GNU parted

Version 2.0 Development Plans
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- Software engineer at Red Hat working on Fedora and Red Hat Enterprise Linux
- Development work includes anaconda, GNU parted, and DHCP software
- Former developer on the Slackware Linux project
- Project co-maintainer for GNU parted
- Usually write C and Python code
GNU parted

- Project overview and scope
- Storage methodologies
- Current features
- Current limitations
- Goals for version 2.0
- Plans for version 1.x
- Contributors
Project Overview and Scope

• GPL library for partition and filesystem management
• Command line program provided as a replacement for fdisk(8)
• Support as many filesystems, disk labels, and operating systems as possible
• Support creating, destroying, copying, moving, and resizing partitions and filesystems
Storage Methodologies

- **Disks** - physical devices
- **Labels** - describe the disk layout
- **Partitions** - disk divisions
- **Filesystems** - organization system
  - 'slice' == 'partition'
- **Seagate, Maxtor, IBM, Western Digital**
- **DOS, Macintosh, Sun, BSD**
- **Primary, Extended, Swap, Whole Disk**
- **DOS, FAT, ext3, NTFS, FFS, HFS+**
RAID and LVM present new challenges
- RAID devices translate to Disks for the most part
- RAID mirrors may need special treatment since breaking the mirror still preserves the disk label
- LVM volume groups == disks
- LVM logical volumes == partitions
- LVM volume group vs. normal block device
- Removable media
Current Features

- Multiple architectures supported
- Wide range of label types supported
  - Examples: DOS, GPT, Mac, Sun, BSD
- Wide range of filesystems supported
  - Examples: Ext2, FAT, HFS
- Same commands and library calls regardless of platform
- Functionality contained in libparted rather than a userspace program
Current Limitations

- Limited filesystem operation support
- e.g., Lacking ext3 creation or resize
- No direct NTFS creation support
- No direct HFS+ creation support
- Library bindings only available for C
- Poor exception handling in libparted
- Lack of good API documentation
- Parted(8) lacks certain features in fdisk(8)
Goals for Version 2.0

- Support non-size boundary specifications (CHS)
- API overhaul
- Improve VFS layer to support more fs features
- Remove legacy fs code and use existing libraries
- Unit testing framework
- Add library bindings for other languages
  - Obsolete pyparted
  - Allow library usage in more applications
  - Possibly autogenerate direct C bindings, then build on that
Goals for Version 2.0 (cont.)

• Improve API documentation
• Improve error handling throughout libparted
• Side projects
  – Exposing LVM devices as virtual block devices
  – Collaboration with other projects using libparted
Plans for Version 1.x

• Version 1.8 will continue in maintenance mode
• No major features introduced in 1.x
• Bug fixes backported from mainline tree
• Help developers ease transition to using libparted 2.0
• Allow commercial distributions to continue with 1.x branch as needed
Contributors

- Translators needed for documentation
- Coders for languages other than C needed for library binding development
- Developers experienced with non-Linux operating systems needed
- Developers using libparted in other projects; we'd like to hear what you like/dislike about the API
- Parted package maintainers; send bug reports and patches upstream!
References

• GNU parted Home Page
  – http://www.gnu.org/software/parted/
• Mailing List
  – parted-devel@lists.alioth.debian.org
• IRC
  – #parted on FreeNode