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# **marsha Documentation**

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## Contents:

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<b>1</b>	<b>About</b>	<b>1</b>
<b>2</b>	<b>ADR - Architecture Decision Records</b>	<b>3</b>
2.1	Purpose . . . . .	3
2.2	Proposed . . . . .	3
2.3	Accepted . . . . .	3
2.4	Deprecated . . . . .	8
2.5	Superseded . . . . .	8
<b>3</b>	<b>Development</b>	<b>9</b>
3.1	Code quality . . . . .	9
3.2	Docstrings . . . . .	11
3.3	Django . . . . .	12
3.4	Tests . . . . .	13
3.5	Makefile . . . . .	13
<b>4</b>	<b>Environment variables</b>	<b>15</b>
4.1	DJANGO_SETTINGS_MODULE . . . . .	15
4.2	DJANGO_CONFIGURATION . . . . .	15
4.3	DJANGO_SECRET_KEY . . . . .	15
4.4	DJANGO_DEBUG . . . . .	16
4.5	DATABASE_URL . . . . .	16
<b>5</b>	<b>marsha</b>	<b>17</b>
5.1	marsha package . . . . .	17
<b>6</b>	<b>Indices and tables</b>	<b>45</b>
	<b>Python Module Index</b>	<b>47</b>



# CHAPTER 1

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About

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A FUN video provider for Open edX

[Hosted on Github](#)



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# ADR - Architecture Decision Records

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## 2.1 Purpose

These are the architectural decisions that are taken while developing Marsha.

The format is based on Michael [Nygard's article on the subject](#).

## 2.2 Proposed

## 2.3 Accepted

### 2.3.1 ADR 0001 - Actors

#### Status

Accepted

#### Context

There are different kinds of actors that need to interact with Marsha.

First we have the people managing a Marsha instance.

Then we have people linking their own website (this website is a “consumer site”) to a Marsha instance, to host videos.

These consumer sites can host many publishers. We call these “organizations”. And these organizations have managers that can administrate some things about authors, video sharing between authors. . .

Next we have the video authors, belonging to the organizations.

And finally we have the users coming to watch videos.

### Decision

Let's separate those 5 actors / roles:

#### “staff”

### Purpose

To manage a Marsha instance

### Implementation

These are simply instances of the Django `User` model, with the flag `is_staff` set to `True`.

#### “admins”

### Purpose

To manage the link between a consumer site and a Marsha instance, and the organizations allowed to access this consumer site on the instance.

### Implementation

To represent a consumer site on a Marsha instance, we have a `ConsumerSite` Django model. With a `ManyToMany` link to the `User` model, named `admins` (not a single admin, to avoid having no admin if the only one existing is not available anymore)).

#### “managers”

### Purpose

To manage the authors in the organization (an organization could be present on many consumer sites). To allow videos to be private to authors or public for all authors. And create courses.

### Implementation

To represent an organization on a Marsha instance, we have an `Organization` Django model. With a `ManyToMany` link to the `User` model, named `managers`.

#### “authors”

### Purpose

To post videos on a Marsha instance to be used on a consumer site.



## Implementation

An author is simply an instance of the `User` model, but has a link to an `Organization` via a `ManyToMany` link, named `organizations` (we can imagine an author working for many organizations).

### “viewers”

## Purpose

To watch videos hosted on a Marsha instance.

## Implementation

For the viewers we don't need to save anything in the database, so there is no instances of the `User` Django model for them.

Each time a user does an action to view a video, they access it via a url containing a unique token, with a limited life span. It's this token that grant them access to the video.

This is not the scope of this document to address token generations.

To store the user preferences regarding languages, video resolution, etc, it can simply be done via a cookie.

## Consequences

Roles and authorizations are easy to understand.

The actors hierarchy is simple.

## 2.3.2 ADR 0002 - Videos languages

### Status

Accepted

### Context

We want to think Marsha as accessible from the beginning. At least from the point of view of the videos, which are the main content available.

We can think about a video as a main content, with many auxiliary contents.

### Auxiliary contents

### Audio

We have a main video, with an audio track included. The author could propose many other audio tracks, as audio files, and in the player the viewer can change the one to use.

