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Modoboa is a mail hosting and management platform including a modern and simplified Web User Interface designed to work with Postfix and Dovecot.

It is extensible by nature and comes with a lot of additional extensions:

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2.1 Installation

2.1.1 Requirements

You will need a Server to perform well with at least:

- CPU: 2
- RAM: 2GB
- Disk: 10GB
- Python 3

Note: Heads up for modoboa versions 1.15 and later

Python 2 support has been dropped with modoboa version 1.15. If you still have Python 2 installed on your system either uninstall it or force modoboa user to run with Python 3.

2.1.2 Recommended way

If you start from scratch and want to deploy a complete mail server, you will love the modoboa installer! It is the easiest and the quickest way to setup a fully functional server (modoboa, postfix, dovecot, amavis and more) on one machine.

Warning: For now, only Debian and CentOS based Linux distributions are supported. We do our best to improve compatibility but if you use another Linux or a UNIX system, you will have to install Modoboa manually.

To use it, just run the following commands in your terminal:
if you get this warning - `/usr/bin/env: ‘python’: No such file or directory’, do make sure sure python is installed on your server. Sometimes python is installed but the installer can‘t detect it or which python version to run, especially on a debian based system. Then run this command first.

```
> sudo apt-get install python-virtualenv python-pip
```

Wait a few minutes and you’re done o/

### 2.1.3 Manual installation

For those who need a manual installation or who just want to setup a specific part, here are the steps you must follow:

**Modoboa**

This section describes the installation of the web interface (a Django project).

**Prepare the system**

First of all, we recommend the following context:

- A dedicated system user
- A virtual environment to install the application because it will isolate it (and its dependencies) from the rest of your system

The following example illustrates how to realize this on Debian-based distributions using virtualenv:

```
# apt-get install virtualenv python3-pip
# useradd modoboa  # create a dedicated user
# su -l modoboa    # log in as the newly created user
$ virtualenv --python python3 .env  # create the virtual environment
$ source .env/bin/activate        # activate the virtual environment
```

Modoboa depends on external tools and some of them require compilation so you need a compiler and a few C libraries. Make sure to install the following system packages according to your distribution:

**Debian / Ubuntu**

```
buid-essential python3-dev libxml2-dev libxslt-dev libjpeg-dev librerd-dev rrdtool libffi-dev libssl-dev
```

**CentOS**

```
gcc gcc-c++ python3-devel libxml2-devel libxslt-devel libjpeg-turbo-devel rrdtool-devel rrdtool libffi-devel
```

**Note:** Alternatively, you could rely on your distribution packages for the Modoboa dependencies which require compilation - e.g. rrdtool - if the version is compatible. In this case, you have to create your virtual environment with the `--system-site-packages` option, and the required system packages will be:

```
python3-wheel python3-rrdtool rrdtool
```
Then, install Modoboa by running:

```
(env)$ pip install modoboa
```

## Database

**Warning:** This documentation does not cover the installation of a database server but only the setup of a functional database that Modoboa will use.

Thanks to Django, Modoboa is compatible with the following databases:

- PostgreSQL
- MySQL / MariaDB
- SQLite

Since the last one does not require particular actions, only the first two ones are described. You should also read the notes for those database backends on the official Django documentation.

### PostgreSQL

Install the corresponding Python binding:

```
(env)$ pip install psycopg2
```

**Note:** Alternatively, you can install the `python3-psycopg2` package instead on Debian-based distributions if your virtual environment was created with `--system-site-packages` option.

Then, create a user and a database. For example, to create the `modoboa` database owned by a `modoboa` user, run the following commands on your PostgreSQL server:

```
# sudo -l -u postgres createuser --no-createdb modoboa
# sudo -l -u postgres createdb --owner=modoboa modoboa
```

### MySQL / MariaDB

Install the corresponding Python binding:

```
(env)$ pip install mysqlclient
```

**Note:** Alternatively, you can install the `python3-mysqldb` package instead on Debian-based distributions if your virtual environment was created with `--system-site-packages` option.

**Note:** MariaDB 10.2 (and newer) require mysqlclient 1.3.11 (or newer).
Then, create a user and a database. For example, to create the `modoboa` database owned by a `modoboa` user, run the following SQL commands:

```sql
CREATE DATABASE modoboa;
CREATE USER 'modoboa'@'localhost' IDENTIFIED BY 'my-strong-password-here';
GRANT ALL PRIVILEGES ON modoboa.* TO 'modoboa'@'localhost';
```

### Deploy an instance

`modoboa-admin.py` is a command line tool that lets you deploy a ready-to-use Modoboa site. To create a new instance into `./instance`, you just have to run the following command:

```
(env)$ modoboa-admin.py deploy instance --collectstatic \
    --domain <hostname of your server> --dburl default:<database url>
```

**Note:** You can install additional extensions during the deploy process. To do so, use the `--extensions` option which accepts a list of names as argument (`--extensions ext1 ext2 ...`). If you want to install all extensions, just use the `all` keyword like this `--extensions all`.

If you choose to install extensions one at a time, you will have to add their names in `settings.py` to `MODOBOA_APPS`. Also ensure that you have the line `from modoboa_amavis.settings import *` at the end of this file.

The list of available extensions can be found on the index page. Instructions to install them are available on each extensions page.

**Note:** You can specify more than one database connection using the `--dburl` option. Multiple connections are differentiated by a prefix.

The primary connection must use the `default:` prefix (as shown in the example above). For the `amavis` extension, use the `amavis:` prefix. For example: `--dburl default:<database url> amavis:<database url>`.

A database url should meet the following syntax: `<mysql|postgres>://[user:pass@[host:port]]/dbname OR sqlite:///full/path/to/your/database/file.sqlite`.

Fox example, if you were using postgres, you could setup your command like this: `modoboa-admin.py deploy instance_name --collectstatic --domain example.com --dburl default:postgres://user:pass@[localhost]/modoboa`

The command will ask you a few questions, answer them and you’re done.

If you need a silent installation (e.g. if you’re using Salt-Stack, Ansible or whatever), it’s possible to supply the database credentials as command line arguments.

You can consult the complete option list by running the following command:

```
(env)$ modoboa-admin.py help deploy
```

### Cron jobs

A few recurring jobs must be configured to make Modoboa works as expected.

Create a new file, for example `/etc/cron.d/modoboa` and put the following content inside:
# Modoboa specific cron jobs

```bash
# PYTHON=<path to Python binary inside the virtual environment> 
# INSTANCE=<path to Modoboa instance>

# Operations on mailboxes
* * * * * vmail $PYTHON $INSTANCE/manage.py handle_mailbox_operations

# Generate DKIM keys (they will belong to the user running this job)
* * * * * root umask 077 && $PYTHON $INSTANCE/manage.py modo manage_dkim_keys

# Sessions table cleanup
0 0 * * * modoboa $PYTHON $INSTANCE/manage.py clearsessions

# Logs table cleanup
0 0 * * * modoboa $PYTHON $INSTANCE/manage.py cleanlogs

# DNSBL checks
*/30 * * * * modoboa $PYTHON $INSTANCE/manage.py modo check_mx

# Public API communication
0 * * * * modoboa $PYTHON $INSTANCE/manage.py communicate_with_public_api
```

## Policy daemon

Modoboa comes with a built-in Policy Daemon for Postfix. Current features are:

- Define daily sending limits for domains and/or accounts

A redis server is required to run this new daemon.

You can launch it manually using the following command:

```
(env)> python manage.py policy_daemon
```

But we recommend an automatic start using systemd or supervisor. Here is a configuration example for supervisor:

```
[program:policyd]
autostart=true
autorestart=true
command=/srv/modoboa/env/bin/python /srv/modoboa/instance/manage.py policy_daemon
directory=/srv/modoboa
redirect_stderr=true
user=modoboa
numprocs=1
```

It will listen by default on 127.0.0.1 and port 9999. The policy daemon won’t do anything unless you tell postfix to use it.

Now you can continue to the Web server section.

## Web server

**Note:** The following instructions are meant to help you get your site up and running quickly. However it is not possible for the people contributing documentation to Modoboa to test every single combination of web server, wsgi
server, distribution, etc. So it is possible that your installation of uwsgi or nginx or Apache or what-have-you works differently. Keep this in mind.

Apache2

First, make sure that mod_wsgi is installed on your server.

Create a new virtualhost in your Apache configuration and put the following content inside:

```html
<VirtualHost *:80>
    ServerName <your value>
    DocumentRoot <modoboa_instance_path>
    Alias /media/ <modoboa_instance_path>/media/
    <Directory <modoboa_instance_path>/media>
        Order deny,allow
        Allow from all
    </Directory>
    Alias /sitestatic/ <modoboa_instance_path>/sitestatic/
    <Directory <modoboa_instance_path>/sitestatic>
        Order deny,allow
        Allow from all
    </Directory>
    WSGIScriptAlias / <modoboa_instance_path>/<instance_name>/wsgi.py

    # Pass Authorization header to enable API usage:
    WSGIPassAuthorization On
</VirtualHost>
```

This is just one possible configuration.

To use mod_wsgi daemon mode, add the two following directives just under WSGIScriptAlias:

```html
WSGIDaemonProcess example.com python-path=<modoboa_instance>:<virtualenv path>/lib/...-python3.7/site-packages
WSGIProcessGroup example.com
```

Replace values between <> with yours. If you don’t use a virtualenv, just remove the last part of the WSGIDaemonProcess directive.

Note: You will certainly need more configuration in order to launch Apache.

Now, you can go the Dovecot section to continue the installation.

Nginx

This section covers two different ways of running Modoboa behind Nginx using a WSGI application server. Choose the one you prefer between Green Unicorn or uWSGI.

In both cases, you’ll need to download and install nginx.
Green Unicorn

Firstly, Download and install gunicorn. Then, use the following sample gunicorn configuration (create a new file named gunicorn.conf.py inside Modoboa’s root dir):

```python
backlog = 2048
bind = "unix:/var/run/gunicorn/modoboa.sock"
pidfile = "/var/run/gunicorn/modoboa.pid"
daemon = True
debug = False
workers = 2
logfile = "/var/log/gunicorn/modoboa.log"
loglevel = "info"
```

To start gunicorn, execute the following commands:

```
$ cd <modoboa dir>
$ gunicorn -c gunicorn.conf.py <modoboa dir>.wsgi:application
```

Now the nginx part. Just create a new virtual host and use the following configuration:

```nginx
upstream modoboa {
    server unix:/var/run/gunicorn/modoboa.sock fail_timeout=0;
}

server {
    listen 443 ssl;
    ssl on;
    keepalive_timeout 70;

    server_name <host fqdn>;
    root <modoboa_instance_path>;

    access_log /var/log/nginx/<host fqdn>.access.log;
    error_log /var/log/nginx/<host fqdn>.error.log;

    ssl_certificate <ssl certificate for your site>;
    ssl_certificate_key <ssl certificate key for your site>;

    location /sitestatic/ {
        autoindex on;
    }

    location /media/ {
        autoindex on;
    }

    location / {
        proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;
        proxy_set_header Host $http_host;
        proxy_redirect off;
        proxy_set_header X-Forwarded-Protocol ssl;
        proxy_pass http://modoboa;
    }
}
```

If you do not plan to use SSL then change the listen directive to listen 80; and delete each of the following directives:

2.1. Installation
ssl on;
keepalive_timeout 70;
ssl_certificate <ssl certificate for your site>;
ssl_certificate_key <ssl certificate key for your site>;
proxy_set_header X-Forwarded-Protocol ssl;

If you do plan to use SSL, you’ll have to generate a certificate and a key. This article contains information about how to do it.

