

# CS312 Homework #3

February 5, 2016

## Instructions

Please submit all answers as a single text file via T.E.A.C.H using the naming format `$onidusername-hw3.txt`. This homework is due at 4pm on Friday, Feb 12th.

## Questions

1. Give the command(s) to manually bring up the IP address `10.1.1.100`, netmask of `255.255.254.0`, and a default gateway to `10.1.1.1` on an interface named `em0`.
2. Give the command(s) to manually turn off multicast on an interface named `eth0`.
3. Give the command(s) to show all Unix domain sockets.
4. What file (including the full path) would you need to create if you wanted to configure network settings for an interface named `enP1p1s0f3`?
5. The predictable naming scheme for ethernet interfaces usually starts using the prefix `eth` and then falls back to using `em`.
  - True
  - False

6. Provide the command(s) that will notify `NetworkManager` of a configuration change.
7. Which version of NFS is considered stateful?
  - (a) 2
  - (b) 3
  - (c) 3 and 4
  - (d) 4
8. Provide the configuration for `/etc/exports` that would provide the following:
  - Export `/data/www`
  - Allow read-write access to hosts `foo.example.org`, `bar.example.org` and any subdomain under `baz.example.org`
  - Disable root squashing for `bar.example.org`
  - Allow read-only access to any other host
9. Which file on a Linux system would you modify to enable LDAP support for name-service information such as users and groups?
10. What is the name of the LDAP server daemon service for OpenLDAP?
  - (a) `slapd`
  - (b) `ldapdd`
  - (c) `ldap-server`
  - (d) `openldap-server`
11. Name the e-mail system components and their primary functions.
12. Given the following e-mail header:

```
Received: from whitealder.osuosl.org (smtp1.osuosl.org. [140.211.166.138])
    by mx.google.com with ESMTP id r19si26152457pab.109.2016.02.01.12.16.38
    for <ramereth@gapps.osuosl.org>;
    Mon, 01 Feb 2016 12:16:39 -0800 (PST)
```

  - (a) Which server recieved the email?

- (b) What is the queue ID for the e-mail?
  - (c) Which server sent the email?
13. Most Linux kernel modules allow parameters to be updated without unloading the module
    - (a) True
    - (b) False
  14. Name the virtual file system that exports information about various kernel subsystems, hardware devices, and device drivers.
  15. Which virtual file system allows you to modify runtime kernel tunable parameters?
  16. Explain what Control Groups are and why they are important in modern Linux system administration
  17. In which systemd cgroup slice would containers typically reside?
    - (a) `-.slice`
    - (b) `machine.slice`
    - (c) `user.slice`
    - (d) `system.slice`
  18. Name four cgroup resource controllers
  19. Which Linux performance tool provides information about processes, memory, paging and other various metrics in real-time?
  20. Which Linux I/O scheduler would be ideal for database servers?