Lab – 05

Objectives:

1. Understanding Process Scheduling and tool to change different scheduling parameters
2. The /proc directory

Resources:

1. Video Lecture 11: https://youtu.be/3ap2kU4bA9E?si=0755yxLZT6ejv2gY
2. Video Lecture 12: https://youtu.be/lLLOhqr5Io0?si=kqRatVqXV2KnUNIZ

Task 1: Be ready to give viva of following questions:

a. What do you mean by process scheduling, and what are different types of process schedulers?
b. Difference between short term and long term scheduler.
c. What are different types of scheduling algorithms that you have studied so far, and what were their flaws.
d. Describe the working of UNIX SVR3 scheduler.
e. What is nice value of a process?
f. From where does a process get its nice value and how can we change it?
g. What is the current scheduling algorithm in Linux Kernel? What are some of its distinct features?

Task 2: Execute a sleep 300 command and then change its nice value using renice command.

Task 3: Execute find command with a nice value of -20 to find all the files whose name contain the word libc.

Task 4: Read the man page of schedtool and then tell what is it?

Task 5: What are different process scheduling parameters?

Task 6: What is CPU affinity and describe 2 of its types in Linux Kernel.

Task 7: Using schetool, get different scheduling parameters of any process and all available scheduling policies.

Task 8: Use schedtool,change the following scheduling parameters of your running process and note you're your observations:

- Change scheduling policy SCHED_BATCH, SCHED_IDLEPRIO, SCHED_NORMAL
- Change nice value
- Change static priority
- Change CPU affinity

Task 9: Give answers to the following questions:

- What is proc file system and why it is called the window to the running Linux Kernel?
- Why is the size of all most all the files in this directory 0?
- What information does the file */proc/version* contain and which commands use this information?
- What does the files cmdline, environ, limits and status in /*proc*/[PID]/ directory?
- What can be the different types of status of a process?

- What does the directory /*proc*/[PID]/fd contain?
- How can you get the uptime and information about our CPU from the proc directory?
- What does the directory /*proc*/sys/kernel contain?