Paste this content to your configuration (replace values between <> with yours) and restart nginx.

Now, you can go the Dovecot section to continue the installation.

uWSGI

The following setup is meant to get you started quickly. You should read the documentation of both nginx and uwsgi to understand how to optimize their configuration for your site.

The Django documentation includes the following warning regarding uwsgi:

**Warning:** Use uwsgi 1.2.6 or newer. If you do not, you will run into problems. Modoboa will fail in obscure ways.

To use this setup, first download and install uwsgi.

Here is a sample nginx configuration:

```nginx
server {

  listen 443 ssl;
  ssl on;
  keepalive_timeout 70;

  server_name <host fqdn>;
  root <modoboa's settings dir>;

  ssl_certificate <ssl certificate for your site>;
  ssl_certificate_key <ssl certificate key for your site>;

  access_log /var/log/nginx/<host fqdn>.access.log;
  error_log /var/log/nginx/<host fqdn>.error.log;

  location <modoboa's root url>/sitestatic/ {
    autoindex on;
    alias <location of sitestatic on your file system>;
  }

  # Whether or not Modoboa uses a media directory depends on how you configured Modoboa. It does not hurt to have this.
  location <modoboa's root url>/media/ {
    autoindex on;
    alias <location of media on your file system>;
  }

  # This denies access to any file that begins with ".ht". Apache's .htaccess and .htpasswd are such files. A
```

(continues on next page)
# Modoboa installed from scratch would not contain any such
# files, but you never know what the future holds.

location ~ /\.ht {
    deny all;
}

location <modoba's root url>/ {
    include uwsgi_params;
    uwsgi_pass <uwsgi port>;
    uwsgi_param UWSGI_SCRIPT <modoboa instance name>.wsgi:application;
    uwsgi_param UWSGI_SCHEME https;
}

<modoboa instance name> must be replaced by the value you used when you deployed your instance.

If you do not plan to use SSL then change the listen directive to listen 80; and delete each of the following directives:

ssl on;
sess_timeout 70;
ssl_certificate <ssl certificate for your site>;
ssl_certificate_key <ssl certificate key for your site>;
uwsgi_param UWSGI_SCHEME https;

If you do plan to use SSL, you’ll have to generate a certificate and a key. This article contains information about how to do it.

Make sure to replace the <...> in the sample configuration with appropriate values. Here are some explanations for the cases that may not be completely self-explanatory:

<modoboa's settings dir> Where Modoboa’s settings.py resides. This is also where the sitestatic and media directories reside.

<modoboa's root url> This is the URL which will be the root of your Modoboa site at your domain. For instance, if your Modoboa installation is reachable at at https://foo/modoboa then <modoboa's root url> is /modoboa. In this case you probably also have to set the alias directives to point to where Modoboa’s sitestatic and media directories are because otherwise nginx won’t be able to find them.

If Modoboa is at the root of your domain, then <modoboa root url> is an empty string and can be deleted from the configuration above. In this case, you probably do not need the alias directives.

<uwsgi port> The location where uwsgi is listening. It could be a unix domain socket or an address:port combination. Ubuntu configures uwsgi so that the port is:

```
unix:/run/uwsgi/app/<app name>/socket
```

where <app name> is the name of the application.

Your uwsgi configuration should be:

```
[uwsgi]
# Not needed when using uwsgi from pip
# plugins = python
chdir = <modoba's top dir>
module = <name>.wsgi:application
master = true
harakiri = 60
```

(continues on next page)
processes = 4
vhost = true
no-default-app = true

The plugins directive should be turned on if you use a uwsgi installation that requires it. If uwsgi was installed from pip, it does not require it. In the configuration above:

<modoboa's top dir> The directory where manage.py resides. This directory is the parent of <modoboa's settings dir>

<name> The name that you passed to modoboa-admin.py deploy when you created your Modoboa instance.

Now, you can go the Dovecot section to continue the installation.

Dovecot

Modoboa requires Dovecot 2+ to work so the following documentation is suitable for this combination.

In this section, we assume dovecot’s configuration resides in /etc/dovecot, all pathes will be relative to this directory.

Mailboxes

First, edit the conf.d/10-mail.conf and set the mail_location variable:

```bash
# maildir
mail_location = maildir:~/.maildir
```

Then, edit the inbox namespace and add the following lines:

```bash
inbox = yes

mailbox Drafts {
    auto = subscribe
    special_use = \Drafts
}
mailbox Junk {
    auto = subscribe
    special_use = \Junk
}
mailbox Sent {
    auto = subscribe
    special_use = \Sent
}
mailbox Trash {
    auto = subscribe
    special_use = \Trash
}
```

With dovecot 2.1+, it ensures all the special mailboxes will be automatically created for new accounts.

For dovecot 2.0 and older, use the autocreate plugin.
Operations on the file system

**Warning:** Modoboa needs to access the `dovecot` binary to check its version. To find the binary path, we use the `which` command first and then try known locations (`/usr/sbin/dovecot` and `/usr/local/sbin/dovecot`). If you installed dovecot in a custom location, please tell us where the binary is by using the `DOVECOT_LOOKUP_PATH` setting (see `settings.py`).

Three operation types are considered:

1. Mailbox creation
2. Mailbox renaming
3. Mailbox deletion

The first one is managed by Dovecot. The last two ones may be managed by Modoboa if it can access the file system where the mailboxes are stored (see *General parameters* to activate this feature).

Those operations are treated asynchronously by a cron script. For example, when you rename an e-mail address through the web UI, the associated mailbox on the file system is not modified directly. Instead of that, a `rename` order is created for this mailbox. The mailbox will be considered unavailable until the order is executed (see *Postfix configuration*).

Edit the crontab of the user who owns the mailboxes on the file system:

```
$ crontab -u <user> -e
```

And add the following line inside:

```
* * * * * python <modoboa_site>/manage.py handle_mailbox_operations
```

**Warning:** The cron script must be executed by the system user owning the mailboxes.

**Warning:** The user running the cron script must have access to the `settings.py` file of the modoboa instance.

The result of each order is recorded into Modoboa’s log. Go to *Modoboa > Logs* to consult them.

**Authentication**

To make the authentication work, edit the `conf.d/10-auth.conf` and uncomment the following line at the end:

```ini
#!/include auth-system.conf.ext
!include auth-sql.conf.ext
#!/include auth-ldap.conf.ext
#!/include auth-passwdfile.conf.ext
#!/include auth-checkpassword.conf.ext
#!/include auth-vpopmail.conf.ext
#!/include auth-static.conf.ext
```

Then, edit the `conf.d/auth-sql.conf.ext` file and add the following content inside:
passdb sql {
    driver = sql
    # Path for SQL configuration file, see example-config/dovecot-sql.conf.ext
    args = /etc/dovecot/dovecot-sql.conf.ext
}

userdb sql {
    driver = sql
    args = /etc/dovecot/dovecot-sql.conf.ext
}

Make sure to activate only one backend (per type) inside your configuration (just comment the other ones).

Edit the `dovecot-sql.conf.ext` and modify the configuration according to your database engine.

**MySQL users**

```sql

driver = mysql
connect = host=<mysql socket> dbname=<database> user=<user> password=<password>
default_pass_scheme = CRYPT

password_query = SELECT email AS user, password FROM core_user WHERE email='%Lu' and is_active=1

user_query = SELECT '<mailboxes storage directory>/%Ld/%Ln' AS home, <uid> as uid, <gid> as gid, concat('*:bytes=', mb.quota, 'M') AS quota_rule FROM admin_mailbox mb INNER JOIN admin_domain dom ON mb.domain_id=dom.id WHERE mb.address='%Ln' AND dom.enabled

iterate_query = SELECT email AS user FROM core_user
```

**PostgreSQL users**

```sql

driver = pgsql
connect = host=<postgres socket> dbname=<database> user=<user> password=<password>
default_pass_scheme = CRYPT

password_query = SELECT email AS user, password FROM core_user u INNER JOIN admin_mailbox mb ON u.id=mb.user_id INNER JOIN admin_domain dom ON mb.domain_id=dom.id WHERE u.email='%Lu' AND u.is_active AND dom.enabled

user_query = SELECT '<mailboxes storage directory>/$Ld/$Ln' AS home, <uid> as uid, <gid> as gid, 'M' AS quota_rule FROM admin_mailbox mb INNER JOIN admin_domain dom ON mb.domain_id=dom.id WHERE mb.address='$Ln' AND dom.enabled

iterate_query = SELECT email AS user FROM core_user
```
SQLite users

```plaintext
driver = sqlite
connect = <path to the sqlite db file>
defaul_pass_scheme = CRYPT

password_query = SELECT email AS user, password FROM core_user u INNER JOIN admin_¬mailbox mb ON u.id=mb.user_id INNER JOIN admin_domain dom ON mb.domain_id=dom.id_¬WHERE u.email='Lu' AND u.is_active=1 AND dom.enabled=1

user_query = SELECT '<mailboxes storage directory>/%Ld/%Ln' AS home, <uid> as uid, ¬<gid> as gid, ('*:bytes=' || mb.quota || 'M') AS quota_rule FROM admin_mailbox mb_¬INNER JOIN admin_domain dom ON mb.domain_id=dom.id WHERE mb.address='%Ln' AND dom._¬name='Ld'

iterate_query = SELECT email AS user FROM core_user
```

**Note:** Replace values between <> with yours.

LDAP

To make the LDAP authentication work, edit the `conf.d/10-auth.conf` and uncomment the following line at the end:

```
!include auth-ldap.conf.ext
```

Then edit the `conf.d/auth-ldap.conf.ext` and edit the passdb section as following. You should comment the userdb section, which will be managed by SQL with modoboa database.:

```plaintext
passdb {
    driver = ldap
    # Path for LDAP configuration file, see example-config/dovecot-ldap.conf.ext
    args = /etc/dovecot/dovecot-ldap.conf.ext
}

#userdb {
#    driver = ldap
#    #args = /etc/dovecot/dovecot-ldap.conf.ext
#
#    # Default fields can be used to specify defaults that LDAP may override
#    #default_fields = home=/home/virtual/%u
#}
```

Your own dovecot LDAP configuration file is now `/etc/dovecot/dovecot-ldap.conf.ext`. You can add your default LDAP conf in it, following the official documentation.

**Synchronize dovecot LDAP conf with modoboa LDAP conf**

To make dovecot LDAP configuration synchronized with modoboa LDAP configuration, you should create a dedicated dovecot conf file. At the end of your dovecot configuration file (`dovecot-ldap.conf.ext`), add the following
line:

```
!include_try dovecot-modoboa.conf.ext
```

Then, set modoboa parameter *Enable Dovecot LDAP sync* to *Yes*. Then set the *Dovecot LDAP config file* following the previous step (*/etc/dovecot/dovecot-modoboa.conf.ext* in the example)

The last step is to add the command `update_dovecot_conf` to the cron job of modoboa. Then, each time your modoboa LDAP configuration is updated, your dovecot LDAP configuration will also be.

**LMTP**

Local Mail Transport Protocol is used to let Postfix deliver messages to Dovecot.