### Subtitles

In addition to audio tracks, many subtitles tracks can be available.

### Sign language

Some people with disabilities could want a video with the sign language transcript. For this it can be a video incorporated in the original one, or an other video displayed on the site.

As sign languages are not the same for every spoken language, there can be several sign languages videos for a single video.

### Decision

We decided to take all these elements into account right from the beginning.

So we have a main Django model named `Video`, from an author, with the link to to main video file, including the default audio track.

For the other audio tracks, we have `AudioTrack` Django model, with a `ForeignKey` to the `Video` instance, named `video`, and a `language` field (with only one audio track for each video+language)

It's the same for the subtitles, we have a `SubtitleTrack` Django model, with the same `video` and `language` fields, but with an additional `cc` field to indicate that this subtitle track is “**closed captioning**”, ie a subtitles track for deaf or hard of hearing viewers. So there can be two subtitle tracks for each video+language: one with `cc` on, one with `cc` off.

And finally, for sign-languages videos, it's the same as for audio tracks: a Django model named `SignTrack` with the same `video` and `language` field.

### Consequences

Accessibility is implemented from the start. Even if we decide to hide some things, the main concepts are here.

## 2.3.3 ADR 0003 - Content organization and accesses

### Status

Accepted

### Context

We have *actors*. And *videos*, with their auxiliary files, that we'll call for now “content”. We want this content to be organized for actors to manage/view them.

### Decision

Videos are grouped in playlists, which is a Django model named `Playlist`. A playlist belongs to an organization (`Organization` model defined in *actors*) and is created by someone who can be a manager of this organization, or an author who belongs to this organization. This link is materialized by an `author` field on the `Playlist` model, a `ForeignKey` to the `User` model.

The manager can allow many actors to manage a playlist, so there is a `ManyToMany` field on the `Playlist` model, named `editors`, pointing to the `User` model. And instead of relying on the hidden model created by Django when creating a `ManyToMany`, we'll define this model and use it via the `through` argument, to be able to add more rights constraints later if needed.

The author of the playlist is automatically added to this list of editors. And can be removed from it by a manager, still staying marked as the author, but being the author itself doesn't involve any rights.

A playlist can be duplicated by a manager, and if it stays in the same organization, the manager can clear or keep the list of editors. If it is to be duplicated in another organization, the list of editors will be cleared of actors not belonging to the new organization, and the manager will still be able to clear it all or keep the remaining editors.

When duplicated, a new instance of `Playlist` is created, with a link to the original playlist, keeping the author. We do the same for each instances of the `Video` linked to this playlist, but we will still point to the same files (videos/audios/subtitles...) on the hosting provider, to keep cost manageable.

And finally, there is a flag named `is_public` on the playlist, that can be toggled by a manager, to tell if the playlist can be viewed by anyone or only by people who were granted access to it. This kind of access is not in the scope of this document.

## Consequences

Videos are grouped, which ease search and maintenance.

It is easy to change and check the rights for people to manage such a playlist.

### 2.3.4 ADR 0004 - Soft deletion

#### Status

Accepted

#### Context

We have users and objects, and everything is tied together. Deleting something may cause some problems, like deleting other things in cascade, or losing some relationship, like not knowing who is the author of a video.

#### Decision

We don't want things to be deleted, instead we'll keep them in the database in a "deleted" state, so that they won't show up anywhere.

Looking at the ' Safe/Soft/Logical deletion/trashing and restoration/undeletion <<https://djangopackages.org/grids/g/deletion/>>' page on djangopackages, we can make a choice with these constraints:

- support for python 3 and django 2
- simple, not over-featured
- can manage relationships
- supports the django admin
- is maintained

Regarding this, we choose `django-safedelete` which proposes many options to handle deletion, and so will fit our needs.

## Consequences

If the correct deletion options are used, depending on the relationships, we won't lose data.

No new code to write to handle soft-deletion.

As a cons: one more dependency, but it seems maintained so it should be ok.

## 2.4 Deprecated

## 2.5 Superseded

At the time of writing, **Marsha** is developed with **Python 3.6** for **Django 2.0**.

### 3.1 Code quality

We enforce good code by using some linters and auto code formatting tools.

