



Release Notes for Dovecot Pro Minor release 2.2.28

1. Shipped Products and Versions

Dovecot Pro 2.2.28

Including; Object Storage Plug-In and Full Text Search

2. Important Changes and Bugs fixed since previous Public Release

2.1. Important new settings

Below is a list of new settings that may be useful to enable, including their suggested values. Please read the settings' descriptions before enabling them. These changes are mainly useful for obox users, but may be useful for other mailbox formats also.

- dovecot.conf:
 - mail_sort_max_read_count = 100
 - protocol !indexer-worker {
 - mail_vsize_bg_after_count = 100
 - plugin {
 - mail_log_cached_only = yes
 - imap_fetch_failure=no-after
 - remote <webmail IP range> {
 - plugin {
 - obox_fetch_lost_mails_as_empty = yes
 - obox_allow_inconsistency = yes
 - plugin {
 - obox_track_copy_flags = yes
 - protocol !mtp {
 - #obox_mailbox_list_quick_lookups = yes # WARNING: potentially dangerous
- If lazy_expunge plugin is enabled, remove "lockdir" parameter from obox_fs setting.
- dovecot-dict-cql.conf.ext:
 - connect = ... execution_retry_interval=500ms execution_retry_times=10

2.2. Changes to plugins and 3rd party drivers

Dovecot OAuth2 plugin has been removed, and is now part of dovecot core as built-in functionality. New configuration settings are needed as the old settings do not work with the new OAuth2 authentication modes.

Please see <https://wiki.dovecot.org/PasswordDatabase/oauth2> for configuration information, or contact support prior upgrading.

Updated cassandra-cpp-driver package to 2.5.0.

<https://github.com/datastax/cpp-driver/blob/master/CHANGELOG.md>

2.3. Dovecot Pro Core

- **CHANGE:** Mail access errors are no longer ignored when searching or sorting. With IMAP the untagged SEARCH/SORT reply is still sent the same as before, but NO reply is returned instead of OK.
 - Exception: With obox “object exists in dict, but not in storage” errors will be logged, but they don’t fail the SEARCH/SORT.
- **CHANGE / Bug 51795:** SORT is opening too many mails when the sort field isn’t cached
 - Added mail_sort_max_read_count setting: This controls how many slow mail accesses sorting can perform before it fails: a NO [LIMIT] Requested sort would have taken too long The SORT reply is still returned, but it’s likely not correct.
 - Exception: With obox format SORT (ARRIVAL) will always return OK. When it reaches the limit, it starts getting the received-timestamps from the time the object was saved. This is commonly the same as the received-timestamp, but not always.
- **CHANGE:** Don’t block user access while recalculating quota
 - Add mail_vsize_bg_after_count setting. If more than this many mails need to be opened/stat()ed to get their vsize, return failure and finish up the quota recalculation on background. When a quota failure happens during LMTP delivery or IMAP APPEND/COPY, user is assumed to be below quota and the operation will succeed. Only the IMAP GETQUOTA command will return a failure.
 - This must not be enabled for indexer-worker, so use e.g.:

```
protocol !indexer-worker {
    mail_vsize_bg_after_count = 100
}
```
- **CHANGE:** Support OAUTHBEARER and XOAUTH2 auth mechanisms and oauth2 passdb. Also support them in lib-dsasl for client side. See <http://wiki2.dovecot.org/PasswordDatabase/oauth2>
- **CHANGE:** Further improvements to SEARCH=X-MIMEPART
 - Rework of IMAP BODYSTRUCTURE and ENVELOPE parse/write APIs.
- **CHANGE:** Reduce Dovecot’s base memory usage (approximately 100 kB with obox)
 - Don’t unnecessarily duplicate user’s all setting strings
 - Don’t duplicate service user’s settings into mail_user
 - lib-metacache: Don’t use a memory pool for struct bundle
- **CHANGE:** Cassandra should retry queries automatically on failures
 - driver-cassandra: Add support for speculative execution. See http://docs.datastax.com/en/developer/java-driver/3.1/manual/speculative_execution/ for details on how it works.