First, make sure the protocol is activated by looking at the *protocols* setting (generally inside *dovecot.conf*). It should be similar to the following example:

```
protocols = imap pop3 lmtp
```

Then, open the `conf.d/10-master.conf`, look for `lmtp` service definition and add the following content inside:

```
service lmtp {
  # stuff before
  unix_listener /var/spool/postfix/private/dovecot-lmtp {
    mode = 0600
    user = postfix
    group = postfix
  }
  # stuff after
}
```

We assume here that Postfix is *chrooted* within */var/spool/postfix*.

Finally, open the `conf.d/20-lmtp.conf` and modify it as follows:

```
protocol lmtp {
  postmaster_address = postmaster@<domain>
  mail_plugins = $mail_plugins quota sieve
}
```

Replace `<domain>` by the appropriate value.

**Note:** If you don’t plan to apply quota or to use filters, just adapt the content of the *mail_plugins* setting.

**Quota**

Modoboa lets administrators define per-domain and/or per-account limits (quota). It also lists the current quota usage of each account. Those features require Dovecot to be configured in a specific way.

Inside `conf.d/10-mail.conf`, add the *quota* plugin to the default activated ones:

```
mail_plugins = quota
```

Inside `conf.d/10-master.conf`, update the *dict* service to set proper permissions:
Inside `conf.d/20-imap.conf`, activate the `imap_quota` plugin:

```bash
protocol imap {
    # ...
    mail_plugins = $mail_plugins imap_quota
    # ...
}
```

Inside `dovecot.conf`, activate the quota SQL dictionary backend:

```bash
dict {
    quota = <driver>:~/etc/dovecot/dovecot-dict-sql.conf.ext
}
```

Inside `conf.d/90-quota.conf`, activate the `quota dictionary` backend:

```bash
plugin {
    quota = dict:User quota::proxy::quota
}
```

It will tell Dovecot to keep quota usage in the SQL dictionary.

Finally, edit the `dovecot-dict-sql.conf.ext` file and put the following content inside:

```bash
connect = host=<db_host> dbname=<db_name> user=<db_user> password=<password>
# SQLite users
# connect = /path/to/the/database.db

map {
    pattern = priv/quota/storage
    table = admin_quota
    username_field = username
    value_field = bytes
}
map {
    pattern = priv/quota/messages
    table = admin_quota
    username_field = username
    value_field = messages
}
```

**PostgreSQL users**
Database schema update

The `admin_quota` table is created by Django but unfortunately it doesn’t support DEFAULT constraints (it only simulates them when the ORM is used). As PostgreSQL is a bit strict about constraint violations, you must execute the following query manually:

```
db=> ALTER TABLE admin_quota ALTER COLUMN bytes SET DEFAULT 0;
db=> ALTER TABLE admin_quota ALTER COLUMN messages SET DEFAULT 0;
```

Trigger

As indicated on Dovecot’s wiki, you need a trigger to properly update the quota.

A working copy of this trigger is available on Github.

Download this file and copy it on the server running postgres. Then, execute the following commands:

```
$ su - postgres
$ psql [modoboa database] < /path/to/modoboa_postgres_trigger.sql
$ exit
```

Replace `[modoboa database]` by the appropriate value.

Forcing recalculation

For existing installations, Dovecot (> 2) offers a command to recalculate the current quota usages. For example, if you want to update all usages, run the following command:

```
$ doveadm quota recalc -A
```

Be careful, it can take a while to execute.

ManageSieve/Sieve

Modoboa lets users define filtering rules from the web interface. To do so, it requires ManageSieve to be activated on your server.

Inside `conf.d/20-managesieve.conf`, make sure the following lines are uncommented:

```
protocols = $protocols sieve

service managesieve-login {
  # ...
}

service managesieve {
  # ...
}

protocol sieve {
  # ...
}
```
Messages filtering using Sieve is done by the LDA.

Inside `conf.d/15-lda.conf`, activate the `sieve` plugin like this:

```conf
protocol lda {
    # Space separated list of plugins to load (default is global mail_plugins).
    mail_plugins = $mail_plugins sieve
}
```

Finally, configure the `sieve` plugin by editing the `conf.d/90-sieve.conf` file. Put the following content inside:

```conf
plugin {
    # Location of the active script. When ManageSieve is used this is actually
    # a symlink pointing to the active script in the sieve storage directory.
    sieve = ~/.dovecot.sieve

    # The path to the directory where the personal Sieve scripts are stored. For
    # ManageSieve this is where the uploaded scripts are stored.
    sieve_dir = ~/sieve
}
```

Restart Dovecot.

Now, you can go to the Postfix section to finish the installation.

### Last-login tracking

To update the `last_login` attribute of an account after a successful IMAP or POP3 login, you can configure a post-login script.

Open `conf.d/10-master.conf` and add the following configuration (imap and pop3 services are already defined, you just need to update them):

```conf
service imap {
    executable = imap postlogin
}

service pop3 {
    executable = pop3 postlogin
}

service postlogin {
    executable = script-login /usr/local/bin/postlogin.sh
    user = modoboa
    unix_listener postlogin {
    }
}
```

Then, you must create a script named `/usr/local/bin/postlogin.sh`. According to your database engine, the content will differ.

### PostgreSQL
MySQL

Postfix

This section gives an example about building a simple virtual hosting configuration with Postfix. Refer to the official documentation for more explanation.

Map files

You first need to create configuration files (or map files) that will be used by Postfix to lookup into Modoboa tables. To automatically generate the requested map files and store them in a directory, run the following command:

```
> cd <modoboa_instance_path>
> python manage.py generate_postfix_maps --destdir <directory>
```

Where `<directory>` is the directory where the files will be stored. Answer the few questions and you’re done.

Configuration

Use the following configuration in the `/etc/postfix/main.cf` file (this is just one possible configuration):

```
# Stuff before
virtual_transport = lmtp:unix:private/dovecot-lmtp

virtual_mailbox_domains = <driver>:/etc/postfix/sql-domains.cf
virtual_alias_domains = <driver>:/etc/postfix/sql-domain-aliases.cf
virtual_alias_maps = <driver>:/etc/postfix/sql-aliases.cf
relay_domains = <driver>:/etc/postfix/sql-relaydomains.cf
transport_maps =
   <driver>:/etc/postfix/sql-transport.cf
   <driver>:/etc/postfix/sql-spliteddomains-transport.cf
```
smtpd_recipient_restrictions =
  # ...
  check_recipient_access
      <driver>:/etc/postfix/sql-maintain.cf
      <driver>:/etc/postfix/sql-relay-recipient-verification.cf
  permit_mynetworks
  reject_unauth_destination
  reject_unverified_recipient
  # ...

smtpd_sender_login_maps = <driver>:/etc/postfix/sql-sender-login-map.cf

smtpd_sender_restrictions =
  reject_sender_login_mismatch

# Stuff after

Replace <driver> by the name of the database you use.
Restart Postfix.

Policy daemon

If you want to enable the built-in policy daemon, add the following content to the /etc/postfix/main.cf file:

smtpd_recipient_restrictions =
  # ...
  check_policy_service inet:localhost:9999
  # ...

And reload postfix.

Note: The check_policy_service line must be placed before the permit_mynetworks one, otherwise the daemon won’t be called.

OpenDKIM

Modoboa can generate DKIM keys for the hosted domains but it won’t sign or check messages. To do that, you need a dedicated software like OpenDKIM.

Note: The cron job in charge of creating DKIM keys must be run using the same user than OpenDKIM (ie. opendkim in most cases).

Database

Since keys related information is stored in Modoboa’s database, you need to tell OpenDKIM how it can access it.
First, make sure to install the required additional packages on your system (libopendbx1-* on debian based distributions or opendbx-* on CentOS, the complete name depends on your database engine).
Then, insert the following SQL view into Modoboa’s database:
**PostgreSQL**

```sql
CREATE OR REPLACE VIEW dkim AS (
    SELECT id, name as domain_name, dkim_private_key_path AS private_key_path,
    dkim_key_selector AS selector
    FROM admin_domain WHERE enable_dkim
);
```

**MySQL/MariaDB**

```sql
CREATE OR REPLACE VIEW dkim AS (
    SELECT id, name as domain_name, dkim_private_key_path AS private_key_path,
    dkim_key_selector AS selector
    FROM admin_domain WHERE enable_dkim=1
);
```

**Configuration**

You should find OpenDKIM’s configuration file at `/etc/opendkim.conf`

Add the following content to it:

```
KeyTable     dsn:<driver>://<user>:<password>@<db host>/<db name>/table=dkim?
             → keycol=id?datacol=domain_name,selector,private_key_path
SigningTable dsn:<driver>://<user>:<password>@<db host>/<db name>/table=dkim?
             → keycol=domain_name?datacol=id
Socket       inet:12345@localhost
```

Replace values between <> by yours. Accepted values for `driver` are `pgsql` or `mysql`. Make sure the user you specify has read permission on the view created previously.

If you run a debian based system, make sure to adjust the following setting in the `/etc/default/opendkim` file:

```
SOCKET=inet:12345@localhost
```

Eventually, reload OpenDKIM.

**Postfix integration**

Add the following lines to the `/etc/postfix/main.cf` file:

```
smtpd_milters = inet:127.0.0.1:12345
non_smtpd_milters = inet:127.0.0.1:12345
milter_default_action = accept
milter_content_timeout = 30s
```

and reload postfix.

**Extensions**

Only few commands are needed to add a new extension to your setup.
In case you use a dedicated user and/or a virtualenv, do not forget to use them:

```
> sudo -u <modoboa_user> -i
> source <virtuenv_path>/bin/activate
```

Then, run the following commands:

```
> pip install <EXTENSION>==<VERSION>
> cd <modoboa_instance_dir>
> python manage.py migrate
> python manage.py collectstatic
> python manage.py check --deploy
```

Then, restart your web server.

## 2.2 Upgrade

### 2.2.1 Modoboa

**Warning:** The new version you are going to install may need to modify your database. Before you start, make sure to backup everything!

Most of the time, upgrading your installation to a newer Modoboa version only requires a few actions. In every case, you will need to apply the general procedure first and then check if the version you are installing requires specific actions.

In case you use a dedicated user and/or a virtualenv, do not forget to use them:

```
> sudo -u <modoboa_user> -i
> source <virtuenv_path>/bin/activate
```

Then, run the following commands:

```
> pip install modoboa==<VERSION>
> cd <modoboa_instance_dir>
> python manage.py migrate
> python manage.py collectstatic
> python manage.py check --deploy
```

Once done, check if the version you are installing requires *Specific instructions.*

Finally, restart your web server.

Sometimes, you might need to upgrade postfix map files too. To do so, just run the `generate_postfix_maps` command on the same directory than the one used for installation (/etc/postfix by default).

Make sure to use root privileges and run the following command:

```
> python manage.py generate_postfix_maps --destdir <directory>
```

Then, reload postfix.
2.2.2 Extensions

If a new version is available for an extension you’re using, it is recommended to install it. Upgrading an extension is pretty and the procedure is almost the same as the one used for Modoboa.

In case you use a dedicated user and/or a virtualenv, do not forget to use them:

```
> sudo -u <modoboa_user> -i
> source <virtuenv_path>/bin/activate
```

Then, run the following commands:

```
> pip install <EXTENSION>=<VERSION>
> cd <modoboa_instance_dir>
> python manage.py migrate
> python manage.py collectstatic
> python manage.py check --deploy
```

Finally, restart your web server.

