

Automation of Home Appliances for SWITCH Application by Scheduling Rudranath Karmakar¹, Nitya S²

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ABSTRACT

Automation of home appliances for ON and OFF task by event driven approach using the mechanism of scheduling on Windows and Linux Operating System. The study of scheduling jobs finds the application in Big Data, Cloud Computing and massive parallel Supercomputers. With this avenue is more beneficial to endeavor at high end scheduling jobs of industry standards (Ex. SPARK used in Big Data and Cloud Computing).

Keywords: *Scheduling, Automation, Event Driven, Operating System*

1. INTRODUCTION

From the Wikipedia, scheduling is basically allocating the resources when invoked for a specified time, in order to increase the performance enhancement and deliver the QoS (Quality of Service). The author [1] defines the scheduling as set of constructs, the order of work exercised from the computer system challenges found on scheduling as depicted [2] in, the extent of sharing, for maximum system utility. Scheduling finds wide variety of application in massive parallel supercomputer [3].

Hot topic of job scheduling seen in the cloud computing [4], where every data stored in cloud our large geographical area, dispatch the task for the given scheduler in major challenges faced. Yet another live issue is in scheduling in Big Data, which uses HADOOP system handler [5]. Widely used scheduling jobs running in IT/Software developer in with APACHE HADOOP, APACHE SPARK to store data, process data and reuse of jobs for better QoS [6].

In this paper, after the survey on scheduling we hereby implementing a basic job scheduling for the automated switch-control ON-OFF using “at” approach for the stipulated time interval.

2. PROPOSED WORK

2.1 Implementation

Automation of switch-control mechanism carried from one job to another by means of Event-Driven approach for the given time schedules as depicted from the Fig. 2.1. This automation of switch-control mechanism from one task to another is successfully carried out in windows scheduler.

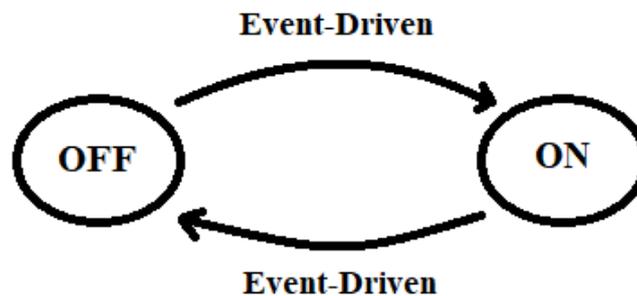
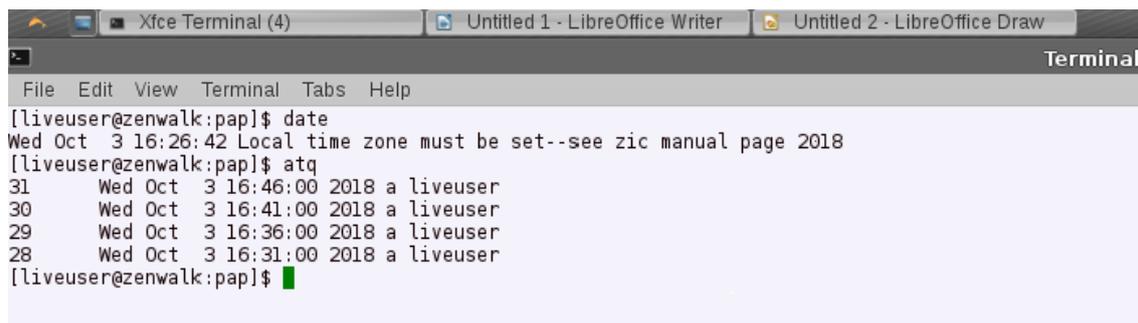


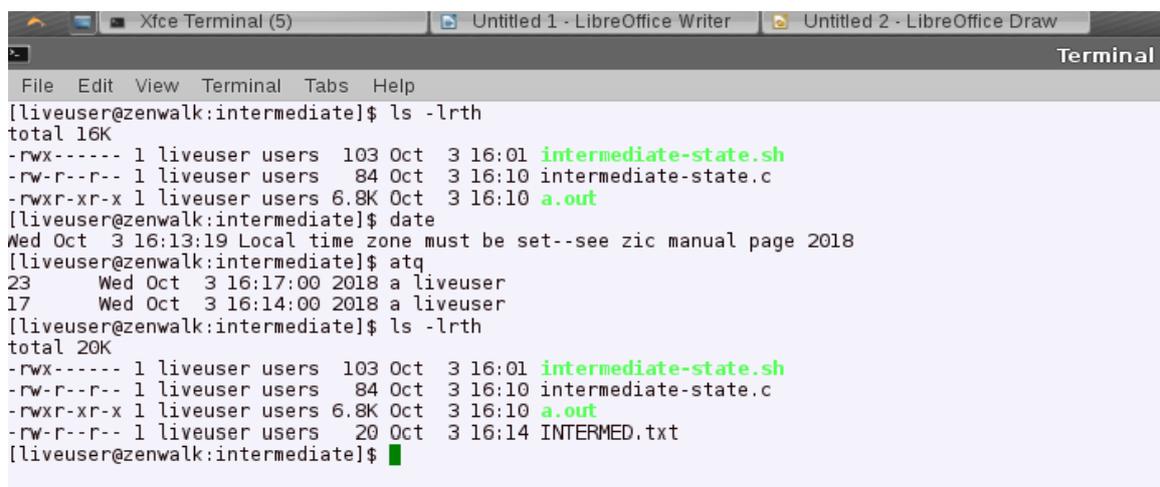
Fig 2.1 Switch of one job to another job by means of event-driven

