



# Release Notes for OX Dovecot Pro

## Minor Release v2.3.14

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# 1. Shipped Products and Versions

OX Dovecot Pro v2.3.14

Built on Dovecot Community Edition Core v2.3.14

Including Object Storage (obox) and Full Text Search (FTS) Plug-ins

Supported OS Distributions:

- [Amazon Linux 2](#)
- [CentOS 7.9, 8.3](#)
- [RHEL 7.4, 8.2](#)
- [Debian stretch \(9.13\), buster \(10\)](#)
- [Ubuntu 18.04 LTS \(bionic\), 20.04 LTS \(focal\)](#)

Apache Cassandra Driver: [v2.15.3](#)

## 2. Release Highlights

This is a maintenance release of OX Dovecot Pro v2.3 branch, which contains bug fixes and minor feature additions.

### **Summary of Highlights**

- Support for environment variables when parsing Dovecot configuration.
- Update exported metrics to be compliant with OpenMetrics standard.
- Support for CentOS/RHEL 6 and Ubuntu 16.04 (xenial) LTS has been dropped.

## 3. Upgrade Information

Config files can now use environment variable with `$ENV:name` (case sensitive) expansion. Using this expansion in external config files, such as auth or sql config files, requires placing the environment variables names to `import_environment` setting so that those processes can see the variables when performing expansion.

To support Cassandra max bucket ID safe shrinking behavior, `dovecot-dict-cql.conf.ext` must get updated. The map for `shared/dictmap/$user/mailboxes/$mailbox_guid/max_bucket` must include the writetime of the last `max_bucket` update. See: [https://doc.dovecot.org/configuration\\_manual/mail\\_location/obox/dictmap\\_cassandra\\_objectid](https://doc.dovecot.org/configuration_manual/mail_location/obox/dictmap_cassandra_objectid). This mapping update is downwards compatible and can be done independently of upgrading OX Dovecot Pro. It is not a schema update but rather fetching additional, already available, information from Cassandra using the built-in [writetime](#) functionality.

Removed:

- autcreate plugin
- cydir mailbox driver
- expire plugin
- mail-filter plugin
- snarf plugin

Added events (see [https://doc.dovecot.org/admin\\_manual/list\\_of\\_events/](https://doc.dovecot.org/admin_manual/list_of_events/)):

- `fs_dictmap_empty_bucket_iterated`

Changed events:

- `fs_dictmap_max_bucket_changed`
  - Event now emitted when bucket shrinks; before it was only emitted when bucket grew.

Metrics have been changed/added to properly support the OpenMetrics format. This change affects the name and unit of several exposed statistics.

See: [https://doc.dovecot.org/configuration\\_manual/stats/openmetrics/#statistics-format](https://doc.dovecot.org/configuration_manual/stats/openmetrics/#statistics-format) for details.

## 4. Known Issues

- Not all Dovecot 2.2.x logging has been converted to Dovecot 2.3.x events, so newer logging/metrics configuration will not work on these older log entries.

## 5. Detailed Changes

### 5.1. OX Dovecot Pro Core

- **IMPROVEMENT DOV-3957:** `doveadm -D`: Add timestamps to debug output even when `LOG_STDERR_TIMESTAMP` environment variable is not set. Timestamp format is taken from `log_timestamp` setting.
- **IMPROVEMENT DOV-4122:** Change indexer to disconnect from indexer-worker after each request. This allows `service indexer-worker { service_count & idle_kill }` settings to work.
  - These can be used to restart indexer-worker processes occasionally to reduce their memory usage. Even if there are no memory leaks, there can be memory fragmentation that keeps the process memory usage unnecessarily large, so it is good practice to ensure processes are occasionally restarted.
- **IMPROVEMENT DOV-4134:** Avoid opening folders when getting folder metadata values with IMAP `GETMETADATA` command or with `doveadm`. This can improve metadata lookup performance especially with `obox` format.
- **IMPROVEMENT DOV-4177:** Update exported metrics to be compliant with OpenMetrics standard.
- **IMPROVEMENT DOV-4194:** Optimize `imap/pop3/submission/managesieve` proxies to use less CPU at the cost of extra memory usage.

