
dj-rest-auth Documentation

Release 1.0.8

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Jun 20, 2020

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Note: dj-rest-auth version 1.0.0 now uses Django Simple JWT.

1.1 Introduction

Since the introduction of `django-rest-framework`, Django apps have been able to serve up app-level REST API endpoints. As a result, we saw a lot of instances where developers implemented their own REST registration API endpoints here and there, snippets, and so on. We aim to solve this demand by providing `dj-rest-auth`, a set of REST API endpoints to handle User Registration and Authentication tasks. By having these API endpoints, your client apps such as AngularJS, iOS, Android, and others can communicate to your Django backend site independently via REST APIs for User Management. Of course, we'll add more API endpoints as we see the demand.

1.1.1 Features

- User Registration with activation
- Login/Logout
- Retrieve/Update the Django User model
- Password change
- Password reset via e-mail
- Social Media authentication

1.1.2 Apps structure

- `dj_rest_auth` has basic auth functionality like login, logout, password reset and password change
- `dj_rest_auth.registration` has logic related with registration and social media authentication

1.1.3 Angular app

- iMerica has also created angular module which uses API endpoints from this app - [angular-django-registration-auth](#)

1.1.4 Demo project

- You can also check our *Demo Project* which is using jQuery on frontend.

1.2 Installation

1. Install package:

```
pip install dj-rest-auth
```

2. Add `dj_rest_auth` app to `INSTALLED_APPS` in your django settings.py:

```
INSTALLED_APPS = (  
    ...,  
    'rest_framework',  
    'rest_framework.authtoken',  
    ...,  
    'dj_rest_auth'  
)
```

Note: This project depends on `django-rest-framework` library, so install it if you haven't done yet. Make sure also you have installed `rest_framework` and `rest_framework.authtoken` apps

3. Add `dj_rest_auth` urls:

```
urlpatterns = [  
    ...,  
    path('dj-rest-auth/', include('dj_rest_auth.urls'))  
]
```

4. Migrate your database

```
python manage.py migrate
```

You're good to go now!

1.2.1 Registration (optional)

1. If you want to enable standard registration process you will need to install `django-allauth` by using `pip install 'dj-rest-auth[with_social]'`.
2. Add `django.contrib.sites`, `allauth`, `allauth.account` and `dj_rest_auth.registration` apps to `INSTALLED_APPS` in your django settings.py:
3. Add `SITE_ID = 1` to your django settings.py

```

INSTALLED_APPS = (
    ...,
    'django.contrib.sites',
    'allauth',
    'allauth.account',
    'dj_rest_auth.registration',
)

SITE_ID = 1

```

3. Add `dj_rest_auth.registration` urls:

```

urlpatterns = [
    ...,
    path('dj-rest-auth/', include('dj_rest_auth.urls')),
    path('dj-rest-auth/registration/', include('dj_rest_auth.registration.urls'))
]

```

1.2.2 Social Authentication (optional)

Using `django-allauth`, `dj-rest-auth` provides helpful class for creating social media authentication view.

Note: Points 1 and 2 are related to `django-allauth` configuration, so if you have already configured social authentication, then please go to step 3. See `django-allauth` documentation for more details.

1. Add `allauth.socialaccount` and `allauth.socialaccount.providers.facebook` or `allauth.socialaccount.providers.twitter` apps to `INSTALLED_APPS` in your `django settings.py`:

```

INSTALLED_APPS = (
    ...,
    'rest_framework',
    'rest_framework.authtoken',
    'dj_rest_auth'
    ...,
    'django.contrib.sites',
    'allauth',
    'allauth.account',
    'dj_rest_auth.registration',
    ...,
    'allauth.socialaccount',
    'allauth.socialaccount.providers.facebook',
    'allauth.socialaccount.providers.twitter',
)

```

2. Add Social Application in `django` admin panel

Facebook

3. Create new view as a subclass of `dj_rest_auth.registration.views.SocialLoginView` with `FacebookOAuth2Adapter` adapter as an attribute:

```
from allauth.socialaccount.providers.facebook.views import FacebookOAuth2Adapter
from dj_rest_auth.registration.views import SocialLoginView

class FacebookLogin(SocialLoginView):
    adapter_class = FacebookOAuth2Adapter
```

4. Create url for FacebookLogin view:

```
urlpatterns += [
    ...,
    path('dj-rest-auth/facebook/', FacebookLogin.as_view(), name='fb_login')
]
```

Twitter

If you are using Twitter for your social authentication, it is a bit different since Twitter uses OAuth 1.0.

