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ECE 565

Homework 5

1. In the figure, we see controllers and devices as separate units. The reason is to allow a controller to handle multiple devices, and thus eliminate the need for having a controller per device. If controllers become almost free, then it will be simpler just to build the controller into the device itself. This design will also allow multiple transfers in parallel and thus give better performance.
2. Device driver.
3. Device driver.
4. Device-independent software.
5. User-level software.
6. RAID level 2 can not only recover from crashed drives, but also from undetected transient errors. If one drive delivers a single bad bit, RAID level 2 will correct this, but RAID level 3 will not.

At time 5000: Current time = 5000; Next Signal = 8; Header → 8 → 4 → 3 → 14 → 8.

At time 5005: Current time = 5005; Next Signal = 3; Header → 3 → 4 → 3 → 14 → 8.

At time 5013: Current time = 5013; Next Signal = 2; Header 2 → 14 → 8.

At time 5023: Current time = 5023; Next Signal = 6; Header → 6 → 4 → 5.

1. The bandwidth on a network segment is shared, so 100 users requesting different data simultaneously on a 1-Mbps network will each see a 10-Kbps effective speed. With a shared network, a TV program can be multicast, so the video packets are only broadcast once, no matter how many users there are and it should work well.

* With 100 users browsing the Web, each user will get 1/100 of the bandwidth, so performance may degrade very quickly.
* In today’s day, 1Mbps is not much bandwidth and even with a limited number of users, many network functions are limited