To run all linters at once, run the command:

```
make lint
```

You can also run each linter one by one. We have ones for the following tools:

#### 3.1.1 black

We use **black** to automatically format python files to produce **pep 8** compliant code.

The best is to **configure your editor to automatically update the files when saved**.

If you want to do this manually, run the command:

```
make black
```

And to check if all is correct without actually modifying the files:

```
make check-black
```

#### 3.1.2 flake8

In addition to **black** auto-formatting, we pass the code through **flake8** to check for a lot of rules. In addition to the default **flake8** rules, we use these plugins:

- [flake8-bugbear](#) to find likely bugs and design problems.
- [flake8-comprehensions](#) to help write better list/set/dict comprehensions.
- [flake8-imports](#) to check imports order via `isort`.
- [flake8-mypy](#) to check typing inconsistencies via `mypy` (see [mypy](#)).
- [flake8-docstrings](#) to check docstrings (see [Docstrings](#))

To check your code, run the command:

```
make flake8
```

### 3.1.3 pylint

To enforce even more rules than the ones provided by [flake8](#), we use [pylint](#) (with the help of [pylint-django](#)).

`pylint` may report some violations not found by `flake8`, and vice-versa. More often, both will report the same ones.

To check your code, run the command:

```
make pylint
```

### 3.1.4 mypy

We use [python typing](#) as much as possible, and [mypy](#) (with the help of [mypy-django](#)) to check it.

We also enforce it when defining Django fields, via the use of a “Django check”. And the type of reverse related fields must always be defined.

To check if your code is valid for `mypy`, run the following command:

```
make mypy
```

Following is how the types of fields must be defined. To check if some fields typing is invalid, among other problems, run the following command:

```
make check-django
```

It will tell you all found errors in typing, with indication on how to correct them.

#### Scalar fields

For scalar fields (`CharField`, `IntegerField`, `BooleanField`, `DateField`...), we just add the type. For each type of Django field, there is an expected type. These types are defined in the `fields_type_mapping` dict defined in `marsha.core.base_models`. Add the missing ones if needed.

```
class Foo(models.Model):  
    # we tell mypy that the attribute ``bar`` is of type ``str``  
    name: str = models.CharField(...)
```

## One-to-one fields

The type expected for a `OneToOneField` is the pointed model.

And on the pointed model we set the type of the related name to the source model.

```
class Foo(models.Model):
    # we tell mypy that the attribute ``bar`` is of type ``Bar``
    bar: "Bar" = models.OneToOneField(to=Bar, related_name="the_foo")

class Bar(models.Model):
    # we tell mypy that the class ``Bar`` has an attribute ``the_foo`` of type ``Foo``
    the_foo: Foo
```

## Foreign keys

The type expected for a `ForeignKey` is the pointed model.

On the pointed model we have a many-to-one relationship. We use a type specifically defined for that, `ReverseFKType`, defined in `marsha.stubs`.

```
from marsha.stubs import ReverseFKType

class Foo(models.Model):
    # we tell mypy that the attribute ``bar`` is of type ``Bar``
    bar: "Bar" = models.ForeignKey(to=Bar, related_name="foos")

class Bar(models.Model):
    # we tell mypy that the class ``Bar`` has an attribute ``foos``
    # which is a reverse foreign key for the class ``Foo``
    foos: ReverseFKType[Foo]
```

## Many-to-many fields

To define the type of a `ManyToManyField`, we use a type specifically defined for that, `M2MType`, defined in `marsha.stubs`.

On the pointed model, we use the same type, as it's also a many-to-many fields (ie it could have been defined in one model or the other).

```
from marsha.stubs import M2MType

class Foo(models.Model):
    # we tell mypy that the attribute ``bar`` is a many-to-many for the class ``Bar``
    bars: M2MType["Bar"] = models.ManyToManyField(to=Bar, related_name="foos")

class Bar(models.Model):
    # we tell mypy that the class ``Bar`` has an attribute ``foos``
    # which is a many-to-many for the class ``Foo``
    foos: M2MType[Foo]
```

## 3.2 Docstrings

*flake8* is configured to enforce docstrings rule defined in the [pep 257](#)

In addition, we document function arguments, return types, etc... using the “NumPy” style documentation, which will be validated by *flake8*.

