

## Kernel Emulator Implementation

To implement the kernel emulator, we want:

- Reuse the kernel code **as much as** possible.
- Modify the kernel code **as less as** possible.

The current modifications in the kernel:

- Provide a new kernel entry point.
- Reuse the boot code to do the initialization work. (Collect the bootinfo and set up the kernel objects for the roottask, etc.)
- Dispatch the seL4 IPC message into the **kernel interrupts or syscalls handling routines**.
  - (In seL4, interrupts and exceptions are all handled in one routine and system calls which are entered using **syscall instructions** will enter a **fast syscall routine**)
- Emulate privilege instructions or bypass them.
- Emulate the **kernel window mapping**.