3. Create new view as a subclass of `dj_rest_auth.registration.views.SocialLoginView` with `TwitterOAuthAdapter` adapter and `TwitterLoginSerializer` as an attribute:

```
from allauth.socialaccount.providers.twitter.views import TwitterOAuthAdapter
from dj_rest_auth.registration.views import SocialLoginView
from dj_rest_auth.social_serializers import TwitterLoginSerializer

class TwitterLogin(SocialLoginView):
    serializer_class = TwitterLoginSerializer
    adapter_class = TwitterOAuthAdapter
```

4. Create url for TwitterLogin view:

```
urlpatterns += [
    ...,
    path('dj-rest-auth/twitter/', TwitterLogin.as_view(), name='twitter_login')
]
```

Note: Starting from v0.21.0, django-allauth has dropped support for context processors. Check out <http://django-allauth.readthedocs.org/en/latest/changelog.html#from-0-21-0> for more details.

GitHub

If you are using GitHub for your social authentication, it uses code and not `AccessToken` directly.

3. Create new view as a subclass of `dj_rest_auth.views.SocialLoginView` with `GitHubOAuth2Adapter` adapter, an `OAuth2Client` and a `callback_url` as attributes:

```
from allauth.socialaccount.providers.github.views import GitHubOAuth2Adapter
from allauth.socialaccount.providers.oauth2.client import OAuth2Client
from dj_rest_auth.registration.views import SocialLoginView

class GithubLogin(SocialLoginView):
    adapter_class = GitHubOAuth2Adapter
    callback_url = CALLBACK_URL_YOU_SET_ON_GITHUB
    client_class = OAuth2Client
```

4. Create url for GitHubLogin view:

```
urlpatterns += [
    ...,
    path('dj-rest-auth/github/', GitHubLogin.as_view(), name='github_login')
]
```

Additional Social Connect Views

If you want to allow connecting existing accounts in addition to login, you can use connect views:

```
from allauth.socialaccount.providers.facebook.views import FacebookOAuth2Adapter
from allauth.socialaccount.providers.github.views import GitHubOAuth2Adapter
from allauth.socialaccount.providers.twitter.views import TwitterOAuthAdapter
from allauth.socialaccount.providers.oauth2.client import OAuth2Client
from dj_rest_auth.registration.views import SocialConnectView
from dj_rest_auth.social_serializers import TwitterConnectSerializer

class FacebookConnect(SocialConnectView):
    adapter_class = FacebookOAuth2Adapter

class TwitterConnect(SocialConnectView):
    serializer_class = TwitterConnectSerializer
    adapter_class = TwitterOAuthAdapter

class GithubConnect(SocialConnectView):
    adapter_class = GitHubOAuth2Adapter
    callback_url = CALLBACK_URL_YOU_SET_ON_GITHUB
    client_class = OAuth2Client
```

In urls.py:

```
urlpatterns += [
    ...,
    path('dj-rest-auth/facebook/connect/', FacebookConnect.as_view(), name='fb_connect
↵')
    path('dj-rest-auth/twitter/connect/', TwitterConnect.as_view(), name='twitter_
↵connect')
    path('dj-rest-auth/github/connect/', GithubConnect.as_view(), name='github_connect
↵')
]
```

You can also use the following views to check all social accounts attached to the current authenticated user and disconnect selected social accounts:

```
from dj_rest_auth.registration.views import (
    SocialAccountListView, SocialAccountDisconnectView
)

urlpatterns += [
    ...,
    path(
        'socialaccounts/',
        SocialAccountListView.as_view(),
        name='social_account_list'
    ),
```

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```

path(
    'socialaccounts/<int:pk>/disconnect/',
    SocialAccountDisconnectView.as_view(),
    name='social_account_disconnect'
)
]

```

1.2.3 JSON Web Token (JWT) Support (optional)

By default dj-rest-auth uses Django's Token-based authentication. If you want to use JWT authentication, follow these steps:

1. Install `django-rest-framework-simplejwt`

- `django-rest-framework-simplejwt` is currently the only supported JWT library.

2. Add a `simple_jwt` auth configuration to the list of authentication classes.

```

REST_FRAMEWORK = {
    ...
    'DEFAULT_AUTHENTICATION_CLASSES': (
        ...
        'dj_rest_auth.utils.JWTCookieAuthentication',
    )
    ...
}

```

3. Add the following configuration value to your settings file to enable JWT authentication in dj-rest-auth.

```
REST_USE_JWT = True
```

4. Declare what you want the cookie key to be called.

