Project 5: IO Scheduler

Design Strategy

Template used: *Noop Scheduler*

We used *noop-iosched.c* as our base template and modified the add request function. The global variable current is accessed to get the *task_struct* of the current task which is then used to access the '*se*' register present which contains the *vruntime* of the task.

The value of vruntime is stored in the extra variable present the request structure *elv*.

The request queue which is a linkedlist is manipulated in the add operation as per the priority defined by the project guidelines.

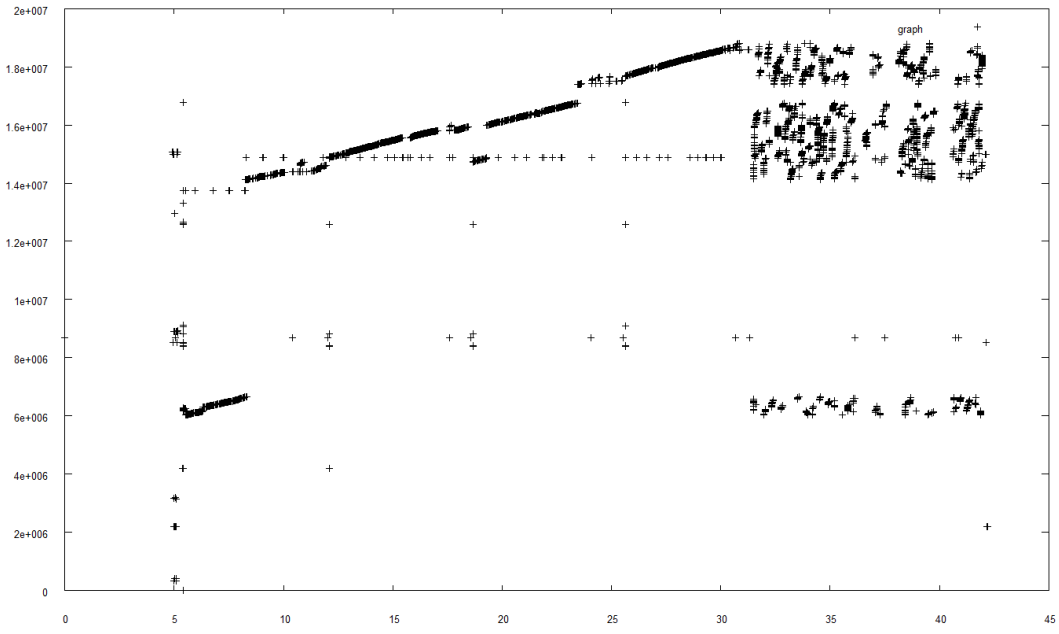
The arrival time is accessed by using *rdtsc()* to get current time stamp.

Priority condition

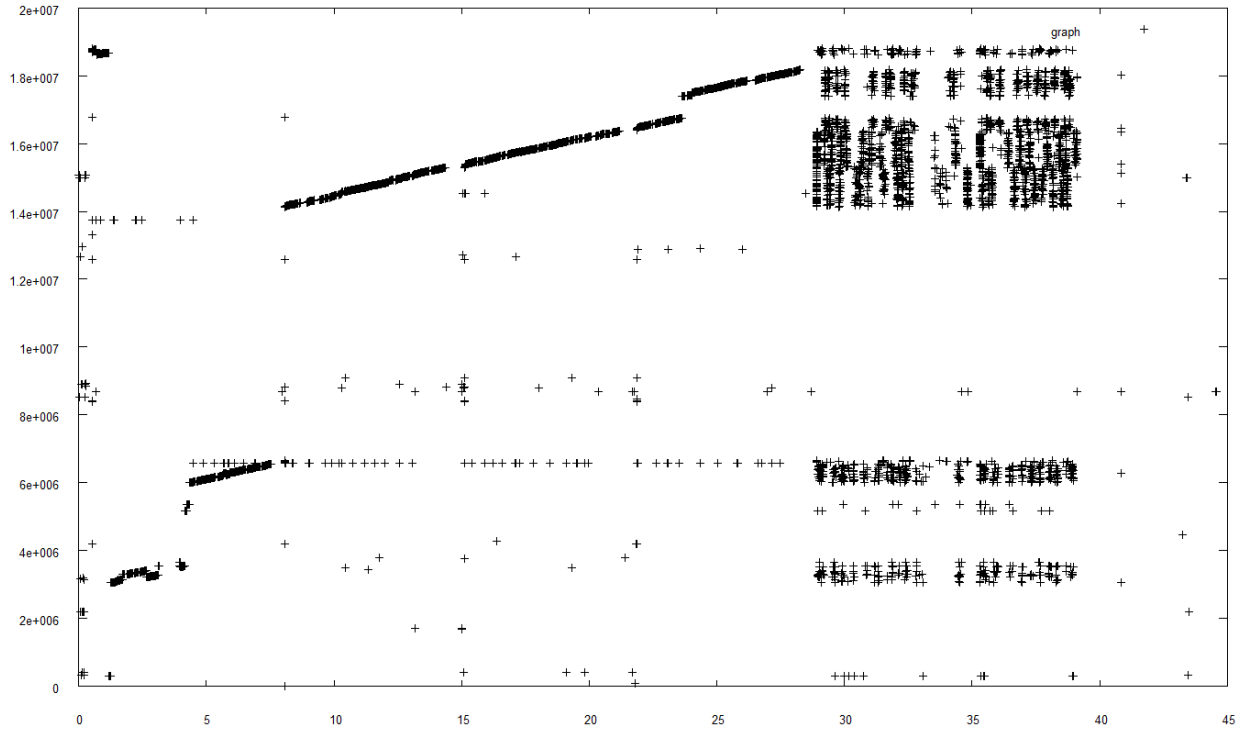
The queue is maintained as a linkedist. If the list is empty, the request is added without any comparison. If the list is not empty, we iterate over it and first compare the arrival time for each request. If the arrival time for the current request is less than 1500 cpu cylcles then the vruntime of the request is compared and based on that sorting takes place. Priority is given to the oldest request to avoid request starvation but if the request arrives in a reasonable time bracket, vruntime is compared, giving priority to the request with lower vruntime.

GNU PLOT

CFQ



COOP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