**TASK 2**

SSL Offloading is a CPU sensitive process , thats why it is very important to monitir the CPU metrics.

As in the given question with 4 CPUs ,64GB RAM ,2TB Hdd disk space and 2 x 10gBITS/S nics. we are recieving around 25000 requests per seconds.

In this specific case there are a lot following metrics which must be monitored for the optimal performance of the server.

As 25000 requests/second could quickly use up the space so its better to check the following:

**1) CPU Statistics-**

**node\_cpu\_seconds\_total**

This will count the time CPU is spending in each mode.(Including the idle mode, system mode , I/O mode).

**2) Disk Statistics-**

**go to /proc/diskstats**

**node\_disk\_io\_now**

Above command will give us the number of I/O currently in progress.

**3)File system-**

**node\_filesystem\_avail\_bytes**

Increased number of request could quickly fill up the disk space so we have to keep a check on that.This will give us the filesystem available for

non root users and then we can modify accordingly.

**4) ART and PRT** - Another important aspect would be to check ART(average response time) and PRT (peak response time).

IOts calculated by the dividing the time it takes to respond to all requests by the number of requests.

In our case with 25000 request/second we could observe a low ART(average response time).

**5)Load Average(Systems Worload)-**

**node\_load1**

This will give us a idea for how much load our machine has for a specific time interval(for example last 15 minutes).

**6)Network Statistics-**

**go to /proc/net/netstat**

**netstat -t -l -p**

get the PID and check if the ports are up and running SSL.

**7)Memory Information-**

As in our case we have 2TB of memory, we should check time to time the used and free memory of the server , so that we dont go out od space, this

can be done by:

Total memory- node\_memory\_MemTotal\_bytes (gives total memory in bytes)

Free memory- node\_memory\_MemFree\_bytes (gives free memory in bytes)

**Challenges of monitoring this:**

1) Key sizes of requests : With this huge number of request of different sizes SSL processing will be intensive for our 4 CPUs.

2) Time to time checking the disk space and applications if running , and aplying patches wherever neccessary in servers caused by huge number of

requests and extensive cpu working.

3)SOmetimes applications could be outdated or have bugs , then we have to update it or sometime just resarting the application is required.

4)One more important issue could arise fgor DDOS(Distributed denial of service) which could cause the downtime.

5) one general challenge for SSL is that SSL, server decrypts the encripted data which is not safe and we have to monitor for HTTP requests which were HTTPS.