It is a generic upgrade procedure which will be enough most of the time but it is generally a good idea to check the associated documentation.

2.2.3 Rebuild Virtual Environment

Sometimes when upgrading your Operating System (eg from Ubuntu 17.04 to Ubuntu 17.10) your virtual environment running modoboa can get corrupted. Your first response will be to panic but fear not! The solution is in this document.

First things first:

**Recover your database password**

You will need to recover your database password (if using mysql or postgresql). You will find this in `/etc/postfix/sql-alias.cf` or any file with `sql-*.cf` in the `/etc/postfix` directory.

Make note of this as you will need it when reconfiguring modoboa.

**Reinstall Modoboa**

Start out by backup up your modoboa settings file located in the `modoboa instance directory` (`/srv/modoboa/instance/instance/settings.py` if you used the default installer configuration). This contains your current configuration.

Next, you want to remove all current modoboa files.

After doing this, follow the manual installation instructions for **Modoboa only** as everything should be working properly.

After this completes, simply restore your backed up settings file to `/srv/instance/instance/settings.py` (if you used installer default configuration). You will then need to reinstall your extensions.

You can find which plugins you had in your `settings.py` file under the `MODOBOA_APPS` variable.

Instructions to install extensions can also be [found here](#).

Once you have completed this step, you will need to run the following commands:
You will then see a message similar to:

```
You have requested to collect static files at the destination location as specified in your settings:

    /srv/modoboa/instance/sitestatic

This will overwrite existing files!
Are you sure you want to do this?
```

Type 'yes' to continue, or 'no' to cancel:

You will want to answer yes here then simply restart the uwsgi process with service uwsgi restart and you should be up and running again.

Simply log into your modoboa web panel and verify that your extensions and webmail box is working.

**2.2.4 Information**

Rebuild instructions from: https://help.pythonanywhere.com/pages/RebuildingVirtualenvs/

**2.2.5 Specific instructions**

**2.0.0-beta.1**

Add `drf_spectacular` and `phonenumber_field` to INSTALLED_APPS in the settings.py file, as follows:

```python
INSTALLED_APPS = (  
    'django.contrib.auth',  
    'django.contrib.contenttypes',  
    'django.contrib.sessions',  
    'django.contrib.messages',  
    'django.contrib.sites',  
    'django.contrib.staticfiles',  
    'reversion',  
    'ckeditor',  
    'ckeditor_uploader',  
    'rest_framework',  
    'rest_framework.authtoken',  
    'drf_spectacular',  
    'phonenumber_field',  
    'django_otp',  
    'django_otp.plugins.otp_totp',  
    'django_otp.plugins.otp_static',  
)
```

Modify the REST_FRAMEWORK setting as follows:
Add the new following settings:

```python
SPECTACULAR_SETTINGS = {
    'SCHEMA_PATH_PREFIX': r'/api/v[0-9]+',
    'TITLE': 'Modoboa API',
    'VERSION': None,
    'SERVE_PERMISSIONS': ['rest_framework.permissions.IsAuthenticated'],
}

PHONENUMBER_DB_FORMAT = 'INTERNATIONAL'
```

New admin interface

This new release brings a new admin interface written with Vue.js framework. It is a work in progress and all features are not yet implemented - i.e. extensions integration - but you could give it a try. It uses a new API version but the old one is still available.

You will need to copy the frontend files in the folder you specified in your web server configuration. If you used the installer, the folder should be `/srv/modoboa/instance/frontend`

```
mkdir /srv/modoboa/instance/frontend
cp -r /srv/modoboa/env/lib/pythonX.X/site-packages/modoboa/frontend_dist/* /srv/modoboa/instance/frontend
```

Then, edit the `/srv/modoboa/instance/frontend/config.json` and update the `API_BASE_URL` setting according to the hostname of your server:

```json
{
    "API_BASE_URL": "https://<hostname of your server>/api/v2"
}
```

Finally, update the configuration of your web server to serve the frontend files. For NGINX, you should add the following in the `server` block:

```
location ^~ /new-admin {
    alias /srv/modoboa/instance/frontend/;
    index index.html;

    expires -1;
    add_header Pragma "no-cache";
    add_header Cache-Control "no-store, no-cache, must-revalidate, post-check=0, pre-check=0";

    try_files $uri $uri/ /index.html = 404;
}
```
1.17.0

Modoboa now supports Two-Factor authentication using TOTP applications.

To enable it, install the following new requirement in your virtualenv:

```
(env)> pip install django-otp qrcode
```

Then, open the `settings.py` file and add `django_otp` packages to `INSTALLED_APPS`:

```python
INSTALLED_APPS = (
    'django.contrib.auth',
    'django.contrib.contenttypes',
    'django.contrib.sessions',
    'django.contrib.messages',
    'django.contrib.sites',
    'django.contrib.staticfiles',
    'reversion',
    'ckeditor',
    'ckeditor_uploader',
    'rest_framework',
    'rest_framework.authtoken',
    'django_otp',
    'django_otp.plugins.otp_totp',
    'django_otp.plugins.otp_static',
)
```

Add new middlewares to `MIDDLEWARE`:

```python
MIDDLEWARE = (
    'x_forwarded_for.middleware.XForwardedForMiddleware',
    'django.contrib.sessions.middleware.SessionMiddleware',
    'django.middleware.common.CommonMiddleware',
    'django.middleware.csrf.CsrfViewMiddleware',
    'django.contrib.auth.middleware.AuthenticationMiddleware',
    'django_otp.middleware.OTPMiddleware',
    'modoboa.core.middleware.TwoFAMiddleware',
    'django.middleware.locale.LocaleMiddleware',
    'django.middleware.clickjacking.XFrameOptionsMiddleware',
    'modoboa.core.middleware.LocalConfigMiddleware',
    'modoboa.lib.middleware.AjaxLoginRedirect',
    'modoboa.lib.middleware.CommonExceptionCatcher',
    'modoboa.lib.middleware.RequestCatcherMiddleware',
)
```

And add the following new setting:

```python
# 2FA

OTP_TOTP_ISSUER = "<your server hostname here>"
```

1.16.0

A new policy daemon has been added.

Make sure to have a Redis instance running on your server.

2.2. Upgrade
Add 'modoboa.policyd' to MODOBA_APPS:

```python
MODOBA_APPS = (
    'modoboa',
    'modoboa.core',
    'modoboa.lib',
    'modoboa.admin',
    'modoboa.transport',
    'modoboa.relaydomains',
    'modoboa.limits',
    'modoboa.parameters',
    'modoboa.dnstools',
    'modoboa.policyd',
)
```

Add the following settings to your `settings.py` file:

```python
REDIS_HOST = '<IP or hostname here>'
REDIS_PORT = 6379
REDIS_QUOTA_DB = 0
REDIS_URL = 'redis://{}:{}/'.format(REDIS_HOST, REDIS_PORT, REDIS_QUOTA_DB)
```

Once done, you can start the policy daemon using the following commands:

```bash
> python manage.py policy_daemon
```

Don’t forget to configure `_policyd_config` if you want to use this feature.

The `modoboa-stats` plugin has been merged into the core.

Add 'modoboa.maillog' to MODOBA_APPS:

```python
MODOBA_APPS = (
    'modoboa',
    'modoboa.core',
    'modoboa.lib',
    'modoboa.admin',
    'modoboa.transport',
    'modoboa.relaydomains',
    'modoboa.limits',
    'modoboa.parameters',
    'modoboa.dnstools',
    'modoboa.policyd',
    'modoboa.maillog',
)
```

And remove any reference to `modoboa_stats` in this same variable.

### 1.15.0

This version drops Python 2 support so don’t forget to update all the extensions you use.

**Warning:** If you upgrade an existing python 2 installation, you will need to create a new Python 3 virtual environment. You can remove the existing virtual environment and replace it by the new one so you won’t have to modify your configuration files.
Add the following new setting:

```
DISABLE_DASHBOARD_EXTERNAL_QUERIES = False
```

Reload uwsgi/gunicorn/apache depending on your setup.

Finally, Make sure to use root privileges and run the following command:

```
> python manage.py generate_postfix_maps --destdir <directory>
```

Then, reload postfix.

**1.14.0**

This release introduces an optional LDAP synchronization process. If you want to use it, please follow the dedicated procedure.

**1.13.1**

Upgrade postfix maps files as follows:

```
> python manage.py generate_postfix_maps --destdir <path> --force-overwrite
```

**1.13.0**

Add 'modoboa.dnstools' to MODBOA_APPS:

```
MODBOA_APPS = ( 
    'modoboa',
    'modoboa.core',
    'modoboa.lib',
    'modoboa.admin',
    'modoboa.transport',
    'modoboa.relaydomains',
    'modoboa.limits',
    'modoboa.parameters',
    'modoboa.dnstools',
)
```

Add the following new settings:

```
CSRF_COOKIE_SECURE = True
SESSION_COOKIE_SECURE = True
```

**modoboa-postfix-autoreply 1.5.0**

Edit the /etc/postfix/main.cf file and remove the sql-autoreplies-transport.cf map from the transport_maps if present. Remove the corresponding proxy_read_maps entry if relevant.

Reload postfix.
Warning: Upgrade installed extensions BEFORE running check or migrate commands.

Upgrade all your installed plugins to the following versions:

Warning: If you use the amavis plugin, make sure to include its configuration as follows into settings.py:

```python
from modoboa_amavis import settings as modoboa_amavis_settings
modoboa_amavis_settings.apply(globals())
```

<table>
<thead>
<tr>
<th>Name</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>modoboa-amavis</td>
<td>1.2.0</td>
</tr>
<tr>
<td>modoboa-contacts</td>
<td>0.5.0</td>
</tr>
<tr>
<td>modoboa-dmarc</td>
<td>1.1.0</td>
</tr>
<tr>
<td>modoboa-imap-migration</td>
<td>1.2.0</td>
</tr>
<tr>
<td>modoboa-pdfcredentials</td>
<td>1.3.0</td>
</tr>
<tr>
<td>modoboa-postfix-autoreply</td>
<td>1.4.0</td>
</tr>
<tr>
<td>modoboa-radicale</td>
<td>1.2.0</td>
</tr>
<tr>
<td>modoboa-sievefilters</td>
<td>1.4.0</td>
</tr>
<tr>
<td>modoboa-stats</td>
<td>1.4.0</td>
</tr>
<tr>
<td>modoboa-webmail</td>
<td>1.4.0</td>
</tr>
</tbody>
</table>

Edit the `settings.py` file and apply the following modifications.

Add `'modoboa.transport'` to `MODOBOA_APPS`:

```python
MODOBOA_APPS = (  
    'modoboa',  
    'modoboa.core',  
    'modoboa.lib',  
    'modoboa.admin',  
    'modoboa.transport',  
    'modoboa.relaydomains',  
    'modoboa.limits',  
    'modoboa.parameters',  
)
```

Replace the following line:

```python
MIDDLEWARE_CLASSES = (
```

by:

```python
MIDDLEWARE = (  
```

Update postfix map files as follows:

```bash
> rm -f <path>/modoboa-postfix-maps.chk
> python manage.py generate_postfix_maps --force --destdir <path>
```

Then, modify postfix’s configuration as follows:
smtpd_sender_login_maps =
   <driver>:/path/sql-sender-login-map.cf

transport_maps =
   <driver>:/path/sql-transport.cf
   <driver>:/path/sql-spliteddomains-transport.cf
   # other map files...