```
JWT_AUTH_COOKIE = 'my-app-auth'
```

This example value above will cause dj-rest-auth to return a *Set-Cookie* header that looks like this:

```
Set-Cookie: my-app-auth=xxxxxxxxxxxxxxxx; expires=Sat, 28 Mar 2020 18:59:00 GMT;
↪HttpOnly; Max-Age=300; Path=/
```

`JWT_AUTH_COOKIE` is also used while authenticating each request against protected views.

1.3 API endpoints

1.3.1 Basic

- `/dj-rest-auth/login/` (POST)
 - username
 - email
 - password
 Returns Token key

- /dj-rest-auth/logout/ (POST)

Note: `ACCOUNT_LOGOUT_ON_GET = True` to allow logout using GET - this is the exact same configuration from allauth. NOT recommended, see: <http://django-allauth.readthedocs.io/en/latest/views.html#logout>

- /dj-rest-auth/password/reset/ (POST)
 - email
- /dj-rest-auth/password/reset/confirm/ (POST)
 - uid
 - token
 - new_password1
 - new_password2

Note: uid and token are sent in email after calling /dj-rest-auth/password/reset/

- /dj-rest-auth/password/change/ (POST)
 - new_password1
 - new_password2
 - old_password

Note: `OLD_PASSWORD_FIELD_ENABLED = True` to use old_password.

Note: `LOGOUT_ON_PASSWORD_CHANGE = False` to keep the user logged in after password change

- /dj-rest-auth/user/ (GET, PUT, PATCH)
 - username
 - first_name
 - last_name

Returns pk, username, email, first_name, last_name

1.3.2 Registration

- /dj-rest-auth/registration/ (POST)
 - username
 - password1
 - password2
 - email
- /dj-rest-auth/registration/verify-email/ (POST)

- key

Note: If you set account email verification as mandatory, you have to add the `VerifyEmailView` with the used `name`. You need to import the view: `from dj_rest_auth.registration.views import VerifyEmailView`. Then add the url with the corresponding name: `path('dj-rest-auth/account-confirm-email/', VerifyEmailView.as_view(), name='account_email_verification_sent')` to the `urlpatterns` list.

1.3.3 Social Media Authentication

Basing on example from installation section *Installation*

- `/dj-rest-auth/facebook/` (POST)
 - `access_token`
 - `code`

Note: `access_token` OR `code` can be used as standalone arguments, see https://github.com/jazzband/dj-rest-auth/blob/master/dj_rest_auth/registration/views.py

- `/dj-rest-auth/twitter/` (POST)
 - `access_token`
 - `token_secret`

1.4 Configuration

- **REST_AUTH_SERIALIZERS**

You can define your custom serializers for each endpoint without overriding urls and views by adding `REST_AUTH_SERIALIZERS` dictionary in your django settings. Possible key values:

- `LOGIN_SERIALIZER` - serializer class in `dj_rest_auth.views.LoginView`, default value `dj_rest_auth.serializers.LoginSerializer`
- `TOKEN_SERIALIZER` - response for successful authentication in `dj_rest_auth.views.LoginView`, default value `dj_rest_auth.serializers.TokenSerializer`
- `JWT_SERIALIZER` - (Using `REST_USE_JWT=True`) response for successful authentication in `dj_rest_auth.views.LoginView`, default value `dj_rest_auth.serializers.JWTSerializer`
- `JWT_TOKEN_CLAIMS_SERIALIZER` - A custom JWT Claim serializer. Default is `rest_framework_simplejwt.serializers.TokenObtainPairSerializer`
- `USER_DETAILS_SERIALIZER` - serializer class in `dj_rest_auth.views.UserDetailsView`, default value `dj_rest_auth.serializers.UserDetailsSerializer`
- `PASSWORD_RESET_SERIALIZER` - serializer class in `dj_rest_auth.views.PasswordResetView`, default value `dj_rest_auth.serializers.PasswordResetSerializer`

- `PASSWORD_RESET_CONFIRM_SERIALIZER` - serializer class in `dj_rest_auth.views.PasswordResetConfirmView`, default value `dj_rest_auth.serializers.PasswordResetConfirmSerializer`
- `PASSWORD_CHANGE_SERIALIZER` - serializer class in `dj_rest_auth.views.PasswordChangeView`, default value `dj_rest_auth.serializers.PasswordChangeSerializer`

Example configuration:

```
REST_AUTH_SERIALIZERS = {
    'LOGIN_SERIALIZER': 'path.to.custom.LoginSerializer',
    'TOKEN_SERIALIZER': 'path.to.custom.TokenSerializer',
    ...
}
```

• `REST_AUTH_REGISTER_SERIALIZERS`

You can define your custom serializers for registration endpoint. Possible key values:

- `REGISTER_SERIALIZER` - serializer class in `dj_rest_auth.registration.views.RegisterView`, default value `dj_rest_auth.registration.serializers.RegisterSerializer`

Note: The custom `REGISTER_SERIALIZER` must define a `def save(self, request)` method that returns a user model instance

- `REST_AUTH_TOKEN_MODEL` - path to model class for tokens, default value `'rest_framework.authtoken.models.Token'`
- `REST_AUTH_TOKEN_CREATOR` - path to callable or callable for creating tokens, default value `dj_rest_auth.utils.default_create_token`.
- `REST_SESSION_LOGIN` - Enable session login in Login API view (default: True)
- `REST_USE_JWT` - Enable JWT Authentication instead of Token/Session based. This is built on top of `django-rest-framework-simplejwt` <https://github.com/SimpleJWT/django-rest-framework-simplejwt>, which must also be installed. (default: False)
- `JWT_AUTH_COOKIE` - The cookie name/key.
- `JWT_AUTH_SECURE` - If you want the cookie to be only sent to the server when a request is made with the https scheme (default: False).
- `JWT_AUTH_HTTPONLY` - If you want to prevent client-side JavaScript from having access to the cookie (default: True).
- `JWT_AUTH_SAMESITE` - To tell the browser not to send this cookie when performing a cross-origin request (default: 'Lax'). SameSite isn't supported by all browsers.
- `OLD_PASSWORD_FIELD_ENABLED` - set it to True if you want to have old password verification on password change endpoint (default: False)
- `LOGOUT_ON_PASSWORD_CHANGE` - set to False if you want to keep the current user logged in after a password change

1.5 Demo project

This demo project shows how you can potentially use dj-rest-auth app with jQuery on frontend. To run this locally follow the steps below.

```
cd /tmp
git clone https://github.com/jazzband/dj-rest-auth.git
cd dj-rest-auth/demo/
pip install -r requirements.pip
python manage.py migrate --settings=demo.settings --noinput
python manage.py runserver --settings=demo.settings
```

Now, go to `http://127.0.0.1:8000/` in your browser. There is also a Single Page Application (SPA) in React within the `demo/` directory. To run this do:

```
cd react-spa/
yarn # or npm install
yarn run start
```

Now, go to `https://localhost:3000` in your browser to view it.

1.6 FAQ

1. Why `account_confirm_email` url is defined but it is not usable?

In `/dj_rest_auth/registration/urls.py` we can find something like this:

```
url(r'^account-confirm-email/(?P<key>[-:\w]+)/$', TemplateView.as_view(),
    name='account_confirm_email'),
```

This url is used by django-allauth. Empty `TemplateView` is defined just to allow `reverse()` call inside app - when email with verification link is being sent.

You should override this view/url to handle it in your API client somehow and then, send post to `/verify-email/` endpoint with proper key. If you don't want to use API on that step, then just use `ConfirmEmailView` view from: [django-allauth `https://github.com/pennersr/django-allauth/blob/master/allauth/account/views.py`](https://github.com/pennersr/django-allauth/blob/master/allauth/account/views.py)

2. I get an error: Reverse for 'password_reset_confirm' not found.

You need to add `password_reset_confirm` url into your `urls.py` (at the top of any other included urls). Please check the `urls.py` module inside demo app example for more details.

3. How can I update `UserProfile` assigned to `User` model?

Assuming you already have `UserProfile` model defined like this

```
from django.db import models
from django.contrib.auth.models import User

class UserProfile(models.Model):
    user = models.OneToOneField(User)
    # custom fields for user
    company_name = models.CharField(max_length=100)
```

To allow update user details within one request send to `dj_rest_auth.views.UserDetailsView` view, create serializer like this:

```

from rest_framework import serializers
from dj_rest_auth.serializers import UserDetailsSerializer

class UserSerializer(UserDetailsSerializer):

    company_name = serializers.CharField(source="userprofile.company_name"
↪")

    class Meta(UserDetailsSerializer.Meta):
        fields = UserDetailsSerializer.Meta.fields + ('company_name',)

    def update(self, instance, validated_data):
        profile_data = validated_data.pop('userprofile', {})
        company_name = profile_data.get('company_name')

        instance = super(UserSerializer, self).update(instance, validated_
↪data)

        # get and update user profile
        profile = instance.userprofile
        if profile_data and company_name:
            profile.company_name = company_name
            profile.save()
        return instance

```

And setup `USER_DETAILS_SERIALIZER` in django settings:

```

REST_AUTH_SERIALIZERS = {
    'USER_DETAILS_SERIALIZER': 'demo.serializers.UserSerializer'
}

```

1.7 Vulnerability Disclosure Policy

Please observe the standard best practices of responsible disclosure, especially considering that this is OSS. See OWASP's disclosure [cheat sheet](#).

Some basic rules:

- Keep it legal.
- Respect everyone's privacy.
- Contact the core maintainer(s) immediately if you discover a serious security vulnerability (imichael@pm.me for now).