- **IMPROVEMENT DOV-4233:** doveadm: Add an optional -p parameter to metadata list command. If enabled, "/private", and "/shared" metadata prefixes will be prepended to the keys in the list output.
- **IMPROVEMENT DOV-4258:** Added new aliases for some variables. Usage of the old ones is possible but discouraged. See: [https://doc.dovecot.org/configuration\\_manual/config\\_file/config\\_variables/](https://doc.dovecot.org/configuration_manual/config_file/config_variables/) (These were partially added already to v2.3.13.).
  - `%{mech}` -> `%{mechanism}`
  - `%{orig_user}` -> `%{original_user}`
  - `%{orig_username}` -> `%{original_username}`
  - `%{orig_domain}` -> `%{original_domain}`
  - `%{lip}` -> `%{local_ip}`
  - `%{rip}` -> `%{remote_ip}`
  - `%{lport}` -> `%{local_port}`
  - `%{rport}` -> `%{remote_port}`
  - `%{real_lip}` -> `%{real_local_ip}`
  - `%{real_rip}` -> `%{real_remote_ip}`
  - `%{real_lport}` -> `%{real_local_port}`
  - `%{real_rport}` -> `%{real_remote_port}`
- **IMPROVEMENT DOV-4264:** Config files can now use environment variable with `$ENV:name` (case sensitive) expansion. Using this expansion in external config files, such as auth or sql config files, requires placing the environment variables names to `import_environment` setting so that those processes can see the variables when performing expansion.
- **CHANGE DOV-3819:** Removed cydir storage format support.
- **CHANGE DOV-4134:** IMAP GETMETADATA and SETMETADATA command responses when ACL rules are present are improved to match [RFC 5464](#).
  - *GETMETADATA command*
    - Users with only "l" right:
      - for non-existing mailbox command failure error changed from "Permission denied" to "Mailbox doesn't exist"
    - Users with "l" right and one of "s", "w", "i", and "p" rights:
      - for INBOX, command result changed from "Permission denied" failure to "OK"
      - for existing mailboxes, command result changed from "Permission denied" failure to "OK"
      - for non-existing mailboxes, command failure error changed from "Permission denied" to "Mailbox doesn't exist"
      - for autcreated mailboxes, command result changed from "Permission denied" failure to "OK"
    - Users with "l" right and one of "x", "c", "d", and "a" rights:
      - for non-existing mailboxes, command failure error changed from "Permission denied" to "Mailbox doesn't exist"
    - Users with only "r" right:

- for INBOX, command result changed from "OK" to "Mailbox doesn't exist"
    - for existing mailboxes, command result changed from "OK" to "Mailbox doesn't exist"
    - for autocreated mailboxes, command result changed from "OK" to "Mailbox doesn't exist"
  - *SETMETADATA* command
    - Users with only "l" right:
      - for non-existing mailbox command failure error changed from "Permission denied" to "Mailbox doesn't exist"
- **CHANGE DOV-4245:** Removed autocreate plugin.
- **CHANGE DOV-4246:** Removed expire plugin.
- **CHANGE DOV-4247:** Removed snarf plugin.
- **CHANGE DOV-4248:** Removed mail-filter plugin.
- **CHANGE DOV-4296:** imapc fixes:
  - imapc with local index files escapes folder names on filesystem a bit differently. This affects only if there are folder names that require escaping, which is not so common. The old-style folders will be automatically deleted from filesystem.
  - imapc now enables `BROKENCHAR=~` by default to escape remote folder names if necessary. This also means that if there are any "~" characters in the remote folder names, they will be visible as "~7e".
  - If `BROKENCHAR` or `listescape` plugin is used, the escaped folder names may be slightly different from before in some situations. This is unlikely to cause issues, although caching clients may redownload the folders.
- **ISSUE DOV-3853:** If `dovecot.index.cache` has corrupted message size, fetching `BODY/BODYSTRUCTURE` may cause assert-crash.
  - *Fixes:* Panic: file `index-mail.c`: line 1140 (`index_mail_parse_body_finish`): assertion failed: (`mail->data.parts != NULL`).
- **ISSUE DOV-3858:** After a service reached `process_limit` and `client_limit`, it could have taken up to 1 second to realize that more client connections became available. During this time client connections could have been unnecessarily rejected and a warning logged.
  - *Fixes:* Warning: `service(...): process_limit (...)` reached, client connections are being dropped.
- **ISSUE DOV-3864:** imapc parsing illegal `BODYSTRUCTURE`s with NILs could have resulted in crashes. This exposed that Dovecot was wrongly accepting atoms in "nstring" handling. Changed the IMAP parsing to be stricter about this now:
  - `SETMETADATA` still allows atoms for backwards compatibility.
  - ID no longer allows atoms, but it is not expected that this affects clients.

