

Lecture 9: 2/20/2020

Lecturer: *Ahmed Ali-Eldin*

Scribe: *Ajinkya Ghadge (2020)*

9.1 History of Linux

Item 1 : Nasa was the early adopter, mostly to reduce the cost.

Item 2 : Flame wars

Item 3 : Item Three Description.

9.2 Beast of a Different Nature(Comparisions with MINIX)

Item 1 : Very easily reaches race condition

Item 2 : Linux was ported to various hardware, portability made it really useful and popular

Item 3 : Kernel got bloated over time, current attempts going on to debloat

Item 4 : Can't add your own scheduler in Linux

Item 5 : No servers everything is in the Kernel

Item 6 : Things like data structures, crypto already implemented in the Kernel and can be used

Item 7 : All process are tasks, with a double link list structure that contain an iterator. This allows quick navigation within the task list

Item 8 : MINIX scheduler user-level, and you can choose the scheduler

9.3 Threading in Linux

Item 1 : vfork vs fork vs clone

Item 2 : For process and thread termination there is a process for process to disappear

Item 3 : cleanup and removal are two seperate things in Linux

9.4 Multitasking and Scheduling

Item 1 : The concept of cooperating multi tasking failed miserably. It put more onous on the applications to be sane

Item 2 : CFS combines quota and prorities. This is opposite to MINIX which adjusts niceness values

Item 3 : Linux gives priority of I/O

Item 4 : What happens when you have a very large number of applications?