CS312 Project #1

January 21, 2016

Instructions

Please submit all answers as a single text file (except for log files) via T.E.A.C.H using the naming format `$onidusername-project1.txt`. This project is due at 4pm Monday, February 1st.

Questions

1. Setup an OpenStack virtual machine and do the following:
   (a) Configure `rsyslog` to send all `local2` facility messages with a warning severity level to `/var/log/cs312.log`
   (b) Use the `logger` utility and send a message chosen by you with the same facility and severity level as described above. Show the command you used.
   (c) Show the output of the of the `/var/log/cs312.log` and the last 5 lines of `/var/log/messages`.
2. Using the `ks.cfg` example from the slides as a base, modify it to do the following. Assume all changes are done via kickstart options and not done using pre or post installation scripts. Please include your full `ks.cfg` config file for the answer and the contents of `/var/log/anaconda/anaconda.log` in a separate file. Please test your kickstart file using virtualbox or vmware to ensure it works properly:

(a) Setup the volumes to be: /boot (512M), swap (1G), / (rest of the disk). Have /boot be a primary partition, while swap and the rootfs be logical volumes with the volume group named `vg_cs312`.

(b) Add the EPEL repository using the following as the URL: `http://epel.osuosl.org/7/x86_64/`

(c) Add the base CentOS repository using the following as the URL: `http://centos.osuosl.org/7/os/x86_64/`

(d) Set to our current timezone

(e) Install `bash-completion` package

(f) Install the Mysql Server package

(g) Enable the Mysql service on boot

3. Using `dd` and `losetup`, create enough 100MB loopback devices for a RAID5 array. How many loopback devices do you need?

4. Create a RAID5 software raid array using the loop devices in the previous question as a device named `/dev/md0`. Please show the command, the output it shows, the contents of `/proc/mdstat` and the output of `mdadm -D /dev/md0`.

5. Using the previous RAID5 array, fail one of the drives, remove the disk. Show the commands, their output, the contents of `/proc/mdstat` and the output of `mdadm -D /dev/md0`.

6. Write out a cronjob definition that does the following: Run the command `date` every 3 hours at 22 minutes past the hour but only on Fridays, Sundays and Wednesdays. Also configure the email to be sent to `foo@example.org`.

7. Write a systemd service unit file that does the following:

   (a) Is parameterized

   (b) Is considered active after all processes are exited

   (c) Runs the command `/bin/echo <msg>` where `<msg>` is an arbitrary message chosen by you and includes the parameterized variable

8. Suppose this unit file is named `foo@.service` and located in `/etc/systemd/system`. Provide the commands to do the following:

   (a) Enable the service without using `systemctl` (Hint: this command should create a symlink)

   (b) Start a parameretized instance of the service with the parameter set to `bar`. (You can use `systemctl` on this part)