

CMPE 283 Assignment 1
Submitted By: Arushi Bhatla | 014161121

Questions

Describe in detail the steps you used to complete the assignment. Consider your reader to be someone skilled in software development but otherwise unfamiliar with the assignment. Good answers to this question will be recipes that someone can follow to reproduce your development steps.

Answer:

Pre requisites:

Step 1: Clone the linux repository which you forked. I cloned it to my Desktop.

Step 2: Install few packages:

> sudo apt-get update

> sudo apt-get install git build-essential kernel-package fakeroot libncurses5-dev libssl-dev ccache bison flex

Steps Followed for completing the Assignment

Part 1: Download and build the Linux kernel source code

Step 1: cd linux (Change present directory to linux)

Step 2: cp /boot/config-`uname -r` .config

Step 3: make oldconfig

(Now Keep pressing Enter. By doing this, the default settings will be implied)

Step 4: make menuconfig

Step 5: sudo make -j2 && sudo make modules_install -j2 && sudo make install -j2
I've written -j2 as I want to use 2 cores to run this.(Step 5 takes a LOT of time.)

Part 2: Create a new kernel module with the assignment functionality

Step 1: Create the .c file implementing the functionality asked.

Step 2: Copy the given MakeFile into the same folder as your .c file

Step 3: Change your Directory into that folder.

Step 4: run the command: **make**

Step 5: Now you'll see that your kernel object file(.ko) is created.

Part 3: Load (insert) the new module

Step 1: `sudo insmod cmpe283-1.ko`

Run this command to insert your module into the kernel. The name of my module(kernel object file) is cmpe283-1.ko

Part 4: Verify proper output in the system message log.

Step 1: `dmesg`

Running this command will display the messages from the kernel.

Step 2: `dmesg > ~/Desktop/log.txt`

Using this command, you can save these all the kernel logs to any text editor. Then filter whatever information you want.