libata: past, present and future

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ATA/ATAPI support

- ATAPI
- PATA + C/H/S, READ/WRITE MULTIPLE
- NCQ
- FUA
- SCSI SAT
- CompactFlash (CFA)
Hardware support

- Most on-motherboard chipsets (mostly AHCI)
- PCI drivers work on all PCI platforms (big endian, little endian, 32-bit, 64-bit, whatever)
- Cell, ARM, embedded...
- “SATA II” - 3.0Gbps, NCQ, ...
- eSATA
Software features

- Conversion to new EH almost complete
- Hotplug, “warm plug”
- Improved diagnostics
- Suspend/resume
- HDIO_xxx compatibility ioctl support
- Bug fixes, bug fixes, bug fixes
Accomplishments

- Fedora 7 test 1 disabled IDE driver, using libata for PATA as well as SATA
- 60+ host controller drivers
- Engineering support from controller vendors, hard drive vendors, integrators, large users
- ATA community seems to be coming together to one big happy family: Alan, Bart, Mark, ...
- Close to completion?
libata future

- New init model: like SCSI/netdev/etc.
- Refine error handling / probe / reset
- Sysfs
- Port multiplier
- Powersave
- Host-protected area (HPA)
- Block layer updates (next slide)
Block layer future

- NV cache
- Synchronization between request queues ("request queue group")
- Centralization of timeouts, error handling infrastructure
- Move ATA block devs from SCSI to block layer
- Make SCSI block devs, transports more generic?
- Barriers suck currently
- I/O rate guarantees
- Better error information back to filesystem?