

Linux Kernel Best Practices and its Implementation in the Project

Abhishek Gupta
guptabhishek785@gmail.com

Vishal Veera Reddy
veerareddyvishal144@gmail.com

Neeloy Gomes
neeloy.gomes@gmail.com

Tyler Craine
tylerkecraine@gmail.com

Abhimanyu Belam
bellamabhimanyu@gmail.com

ACM Reference Format:

Abhishek Gupta, Vishal Veera Reddy, Neeloy Gomes, Tyler Craine, and Abhimanyu Belam. 2022. Linux Kernel Best Practices and its Implementation in the Project. In *Proceedings of ACM Conference (Conference'17)*. ACM, New York, NY, USA, 2 pages. <https://doi.org/10.1145/nnnnnnn.nnnnnnn>

1 LINUX KERNEL BEST PRACTICES

There are many practices that led to the success of the Linux Kernel but the following process stands out in particular

1.1 Short Release Cycle

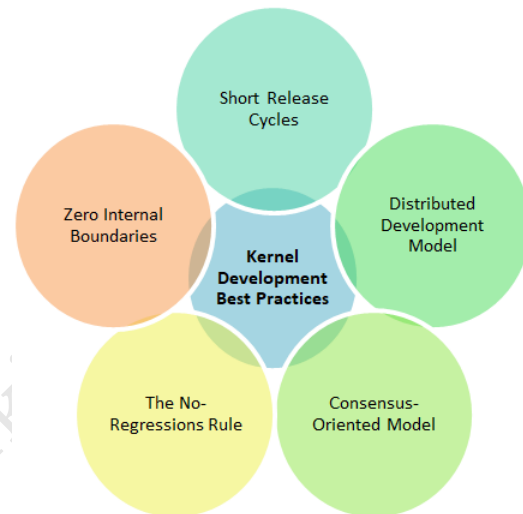
One of the major reasons for the success of the Linux Kernel was that it quickly adapted to the short-release cycle format. A short release cycle ensured that new but stable updates were quickly released for the kernel which ensured that work wasn't getting piled up without affecting the development of the product

The project rubric ensures that the software created by the students was released in short cycles, ensured that there were a high number of commits which is a good indicator of continuous patches implemented to fix issues as soon as it was created

1.2 Distributed Development Model

The Distributed Development Model stresses that the responsibility and workload need to be efficiently distributed among team members and improve participation for better scalability

The project rubric gives a lot of importance to this practice. As per the rubric, it is very important that the workload is evenly spread over the whole team members and there are a high number of commits by different people. It ensures that a suitable version control system is used by the team members to ensure that there is a good and equal collaboration among members.



1.3 Consensus-Oriented Model

The Linux team stressed that every feature to be merged/ made available would require the approval of all the developers and every developer's consensus was taken into account

This rule is enforced by the fact that the project rubric wants the team to have a channel for communication so that they can arrive at a consensus. Also importance is given to issues being created and that the issues are closed with everyone's consensus

1.4 The No-Regression Rule

The Linux team stressed that every feature to be merged/ made available would require the approval of all the developers and every developer's consensus was taken into account

This rule is enforced by the incorporating automated testing and test cases for testing

1.5 Zero Internal Boundaries

Every developer is free to work on any part of the software. The responsibility for a particular task can be taken up by any developer and there is no specific restrictions to each area

The project rubrics ensures that there are no internal boundaries among students by making sure that contributors are using the same tools and each of them make commits in multiple areas.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted by ACM, provided that the fee of \$15.00 is paid directly to ACM. This permission is granted without fee or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from permissions@acm.org.
Conference'17, July 2017, Washington, DC, USA
© 2022 Association for Computing Machinery.
ACM ISBN 978-x-xxxx-xxxx-x/YY/MM...\$15.00
<https://doi.org/10.1145/nnnnnnn.nnnnnnn>

2 CONCLUSION

The Linux kernel is one of the largest and most successful open-source projects that has ever come about projects that has ever come about. The reason for success is the high rate of change and the scale. A vast number of individual contributors along with corporate participation all following the core principle has been the

major reason for its success

Overall the rubrics stress highly that the Linux Kernel best practices are embraced by the students when developing software or working on any other project.