Replace <driver> and <path> by your values.
If transport_maps contains sql-relaydomains-transport.cf, remove it.

Warning: If you make use of postfix’s proxymap server, you must also update the proxy_read_maps setting.

Reload postfix.
Add the following cron job in order to generate DKIM keys:

# Generate DKIM keys (they will belong to the user running this job)
* * * * * root $PYTHON $INSTANCE/manage.py modo_
    manage_dkim_keys

1.9.0
If you want to manage inactive accounts, look at Cleaning inactive accounts.

1.8.3
Edit the settings.py file and replace the following line:

BASE_DIR = os.path.dirname(os.path.dirname(__file__))

by:

BASE_DIR = os.path.realpath(os.path.dirname(os.path.dirname(__file__)))

1.8.0
Modoboa now relies on Django’s builtin password validation system to validate user passwords, instead of django-passwords.
Remove django-passwords from your system:

> sudo -u <modoboa_user> -i
> source <virtuenv_path>/bin/activate
> pip uninstall django-passwords

Edit the settings.py file and remove the following content:

# django-passwords
PASSWORD_MIN_LENGTH = 8

(continues on next page)
Add the following lines:

```python
# Password validation rules
AUTH_PASSWORD_VALIDATORS = [
    {
        'NAME': 'django.contrib.auth.password_validation.UserAttributeSimilarityValidator',
    },
    {
        'NAME': 'django.contrib.auth.password_validation.MinimumLengthValidator',
    },
    {
        'NAME': 'django.contrib.auth.password_validation.CommonPasswordValidator',
    },
    {
        'NAME': 'django.contrib.auth.password_validation.NumericPasswordValidator',
    },
    {
        'NAME': 'modoboa.core.password_validation.ComplexityValidator',
        'OPTIONS': {
            'upper': 1,
            'lower': 1,
            'digits': 1,
            'specials': 0
        }
    },
]
```

1.7.2

API documentation has evolved (because of the upgrade to Django Rest Framework 3.6) and CKeditor is now embedded by default (thanks to the django-ckeditor package). Some configuration changes are required.

Edit your settings.py file and apply the following modifications:

- Update the INSTALLED_APPS variable as follows:

```python
INSTALLED_APPS = [
    'django.contrib.auth',
    'django.contrib.contenttypes',
    'django.contrib.sessions',
    'django.contrib.messages',
    'django.contrib.sites',
    'django.contrib.staticfiles',
    'reversion',
    'ckeditor',
    'ckeditor_uploader',
    'rest_framework',
]```
• Update the `REST_FRAMEWORK` variable as follows:

```python
REST_FRAMEWORK = {
    'DEFAULT_AUTHENTICATION_CLASSES': (
        'rest_framework.authentication.TokenAuthentication',
        'rest_framework.authentication.SessionAuthentication',
    ),
}
```

• Remove the `SWAGGER_SETTINGS` variable

• Add the following content

```python
# CKeditor
CKEDITOR_UPLOAD_PATH = "uploads/
CKEDITOR_IMAGE_BACKEND = "pillow"
CKEDITOR_RESTRICT_BY_USER = True
CKEDITOR_BROWSE_SHOW_DIRS = True
CKEDITOR_ALLOW_NONIMAGE_FILES = False

CKEDITOR_CONFIGS = {
    'default': {
        'allowedContent': True,
        'toolbar': 'Modoboa',
        'width': None,
        'toolbar_Modoboa': [
            ['Bold', 'Italic', 'Underline'],
            ['JustifyLeft', 'JustifyCenter', 'JustifyRight', 'JustifyBlock'],
            ['BidiLtr', 'BidiRtl', 'Language'],
            ['NumberedList', 'BulletedList', '-', 'Outdent', 'Indent'],
            ['Undo', 'Redo'],
            ['Link', 'Unlink', 'Anchor', '-', 'Smiley'],
            ['TextColor', 'BGColor', '-', 'Source'],
            ['Font', 'FontSize'],
            ['Image', ],
            ['SpellChecker']
        ],
    },
}
```

Don’t forget to run the following command:

```console
> python manage.py collectstatic
```

### 1.7.1

If you used 1.7.0 for a fresh installation, please run the following commands:
> sudo -u <modoboa_user> -i
> source <virtuenv_path>/bin/activate
> cd <modoboa_instance_dir>
> python manage.py load_initial_data

1.7.0

This version requires Django >= 1.10 so you need to make some modifications. It also brings internal API changes which are not backward compatible so installed extensions must be upgraded too.

First of all, deactivate all installed extensions (edit the settings.py file and comment the corresponding lines in MODOBOA_APPS).

Edit the urls.py file of your local instance and replace its content by the following one:

```python
from django.conf.urls import include, url
urlpatterns = [
    url(r'^$', include('modoboa.urls')),
]
```

Edit the settings.py and apply the following changes:

- Add 'modoboa.parameters' to MODOBOA_APPS:

```python
MODOBOA_APPS = (
    'modoboa',
    'modoboa.core',
    'modoboa.lib',
    'modoboa.admin',
    'modoboa.relaydomains',
    'modoboa.limits',
    'modoboa.parameters',
    # Modoboa extensions here.
)
```

- Add 'modoboa.core.middleware.LocalConfigMiddleware' to MIDDLEWARE_CLASSES:

```python
MIDDLEWARE_CLASSES = (
    'django.contrib.sessions.middleware.SessionMiddleware',
    'django.middleware.common.CommonMiddleware',
    'django.middleware.csrf.CsrfViewMiddleware',
    'django.contrib.auth.middleware.AuthenticationMiddleware',
    'django.contrib.messages.middleware.MessageMiddleware',
    'django.middleware.locale.LocaleMiddleware',
    'django.middleware.clickjacking.XFrameOptionsMiddleware',
    'modoboa.core.middleware.LocalConfigMiddleware',
    'modoboa.lib.middleware.AjaxLoginRedirect',
    'modoboa.lib.middleware.CommonExceptionCatcher',
    'modoboa.lib.middleware.RequestCatcherMiddleware',
)
```

- Modoboa used to provide a custom authentication backend (modoboa.lib.authbackends.SimpleBackend) but it has been removed. Replace it as follows:
AUTHENTICATION_BACKENDS = {
    # Other backends before...
    'django.contrib.auth.backends.ModelBackend',
}

- Remove TemplateContextProcessors and replace it by:

```python
TEMPLATES = {
    'BACKEND': 'django.template.backends.django.DjangoTemplates',
    'DIRS': [],
    'APP_DIRS': True,
    'OPTIONS': {
        'context_processors': [
            'django.template.context_processors.debug',
            'django.template.context_processors.request',
            'django.contrib.auth.context_processors.auth',
            'django.template.context_processors.i18n',
            'django.template.context_processors.media',
            'django.template.context_processors.static',
            'django.template.context_processors.tz',
            'django.contrib.messages.context_processors.messages',
            'modoboa.core.context_processors.top_notifications',
        ],
        'debug': False,
    },
}
```

Run the following commands (load virtualenv if you use one):

```
> sudo -u <modoboa_user> -i
> source <virtuenv_path>/bin/activate
> cd <modoboa_instance_dir>
> python manage.py migrate
> python manage.py collectstatic
```

Finally, upgrade your extensions and reactivate them.

<table>
<thead>
<tr>
<th>Name</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>modoboa-amavis</td>
<td>1.1.0</td>
</tr>
<tr>
<td>modoboa-dmarc</td>
<td>1.0.0</td>
</tr>
<tr>
<td>modoboa-imap-migration</td>
<td>1.1.0</td>
</tr>
<tr>
<td>modoboa-pdfcredentials</td>
<td>1.1.0</td>
</tr>
<tr>
<td>modoboa-postfix-autoreply</td>
<td>1.2.0</td>
</tr>
<tr>
<td>modoboa-radicale</td>
<td>1.1.0</td>
</tr>
<tr>
<td>modoboa-sievelfilters</td>
<td>1.1.0</td>
</tr>
<tr>
<td>modoboa-stats</td>
<td>1.1.0</td>
</tr>
<tr>
<td>modoboa-webmail</td>
<td>1.1.0</td>
</tr>
</tbody>
</table>

Command line shortcuts:

```
$ pip install modoboa-amavis==1.1.0
$ pip install modoboa-dmarc==1.0.0
$ pip install modoboa-imap-migration==1.1.0
```

(continues on next page)
$ pip install modoboa-pdfcredentials==1.1.0
$ pip install modoboa-postfix-autoreply==1.2.0
$ pip install modoboa-radicale==1.1.0
$ pip install modoboa-sievefilters==1.1.0
$ pip install modoboa-stats==1.1.0
$ pip install modoboa-webmail==1.1.0

And please make sure you use the latest version of the `django-versionfield2` package:

$ pip install -U django-versionfield2

Notes about quota changes and resellers

Reseller users now have a quota option in Resources tab. This is the quota that a reseller can share between all its domains.

There are two quotas for a domain in the new version:

1. Quota
2. Default mailbox quota.

[1]. Quota: quota shared between mailboxes This quota is shared between all the mailboxes of this domain. This value cannot exceed reseller’s quota and hence cannot be 0(unlimited) if reseller has finite quota.

[2]. Default mailbox quota: default quota applied to mailboxes This quota is the default quota applied to new mailboxes. This value cannot exceed Quota[1] and hence cannot be 0(unlimited) if Quota[1] is finite.

1.6.1

First of all, update postfix map files as follows:

```bash
> python manage.py generate_postfix_maps --destdir <path> --force-overwrite
```

Then, modify postfix’s configuration as follows:

```python
smtpd_sender_login_maps =
    <driver>:/path/sql-sender-login-mailboxes.cf
    <driver>:/path/sql-sender-login-aliases.cf
    <driver>:/path/sql-sender-login-mailboxes-extra.cf
```

Replace `<driver>` and `<path>` by your values.

Finally, reload postfix.

This release also deprecates some internal functions. As a result, several extensions has been updated to maintain the compatibility. If you enabled the notification service, you’ll find the list of available updates directly in your Modoboa console.

For the others, here is the list:

<table>
<thead>
<tr>
<th>Name</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>modoboa-amavis</td>
<td>1.0.10</td>
</tr>
<tr>
<td>modoboa-postfix-autoreply</td>
<td>1.1.7</td>
</tr>
<tr>
<td>modoboa-radicale</td>
<td>1.0.5</td>
</tr>
<tr>
<td>modoboa-stats</td>
<td>1.0.9</td>
</tr>
</tbody>
</table>
Command line shortcut:

```
$ pip install modoboa-amavis==1.0.10
$ pip install modoboa-postfix-autoreply==1.1.7
$ pip install modoboa-radicale==1.0.5
$ pip install modoboa-stats==1.0.9
```

1.6.0

**Warning:** You have to upgrade extensions due to `core.User` model attribute change (`user.group` to `user.role`). Otherwise, you will have an internal error after upgrade. In particular: `modoboa-amavisd`, `modoboa-stats`, `modoboa-postfix-autoreply` are concerned.

An interesting feature brought by this version is the capability to make different checks about MX records. For example, Modoboa can query main DNSBL providers for every defined domain. With this, you will quickly know if one the domains you manage is listed or not. To activate it, add the following line to your crontab:

```
*/30 * * * * <optional_virtualenv_path/>python <modoboa_instance_dir>/manage.py modo_check_mx
```

The communication with Modoboa public API has been reworked. Instead of sending direct synchronous queries (for example to check new versions), a cron job has been added. To activate it, add the following line to your crontab:

```
0 * * * * <optional_virtualenv_path/>python <modoboa_instance_dir>/manage.py communicate_with_public_api
```

Please also note that public API now uses TLS so you must update your configuration as follows:

```
MODOBOA_API_URL = 'https://api.modoboa.org/1/
```

Finally, it is now possible to declare additional sender addresses on a per-account basis. You need to update your postfix configuration in order to use this functionality. Just edit the `main.cf` file and change the following parameter:

```
smtpd_sender_login_maps =
    <driver>:/etc/postfix/sql-sender-login-mailboxes.cf
    <driver>:/etc/postfix/sql-sender-login-aliases.cf
    <driver>:/etc/postfix/sql-sender-login-mailboxes-extra.cf
```

1.5.0

The API has been greatly improved and a documentation is now available. To enable it, add `'rest_framework_swagger'` to the `INSTALLED_APPS` variable in `settings.py` as follows:

```
INSTALLED_APPS = (  
    'django.contrib.auth',
    'django.contrib.contenttypes',
    'django.contrib.sessions',
    'django.contrib.messages',
    'django.contrib.sites',
    'django.contrib.staticfiles',
    'reversion',
    'rest_framework.authtoken',
```

(continues on next page)
Then, add the following content into settings.py, just after the REST_FRAMEWORK variable:

```python
SWGAGER_SETTINGS = {
    "is_authenticated": False,
    "api_version": "1.0",
    "exclude_namespaces": [],
    "info": {
        "contact": "contact@modoboa.com",
        "description": "Modoboa API, requires a valid token.",
        "title": "Modoboa API",
    }
}
```

You’re done. The documentation is now available at the following address:

http://<your instance address>/docs/api/

Finally, if you find a TEMPLATE_CONTEXT_PROCESSORS variable in your settings.py file, make sure it looks like this:

```python
TEMPLATE_CONTEXT_PROCESSORS = global_settings.TEMPLATE_CONTEXT_PROCESSORS + [
    'modoboa.core.context_processors.top_notifications',
]
```

### 1.4.0

**Warning:** Please make sure to use Modoboa 1.3.5 with an up-to-date database before an upgrade to 1.4.0.

**Warning:** Do not follow the regular upgrade procedure for this version.

Some extension have been moved back into the main repository. The main reason for that is that using Modoboa without them doesn’t make sense.

First of all, you must rename the following applications listed inside the MODOBOA_APPS variable:

<table>
<thead>
<tr>
<th>Old name</th>
<th>New name</th>
</tr>
</thead>
<tbody>
<tr>
<td>modoboa_admin</td>
<td>modoboa.admin</td>
</tr>
<tr>
<td>modoboa_admin_limits</td>
<td>modoboa.limits</td>
</tr>
<tr>
<td>modoboa_admin_relaydomains</td>
<td>modoboa.relaydomains</td>
</tr>
</tbody>
</table>

Then, apply the following steps:

1. Uninstall old extensions:
   ```bash
   $ pip uninstall modoboa-admin modoboa-admin-limits modoboa-admin-relaydomains
   ```
2. Install all extension updates using pip (check the Modoboa > Information page)
3. Manually migrate database:
$ cd <instance_dir>
$ python manage.py migrate auth
$ python manage.py migrate admin 0001 --fake
$ python manage.py migrate admin
$ python manage.py migrate limits 0001 --fake
$ python manage.py migrate relaydomains 0001 --fake
$ python manage.py migrate

4. Finally, update static files:

    $ python manage.py collectstatic

This version also introduces a REST API. To enable it:

1. Add 'rest_framework.authtoken' to the INSTALLED_APPS variable
2. Add the following configuration inside settings.py:

```python
# Rest framework settings
REST_FRAMEWORK = {
    'DEFAULT_AUTHENTICATION_CLASSES': (
        'rest_framework.authentication.TokenAuthentication',
    ),
    'DEFAULT_PERMISSION_CLASSES': (
        'rest_framework.permissions.IsAuthenticated',
    )
}
```

3. Run the following command:

    $ python manage.py migrate

1.3.5

To enhance security, Modoboa now checks the strength of user passwords [https://github.com/dstufft/django-passwords].

To use this feature, add the following configuration into the settings.py file:

```python
# django-passwords
PASSWORD_MIN_LENGTH = 8

PASSWORD_COMPLEXITY = {
    "UPPER": 1,
    "LOWER": 1,
    "DIGITS": 1
}
```

1.3.2

Modoboa now uses the atomic requests mode to preserve database consistency (reference).

To enable it, update the DATABASES variable in settings.py as follows:
DATABASES = {
    "default": {
        # stuff before...
        "ATOMIC_REQUESTS": True
    },
    "amavis": {
        # stuff before...
        "ATOMIC_REQUESTS": True
    }
}

1.3.0

This release does not bring awesome new features but it is a necessary bridge to the future of Modoboa. All extensions now have their own git repository and the deploy process has been updated to reflect this change.

Another important update is the use of Django 1.7. Besides its new features, the migration system has been reworked and is now more robust than before.

Before we begin with the procedure, here is a table showing old extension names and their new name:

<table>
<thead>
<tr>
<th>Old name</th>
<th>New package name</th>
<th>New module name</th>
</tr>
</thead>
<tbody>
<tr>
<td>modoboa.extensions.admin</td>
<td>modoboa-admin</td>
<td>modoboa_admin</td>
</tr>
<tr>
<td>modoboa.extensions.limits</td>
<td>modoboa-admin-limits</td>
<td>modoboa_admin_limits</td>
</tr>
<tr>
<td>modoboa.extensions.postfix_autoreply</td>
<td>modoboa-postfix-autoreply</td>
<td>modoboa_postfix_autoreply</td>
</tr>
<tr>
<td>modoboa.extensions.postfix_relay_domains</td>
<td>modoboa-admin-relaydomains</td>
<td>modoboa_admin_relaydomains</td>
</tr>
<tr>
<td>modoboa.extensions.radicale</td>
<td>modoboa-radical</td>
<td>modoboa_radical</td>
</tr>
<tr>
<td>modoboa.extensions.sievefilters</td>
<td>modoboa-sievefilters</td>
<td>modoboa_sievefilters</td>
</tr>
<tr>
<td>modoboa.extensions.stats</td>
<td>modoboa-stats</td>
<td>modoboa_stats</td>
</tr>
<tr>
<td>modoboa.extensions.webmail</td>
<td>modoboa-webmail</td>
<td>modoboa_webmail</td>
</tr>
</tbody>
</table>

Here are the required steps:

1. Install the extensions using pip (look at the second column in the table above):

   $ pip install <the extensions you want>

2. Remove `south` from `INSTALLED_APPS`

3. Rename old extension names inside `MODOBOA_APPS` (look at the third column in the table above)

4. Remove `modoboa.lib.middleware.ExtControlMiddleware` from `MIDDLEWARE_CLASSES`

5. Change `DATABASE_ROUTERS` to:

   DATABASE_ROUTERS = ["modoboa_amavis.dbrouter.AmavisRouter"]

6. Run the following commands:

   $ cd <modoboa_instance_dir>
   $ python manage.py migrate

7. Reply `yes` to the question

8. Run the following commands:
$ python manage.py load_initial_data
$ python manage.py collectstatic

9. The cleanup job has been renamed in Django, so you have to modify your crontab entry:

- 0 0 * * * <modoboa_site>/manage.py cleanup
+ 0 0 * * * <modoboa_site>/manage.py clearsessions

1.2.0

A new notification service let administrators know about new Modoboa versions. To activate it, you need to update the TEMPLATE_CONTEXT_PROCESSORS variable like this:

```python
from django.conf import global_settings

TEMPLATE_CONTEXT_PROCESSORS = global_settings.TEMPLATE_CONTEXT_PROCESSORS + ('modoboa.core.context_processors.top_notifications',)
```

and to define the new MODOBOA_API_URL variable:

```
MODOBOA_API_URL = 'http://api.modoboa.org/1/'
```

The location of external static files has changed. To use them, add a new path to the STATICFILES_DIRS:

```
# Additional locations of static files
STATICFILES_DIRS = (
    # Put strings here, like "'/home/html/static" or "C:\www/django/static".
    # Always use forward slashes, even on Windows.
    # Don't forget to use absolute paths, not relative paths.
    '<path/to/modoboa/install/dir>/bower_components",
)
```

Run the following commands to define the hostname of your instance:

```
$ cd <modoboa_instance_dir>
$ python manage.py set_default_site <hostname>
```

If you plan to use the Radicale extension:

1. Add 'modoboa.extensions.radicale' to the MODOBOA_APPS variable
2. Run the following commands:

