2.30.0

Git 2.30 Release Notes ======================

Updates since v2.29 ----------

UI, Workflows & Features

- Userdiff for PHP update.
- Userdiff for Rust update.
- Userdiff for CSS update.
- The command line completion script (in contrib/) learned that "git stash show" takes the options "git diff" takes.
- "git worktree list" now shows if each worktree is locked. This possibly may open us to show other kinds of states in the future.
- "git maintenance", an extended big brother of "git gc", continues to evolve.
- "git push --force-with-lease[=<ref>]" can easily be misused to lose commits unless the user takes good care of their own "git fetch". A new option "--force-if-includes" attempts to ensure that what is being force-pushed was created after examining the commit at the tip of the remote ref that is about to be force-replaced.
- "git clone" learned clone.defaultremotename configuration variable to customize what nickname to use to call the remote the repository was cloned from.
- "git checkout" learned to use checkout.guess configuration variable and enable/disable its "--[no-]guess" option accordingly.
- "git resurrect" script (in contrib/) learned that the object names may be longer than 40-hex depending on the hash function in use.
- "git diff A...B" learned "git diff --merge-base A B", which is a longer short-hand to say the same thing.
- A sample ’push-to-checkout’ hook, that performs the same as what the built-in default action does, has been added.

- "git diff" family of commands learned the "-I<regex>" option to ignore hunks whose changed lines all match the given pattern.
- The userdiff pattern learned to identify the function definition in POSIX shells and bash.
- "git checkout-index" did not consistently signal an error with its exit status, but now it does.
- A commit and tag object may have CR at the end of each and every line (you can create such an object with hash-object or using --cleanup=verbatim to decline the default clean-up action), but it would make it impossible to have a blank line to separate the title from the body of the message. We are now more lenient and accept a line with lone CR on it as a blank line, too.
- Exit codes from "git remote add" etc. were not usable by scripted callers, but now they are.
- "git archive" now allows compression level higher than "-9" when generating tar.gz output.
- Zsh autocompletion (in contrib/) update.
- The maximum length of output filenames "git format-patch" creates has become configurable (used to be capped at 64).
- "git rev-parse" learned the "--end-of-options" to help scripts to safely take a parameter that is supposed to be a revision, e.g. "git rev-parse --verify -q --end-of-options $rev".
- The command line completion script (in contrib/) learned to expand commands that are alias of alias.
- "git update-ref --stdin" learns to take multiple transactions in a single session.
- Various subcommands of "git config" that take value_regex learned the "--literal-value" option to take the value_regex option as a literal string.
- The transport layer was taught to optionally exchange the session ID assigned by the trace2 subsystem during fetch/push transactions.
- "git imap-send" used to ignore configuration variables like core.askpass; this has been corrected.
- "git $cmd $args", when $cmd is not a recognised subcommand, by default tries to see if $cmd is a typo of an existing subcommand and optionally executes the corrected command if there is only one possibility, depending on the setting of help.autocorrect; the users can now disable the whole thing, including the cycles spent to find a likely typo, by setting the configuration variable to ’never’.

- "@" sometimes worked (e.g. "git push origin @:there") as a part of a refspec element, but "git push origin @" did not work, which has been corrected.

Performance, Internal Implementation, Development Support etc.

- Use "git archive" more to produce the release tarball.
- GitHub Actions automated test improvement to skip tests on a tree identical to what has already been tested.
- Test-coverage for running commit-graph task "git maintenance" has been extended.
- Our test scripts can be told to run only individual pieces while skipping others with the "--run=..." option; they were taught to take a substring of test title, in addition to numbers, to name the test pieces to run.
- Adjust tests so that they won't scream when the default initial branch name is different from 'master'.
- Rewriting "git bisect" in C continues.
- More preliminary tests have been added to document desired outcomes of various "directory rename" situations.
- Micro clean-up of a couple of test scripts.
- "git diff" and other commands that share the same machinery to compare with working tree files have been taught to take advantage of the fsmonitor data when available.
- The code to detect premature EOF in the sideband demultiplexer has been cleaned up.
- "git fetch --depth=<n>" over the stateless RPC / smart HTTP transport handled EOF from the client poorly at the server end.
- A specialization of hashmap that uses a string as key has been introduced. Hopefully it will see wider use over time.
- "git bisect start/next" in a large span of history spends a lot of time trying to come up with exactly the half-way point; this can be optimized by stopping when we see a commit that is close enough to the half-way point.
- A lazily defined test prerequisite can now be defined in terms of another lazily defined test prerequisite.
- Expectation for the original contributor after responding to a review comment to use the explanation in a patch update has been described.

- Multiple "credential-store" backends can race to lock the same file, causing everybody else but one to fail---reattempt locking with some timeout to reduce the rate of the failure.

- "git-parse-remote" shell script library outlived its usefulness.

- Like die() and error(), a call to warning() will also trigger a trace2 event.

- Use of non-reentrant localtime() has been removed.

- Non-reentrant time-related library functions and ctime/asctime with awkward calling interfaces are banned from the codebase.

