CS312 Homework #2

February 4, 2015

Instructions

Please email all answers as a single text file to cs312@osuosl.org using the naming format `$onidusername-hw2.txt`. This homework is due at 4pm on Wednesday, Feb 4.

Questions

1. (1pt) Give the command to create a logical volume named `data` that is 100G in size and uses 2 stripes. Assume the volume group name is `vg_cs312`.

2. (1pt) Give the command to extend the logical volume described in #1 by 200GB to make it a total of 300GB in size.

3. (5pts) 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. 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/6/x86_64/`

(c) Add the base CentOS repository using the following as the URL:
http://centos.osuosl.org/6/os/x86_64/

(d) Set to our current timezone

(e) Install `bash-completion` package

(f) Install the Apache web server package

(g) Enable the Apache web service on boot

4. (1pt) What is the name of syslog facility where you would tyically find user ssh login information at?

5. (1pt) What protocol(s) are recommended to be used for remote syslog communication?

6. (1pt) Write out a cronjob definition that does the following: Run the command `date` every 6 hours at 12 minutes past the hour but only on Saturdays, Sundays and Wednesdays.

7. (1pt) Using `dd` and `losetup`, create enough 100MB loopback devices for a RAID6 array. How many loopback devices do you need?

8. (1pt) Create a RAID6 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`.

9. (1pt) Using the previous RAID6 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`.

10. (2pts) Install and setup jenkins in an openstack virtual machine. Describe the process and the exact commands you ran to setup jenkins.

11. (5pts) Create a jenkins job that will build the CS312 website repo. It requires that you add the EPEL repository and install `python-virtualenv` and `gcc` as dependencies. Install those dependencies manually before creating the job. Also make a fork of `https://github.com/osuosl/cs312` on your github account. Please have the job do the following:

(a) Clone your fork of the CS312 github repo

(b) Executes `bash -ex scripts/build.sh` as a build step

(c) Integrate with github Jenkins webhook

(d) Create an empty git commit and push to your fork

Paste the output of the console output for the job triggered by github as your answer to this question.