

The Boot Process (Will be very light – Mead's notes are very comprehensive)

- The Power-On Self-Test
 - BIOS – Basic Input/Output System
 - Detects what components are connected to computer, which may do their own self-tests.
 - Olden days, problems would be beep codes. Now, there are some voice projections.
- Finding an operating system
 - Always in the first sector of the hard disk (except for hard drives over 2TB)
- Master Boot Record
 - 0x55AA is a **required** sanity check at the end of the record. If this is missing, the operating system will not boot.
- Dumping the Sector
 - `dd if=/dev/sba of=mbr.bin bs=512 count=1`
 - *sba* is the entire drive. When partitioned, it looks like *sba1*, *sba2*, etc.
 - *mbr.bin* is the binary output file
 - 512 is the number of bytes to grab
 - *count* is the number of times to grab 512 bytes
- Examples of partitioned disks
 - Do not install applications in C:/ (for Windows users)
 - If you run out of space, you're basically hosed
 - Never upgrade in place!
 - If something fails or is buggy, you can't roll back at all.
 - 512 bytes is the smallest amount of bytes you can read at a time (hard-coded)
 - Can't share sections between files
- GUID (Globally Unique Identifier) Partition Table
 - MBR only supports 4 primary partitions or 3 + 1 extended partitions.
 - Solution for over 2TB files
 - GUID Partitions "Fake" the protective MBR (both at front and at end) to fool the utility that it isn't an empty partition.