## 3.3 Django

### 3.3.1 Opinionated choices

We made the opinionated choice of following [this document](#), “Tips for Building High-Quality Django Apps at Scale”.

In particular:

- Do not split code in many Django applications if code is tightly coupled.
- Applications are inside the `marsha` package, not at root, so import are done like this:

```
from marsha.someapp.foo import bar
```

- Database tables are specifically named: we do not rely on the Django auto-generation. And then we don’t prefix theses tables with the name of the project or the app. For example, a model named `Video`, will have the `db_table` attribute of its `Meta` class set to `video`. Enforced by a “Django check”.
- Through tables for `ManyToManyField` relations must be defined. Enforced by a “Django check”.

In addition:

- We enforce typing of fields and reverse related fields (see *mypy*). Enforced by a “Django check”.
- We enforce defining a related name for all related field (`ManyToManyField`, `ForeignKey`, `OneToOneField`). Enforced by a “Django check”.

To check if theses rules are correctly applied, among other rules defined by Django itself, run:

```
make check-django
```

---

**Note:** for these checks to work, all models must inherit from `BaseModel` defined in `marsha.core.base_models`.

---

### 3.3.2 Specific libraries

Here are a list of specific Django libraries we chose to use and why.

#### django-configurations

The aim is to be more specific about inheritance in settings from dev to staging to production, instead of relying on multiple files (and changing the `DJANGO_SETTINGS_MODULE` environment variable accordingly), using the `from .base import *` pattern.

It also provides tools to get some variables from the environment and validating them.

As a consequence of this tool, some default behavior of Django don’t work anymore. It’s why the `django-admin` bash command is redefined in `setup.cfg`.



## django-safedelete

We don't want to lose data, so everything is kept in database, but hidden from users.

See [ADR 0004 - Soft deletion](#) for details about the reasoning behind this choice.

## django-postgres-extra

With `django-safedelete`, model instances are not deleted but saved with a field `deleted` changing from `None` to the deletion date-time.

So we cannot anymore use `unique_together`.

`django-postgres-extra` provides a `ConditionalUniqueIndex` index, that acts like `unique_together`, but with a condition. We use the condition `WHERE "deleted" IS NULL`, to enforce the fact that only one non-deleted instance matching the fields combination can exist.

## 3.4 Tests

The whole Marsha project is tested.

Run this command to run all the tests:

```
make test
```

If you want to be more specific about the tests to run, use the Django command:

```
django-admin test marcha.path.to.module
django-admin test marcha.path.to.module.Class
django-admin test marcha.path.to.module.Class.method
```

## 3.5 Makefile

We provide a `Makefile` that allow to easily perform some actions.

**make install** Will install the project in the current environment, with its dependencies.

**make dev** Will install the project in the current environment, with its dependencies, including the ones needed in a development environment.

**make dev-upgrade** Will upgrade all default+dev dependencies defined in `setup.cfg`.

**make check** Will run all linters and checking tools.

**make lint** Will run all linters (*mypy*, *black*, *flake8*, *pylint*)

**make mypy** Will run the *mypy* tool.

**make check-black** Will run the *black* tool in check mode only (won't modify files)

**make black** Will run the *black* tool and update files that need to.

**make flake8** Will run the *flake8* tool.

**make pylint** Will run the *pylint* tool.

**make check-django** Will run the Django `check` command.

**make check-migrations** Will check that all needed migrations exist.

**make tests** Will run django tests for the marsha project.

**make doc** Will build the documentation.

**make dist** Will build the package.

**make clean** Will clean python build related directories and files.

**make full-clean** Like `make clean` but will clean some other generated directories or files.

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## Environment variables

---

We try to follow [12 factors app](#) and so use environment variables for configuration.