Fixes since v2.29 ----------

- In 2.29, "--committer-date-is-author-date" option of "rebase" and "am" subcommands lost the e-mail address by mistake, which has been corrected. (merge 5f35edd9d7 jk/committer-date-is-author-date-fix later to maint).

- "git checkout -p A…B [-- <path>]" did not work, even though the same command without "-p" correctly used the merge-base between commits A and B. (merge 35166b1fb5 dl/checkout-p-merge-base later to maint).

- The side-band status report can be sent at the same time as the primary payload multiplexed, but the demultiplexer on the receiving end incorrectly split a single status report into two, which has been corrected. (merge 712b0377db js/avoid-split-sideband-message later to maint).

- "git fast-import" wasted a lot of memory when many marks were in use. (merge 3f018ec716 jk/fast-import-marks-alloc-fix later to maint).

- A test helper "test_cmp A B" was taught to diagnose missing files A or B as a bug in test, but some tests legitimately wanted to notice a failure to even create file B as an error, in addition to leaving the expected result in it, and were misdiagnosed as a bug. This has been corrected. (merge 262d5ad5a5 es/test-cmp-typocatcher later to maint).

- When "git commit-graph" detects the same commit recorded more than once while it is merging the layers, it used to die. The code now ignores all but one of them and continues. (merge 85102ac71b ds/commit-graph-merging-fix later to maint).

- The meaning of a Signed-off-by trailer can vary from project to project; this and also what it means to this project has been clarified in the documentation. (merge 3abd4a67d9 bk/sob-dco later to maint).

- "git credential’ didn’t honor the core.askPass configuration variable (among other things), which has been corrected. (merge 567ad2c0f9 tk/credential-config later to maint).

- Dev support to catch a tentative definition of a variable in our C code as an error. (merge 5539183622 jk/no-common later to maint).

- "git rebase --rebase-merges" did not correctly pass --gpg-sign command line option to underlying "git merge" when replaying a merge using non-default merge strategy or when replaying an octopus merge (because replaying a two-head merge with the default strategy was done in a separate codepath, the problem did not trigger for most users), which has been corrected. (merge 43ad4f2eca sc/sequencer-gpg-octopus later to maint).

- "git apply -R" did not handle patches that touch the same path twice correctly, which has been corrected. This is most relevant in a patch that changes a path from a regular file to a symbolic link (and vice versa). (merge b0f266de11 jt/apply-reverse-twice later to maint).

- A recent oid→hash conversion missed one spot, breaking "git svn". (merge 03bb366de4 bc/svn-hash-oid-fix later to maint).

- The documentation on the "--abbrev=<n>" option did not say the output may be longer than "<n>" hexdigits, which has been clarified. (merge cda34e0d0c jc/abbrev-doc later to maint).

- "git p4" now honors init.defaultBranch configuration. (merge 1b09d1917f js/p4-default-branch later to maint).

- Recently the format of an internal state file "rebase -i" uses has been tightened up for consistency, which would hurt those who start "rebase -i" with old git and then continue with new git. Loosen the reader side a bit (which we may want to tighten again in a year or so). (merge c779386182 jc/sequencer-stopped-sha-simplify later to maint).

- The code to see if "git stash drop" can safely remove refs/stash has been made more careful. (merge 4f44c5659b rs/empty-reflog-check-fix later to maint).

- "git log -L<range>:<path>" is documented to take no pathspec, but this was not enforced by the command line option parser, which has been corrected. (merge 39664cb0ac jc/line-log-takes-no-pathspec later to maint).

- "git format-patch --output=there" did not work as expected and instead crashed. The option is now supported. (merge dc1672dd10 jk/format-patch-output later to maint).

- Define ARM64 compiled with MSVC to be little-endian. (merge 0c038fc65a dg/bswap-msvc later to maint).

- "git rebase -i" did not store ORIG_HEAD correctly. (merge 8843302307 pw/rebase-i-orig-head later to maint).

- "git blame -L :funcname — path" did not work well for a path for which a userdiff driver is defined.

- "make DEVELOPER=1 sparse" used to run sparse and let it emit warnings; now such warnings will cause an error. (merge 521dc56270 jc/sparse-error-for-developer-build later to maint).

- "git blame --ignore-revs-file=<file>" learned to ignore a non-existent object name in the input, instead of complaining. (merge c714d05875 jc/blame-ignore-fix later to maint).

- Running "git diff" while allowing external diff in a state with unmerged paths used to segfault, which has been corrected. (merge d66851806f jk/diff-release-filespec-fix later to maint).

- Build configuration cleanup. (merge b990f02fd8 ab/config-mak-uname-simplify later to maint).

- Fix regression introduced when nvimdiff support in mergetool was added. (merge 12026f46e7 pd/mergetool-nvimdiff later to maint).

- The exchange between receive-pack and proc-receive hook did not carefully check for errors.

- The code was not prepared to deal with pack .idx file that is larger than 4GB. (merge 81c4c5cf2e jk/4gb-idx later to maint).

- Since jgit does not yet work with SHA-256 repositories, mark the tests that use it not to run unless we are testing with ShA-1 repositories. (merge ea699b4adc sg/t5310-jgit-wants-sha1 later to maint).

