
Name
IRC Handle
College
Email
Github
LinkedIn
Phone No
Timezone
Location

Mechanism for changing kernel name via kw

GSoC Proposal 2021 for Kworkflow Community (The Linux Foundation)

ABSTRACT

Changing a kernel name could be a very daunting and complex task. This project focuses on adding new features to the kworkflow (kw). We would be able to update the kernel name via a simple command through terminal. Any name of your choice could be given to the kernel. This project is based on the enhancement issue in kworkflow project.

<https://github.com/kworkflow/kworkflow/issues/189>

MY APPROACH

Since the kworkflow is based upon shell scripting and C language so I will use the same. I will write bash scripts and update the existing ones to achieve my task. I will follow the coding practices of the project and achieve my result in time. Like the issue creator suggests that we have to update the kworkflow.config file so that we could display `kernel_name=A-COOL-NAME`.

We would be able to update the kernel name via command line as:

```
kw deploy --name A-COOL-NAME
```

Since my daily use operating system is also Linux (Ubuntu 20.04) so I am already familiar with the Linux environment and programming.

CODING SKILLS

- Bash Scripting - Intermediate
- C language - Intermediate
- Linux Programming - Beginner

- Testing - Beginner
- VS Code - Intermediate
- Kernel Development - Beginner
- I have skills and experience related to coding in other branches of Computer Science but they are irrelevant for this project

I use Ubuntu Linux as my main operating system. For coding I prefer VS Code as well as nano for terminal based editing. Since my Computer Science courses are implemented in C/C++ so I am good at C language..

WORK DONE TILL NOW

These are the works that are mentioned in the prerequisites as well as in the email that mentor(s) suggested.

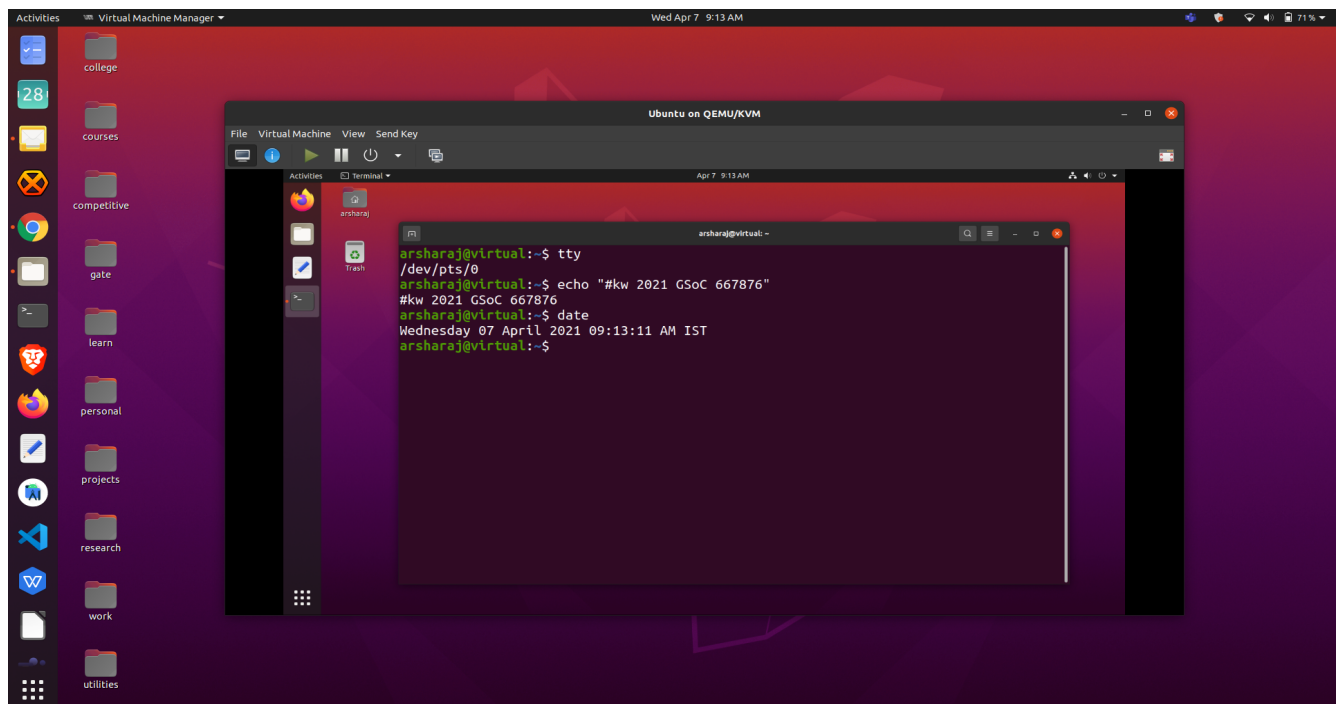
My unique id : 667876

1. Setup a Virtual Machine using qemu:

I have successfully installed the qemu on my laptop and successfully booted into my virtual ubuntu desktop.

