The Block I/O Layer - B

Objective: In this lab you will modify the noop I/O scheduler to log each read/write block I/O message that comes into subsystem along with some accounting information for bio structure.

1. Create a new project “Lab14” and copy the noop-iosched.c implementation file to that directory.

2. Modify the “elevator_name” to something else ex. “fp-noop”.

3. Modify the noop_add_request:

    - Log reads/writes to this block I/O scheduler by dereferencing the rq structure.
    - Access and log the bio_vec structure count and current index.

4. Test your block I/O scheduler. Example: “cat /dev/random > /tmp/junk”

5. Don’t forget to change back to the CFQ and unload your module when your done!

Hints:

- Look at the bio structure and header file.

```
/*
 * bio bi_rw flags
 *
 * bit 0 -- read (not set) or write (set)
 * bit 1 -- rw-ahead when set
 * bit 2 -- barrier
 * bit 3 -- fail fast, don't want low level driver retries
 * bit 4 -- synchronous I/O hint: the block layer will unplug immediately
 * bit 5 -- fail fast device errors
 * bit 6 -- fail fast transport errors
 * bit 7 -- fail fast driver errors
 */
```

```
noop: adding [write] request
noop: bio_vec count [1]
noop: bio_vec index[0]
noop: adding [write] request
noop: bio_vec count [1]
noop: bio_vec index[0]
noop: adding [write] request
```