- Added `execution_retry_interval` and `execution_retry_times` to the `connect`-setting in `dovecot-dict-cql.conf.ext`. These are needed to enable the feature. For example this would send the request up to 3 Cassandra nodes in intervals of 500 milliseconds. So the 3rd request would be sent 1000ms after the first one:


```
connect = ... execution_retry_interval=500ms execution_retry_times=3
```
- **CHANGE:** `director: "doveadm director move"` to same host now refreshes user's timeout.
 - This allows keeping user constantly in the same backend by just periodically moving the user there.
- **CHANGE:** `pop3c`: Increase timeout for `PASS` command to 5 minutes.
 - This is useful with POP3 servers where it takes a long time.
- **CHANGE:** Added `"doveadm mailbox path"` command.
 - This allows easily printing a path for a mailbox, index, control dir, etc.
- **CHANGE:** Added `mail_log_cached_only` setting.
 - If enabled, everything except "save" event will log only the fields that can be looked up from cache. This improves performance if some of the fields aren't cached and it's not a strict requirement to log them.
- **CHANGE:** Support filtering `passdbs` by auth mechanisms.
 - For example:


```
passdb {
    driver = oauth2
    mechanisms = xoauth2 oauthbearer
}
```
- **CHANGE:** If IMAP client disconnects without `LOGOUT`, log information about the last command it performed.
 - This includes timing information about how long the command was running and whether it was waiting on `ioloop` or locks. This can be useful when debugging when client disconnects due to a long-running command.
- **BUG 48036:** Sieve does not support `%{storage_id}` variable
 - **FIX:** `lib-lda`: Fix `deliver_log_format` variables with Sieve
 - With Sieve it was using `src_mail` for getting the values, which weren't correct especially if Sieve had modified the mail.
 - **FIX:** `lib-lda`: Implement `%{storage_id}` correctly
- **BUG 49841:** Date header in leap second is parsed as invalid
 - **FIX:** `lib`: Accept leap second in `utc_mktime`
- **BUG 51258:** `lazy_expunge` creates duplicates
 - **FIX:** `lib-storage`: Lock autoexpunging so only a single process does it.
- **BUG 51265:** mail expunging may trigger a slow GUID lookup, which makes expunging a large number of mails slow.
 - **FIX:** `lib-storage`: Expunging now uses GUID only if it's in cache.
- **BUG 51295:** `%{passdb:*}` variables didn't work in `auth-worker` processes
 - **FIX:** `auth`: Pass through `passdb` extra fields to `auth-worker` requests
- **BUG 51201:** Panic: file `index-mail-headers.c`: line 286 (`index_mail_parse_header`): assertion failed: (`data->header_parser_initialized`)
 - **FIX:** `lib-mail`: Fix duplicate `HEADER_FILTER_ADD_MISSING_EOH` callback call
 - If headers weren't modified, the second reading of the `istream` shouldn't call any callbacks.

- **BUG 51709:** Corrupted dovecot.list.index may have crashed: Panic: file hash.c: line 213 (hash_table_insert_node): assertion failed: (key != NULL)
 - **FIX:** lib-storage: Fix assert-crash on corrupted dovecot.list.index with name_id==0
- **BUG 51670:** dovecot.list.index duplicate name fixing doesn't work
 - **FIX:** LAYOUT=index: Fix duplicate mailbox name renaming to actually work
- **BUG 50061:** indexer: Panic: file worker-connection.c: line 225 (worker_connection_request): assertion failed: (worker_connection_is_connected(conn))
 - **FIX:** indexer: Don't send more requests directly from worker status callback
- **BUG 51592:** if smartcache plugin is enabled, the quota_warning scripts don't run properly.
 - **FIX:** smartcache: Don't filter out mailboxes in non-smartcache namespaces.
 - **FIX:** quota: Make sure quota_warning doesn't wrap "quota before" value.
- **BUG 51599:** Dovecot cassandra metrics does not show timeout errors that are seeing in dovecot logs
 - **FIX:** cassandra: Track query counts internally and include them in metrics
- **BUG 51697:** Opening INBOX failed: Mailbox was deleted under us
 - **FIX:** lib-storage: Re-open mailbox after it's undeleted.
 - This is needed with mailbox formats that didn't fully open the mailbox while it was undeleted.
 - **FIX:** lib-storage: Don't sync mailbox after undeleting it.
 - This is useful only when deleting it. With undeletion the syncing isn't useful and might actually be harmful with mailbox formats that didn't fully open the mailbox while it was undeleted.
 - **FIX:** lib-storage: Make sure mailbox undeletion won't go to infinite loop
- **BUG 47314:** mailbox_get_metadata assertion failed: ((items & MAILBOX_METADATA_GUID) == 0 || !guid_128_is_empty(metadata_r->guid))
 - **FIX:** lib-storage: If mailbox_create() fails, don't leave box in partially opened state
 - **FIX:** sdbx: Fix assert-crash on mailbox create race
- **BUG 51329:** Sieve scripts weren't being replicated when service doveadm { service_count } wasn't 1.
 - **FIX:** doveadm: Add explicit mail_storage_init/deinit() calls
This mainly prevents losing hooks that were registered by doveadm plugins.
 - **FIX:** dsync: Fix syncing attributes with large values.
- **BUG 51726:** Index files: day_first_uid wasn't updated correctly.
 - This caused dovecot.index.cache to have non-optimal caching decisions.
- **BUG 50425:** lmtplib_user_concurrency_limit not honored - LMTP creates more processes per user than is allowed by concurrency limit
 - **FIX:** lmtplib: Fix lmtplib_user_concurrency_limit when userdb changes the username
- **BUG 51877:** Panic: file http-client-private.h: line 529: unreachable
 - **FIX:** lib-http: client: Fixed i_unreached() failure occurring when a host's list of IPs changes while a connection is still pending.
- **BUG 51943:** doveadm mailbox metadata set -s parameter isn't proxied
 - **FIX:** doveadm: Fix allow-empty-mailbox-name handling
- **BUG 51911:** Dovecot API fails commands if username starts with dash (minus)
 - **FIX:** doveadm: Ensure -- is added to command line before positional arguments