My personal reference number : #kw 2021 GSoC 667876

Here is my proof :-

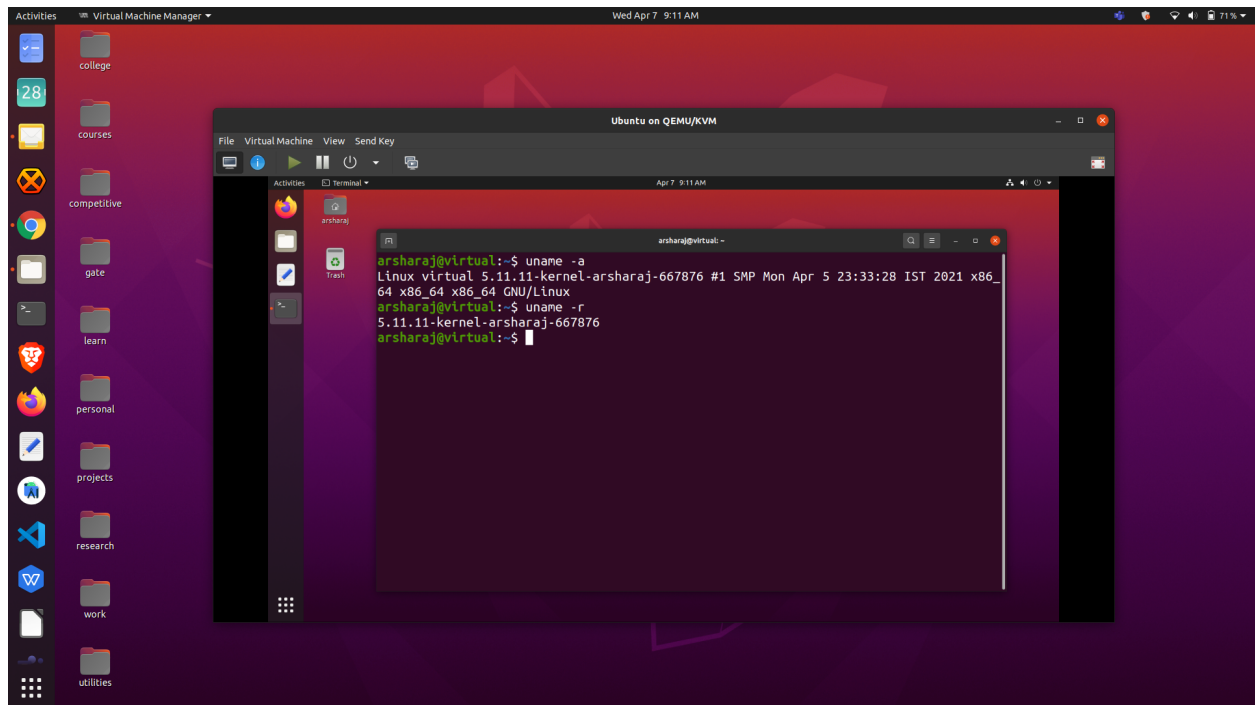


2. Custom Kernel installation in VM :

I have successfully compiled and installed the custom kernel.

My personal reference : Kernel-Arsharaj-667876

Here is my proof :-



TIMELINE

1. April 13, 2021 - May 16, 2021 (Proposal Review Period)

- During my proposal review period, I am going to enhance my knowledge related to the project and its requirements.
- I will revise Bash Scripting as well as C programming.
- Get my hands-on experience with kworkflow and linux kernel.

2. May 17, 2021 - June 7, 2021 (Community Bonding)

- Gain exposure to open-source software development by interacting with community members and introducing myself as an aspiring Linux developer.
- Learning and helping out community members.
- Keep learning new stuff and doing practicals related to what I have learnt.

3. June 7, 2021 - July 16, 2021 (Working Phase 1)

- Familiarize myself with the kworkflow codebase and coding style.
- Send my first patch to the kworkflow after discussing my approach with my mentor.

4. July 16, 2021 - August 16, 2021 (Working Phase 2)

- Work upon more issues and features if the code was merged into the codebase.
- Otherwise update the code and send the patch after resolving all the issues.
- Help out other community members during all of this time.

5. August 16, 2021 - August 23, 2021 (Final Working Phase)

- Write appropriate documentation for the patches and features added.
- Make the codebase into standard format.
- Submit all of my evaluations and final code.

6. August 23, 2021 - Onwards

- Keep contributing to open-source softwares and projects in some form or the other.

Other Commitments :-

Since I am in the third year of my B.Tech so it may be possible that I would not be able to give the required time during my end-semester examinations. But, I assure you that I will cover up my time before/after my semester exams. I could not give the exact timing of the exams due to the Covid disturbance. I will be in constant touch with my mentor and organization.

RELATED WORKS

Library Management System :-

- Language used - C
- Implemented the concept of pointers, file handling, file inclusion, etc.
- Basic form of Key encryption was also implemented using fibonacci series.
- Project link : <https://github.com/arsharaj/library-management-system-c>

- All of the projects on my Github account are developed on the Linux Operating System.

WHY LINUX FOUNDATION ?

I really want to work with the Linux Organization since it is the most prominent organization that is actively working on open-source software development. I intend to work with the Linux community for a long time and develop softwares that runs the heart of millions of computers.

WHY ME ?

As for me I am a Computer Science student currently in third year of my B.Tech. I am a Linux enthusiast and aspiring Software Developer. I have used many open-source softwares like linux (obviously), flutter, git, etc. and now I want to give back to that open-source community. I intend to gain exposure with OSS development while developing a real-world project. I have chosen this idea since it would be a good entry ticket for me.

I will be waiting for your positive feedback.

Thanks and Regards,

Arsharaj Chauhan