Verify integrity and Availability of Resources and Processes

The “df” utility (Disk free)

$: df --> Output can be a bit hard to read. You can use the –h flag

$: df -h

You would likely see in the output “tmpfs”. These are virtual filesystems that only exist in memory, not on storage devices.

The “du” utility (Disk usage)

$: du –sh <path>   
The –sh flag (s --> summarize flag) When used without the –s flag, the output would be the directory and all its subdirectories.  
-h --> means display output in human readable format.

The free command. This command shows you RAM utilization.  
$: free –h --> -h is for human readable. This flag seems to be consistent with the storage related Linux commands.  
  
The uptime command  
$: uptime

There are 3 numbers in the output that are the most important: it is the load average.  
For example:  
$: uptime  
00:12:19 up 26 days, 4:55, 2 users, load average: **1.23**, **1.52**, **0.98**  
The first number **(1.23)** shows us the load average for the last 1 minute.  
The second number **(1.52)** shows us the load average for the last 5 minutes.  
The third number **(0.98)** refers to the last 15 minutes.  
The higher the number on all three indicates CPU load, the higher the number the higher the load.  
  
The lscpu command can provide details on the cpu that is inside the server.  
$: lscpu

The lspci command will list information on other hardware inside the system.  
$: lspci

Integrity of file systems

**Important**: To check a file system for errors, one must first **unmount** it.

RedHat OS == xfs file system (default)

Ubuntu OS == ext4 file system (default)

To verify an xfs file system, I can use the following command:  
$: sudo xfs\_repair –v /dev/<xfs partition> (-v is for verbose output)  
  
To check and repair an ext4 file system, I can use the following command:  
$: sudo fsck.ext4 -v –f –p /dev/<ext4 partition> -f (force) -v (verbose) -p(“preen mode” this lets the utility fix simple problems automatically without asking any questions.)

How do we make sure that key processes and important programs are working correctly on our system?  
  
First use this command:  
$: systemctl list-dependencies --> shows important systemd units that are active and inactive.  
To kill a systemd unit:  
$: sudo pkill <systemd unit name>