- **BUG:** Running time in tagged IMAP command reply was often wrongly 0.
 - **FIX:** imap: Fix running time in tagged command replies.

2.4. Object Storage Plug-in

- **CHANGE:** S3: Support Amazon's AWS4-HMAC-SHA256 authorization scheme
- **CHANGE:** dsync-merging is no longer done when the local metacache has only unimportant changes. Instead, the local changes are deleted and overwritten by the new index bundle.
- **CHANGE:** Bypass "object exists in dict, but not in storage" errors for FETCH
 - Add `imap_fetch_failure=no-after` setting. With this setting the FETCH will return everything that it can, but at the end it returns NO (instead of just disconnecting like it used to). See `example-config/20-imap.conf` for details and other values.
 - If `obox_fetch_lost_mails_as_empty=yes` is used, Dovecot returns these mails as if they were empty. The FETCH command will not fail with NO error.
 - **WARNING:** This is dangerous to enable globally. The "object exists in dict, but not in storage" errors can intentionally happen during temporary storage outages. If a caching IMAP client had fetched the mail during this time, it would permanently store the mails as an empty mail in its local cache. So this setting should only be enabled towards clients that are known to not perform any caching, such as inside a remote { } block that contains only a noncaching webmail's IP range.
- **CHANGE:** fs-dictmap: Avoid Cassandra SELECT when copying mails
 - If `lockdir` isn't set in `obox_fs`, copying no longer does a SELECT.
 - The `lockdir` removal is safe to do when `lazy_expunge` plugin is used. The setting's purpose was to prevent race conditions with copying and expunging an email, but with `lazy_expunge` this won't practically happen. The only possibility would be if an email was being moved away from the `lazy_expunge` folder at the same time as it was being expunged, which is highly unlikely to happen and not worth the extra performance hit of the SELECT.
- **CHANGE:** lazy-expunge: Avoid Cassandra SELECT when deciding whether to move mails to lazy-expunge folder
 - `obox:` Add `obox_track_copy_flags` setting. When enabled, copying a mail sets a flag in index file that it's been copied. Moving a mail (with IMAP move) doesn't set this flag. When lazy-expunge checks whether mail is the last instance and the copied-flag doesn't exist, it knows it's the last instance and can avoid the Cassandra SELECT. However, because a backend may crash before uploading the latest IMAP flags state, this behavior isn't always safe to do. The copied-flag checking is done only if the user hasn't moved backends since the email was initially saved. This is done by keeping track of which UIDs have been saved since the user was last moved to this backend.
- **CHANGE:** Allow accessing mailboxes that exist in local metacache even if storage is returning errors.
 - `obox_allow_inconsistency=yes` setting enables this behavior. The user's local metacache can be used if exists and the server hadn't crashed since it was created. The per-folder metacaches can be used if the folder had been refreshed since the user's metacache was last refreshed (i.e. potentially dangerously stale folder metacaches aren't allowed to be accessed).
 - **WARNING:** This may cause an obsolete view of the mailbox to become visible to the IMAP client. Caching IMAP clients may become confused by this. So same as with `obox_fetch_lost_mails_as_empty` setting, this is safer to enable only towards a noncaching webmail's IPs.