- imapc parsing is stricter.
- **ISSUE DOV-4109:** Minor error handling and race condition fixes related to rotating dovecot.index.log. These did not usually cause problems unless the log files were rotated rapidly.
- **ISSUE DOV-4190:** doveadm sync + imapc does not always sync all mails when doing an incremental sync (-1), which could lead to mail loss when it is used for migration. This happens only when GUIDs aren't used (i.e. imapc without `imapc_features=guid-forced`).
- **ISSUE DOV-4230:** Lua scripts using coroutines or lua libraries using coroutines (e.g., `cqueues`) panicked.
- **ISSUE DOV-4234:** HS512 and HS384 JWT token algorithms crash when you try to use them.
  - *Fixes:* Panic: file hmac.c: line 26 (`hmac_init`): assertion failed: (`meth->context_size <= MAC_MAX_CONTEXT_SIZE`).
- **ISSUE DOV-4239:** FTS and message PREVIEW (snippet) parsed HTML & entities case-sensitively.
- **ISSUE DOV-4241:** Auth lua script generating an error triggered an assertion failure.
  - *Fixes:* Panic: file db-lua.c: line 630 (`auth_lua_call_password_verify`): assertion failed: (`lua_gettop(script->L) == 0`).
- **ISSUE DOV-4261:** Message PREVIEW (snippet) handled whitespace wrong so first space would get eaten from between words.
- **ISSUE DOV-4278:** Event filter NOT keyword does not have the correct associativity. `NOT a AND b` is getting parsed as `NOT (a AND b)` instead of `(NOT a) AND b`.
- **ISSUE DOV-4280:** `nodelay` with various authentication mechanisms such as APOP and DIGEST-MD5 crashed auth process if authentication failed.
- **ISSUE DOV-4283:** `instance_name` was not used as syslog ident by the log process.
- **ISSUE DOV-4296:** Folder name escaping with `BROKENCHAR` did not work correctly. This especially caused problems with `dsync`-migrations using `imapc` where some of the remote folder names may not have been accessible.
- **ISSUE DOV-4297:** Event filters comparing against empty strings crash the stats process.
- **ISSUE DOV-4298:** Folder listing errors are sometimes handled wrong and may result in "Unknown internal list error".

- **ISSUE DOV-4309:** Master process did not reopen log files with `doveadm log reopen` or `SIGUSR1`. This may practically have ended up losing the errors/warnings logged by the master process unless logging was done via `syslog`.
- **ISSUE DOV-4385:** Using both Solr FTS and Tika may have caused HTTP requests to assert-crash.
  - *Fixes:* Panic: file `http-client-request.c`: line 1232 (`http_client_request_send_more`): assertion failed: (`req->payload_input != NULL`).
  - v2.3.13 tried this fix this already, but it did not fully work.
- **ISSUE DOV-4400:** v2.3.11 regression: Indexing messages with `fts-tika` may have resulted in panic.
  - *Fixes:* Panic: file `message-parser.c`: line 802 (`message_parser_deinit_from_parts`): assertion failed: (`ctx->nested_parts_count == 0 || i_stream_have_bytes_left(ctx->input)`).