- Config parser fix for "git notes". (merge 45fef1599a na/notes-displayref-is-not-boolean later to maint).

- Move a definition of compatibility wrapper from cache.h to git-compat-util.h (merge a76b138daa hn/sleep-millisec-decl later to maint).

- Error message fix. (merge eaf5341538 km/stash-error-message-fix later to maint).

- "git pull --rebase --recurse-submodules" checked for local changes in a wrong range and failed to run correctly when it should. (merge 5176f20ffe pb/pull-rebase-recurse-submodules later to maint).

- "git push" that is killed may leave a pack-objects process behind, still computing to find a good compression, wasting cycles. This has been corrected. (merge 8b59935114 jk/stop-pack-objects-when-push-is-killed later to maint).

- "git fetch" that is killed may leave a pack-objects process behind, still computing to find a good compression, wasting cycles. This has been corrected. (merge 309a4028e7 jk/stop-pack-objects-when-fetch-is-killed later to maint).

- "git add -i" failed to honor custom colors configured to show patches, which has been corrected. (merge 96386faa03 js/add-i-color-fix later to maint).

- Processes that access packdata while the .idx file gets removed (e.g. while repacking) did not fail or fall back gracefully as they could. (merge 506ec2fbda tb/idx-midx-race-fix later to maint).

- "git apply" adjusted the permission bits of working-tree files and directories according to core.sharedRepository setting by mistake and for a long time, which has been corrected. (merge eb3c027e17 mt/do-not-use-scld-in-working-tree later to maint).

- "fetch-pack" could pass NULL pointer to unlink(2) when it sees an invalid filename; the error checking has been tightened to make this impossible. (merge 6031af387e rs/fetch-pack-invalid-lockfile later to maint).

- "git maintenance run/start/stop" needed to be run in a repository to hold the lockfile they use, but didn’t make sure they are actually in a repository, which has been corrected.

- The glossary described a branch as an "active" line of development, which is misleading---a stale and non-moving branch is still a branch. (merge eef1ceabd8 so/glossary-branch-is-not-necessarily-active later to maint).

- Newer versions of xsltproc can assign IDs in HTML documents it generates in a consistent manner. Use the feature to help format HTML version of the user manual reproducibly. (merge 3569e11d69 ae/doc-reproducible-html later to maint).

- Tighten error checking in the codepath that responds to "git fetch". (merge d43a21bdbb jk/check-config-parsing-error-in-upload-pack later to maint).

- "git pack-redundant" when there is only one packfile used to crash, which has been corrected. (merge 0696232390 jx/pack-redundant-on-single-pack later to maint).

- Other code cleanup, docfix, build fix, etc. (merge 3e0a5dc9af cc/doc-filter-branch-typofix later to maint). (merge 32c83afc2c cw/ci-ghwf-check-ws-errors later to maint). (merge 5eb2ed691b rs/tighten-callers-of-deref-tag later to maint). (merge 6db29ab213 jk/fast-import-marks-cleanup later to maint). (merge e5cf6d3df4 nk/dir-c-comment-update later to maint). (merge 5710dcce74 jk/report-fn-typedef later to maint). (merge 9a82db1056 en/sequencer-rollback-lock-cleanup later to maint). (merge 4e1bee9a99 js/t7006-cleanup later to maint). (merge f5bcde6c58 es/tutorial-mention-asciidoc-early later to maint). (merge 714d491af0 so/format-patch-doc-on-default-diff-format later to maint). (merge 0795df4b9b rs/clear-commit-marks-in-repo later to maint). (merge 9542d56379 sd/prompt-local-variable later to maint). (merge 06d43fad18 rs/pack-write-hashwrite-simplify later to maint). (merge b7e20b4373 mc/typofix later to maint). (merge f6bcd9a8a4 js/test-whitespace-fixes later to maint). (merge 53b67a801b js/test-file-size later to maint). (merge 970909c2a7 rs/hashwrite-be64 later to maint). (merge 5a923bb1f0 ma/list-object-filter-opt-msgfix later to maint). (merge 1c3e412916 rs/archive-plug-leak-refname later to maint). (merge d44e5267ea rs/plug-diff-cache-leak later to maint). (merge 793c1464d3 ab/gc-keep-base-option later to maint). (merge b86339b12b

mt/worktree-error-message-fix later to maint). (merge e01ae2a4a7 js/pull-rebase-use-advise later to maint). (merge e63d774242 sn/config-doc-typofix later to maint). (merge 08e9df2395 jk/multi-line-indent-style-fix later to maint). (merge e66590348a da/vs-build-iconv-fix later to maint). (merge 7fe07275be js/cmake-extra-built-ins-fix later to maint). (merge 633eebe142 jb/midx-doc-update later to maint). (merge 5885367e8f jh/index-v2-doc-on-fsmn later to maint). (merge 14639a4779 jc/compat-util-setitimer-fix later to maint). (merge 56f56ac50b ab/unreachable-break later to maint). (merge 731d578b4f rb/nonstop-config-mak-uname-update later to maint). (merge f4698738f9 es/perf-export-fix later to maint). (merge 773c694142 nk/refspecs-negative-fix later to maint).

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