

Operating Systems Laboratory Assignment 3

Group Number - 1

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- The user process resource limits of our system are:

```
core file size          (blocks, -c) 0
data seg size           (kbytes, -d) unlimited
scheduling priority     (-e) 0
file size                (blocks, -f) unlimited
pending signals         (-i) 30950
max locked memory       (kbytes, -l) 65536
max memory size         (kbytes, -m) unlimited
open files              (-n) 1024
pipe size                (512 bytes, -p) 8
POSIX message queues    (bytes, -q) 819200
real-time priority      (-r) 0
stack size              (kbytes, -s) 8192
cpu time                (seconds, -t) unlimited
max user processes      (-u) 30950
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
```

- As we can see, the maximum number of processes in our system is: 30950
- Assuming that around 50% of the threads will be used for system processes that are currently being run to support the vital execution of the operating system and the other half can be used for child processes.
- **The maximum size of matrix that we can multiply is around 15500 ($r1 \times c2$).**
- Also to note, as our system has 8 cores, 8 processes can work simultaneously and hence matrix multiplication will become 8 times faster.