

DT149G Administration of UNIX-like systems

# Laboratory Assignment: Building a custom kernel

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lab\_assgn1.tex 2071 2014-11-05 10:14:51Z lenfra

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## 1 Introduction

In this laboratory assignment we are going to configure and build a customized kernel for your system. Usually one never need to bother with creating a customized kernel, however, when one is given a task of administrating several servers running a unix-like operating system there might be times where a custom kernel is needed, for example if your server is running some special devices that isn't supported in the standard kernel.

## 2 Aim

After completion of this assignment you will have:

- Knowledge on how to customize the kernel of your system.

## 3 Reading instructions

Before starting this assignment you should have read chapters 13.1-13.3, 13.7-13.9 in Nemeth et al. [2]

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## 4 Tasks

Follow the *Alternate build Method: The Old-Fashioned Debian Way* that can be found at [1] to create your custom kernel. Remember to use `make localmodconfig` when configuring the kernel to make sure that all the necessary modules are built, it will also significantly reduce the time needed to build the kernel by reducing the amount of modules that has to be built. Make sure that the *knfsd* kernel module is included in your new kernel, otherwise you will not be able to set up the *nfs-server* in laboratory assignment 4.

## 5 Examination

In your report, you should describe the process of building your own custom kernel and give a detailed explanation of each step.

## References

- [1] Kernel/compile. URL <https://help.ubuntu.com/community/Kernel/Compile>.
- [2] Evi Nemeth, Garth Snyder, Trent R. Hein, and Ben Whaley. *UNIX and Linux system administration handbook*. Prentice Hall, Upper Saddle River, NJ, 4th ed. edition, 2011. ISBN 978-0-13-148005-6 (pbk. : alk. paper).