The same mechanism is explored on the Linux platform. The output shown in Fig. 2.2 depicts the job scheduled covering the four jobs and Fig. 2.3 depicts the execution of a particular job (we are showing only one job), emphasizing the output screen before and after scheduling which are in real time. We have also given the access rights to read-write-execute only to the owner and the owner has the privilege access to execute.



```
Xfce Terminal (4) | Untitled 1 - LibreOffice Writer | Untitled 2 - LibreOffice Draw
Terminal
File Edit View Terminal Tabs Help
[liveuser@zenwalk:pap]$ date
Wed Oct 3 16:26:42 Local time zone must be set--see zic manual page 2018
[liveuser@zenwalk:pap]$ atq
31    Wed Oct 3 16:46:00 2018 a liveuser
30    Wed Oct 3 16:41:00 2018 a liveuser
29    Wed Oct 3 16:36:00 2018 a liveuser
28    Wed Oct 3 16:31:00 2018 a liveuser
[liveuser@zenwalk:pap]$
```

Fig 2.2 Jobs Scheduled



```
Xfce Terminal (5) | Untitled 1 - LibreOffice Writer | Untitled 2 - LibreOffice Draw
Terminal
File Edit View Terminal Tabs Help
[liveuser@zenwalk:intermediate]$ ls -lrth
total 16K
-rwx----- 1 liveuser users 103 Oct 3 16:01 intermediate-state.sh
-rw-r--r-- 1 liveuser users 84 Oct 3 16:10 intermediate-state.c
-rwxr-xr-x 1 liveuser users 6.8K Oct 3 16:10 a.out
[liveuser@zenwalk:intermediate]$ date
Wed Oct 3 16:13:19 Local time zone must be set--see zic manual page 2018
[liveuser@zenwalk:intermediate]$ atq
23    Wed Oct 3 16:17:00 2018 a liveuser
17    Wed Oct 3 16:14:00 2018 a liveuser
[liveuser@zenwalk:intermediate]$ ls -lrth
total 20K
-rwx----- 1 liveuser users 103 Oct 3 16:01 intermediate-state.sh
-rw-r--r-- 1 liveuser users 84 Oct 3 16:10 intermediate-state.c
-rwxr-xr-x 1 liveuser users 6.8K Oct 3 16:10 a.out
-rw-r--r-- 1 liveuser users 20 Oct 3 16:14 INTERMED.txt
[liveuser@zenwalk:intermediate]$
```

Fig 2.3 Execution of a particular job

3. SOFTWARE REQUIREMENTS

Table: 3.1 Software requirements

SOFTWARE REQUIREMENT
<ol style="list-style-type: none">1. Linux2. Windows (where software need to be installed)

4. CONCLUSION

Automation of Switch Control for ON-OFF mechanism, from the event driven approach successfully carried. To work on real-time basis for this application, task/job scheduler carried in Windows/Linux platform. Survey on vulnerability, summons and contour of job scheduling is been observed.

REFERENCES

- [1]. Abhishek Gupta, H S Bhadauria, Annapurna Singh, Jagdish Chandra Patni, "A theoretical comparison of job scheduling algorithms in cloud computing environment", *2015 1st International Conference on Next Generation Computing Technologies (NGCT)*, IEEE, 2016, January.
- [2]. <http://cseweb.ucsd.edu/~j1weinberg/papers/weinberg06researchExam.pdf>
- [3]. Aftab Ahmed Chandio, Cheng-Zhong Xu, Nikos Tziritas, Kashif Bilal, Samee U. Khan, "A Comparative Study of Job Scheduling Strategies in Large-Scale Parallel Computational Systems", *2013 12th IEEE International Conference on Trust, Security and Privacy in Computing and Communications*, IEEE, 2013, December.
- [4]. <https://www.omicsonline.org/open-access/job-scheduling-in-big-data--a-survey-2175-7866-1000226.pdf>
- [5]. https://en.wikipedia.org/wiki/Job_scheduler
- [6]. Tang Jianchao, Yang Shuqiang, Huang Chaoqiang, Yan Zhou, "Design and Implementation of Scheduling Pool Scheduling Algorithm Based on Reuse of Jobs in Spark", *2016 IEEE First International Conference on Data Science in Cyberspace (DSC)*, IEEE, 2017, March.