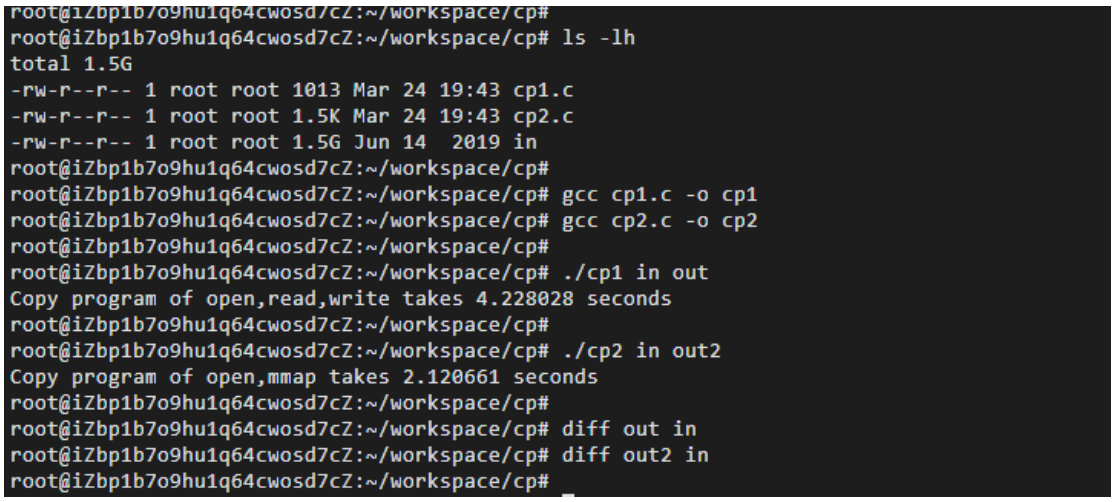

From the screenshot above, copy a 1.5G file:

(1) For the first variant, using open(), read() and write() system calls, it took 4.228028 seconds;

(2) For the second variant, using open() and mmap() system calls, and memcpy(), it took 2.120661 second;

First variant takes more than twice as long as second variant, so second variant's time performance is much better.

Possible reasons of (no) performance difference: read() and write() copy data from the kernel buffer to the application buffer, and then copy data from the application buffer to the kernel buffer. Mmap() and memcpy() on the other hand, copy data directly from one kernel buffer mapped to the address space to another. Therefore, read() and write() performed more system calls and made more copies than mmap() and memcpy().

Questions:

1. About mmap(), it kept failing when using open() with O_WRONLY, but it succeed by switching to O_RDWR or O_RDONLY. Why?
2. It would report “Bus error” if not set the size of dst file for second variant, Why is the size not required for first variant, but for second variant?