

Network of Alabama Academic Libraries
Alabama Digital Preservation Network (ADPNet)
Appendix B: ADPNet Technical Specifications

An ADPNet server capable of running LOCKSS requires:

- Enough CPU and memory. 1GHz VIA CPUs are the slowest we recommend, a 2.4GHz Celeron is plenty. We recommend at least 1GB of memory.
- A CD drive and optionally either:
 - a floppy disk drive
 - or a USB flash memory drive **with a hardware write-protect switch.**
- At least 1 terabyte of disk storage. The current LOCKSS CD supports both parallel ATA (PATA) drives and serial ATA (SATA) in native mode. Some adjustment of BIOS settings may be needed to handle SATA drives.

The ADPNet Technical Committee recommends servers similar to the Iron Systems (<http://www.ironsystems.com/index.asp>) AR230R 1U rackmount systems configured with a 3.2GHz Celeron, 1GB of RAM, two 750GB or 1TB disk drives and a CD drive.

We **strongly advise** buying from smaller vendors like Iron Systems. Almost all the problems we have encountered bringing up LOCKSS boxes have been on new machines from major manufacturers, in particular from Dell. The reason is that Dell gets new chips first, and is highly efficient at managing inventory. So the machine you get is likely to have new chips in it for which the Open Source community in general and the OpenBSD team in particular has not yet had time to create the drivers. Smaller manufacturers get the new chips later, and are less efficient at managing inventory; the resulting longer lag time makes it much more likely that the necessary drivers will be in place.

We **strongly advise** buying low-cost hardware such as desktops or small, 1U servers. For normal use the LOCKSS system neither requires nor benefits from expensive hardware. Again, high-end hardware or very recent models, especially from large manufacturers, often includes brand new chips and devices for which suitable drivers do not yet exist.

LOCKSS does not currently support RAID. The LOCKSS system provides much higher levels of replication and fault-tolerance than RAID. If multiple disks are present, LOCKSS will use them all. Combining them into a single large RAID filesystem may cause problems, and doesn't provide significant advantages.

If you are in any doubt, please arrange to run the LOCKSS system in demo mode on the hardware you are thinking of buying—it acts as a “live CD” and will not affect the system's disk. Demo mode requires at least 750MB of RAM.

If you have questions about which server you should buy, please contact the ADPNet Technical Committee first, at adpnet@auburn.edu.