

CMPE283 : Virtualization
Assignment 1: Discovering VMX Features

Questions:

1. Details about my contribution.

- **Mandipsinh Gohil:** First, I understand about the code how it works. After that search about the Ubuntu version with VMX mode enable and make Virtual Machine using VM Ware Fusion. After That Search about the MSR structure given in the Assignment. Learn about how the C code that given by Prof works. And accordingly make structure of the MSR listed. Test the Code in local kernel by insert it. Also search about the Makefile and how to insert .ko file to run our code in the kernel. Finally came up with the final code with all the structure of the MSR and updated code.
- **Utsav Jain:** I researched how to build the Linux kernel and troubles hooted all the errors that arose while building the kernel. I also researched how to insert module into the kernel and get the output. I created the diff file and made sure that the assignment is delivered on time. I also understood the starter code and figured out the steps that needed to be done in order to get the desired output. I attempted to do this lab using virtual box running on Windows host. After exhaustive troubleshooting, I was not able to get the desired output.

2. Details Step we use to complete the Assignment.

Steps

1. Change to the directory where you want to clone the git tree. In this example we will use

```
$HOME: cd $HOME
```

2. Clone the mainline kernel git tree:

```
git clone https://github.com/torvalds/linux.git
```

3. Change to directory linux: cd linux

4. Copy the kernel config file from your existing system to the kernel tree:

```
cp /boot/config-`uname -r` .config
```

5. sudo apt install bison
6. sudo apt install flex

7. Bring the config file up to date. Answer any questions that get prompted. Unless you know you are interested in a particular feature, accepting the default option by pressing Enter should be a safe choice:

`make oldconfig`

8. `make clean` : Make kernel code directory clean
9. `sudo apt install libelf-dev`
10. `sudo apt-get install libssl-dev`
11. `make -j`getconf _NPROCESSORS_ONLN` deb-pkg LOCALVERSION=-mandipstud`
12. `cd ..`
13. `sudo dpkg -i linux-image-4.16.0-rc6-mandipstud_4.16.0-rc6-mandipstud-1_amd64.deb`
14. `sudo dpkg -i linux-headers-4.16.0-rc6-mandipstud_4.16.0-rc6-mandipstud-1_amd64.deb`
15. `sudo reboot`
16. After reboot clone the repository with the module code
17. `Git clone`
18. `cd CMPE283`
19. `make https://github.com/MandipGohil/CMPE283.git`
20. `sudo insmod cmpe-283-1.ko`
21. `dmesg`