OX Dovecot Pro

Product Guide – OX Dovecot Pro v2.3.16

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1. Introducing OX Dovecot Pro

OX Dovecot Pro is a mail server platform that handles both message storage and remote message access. It is designed to easily scale to millions of provisioned users. The main components of OX Dovecot Pro are described in the next section.

1.1. OX Dovecot Pro Product Components

The OX Dovecot Pro product contains the following main components:

- Mail Core
- Object Storage Support
- Dovecot Full Text Search Driver

2. What's New in v2.3.16

OX Dovecot Pro v2.3.16 is a regularly scheduled maintenance release.

OX Dovecot Pro v2.3.16 provides the following main improvements:

2.1. High Availability Shared Mailboxes

Previously, OX Dovecot Pro only supported mailbox sharing when all users accessed a mailbox on the same server. As of this release, mailbox sharing is now available across a cluster. All users accessing a mailbox will be transparently proxied to a single Dovecot backend that handles all accesses to the mailbox.

See https://doc.dovecot.org/configuration_manual/shared_mailboxes/cluster_setup for further information.

2.2. Configuration Support for TLSv1.3 Settings

The new version provides configuration support for TLSv1.3 settings (see ssl_cipher_suites and ssl_min_protocol settings).

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2.3. Improved Obox Retry Delays

Previously, temporary errors when accessing storage with obox would have immediately retried multiple times before returning an error. Now, these retry delay grows between attempts to allow the storage to recover from temporary errors.

The new retry times are 50ms -> 500ms -> 5s -> 10s. Retries happen for all 5xx errors as well as for 423 (locked) with sproxyd and 409 (conflict) with CDMI.

2.4. Improved Process Launching Performance

For heavily loaded servers, new processes were not being launched quickly enough in certain situations, causing various problems. Process launching performance has been improved as of this version.

2.5. OpenID Configuration Support (RFC 7628)

Support RFC 7628 openid-configuration element in oauth2 responses. This enables clients to support OAUTH2 for any server.

3. OX Dovecot Pro - Mail Core

3.1. Overview

Depending on the size of the installation, the OX Dovecot Pro mail system contains servers with different roles: Proxies, Directors, and Backends. OX Dovecot Pro's stateless design allows any of these components to be removed, taken offline for maintenance, or upgraded without affecting the overall service availability. All users in the same site will still receive service, with only the capacity of the platform being diminished (based on the number of OX Dovecot Pro nodes unavailable at any given time). This high-availability (HA) design maximizes both uptime and operational flexibility. For example, the HA design allows admins to roll out OX Dovecot Pro upgrades in the system incrementally without the end-user noticing any visible downtime.

While individual users do not have a home server, for performance and load purposes, a user will, at any given point in time, be assigned to an OX Dovecot Pro cluster (cluster = unified collection of Directors & Backends). All user's connections will be forwarded to that cluster regardless where in the OX Dovecot Pro platform they actually connect. This home cluster

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assignment can change over time, depending on operational considerations.

The OX Dovecot Pro architecture enables both horizontal and vertical scaling. The recommended network topology has:

- Dovecot Proxy pool in public network
- Dovecot Director ring and Dovecot Backend pool in private network
- Object storage (typically) in storage network

OX Dovecot Pro Backends require extensible-shared storage, such as object storage or NFS. OX Dovecot Pro does not support storage on a local filesystem.

OX Dovecot Pro supports multi-site installations, but only if the Scality sproxyd object storage connector is used in conjunction with the Cassandra fs-dictmap driver.

All OX Dovecot Pro nodes run the same core application; local configurations define the role that each system takes. The OX Dovecot Pro components are explained in more detail below.

OX Dovecot Pro nodes handle the following protocols:

- IMAP4
- POP3
- LMTP
- ManageSieve
- Doveadm (both binary and REST access)
- Submission (a subset of SMTP)

4. OX Dovecot Pro - Object Storage Support

4.1. Overview

OX Dovecot Pro mail storage supports several object storage solutions. These solutions include managed cloud storage service such as Amazon

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Web Services (AWS) S3 or locally hosted object storage solutions such as Scality.

Mail stored in object storage is accessible from any OX Dovecot Pro Backend node. As explained above, a user’s mail data is retrieved to an allocated Backend node, index and metadata changes happen on that Backend node. Any changed data is then uploaded back to the object storage as required. In case of a Backend node failure, another Backend node can continue where the other Backend node left off. This is possible because there are no locking problems (in comparison to NFS).

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5. OX Dovecot Pro - Full Text Search Driver

5.1. Overview

The amount of data that is stored as email messages is significantly increasing. The amount of important information that is stored in email messages is also increasing. Finding what you need amongst all those emails means that an efficient search is now even more important than ever.

The ever increasing, and changing, landscape of mail clients keeps testing the limits of the IMAP protocol, and in turn the associated mail server implementations. It must be noted that when messages are not pre-indexed, the search falls-back to a slow sequential search of all the message headers or text. This mechanism is very slow on block storage and becomes performance prohibitive in a distributed object storage architecture.

Today, mobile clients are the fastest growing segment for mailbox access. These clients come with additional bandwidth limitations in terms of costs and the network latency associated with these devices. This highlights the need for an efficient, feature-rich, server-based search solution.

To help address these concerns a two-part reimplementation of the OX Dovecot Pro indexing and search architecture has been developed. This new design provides more customizability for searching; as well as a more unified range of features for existing Full Text Search (FTS) plugins. Additionally, an OX Dovecot Pro native implementation of the full FTS stack is provided to OX Dovecot Pro licensees. This provides much better performance and scaling for large mail volumes.

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