## 5.2. Object Storage (obox) Plug-in

- **IMPROVEMENT DOV-3947:** Added `cassandra-fix-buckets.sh` script that can be used to fix `user_mailbox_buckets` table for a given user. This may be necessary to make missing emails visible. This should not usually be necessary, especially because this release also tries harder to detect and fix up such situations. This script should only need to be executed if a specific user is missing mails that should be there.
- **ISSUE DOV-3834:** If multiple namespaces have been configured, metacache usage size could have been wrong. The usage size was fluctuating between the different namespace's sizes. Now usage size is always updated as sum of all namespaces.
- **ISSUE DOV-3954:** `fs-dictmap` (obox/Cassandra): The max bucket ID never shrinks again after expunging mails which led to an increased bucket count.
  - Shrink max bucket ID safely if a mailbox has empty buckets before the last bucket (max bucket ID). When the max bucket ID becomes shrunk emit a `fs_dictmap_max_bucket_changed` event ([https://doc.dovecot.org/admin\\_manual/list\\_of\\_events/#fs-dictmap-max-bucket-changed](https://doc.dovecot.org/admin_manual/list_of_events/#fs-dictmap-max-bucket-changed)).
  - When Dovecot discovers empty buckets while iterating a mailbox it will emit a new event if configured to do so:  
`fs_dictmap_empty_bucket_iterated`  
([https://doc.dovecot.org/admin\\_manual/list\\_of\\_events/#fs-dictmap-empty-bucket-iterated](https://doc.dovecot.org/admin_manual/list_of_events/#fs-dictmap-empty-bucket-iterated)).
- **ISSUE DOV-4112:** When a large copy transaction copies mails to multiple buckets, in some situation finding the new bucket may assert-crash.
  - *Fixes:* Panic: file `fs-bucket-cache.c`: line 946 (`fs_bucket_cache_transaction_begin`): assertion failed: (`cache->trans == NULL`).

- **ISSUE DOV-4251:** fs-[aws-]s3: Chunked responses on bulk-delete requests could end up leaving a bulk-delete container allocated which results in a crash when trying to deinitialize the user fs. This happened because all files have been marked as finished/deleted while there was still input pending.
  - *Fixes:* Panic: file fs-bulk.c: line 51 (fs\_bulk\_deinit): assertion failed: (array\_count(&bulk->containers) == 0)
- **ISSUE DOV-4269:** obox could have unnecessarily attempted to read mail objects that were already known to be deleted. This resulted in object storage GET/HEAD requests that always failed with 404.
- **ISSUE DOV-4290:** Cleaning and opening the same user in metacache at the same time may have failed.
  - *Fixes:* Failed to open mailbox: .opened file was deleted while switching to shared lock.
- **ISSUE DOV-4291:** Fixed race condition with metacache cleaning.
  - *Fixes:* Error: Failed to update bundle changes: Failed to refresh bundle state: .state file was lost.
- **ISSUE DOV-4324:** Failures to iterate index bundles in storage may have resulted in crashes:
  - *Fixes:* Panic: file strfuncs.c: line 148 (t\_noalloc\_strdup\_vprintf): assertion failed: ((unsigned int)ret == \*size\_r-1).
  - *Fixes:* Panic: file str.c: line 143 (str\_vprintf): assertion failed: (ret2 == ret).

### 5.3. Full Text Search (fts) Plug-in

No Changes

### 5.4. Pigeonhole (sieve) Plug-in

No Changes

### 5.5. Intercept (intercept) Plug-in

No Changes

## 6. Tests

The QA team has successfully verified all issue 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.

## 7. Repository Information

For details of how to install and update OX Dovecot Pro, please refer to the instructions at:

[https://doc.dovecot.org/installation\\_guide/dovecot\\_pro\\_releases/repository\\_guide/](https://doc.dovecot.org/installation_guide/dovecot_pro_releases/repository_guide/).