```
$ cd <modoboa_instance_dir>
$ python manage.py syncdb
```

**Warning:** You also have to note that the sitestatic directory has moved from `<path to your site's dir>` to `<modoboa's root url>` (it's probably the parent directory). You have to adapt your web server configuration to reflect this change.

2.2. Upgrade

43
2.3 Configuration

2.3.1 Online parameters

Modoboa provides online panels to modify internal parameters. There are two available levels:

- Application level: global parameters, define how the application behaves. Available at Modoboa > Parameters
- User level: per user customization. Available at User > Settings > Preferences

Regardless level, parameters are displayed using tabs, each tab corresponding to one application.

General parameters

The admin application exposes several parameters, they are presented below:
<table>
<thead>
<tr>
<th>Name</th>
<th>Tab</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentication type</td>
<td>General</td>
<td>The backend used for authentication</td>
<td>Local</td>
</tr>
<tr>
<td>Default password scheme</td>
<td>General</td>
<td>Scheme used to crypt mailbox passwords</td>
<td>sha512crypt</td>
</tr>
<tr>
<td>Rounds</td>
<td>General</td>
<td>Number of rounds (only used by sha256crypt and sha512crypt). Must be between 1000 and 999999999, inclusive.</td>
<td>70000</td>
</tr>
<tr>
<td>Secret key</td>
<td>General</td>
<td>A key used to encrypt users’ password in sessions</td>
<td>random value</td>
</tr>
<tr>
<td>Sender address</td>
<td>General</td>
<td>Email address used to send notifications.</td>
<td></td>
</tr>
<tr>
<td>Enable communication</td>
<td>General</td>
<td>Enable communication with Modoboa public API</td>
<td>yes</td>
</tr>
<tr>
<td>Check new versions</td>
<td>General</td>
<td>Automatically checks if a newer version is available</td>
<td>yes</td>
</tr>
<tr>
<td>Send statistics</td>
<td>General</td>
<td>Send statistics to Modoboa public API (counters and used extensions)</td>
<td>yes</td>
</tr>
<tr>
<td>Top notifications check interval</td>
<td>General</td>
<td>Interval between two top notification checks (in seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Maximum log record age</td>
<td>General</td>
<td>The maximum age in days of a log record</td>
<td>365</td>
</tr>
<tr>
<td>Items per page</td>
<td>General</td>
<td>Number of displayed items per page</td>
<td>30</td>
</tr>
<tr>
<td>Default top redirection</td>
<td>General</td>
<td>The default redirection used when no application is specified</td>
<td>userprefs</td>
</tr>
<tr>
<td>Enable MX checks</td>
<td>Admin</td>
<td>Check that every domain has a valid MX record</td>
<td>yes</td>
</tr>
<tr>
<td>Valid MXs</td>
<td>Admin</td>
<td>A list of IP or network address every MX should match. A warning will be sent if a record does not respect this it.</td>
<td></td>
</tr>
<tr>
<td>Enable DNSBL checks</td>
<td>Admin</td>
<td>Check every domain against major DNSBL providers</td>
<td>yes</td>
</tr>
<tr>
<td>DKIM keys storage directory</td>
<td>Admin</td>
<td>Path to a directory where generated keys will be stored</td>
<td>DKIM</td>
</tr>
<tr>
<td>Default DKIM key length</td>
<td>Admin</td>
<td>The default size (in bits) for new keys</td>
<td>2048</td>
</tr>
<tr>
<td>Handle mailboxes on filesystem</td>
<td>Admin</td>
<td>Rename or remove mailboxes on the filesystem when they get renamed or removed within Modoboa</td>
<td>no</td>
</tr>
<tr>
<td>Mailboxes owner</td>
<td>Admin</td>
<td>The UNIX account who owns mailboxes on the filesystem</td>
<td>vmail</td>
</tr>
</tbody>
</table>

2.3. Configuration

Default domain quota | Admin | Default quota (in MB) applied to freshly created domains with no value specified | 0
Warning: If Dovecot is not running on the same host than Modoboa, you will have to define which password schemes are supported. To do so, open the settings.py file and add a `DOVECOT_SUPPORTED_SCHEMES` variable with the output of the command: `doveadm pw -l`.

Note: If you are not familiar with virtual domain hosting, you should take a look at postfix's documentation. This How to also contains useful information.

Note: A random secret key will be generated each time the Parameters page is refreshed and until you save parameters at least once.

Note: Specific LDAP parameters are also available, see LDAP authentication.

2.3.2 Media files

Modoboa uses a specific directory to upload files (ie. when the webmail is in use) or to create ones (ex: graphical statistics). This directory is named `media` and is located inside modoboa's installation directory (called `modoboa_site` in this documentation).

To work properly, the system user which runs modoboa (www-data, apache, whatever) must have write access to this directory.

2.3.3 Customization

Custom logo

You have the possibility to use a custom logo instead of the default one on the login page.

To do so, open the settings.py file and add a `MODOBOA_CUSTOM_LOGO` variable. This variable must contain the relative URL of your logo under `MEDIA_URL`. For example:

```python
MODOBOA_CUSTOM_LOGO = os.path.join(MEDIA_URL, "custom_logo.png")
```

Then copy your logo file into the directory indicated by `MEDIA_ROOT`.

2.3.4 Host configuration

Note: This section is only relevant when Modoboa handles mailboxes renaming and removal from the filesystem, which requires that Dovecot is installed and running on this host. If it is installed at a non-standard directory, paths to its binaries can be set in the settings.py file with the `DOVECOT_LOOKUP_PATH` and `DOVEADM_LOOKUP_PATH` variables.

To manipulate mailboxes on the filesystem, you must allow the user who runs Modoboa to execute commands as the user who owns mailboxes.

To do so, edit the `/etc/sudoers` file and add the following inside:
Replace values between <> by the ones you use.

### 2.3.5 Time zone and language

Modoboa is available in many languages. To specify the default language to use, edit the `settings.py` file and modify the `LANGUAGE_CODE` variable:

```
LANGUAGE_CODE = 'fr' # or 'en' for english, etc.
```

**Note:** Each user has the possibility to define the language he prefers.

In the same configuration file, specify the timezone to use by modifying the `TIME_ZONE` variable. For example:

```
TIME_ZONE = 'Europe/Paris'
```

### 2.3.6 Sessions management

Modoboa uses Django’s session framework to store per-user information. Few parameters need to be set in the `settings.py` configuration file to make Modoboa behave as expected:

```
SESSION_EXPIRE_AT_BROWSER_CLOSE = False # Default value
```

This parameter is optional but you must ensure it is set to `False` (the default value).

The default configuration file provided by the `modoboa-admin.py` command is properly configured.

### 2.3.7 Logging authentication

To trace login attempts to the web interface, Modoboa uses python `SysLogHandler` so you can see them in your syslog authentication log file (`/var/log/auth.log` in most cases).

Depending on your configuration, you may have to edit the `settings.py` file and add `‘address’: ‘/dev/log’` to the logging section:

```
'syslog-auth': {
    'class': 'logging.handlers.SysLogHandler',
    'facility': SysLogHandler.LOG_AUTH,
    'address': '/dev/log',
    'formatter': 'syslog'
}
```

### 2.3.8 External authentication

**LDAP**

Modoboa supports external LDAP authentication using the following extra components:
• Python LDAP client
• Django LDAP authentication backend

If you want to use this feature, you must first install those components:

```bash
$ pip install python-ldap django-auth-ldap
```

Then, all you have to do is to modify the `settings.py` file. Add a new authentication backend to the `AUTHENTICATION_BACKENDS` variable, like this:

```python
AUTHENTICATION_BACKENDS = (
    'modoboa.lib.authbackends.LDAPBackend',
    # 'modoboa.lib.authbackends.LDAPSecondaryBackend', # Useful for a fallback mechanism
    'django.contrib.auth.backends.ModelBackend',
)
```

Finally, go to Modoboa > Parameters > General and set Authentication type to LDAP.

From there, new parameters will appear to let you configure the way Modoboa should connect to your LDAP server. They are described just below:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server address</td>
<td>The IP address of the DNS name of the LDAP server</td>
<td>localhost</td>
</tr>
<tr>
<td>Server port</td>
<td>The TCP port number used by the LDAP server</td>
<td>389</td>
</tr>
<tr>
<td>Use a secure connection</td>
<td>Use an SSL/TLS connection to access the LDAP server</td>
<td>no</td>
</tr>
<tr>
<td>Authentication method</td>
<td>Choose the authentication method to use</td>
<td>Direct bind</td>
</tr>
<tr>
<td>User DN template (direct bind mode)</td>
<td>The template used to construct a user’s DN. It should contain one placeholder (ie. <code>%{user}</code>)</td>
<td></td>
</tr>
<tr>
<td>Bind DN</td>
<td>The distinguished name to use when binding to the LDAP server. Leave empty for an anonymous bind</td>
<td></td>
</tr>
<tr>
<td>Bind password</td>
<td>The password to use when binding to the LDAP server (with ‘Bind DN’)</td>
<td></td>
</tr>
<tr>
<td>Search base</td>
<td>The distinguished name of the search base</td>
<td></td>
</tr>
<tr>
<td>Search filter</td>
<td>An optional filter string (e.g. ‘(objectClass=person)’). In order to be valid, it must be enclosed in parentheses.</td>
<td>(mail=%{user})</td>
</tr>
<tr>
<td>Password attribute</td>
<td>The attribute used to store user passwords</td>
<td>user-Password</td>
</tr>
<tr>
<td>Active Directory</td>
<td>Tell if the LDAP server is an Active Directory one</td>
<td>no</td>
</tr>
<tr>
<td>Administrator groups</td>
<td>Members of those LDAP Posix groups will be created ad domain administrators. Use ‘;’ characters to separate groups.</td>
<td></td>
</tr>
<tr>
<td>Group type</td>
<td>The type of group used by your LDAP directory.</td>
<td>Posix-Group</td>
</tr>
<tr>
<td>Groups search base</td>
<td>The distinguished name of the search base used to find groups</td>
<td></td>
</tr>
<tr>
<td>Domain/mailbox creation</td>
<td>Automatically create a domain and a mailbox when a new user is created just after the first successful authentication. You will generally want to disable this feature when the relay domains extension is in use</td>
<td>yes</td>
</tr>
</tbody>
</table>
If you need additional parameters, you will find a detailed documentation here.

Once the authentication is properly configured, the users defined in your LDAP directory will be able to connect to Modoboa, the associated domain and mailboxes will be automatically created if needed.

The first time a user connects to Modoboa, a local account is created if the LDAP username is a valid email address. By default, this account belongs to the SimpleUsers group and it has a mailbox.

To automatically create domain administrators, you can use the Administrator groups setting. If a LDAP user belongs to one the listed groups, its local account will belong to the DomainAdmins group. In this case, the username is not necessarily an email address.

Users will also be able to update their LDAP password directly from Modoboa.

**Note:** Modoboa doesn’t provide any synchronization mechanism once a user is registered into the database. Any modification done from the directory to a user account will not be reported to Modoboa (an email address change for example). Currently, the only solution is to manually delete the Modoboa record, it will be recreated on the next user login.

### SMTP

It is possible to use an existing SMTP server as an authentication source. To enable this feature, edit the `settings.py` file and change the following setting:

```python
AUTHENTICATION_BACKENDS = (
    'modoboa.lib.authbackends.SMTPBackend',
    'django.contrib.auth.backends.ModelBackend',
)
```

SMTP server location can be customized using the following settings:

```python
AUTH_SMTP_SERVER_ADDRESS = 'localhost'
AUTH_SMTP_SERVER_PORT = 25
AUTH_SMTP_SECURED_MODE = None # 'ssl' or 'starttls' are accepted
```

### 2.3.9 LDAP synchronization

Modoboa can synchronize accounts with an LDAP directory (tested with OpenLDAP) but this feature is not enabled by default. To activate it, add `modoboa.ldapsync` to `MODOBOA_APPS` in the `settings.py` file:

```python
MODOBOA_APPS = (    'modoboa',
    'modoboa.core',
    'modoboa.lib',
    'modoboa.admin',
    'modoboa.transport',
    'modoboa.relaydomains',
    'modoboa.limits',
    'modoboa.parameters',
    'modoboa.dnstools',
    'modoboa.ldapsync',
)
```

and enable it from the admin panel.
Warning: Make sure to install additional requirements otherwise it won’t work.

The following parameters are available and must be filled:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable LDAP synchronization</td>
<td>Control LDAP synchronization state</td>
<td>no</td>
</tr>
<tr>
<td>Bind DN</td>
<td>The DN of a user with write permission to create/update accounts</td>
<td></td>
</tr>
<tr>
<td>Bind password</td>
<td>The associated password</td>
<td></td>
</tr>
<tr>
<td>Account DN template</td>
<td>The template used to build account DNs (must contain a %%(user)s placeholder)</td>
<td></td>
</tr>
</tbody>
</table>

2.3.10 Database maintenance

Cleaning the logs table

Modoboa logs administrator specific actions into the database. A clean-up script is provided to automatically remove oldest records. The maximum log record age can be configured through the online panel.

To use it, you can setup a cron job to run every night:

```
0 0 * * * <modoboa_site>/manage.py cleanlogs
#
# Or like this if you use a virtual environment:
# 0 0 * * * <virtualenv path/bin/python> <modoboa_site>/manage.py cleanlogs
```

Cleaning the session table

Django does not provide automatic purging. Therefore, it’s your job to purge expired sessions on a regular basis.

Django provides a sample clean-up script: `django-admin.py clearsessions`. That script deletes any session in the session table whose `expire_date` is in the past.

For example, you could setup a cron job to run this script every night:

