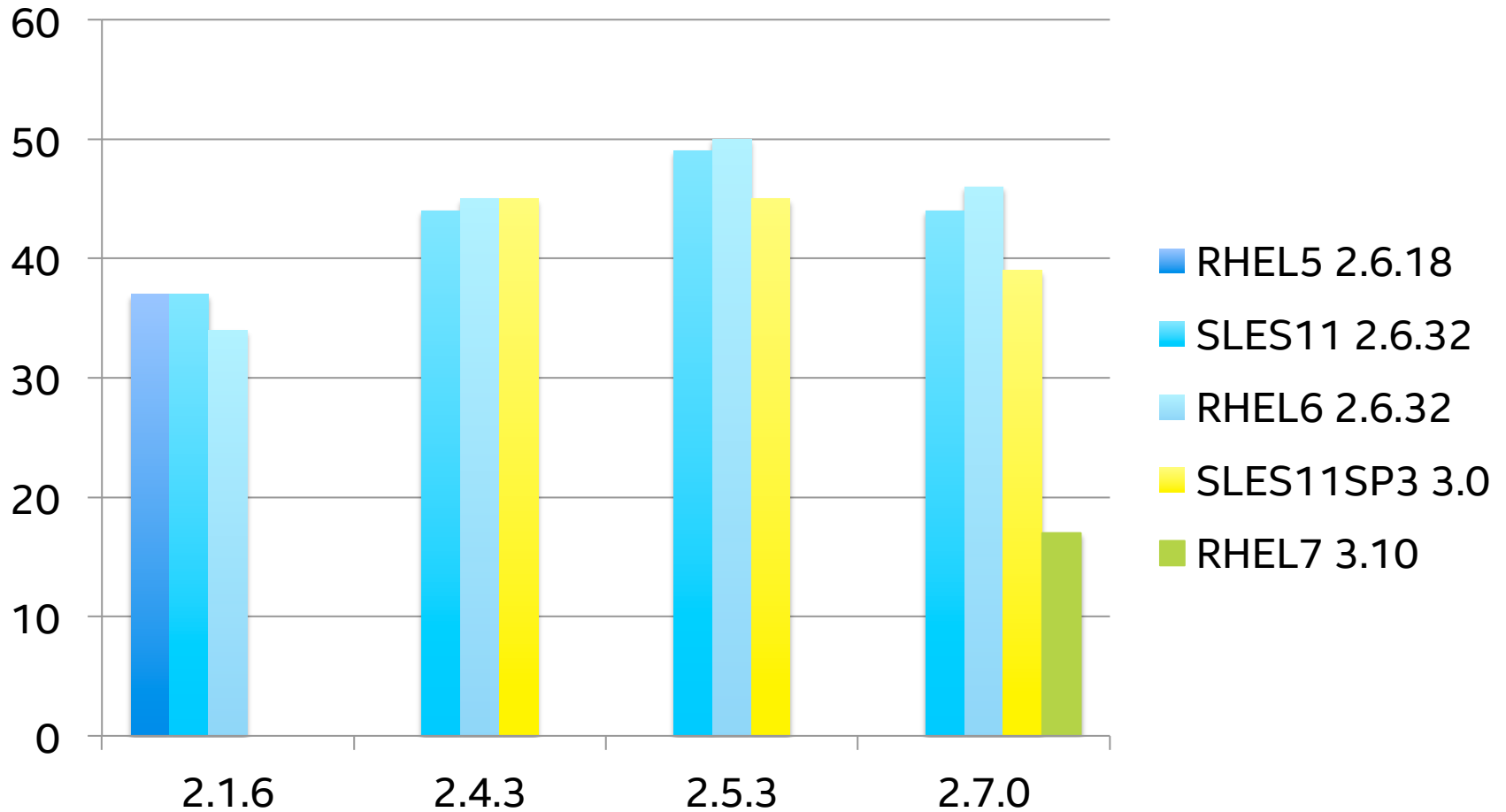# Toward patchless ldiskfs kernels

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Patch changes by release

Legend:
- RHEL5 2.6.18
- SLES11 2.6.32
- RHEL6 2.6.32
- SLES11SP3 3.0
- RHEL7 3.10

Current RHEL 7 patch series

ext4-print-inum-in-htree-warning.patch

ext4-remove-truncate-warning.patch

ext4-hash-indexed-dir-dotdot-update.patch

ext4-mballoc-extra-checks.patch

ext4-mballoc-pa-free-mismatch.patch

ext4-disable-mb-cache.patch

ext4-inode-version.patch

ext4-lookup-dotdot.patch

ext4-osd-iop-common.patch

ext4-kill-dx-root.patch

ext4-data-in-dirent.patch

ext4-large-eas.patch

ext4-nocmtime.patch

ext4-pdirop.patch

ext4-max-dir-size.patch

ext4-prealloc.patch

ext4-misc.patch

14 files changed, 2428 insertions(+), 249 deletions(–)

Could land with update to latest kernel

ext4-print-inum-in-htree-warning.patch

ext4-remove-truncate-warning.patch

ext4-mballoc-extra-checks.patch

ext4-mballoc-pa-free-mismatch.patch

ext4-kill-dx-root.patch

ext4-nocmtime.patch

ext4-disable-mb-cache.patch

ext4-max-dir-size.patch

Maybe drop

ext4-prealloc.patch – mballoc tunables that are likely no longer needed

ext4-lookup-dotdot.patch - Need to determine if still needed after upstream fixes

14 files changed, 430 insertions(+), 149 deletions(-)

Could land with rework/enhancement

`ext4-large-eas.patch` - medium effort

- Needs support for 64KB direct-addressed xattrs (LU-908)

`ext4-inode-version.patch` - medium effort

- Could rework i_version increment to `ext4_inc_iversion()` wrapper
- ldiskfs would only need to patch `ext4_inc_iversion()`

`ext4-pdirop.patch` - already done

- Being split into two patches (http://review.whamcloud.com/14264)
- 3-level htree + >2GB dir size likely to be accepted upstream
- ext4 parallel dir locking needs VFS-level parallel dir locking
  - Major amount of effort, won't land upstream without it

14 files changed, 2213insertions(+), 156 deletions(-)

Unlikely to land upstream

`ext4-osd-iop-common.patch`

- EXPORT_SYMBOL()

- Two isolated functions, could move to osd-ldiskfs?

`ext4-data-in-dirent.patch`

- Patch largely ready, need to find upstream use case for it first

`ext4-misc.patch`

- Mostly EXPORT_SYMBOL()

EXPORT_SYMBOL() is easily patched or worked around if needed

Conclusion

Unlikely to become completely patchless in near future

Reducing patch count is good anyway, makes updates easier

LU-6030 cleanup for ldiskfs patches

- https://jira.hpdd.intel.com/browse/LU-6030

LU-6220: push ext4/ldiskfs patches upstream if possible

- https://jira.hpdd.intel.com/browse/LU-6220