- **CHANGE:** quota calculation is slow when there are a lot of folders
 - obox: Add `obox_mailbox_list_quick_lookups` setting.
 - This setting avoids downloading mailboxes to metacache if the mailbox already exists in `dovecot.list.index`, even though it's now known whether it's up-to-date or not. Any mailboxes with `special_use` flags will be fully refreshed though.
 - Probably the most useful use case for this is with LMTP to avoid quota checks from opening a lot of mailboxes. In theory it could be used also with IMAP to give quick STATUS replies, but that might cause more problems since the counters could be wrong.
 - **WARNING:** This setting may still be slightly dangerous to use. If the user has gone above quota and afterwards deleted some mails from non-INBOX, non-specialuse folders and afterwards was moved to another backend without flushing the indexes, Dovecot may not realize that the user is now below quota. We are still planning to change this so that if user appears to be over quota, the quota is strictly calculated before returning "over quota" failures or executing any quota warning/over scripts.
- **BUG 50431:** Panic: file `ioloop-epoll.c`: line 189 (`io_loop_handler_run_internal`): assertion failed: (`msecs >= 0`) / Panic: BUG: No IOs or timeouts set. Not waiting for infinity
 - **FIX:** `lib-http`: client: Fixed peer reconnection failure handling.
 - The addressed problem occurs in a very specific situation in which the original successful connection is dropped, yet a new connection fails.
- **BUG 51315:** `fscache` may keep already-deleted `fscache.log` open for a long time
 - **FIX:** `fs-fscache`: Check every 1min if `fscache.log` has been recreated, and close it if yes.
- **BUG 51296:** `.vsize.lock` is kept locked for too long
 - **FIX:** `obox`: Unlock `.vsize.lock` before deleting mails from storage
- **BUG 49462:** Cassandra refers to a file in object store which isn't available there
 - **FIX:** `LAYOUT=index`: Fix duplicate mailbox name renaming to actually work
- **BUG 50756:** After mailbox index is rebuilt --> Error: GUIDs in mailbox path and index header are different
 - **FIX:** `obox`: Make sure header's `mailbox_guid` is correct.
 - **FIX:** `obox`: If header's `mailbox_guid` is wrong, rebuild index.
- **BUG 51501:** Panic: file `fs-api.c`: line 288 (`fs_file_close`): assertion failed: (`!file->istream_open`)
 - **FIX:** `fs-fscache`: Unref `prefetch_istream` if it exists at close.
- **BUG 51605:** If saving a mail failed, it was still attempted to be deleted on rollback.
 - **FIX:** `obox`: If saving/copying a mail fails, don't try to delete the object afterwards.

2.5. Full Text Search Plug-in

- **BUG 51513:** `fs-fts-cache`: Unnecessary `fs_delete()`s to nonexistent remote files
 - **FIX:** `fs-fts-cache`: Track "deleted in cache" status separately.
 - Don't try to delete these files from storage, because they only exist in cache. This removes 6 unnecessary `fs_delete()` calls per mail delivery.
- **BUG:** Storage errors were causing all kinds of crashes and other unexpected behavior in error handling code paths.

2.6. Pigeonhole Sieve

- **BUG 50340:** Global scripts were attempted to be recompiled when they already were compiled.
 - **FIX:** lib-sieve: file storage: Amended the up-to-date timestamp comparison for on-disk
 - This will fix problems occurring when both binary and script are saved within the same second.
 - On older systems that have no support for nanoseconds in the stat() time stamps, this has no effect.

3. Tests

The Dovecot QA team has successfully verified all bug fixes that could be reproduced within a lab environment.

To avoid side effects, the shipped packages have gone through automated regression test on both, a Continuous Integration System and a dedicated server setup for system and integration testing.

All changes have been checked for potential side-effects and effect on behavior. Unless explicitly stated within this document, we do not expect any side-effects.