355f9543a

GPG\_AGENT\_INFO=/run/user/1000/keyring-CQbV1T/gpg:0:1

1. [user@localhost Desktop]$ **ping** www.google.com

PING www.google.com (216.58.219.100) 56(84) bytes of data.

^C

--- www.google.com ping statistics ---

5 packets transmitted, 0 received, 100% packet loss, time 3999ms

1. [user@localhost Desktop]$ **which** netstat

/usr/bin/netstat

1. [user@localhost Desktop]$ **netstat**

Active Internet connections (w/o servers)

Proto Recv-Q Send-Q Local Address Foreign Address State

Active UNIX domain sockets (w/o servers)

Proto RefCnt Flags Type State I-Node Path

unix 2 [ ] DGRAM 10797 /run/systemd/shutdown

1. [user@localhost Desktop]$ **su**

Password:

[root@localhost Desktop]#

1. [root@localhost Desktop]# **clear**
2. [root@localhost Desktop]# **whoami**

root

1. [root@localhost Desktop]# **md5sum** testfile1.txt

54e4bfae41237533ea3e5502bbcc98fb testfile1.txt

1. [root@localhost Desktop]# **uname**

Linux

1. [root@localhost Desktop]# time

real 0m0.000s

user 0m0.000s

sys 0m0.000s

1. [root@localhost Desktop]# **head** testfile1.txt

This is a test file for Homework #1.

1. [root@localhost Desktop]# **tail** testfile1.txt

This is a test file for Homework #1.

1. [root@localhost Desktop]# **diff** testfile1.txt testFile2.text

1d0

< This is a test file for Homework #1.

1. [root@localhost Desktop]# less testfile1.txt
2. [root@localhost Desktop]# more testfile1.txt

This is a test file for Homework #1.

1. [root@localhost Desktop]# **find** test\*

testfile1.txt

testFile2.text

1. [root@localhost Desktop]# **grep** Homework testfile1.txt

This is a test file for **Homework** #1.

1. [root@localhost Desktop]# **lsblk**

NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT

sda 8:0 0 100G 0 disk

├─sda1 8:1 0 500M 0 part /boot

└─sda2 8:2 0 99.5G 0 part

├─centos-root 253:0 0 50G 0 lvm /

├─centos-swap 253:1 0 2G 0 lvm [SWAP]

└─centos-home 253:2 0 47.5G 0 lvm /home

sr0 11:0 1 56M 0 rom /run/media/user/VBOXADDITIONS\_5.0.2\_102096

sr1 11:1 1 1024M 0 rom

1. [root@localhost Desktop]# **tar** cvf kevin.tar testfile1.txt

testfile1.txt

1. [root@localhost Desktop]# **service** --status-all

netconsole module not loaded

Configured devices:

lo enp0s3

Currently active devices:

lo enp0s3 virbr0

The VirtualBox Additions are currently running.

Checking for VBoxService ...not running

1. [root@localhost Desktop]# **ps**

PID TTY TIME CMD

7743 pts/1 00:00:00 su

7750 pts/1 00:00:00 bash

12121 pts/1 00:00:00 ps

1. [root@localhost Desktop]# **df** -k

Filesystem 1K-blocks Used Available Use% Mounted on

/dev/mapper/centos-root 52403200 7248268 45154932 14% /

devtmpfs 932552 0 932552 0% /dev

tmpfs 942132 148 941984 1% /dev/shm

1. [root@localhost Desktop]# **locate** crontab

/etc/anacrontab

/etc/crontab

/usr/bin/crontab

/usr/share/doc/man-pages-overrides-7.1.3/crontabs

1. [root@localhost Desktop]# **cal**

September 2015

Su Mo Tu We Th Fr Sa

1 2 3 4 5

6 7 8 9 10 11 12

13 14 15 16 17 18 19

20 21 22 23 24 25 26

27 28 29 30

1. [root@localhost Desktop]# **nslookup** www.google.com

Server: 134.223.80.93

Address: 134.223.80.93#53

Non-authoritative answer:

Name: www.google.com

Address: 216.58.219.100

1. root@localhost Desktop]# **chkconfig**

netconsole 0:off 1:off 2:off 3:off 4:off 5:off 6:off

network 0:off 1:off 2:on 3:on 4:on 5:on 6:off

1. [root@localhost Desktop]# **dmesg**

[ 0.000000] Initializing cgroup subsys cpuset

[ 0.000000] Initializing cgroup subsys cpu

[ 0.000000] Initializing cgroup subsys cpuacct

[ 0.000000] Linux version 3.10.0-229.11.1.el7.x86\_64 (builder@kbuilder.dev.centos.org) (gcc version 4.8.3 20140911 (Red Hat 4.8.3-9) (GCC) ) #1 SMP Thu Aug 6 01:06:18 UTC 2015

1. [root@localhost Desktop]# **free**

total used free shared buff/cache available

Mem: 1884264 526824 536124 15468 821316 1125700

Swap: 2097148 0 2097148

1. [root@localhost Desktop]# **iostat**

Linux 3.10.0-229.11.1.el7.x86\_64 (localhost.localdomain) 09/16/2015 \_x86\_64\_ (3 CPU)

avg-cpu: %user %nice %system %iowait %steal %idle

0.63 0.00 0.22 0.04 0.00 99.12

1. [root@localhost Desktop]# **lsmod**

Module Size Used by

nls\_utf8 12557 1

isofs 39844 1

bnep 19704 2

bluetooth 372662 7 bnep

1. [root@localhost Desktop]# **tcpdump**

tcpdump: verbose output suppressed, use -v or -vv for full protocol decode

listening on enp0s3, link-type EN10MB (Ethernet), capture size 65535 bytes

10:13:42.011752 IP localhost.localdomain.56394 > ng-vag-dc05.northgrum.com.domain: 6743+ A? tiles.services.mozilla.com. (44)

1. [root@localhost Desktop]# uptime

10:14:24 up 2:38, 3 users, load average: 0.08, 0.07, 0.05

1. [root@localhost Desktop]# **shutdown** now

**3. Learn two commands (objdump and nm) in Linux and try some options in these commands and capture the output. Why do we need these commands?**

**OBJDUMP**

Man pages:

objdump - <http://linux.die.net/man/1/objdump>

Example:

[root@localhost bin]# **pwd**

/usr/bin

[root@localhost bin]# **objdump** -f grep

grep: file format elf64-x86-64

architecture: i386:x86-64, flags 0x00000112:

EXEC\_P, HAS\_SYMS, D\_PAGED

start address 0x0000000000403ecc

**NM**

Man pages:

nm – <http://linux.die.net/man/1/nm>

Examples:

[root@localhost bin]# nm grep

nm: grep: no symbols

**4. Learn “find” and “grep” commands and show some examples if their usage.**

Find search the specified path for a given filename (in the form of an expression).

[root@localhost Desktop]# **find** test\*

testfile1.txt

testFile2.text

Grep searches within text based files for an expression in a specified path.

[root@localhost Desktop]# **grep** Homework testfile1.txt

This is a test file for **Homework** #1.

**5. Shell script**

A shell script is a computer program designed to be run by the Unix shell, a command line interpreter. The various dialects of shell scripts are considered to be scripting languages.

# This script displays the date, time, username and

# current directory.

echo "Date and time is:"

date

echo

echo "Your username is: `whoami` \\n"

echo "Your current directory is: \\c"

pwd