# Software OS Exam Review

**Instructions:** Complete the review in its entirety to earn additional points on an exam. No partial credit is given. Must be turned in on blackboard prior to the OS Exam on 11 March. The file should be in PDF format and named according to the syllabus.

# General

1. What are the configuration and administrative tools used in widows?

Some admin and configuration tools used in windows are event viewer, registry editor, window memory diagnostics, task scheduler, system config, resource monitor, service, and computer management.

1. Define the layers of software:
   1. Hardware: need to be started and checked by the bios to see that everything is working fine before the boot up process
   2. BIOS : bios will check that all of the hardware is working fine then it goes into the booting process
   3. Device Drivers: device drivers are a software/lines of codes inside of a piece of hardware that tells the computer how it can be used.
   4. Kernel: works behind your operating system to allow applications to interact with your hardware through device drivers.
   5. Operating System: a special software that runs after the booting process that allow the user to interact with the computer.
   6. Application Program Interface: API allow an application to interact with a separate application or resource, such as another component or a database.
   7. Run-time Library: a routine by the programming language of the application that runs every time the application is called.
   8. Application: usually a software that is executable by the user that allows additional commands to the user that may have not been there before
   9. User Interface: the graphical interface that the user see when opening up a software that allow the user to locate and move through the application to execute functions.
   10. User-Written Scripts 3. Describe the boot process 4. What is a database?

3.The pc turns on and the bios initiate the hardware, then it goes onto the boot loader stage, then load kernel and the OS start.

4.A database is a collection of organized data that is usually accessible.

1. Difference between absolute and relative path

Absolute path is preferring to the location of the file/dir relative to the root directory, will usually include the full path name when locating such path, while relative is the location of the file/dir relative to the current directory.

1. Fill in the table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Type of File  System | Operating System | Include  Encryption | Max File Size | Max Volume  Size | Supports Journaling |
| FAT32 | Window and linux | no | 4gb | 32gb | no |
| NTFS | windows | yes | 16 exabytes | None | yes |
| HFS+/HFSX | Mac os | yes | 2gb | 2 terab | yes |
| ext3 | linux | No | 16gb to2tb | 4 tebibytes-32tib | yes |
| ext4 | linux | yes | 16 terab | 1 exabyte | yes |

1. Define the follow RAID types:
   1. What is RAID? Combines two or more hard drive to store data among the drives depending on the type of raid.
   2. Parity : a method of checking data when is copied from one storage to another, make sure data isn’t overwrriten, lost, or corrupted
   3. ECC : looks for error in the data by using math codes
   4. Raid 0: basic striping, stripping all of the data across the multiples drives, quick read/write, no redundancy
   5. Raid 1: mirror data incase of drive failures
   6. Raid 5: has parity across all drives, at least 4 drives, if one drive fails the parity on the other drives can be used to reconstruct the drive that failed.
2. Define the following OS components:
   1. Shell : a program that works as a interface for the user to interact with the OS
   2. Kernel : a program at the core of the OS that has control over the entire system

# Windows

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1. What commands would you run to gather network configurations and settings?

Ipconfig and netstat command

1. What are the Windows file systems? Advantages disadvantages?

Window uses fat32 and ntfs, advantages of ntfs: increase security, support journaling, read-only available. Disadvantages: cannot read some files type, usually is only on Microsoft system

Fat32 advantages: supports up to 2 tb compared to fat16’s 2gb, waste less disk space on large partition

Disadvantages: does not allow compression, not compatible with many things, could be slower than fat16, no file security

1. What is the MBR? Master boot record Information is inside of the first sector of your harddisk that identifies where and how an OS is located so that it can be booted into the RAM.
2. What is the FAT? How does it work? Fat is a type of file system, it uses index table stored on the device to identify data storage areas associated with the files.
3. What is the registry editor, why is it important? Dangers? Registry editor allows a user to edit their registry, which contains all of the configuration and settings used by everything in windows. It is dangerous to mess with it because one wrong selection may cause a computer to be unable to boot again.

# Linux

1. How does Linux name partitions and volumes?

Linux will name its partition by using the name of the drive follow by the number of the partition.

1. Who created Linux?

Linus Torvalds created linux

1. Fill in the following table
2. Fill in the blanks

|  |  |
| --- | --- |
| **Directory** | **Description** |
| / | Root-level directory |
| /sbin | System administration executable files |
| /etc | Start up and configuration files |
| /dev | Contain all special device files for all the connected devices |
| /home | Where most of the user will be spending time, it is like a working space since you can do almost anything with it, except for root levels |

1. What is ‘sudo’? short for “superuser do”, using sudo before most commands allow the current user to run the command as an administrator.
2. List and define the two types of software. Give 3 examples of each.

Operating system is a type of software that runs and enable the user to interact with the hardware of the computer. Examples: Windows, Linux, iOS, Mac

Utility software allow the user to have more commands available at their disposal that was not available before the installation of the software. Examples: Antivirus, WinRAR, paint, explorer

1. What software license does Linux operate under? Why is it important?

They are under the free and open-source license which means a user can redistribute it without consequences and also allow the user to even make their own version of Linux if they wished.