```
0 0 * * * <modoboa_site>/manage.py clearsessions
#
# Or like this if you use a virtual environment:
# 0 0 * * * <virtualenv path/bin/python> <modoboa_site>/manage.py clearsessions
```

Cleaning inactive accounts

Thanks to Last-login tracking, it is now possible to monitor inactive accounts. An account is considered inactive if no login has been recorded for the last 30 days (this value can be changed through the admin panel).

A management command is available to disable or delete inactive accounts. For example, you could setup a cron job to run it every night:

```
0 0 * * * <modoboa_site>/manage.py clearsessions
#
# Or like this if you use a virtual environment:
# 0 0 * * * <virtualenv path/bin/python> <modoboa_site>/manage.py clearsessions
```
The default behaviour is to disable accounts. You can delete them using the --delete option.

## 2.4 Moving to Modoboa

You have an existing platform and you’d like to move to Modoboa, the following tools could help you.

### 2.4.1 From postfixadmin

A dedicated command allows you to convert an existing postfixadmin database to a Modoboa one. Consult the documentation to know more about the process.

### 2.4.2 Using CSV files

Modoboa allows you to import any object (domain, domain alias, mailbox and alias) using a simple CSV file encoded using UTF8. Each line corresponds to a single object and must respect one of the following format:

```plaintext
domain; <name: string>; <quota: integer>; <default mailbox quota: integer>; <enabled: boolean>
domainalias; <name: string>; <targeted domain: string>; <enabled: boolean>
relaydomain; <name: string>; <target host: string>; <target port: integer>; <service: string>; <enabled: boolean>; <verify recipients: boolean>
account; <loginname: string>; <password: string>; <first name: string>; <last name: string>; <enabled: boolean>; <group: string>; <address: string>; <quota: integer>; [ <domain: string>, ... ]
alias; <address: string>; <enabled: boolean>; <recipient: string>; ...
```

Boolean fields accept the following values: true, 1, yes, y (case insensitive). Any other value will be evaluated as false.

**Warning:** The order does matter. Objects are created sequentially so a domain must be created before its mailboxes and aliases and a mailbox must created before its alias(es).

To actually import such a file:

```
> sudo -u <modoboa_user> -i
> source <virtualenv_path>/bin/activate
> cd <modoboa_instance_dir>
> python manage.py modo import <your file>
```

Available options can be listed using the following command:

```
> python manage.py modo import -h
```
2.5 REST API

To ease the integration with external sources (software or other), Modoboa provides a REST API.
Every installed instance comes with a ready-to-use API and a documentation. You will find them using the following url patterns:

- API: http://<hostname>/api/v1/
- Documentation: http://<hostname>/docs/api/

An example of this documentation is available on the official demo.

Using this API requires an authentication and for now, only a token based authentication is supported. To get a valid token, log-in to your instance with a super administrator, go to Settings > API and activate the API access. Press the Update button and wait until the page is reloaded, the token will be displayed.

To make valid API calls, every requests you send must embed this token within an Authorization HTTP header like this:

```
Authorization: Token <YOUR_TOKEN>
```

and the content type of those requests must be application/json.

2.6 How to contribute

Contributions are always welcome. If you want to submit a patch, please respect the following rules:

- Open a pull request on the appropriate repository
- Respect PEP8
- Document your patch and respect PEP 257
- Add unit tests and make sure the global coverage does not decrease

If all those steps are validated, your contribution will generally be integrated.

2.6.1 Table of contents
Getting started

You would like to work on Modoboa but you don’t know where to start? You’re at the right place! Browse this page to learn useful tips.

With Docker

A docker image is available for developers. To use it, you must install docker and docker-compose first.

Then, just run the following command:

```
$ docker-compose up
```

It will start the docker environment and make a Modoboa instance available at http://localhost:8000.

If you don’t want to use docker or need a more complex development setup, go to the next section.

Without Docker

Prepare a virtual environment

A virtual environment is a good way to setup a development environment on your machine.

To do so, run the following commands:

```
$ python3 -m venv <path>
$ source <path>/bin/activate
$ git clone https://github.com/modoboa/modoboa.git
$ cd modoboa
$ python setup.py develop
$ pip install -r dev-requirements.txt
```

The develop command creates a symbolic link to your local copy so any modification you make will be automatically available in your environment, no need to copy them.

Deploy an instance for development

**Warning:** Make sure to create a database before running this step. The format of the database url is also described in this page.

Now that you have setup a development environment, you can deploy a test instance and run it:

```
$ cd <path>
$ modoboa-admin.py deploy --dburl default:<database url> --domain localhost --devel --instance
$ python manage.py runserver
```

You’re ready to go! You should be able to access Modoboa at http://localhost:8000 using admin:password as credentials.
Frontend

Legacy interface

The Django templates and views are used to render this interface, which is served by the uWSGI application - or the local server in development. `bower` is used to manage the CSS and JavaScript dependencies - i.e. Bootstrap, jQuery - thanks to `django-bower`.

Those dependencies are listed in a file called `dev_settings.py` located inside the `<path_to_local_copy>/modoboa/core` directory.

If you want to add a new dependency, just complete the `BOWER_INSTALLED_APPS` parameter and run the following command:

```
$ python manage.py bower install
```

It will download and store the required files into the `<path_to_local_copy>/modoba/bower_components` directory.

New Vue.js interface

The 2.0 version of Modoboa introduces a completely new interface written with the `Vue.js` framework. The source files are located in the `frontend/` directory.

To set it up, you will need to install NodeJS and Yarn - to manage the dependencies. Then, navigate to the `frontend/` directory and run:

```
$ yarn install
```

You can now build it and serve it - while running your instance too to serve the API - with:

```
$ yarn serve
```

Tests

If you deployed an instance for development, you can launch the tests from it with:

```
$ python manage.py test modoboa
```

You could also test just some them, i.e.:

```
$ python manage.py test modoboa.core.tests.test_authentication
```

Alternatively, you can use `tox` from the repository to run all the tests and check the coverage with:

```
$ tox
```

You could limit the environment to a specific Python version with the `--py<version>` argument.

Note that it is also possible to quickly run a test instance without any deployment - e.g. to preview some changes - by running:

```
$ tox -e serve
```
**Documentation**

The source files are located in the file:`doc/` folder and are written in reStructuredText (reST). They are formatted in HTML and compiled thanks to Sphinx.

To build it and see the result, run:

```
$ tox -e doc
$ open .tox/doc/tmp/html/index.html
```

**FAQ**

**bower command is missing in manage.py**

`bower` command is missing in `manage.py` if you don’t use the `--devel` option of the `modoboa-admin.py deploy` command.

To fix it, regenerate your instance or update your `settings.py` file manually. Look at `devmode` in https://github.com/tonioo/modoboa/blob/master/modoboa/core/commands/templates/settings.py.tpl

**Create a new plugin**

**Introduction**

Modoboa offers a plugin API to expand its capabilities. The current implementation provides the following possibilities:

- Expand navigation by adding entry points to your plugin inside the GUI
- Access and modify administrative objects (domains, mailboxes, etc.)
- Register callback actions for specific events

Plugins are nothing more than Django applications with an extra piece of code that integrates them into Modoboa. The `modo_extension.py` file will contain a complete description of the plugin:

- Admin and user parameters
- Custom menu entries

The communication between both applications is provided by Django signals.

The following subsections describe the plugin architecture and explain how you can create your own.

**The required glue**

To create a new plugin, just start a new django application like this (into Modoboa’s directory):

```
$ python manage.py startapp
```

Then, you need to register this application using the provided API. Just copy/paste the following example into the `modo_extension.py` file of the future extension:
from modoboa.core.extensions import ModoExtension, exts_pool

class MyExtension(ModoExtension):
    """My custom Modoboa extension.""
    name = "myext"
    label = "My Extension"
    version = "0.1"
    description = "A description"
    url = "myext_root_location"  # optional, name is used if not defined

    def load(self):
        """This method is called when Modoboa loads available and activated plugins.
        Declare parameters and register events here.
        ""
        pass

    def load_initial_data(self):
        """Optional: provide initial data for your extension here.""
        pass

exts_pool.register_extension(MyExtension)

Once done, simply add your extension’s module name to the MODOBOA_APPS variable located inside settings.py. Finally, run the following commands:

$ python manage.py migrate
$ python manage.py load_initial_data
$ python manage.py collectstatic

Parameters

A plugin can declare its own parameters. There are two levels available:

- ‘Global’ parameters: used to configure the plugin, editable inside the Admin > Settings > Parameters page
- ‘User’ parameters: per-user parameters (or preferences), editable inside the Options > Preferences page

Playing with parameters

Parameters are defined using Django forms and Modoboa adds two special forms you can inherit depending on the level of parameter(s) you want to add:

- modoboa.parameters.forms.AdminParametersForm: for general parameters
- modoboa.parameters.forms.UserParametersForm: for user parameters

To register new parameters, add the following line into the load method of your plugin class:

```python
from modoboa.parameters import tools as param_tools
param_tools.registry.add(
    LEVEL, YourForm, ugettext_lazy("Title"))
```

Replace LEVEL by "global" or "user".
**Custom role permissions**

Modoboa uses Django’s internal permission system. Administrative roles are nothing more than groups (Group instances).

An extension can add new permissions to a group by listening to the `extra_role_permissions` signal. Here is an example:

```python
from django.dispatch import receiver
from modoboa.core import signals as core_signals

PERMISSIONS = {
    "Resellers": [
        ("relaydomains", "relaydomain", "add_relaydomain"),
        ("relaydomains", "relaydomain", "change_relaydomain"),
        ("relaydomains", "relaydomain", "delete_relaydomain"),
        ("relaydomains", "service", "add_service"),
        ("relaydomains", "service", "change_service"),
        ("relaydomains", "service", "delete_service"),
    ]
}

@receiver(core_signals.extra_role_permissions, sender=None)
def extra_role_permissions(sender, role, **kwargs):
    return constants.PERMISSIONS.get(role, [])
```

**Extending admin forms**

The forms used to edit objects (account, domain, etc.) through the admin panel are composed of tabs. You can extend them (ie. add new tabs) in a pretty easy way thanks to custom signals.

**Account**

To add a new tab to the account edition form, define new listeners (handlers) for the following signals:

- `modoboa.admin.signals.extra_account_forms`
- `modoboa.admin.signals.get_account_form_instances`
- `modoboa.admin.signals.check_extra_account_form` (optional)

Example:

```python
from django.dispatch import receiver
from modoboa.admin import signals as admin_signals

@receiver(admin_signals.extra_account_forms)
def extra_account_form(sender, user, account, **kwargs):
    return ["id": "tabid", "title": "Title", "cls": MyFormClass}
]

@receiver(admin_signals.get_account_form_instances)
```

(continues on next page)
def fill_my_tab(sender, user, account, **kwargs):
    return {'id': my_instance}

Domain

To add a new tab to the domain edition form, define new listeners (handlers) for the following signals:

- modoboa.admin.signals.extra_domain_forms
- modoboa.admin.signals.get_domain_form_instances

Example:

```python
def extra_account_form(sender, user, domain, **kwargs):
    return [{'id': 'tabid', 'title': 'Title', 'cls': MyFormClass}]
```

```python
def fill_my_tab(sender, user, account, **kwargs):
    return {'id': my_instance}
```

2.7 Contributors

- Antidot
- Bearstech
- CAP-REL
- Dalnix