Here is a list of the ones that are needed or optional:

### 4.1 DJANGO\_SETTINGS\_MODULE

**Description** Define the settings file to use

**Type** String

**Mandatory** Yes

**Default** None

**Choices** Must be set to `marsha.settings`

### 4.2 DJANGO\_CONFIGURATION

**Description** Define the configuration to use in settings

**Type** String

**Mandatory** Yes

**Default** None

**Choices** Actually only `Dev` is available

### 4.3 DJANGO\_SECRET\_KEY

**Description** Used to provide cryptographic signing, and should be set to a unique, unpredictable value

**Type** String

**Mandatory** Yes

**Default** None

## 4.4 DJANGO\_DEBUG

**Description** Turns on/off debug mode

**Type** Boolean

**Mandatory** No

**Default** True if DJANGO\_CONFIGURATION is set to Dev, False otherwise

**Choices** True or False

## 4.5 DATABASE\_URL

**Description** URL to represent the connection string to a database

**Type** String

**Mandatory** No if DJANGO\_CONFIGURATION is set to Dev, yes otherwise

**Default** `sqlite:///path/to/project/db.sqlite3` if DJANGO\_CONFIGURATION is set to Dev, None otherwise

**Choices** See [schemas](#) as presented by `dj-database-url`

## 5.1 marsha package

### 5.1.1 Subpackages

marsha.core package

Subpackages

marsha.core.migrations package

Submodules

marsha.core.migrations.0001\_initial\_models module

```

class marsha.core.migrations.0001_initial_models.Migration(name, app_label)
    Bases: django.db.migrations.migration.Migration
    dependencies = [('auth', '0009_alter_user_last_name_max_length')]
    initial = True
    operations = [<CreateModel name='User', fields=[('id', <django.db.models.fields.AutoField

```

marsha.core.migrations.0002\_soft\_deletion module

```

class marsha.core.migrations.0002_soft_deletion.Migration(name, app_label)
    Bases: django.db.migrations.migration.Migration
    dependencies = [('core', '0001_initial_models')]
    operations = [<AlterModelManagers name='user', managers=[('objects', <marsha.core.managers

```

### marsha.core.migrations.0003\_missing\_text\_fields module

```
class marsha.core.migrations.0003_missing_text_fields.Migration(name,  
                                                             app_label)  
    Bases: django.db.migrations.migration.Migration  
    dependencies = [('core', '0002_soft_deletion')]  
    operations = [<AddField model_name='playlist', name='name', field=<django.db.models.fi
```

### marsha.core.migrations.0004\_duplicated\_from\_\_blank module

```
class marsha.core.migrations.0004_duplicated_from__blank.Migration(name,  
                                                                    app_label)  
    Bases: django.db.migrations.migration.Migration  
    dependencies = [('core', '0003_missing_text_fields')]  
    operations = [<AlterField model_name='playlist', name='duplicated_from', field=<django
```

### marsha.core.migrations.0005\_use\_our\_\_nondeleteduniqueindex module

```
class marsha.core.migrations.0005_use_our__nondeleteduniqueindex.Migration(name,  
                                                                            app_label)  
    Bases: django.db.migrations.migration.Migration  
    dependencies = [('core', '0004_duplicated_from__blank')]  
    operations = [<RemoveIndex model_name='audiotrack', name='audio_track_video_i_fe6276_i
```

## Module contents

### marsha.core.tests package

#### Submodules

#### marsha.core.tests.factories module

#### marsha.core.tests.test\_models module

## Module contents

Tests for the `core` app of the Marsha project.

#### Submodules

#### marsha.core.admin module

Admin of the `core` app of the Marsha project.

```
class marsha.core.admin.AudioTrackInline (parent_model, admin_site)
    Bases: marsha.core.admin.BaseTabularInline

    Inline for audio tracks of a video.

    media

    model
        alias of marsha.core.models.AudioTrack

class marsha.core.admin.AuthorOrganizationsInline (parent_model, admin_site)
    Bases: marsha.core.admin.BaseTabularInline

    Inline for organizations the user is an author of.

    media

    model
        alias of marsha.core.models.Authoring

    verbose_name = 'authoring organization'
    verbose_name_plural = 'authoring organizations'

class marsha.core.admin.BaseModelAdmin (model, admin_site)
    Bases: safedelete.admin.SafeDeleteAdmin

    Base for all our model admins.

    media

class marsha.core.admin.BaseTabularInline (parent_model, admin_site)
    Bases: django.contrib.admin.options.TabularInline

    Base for all our tabular inlines.

    media

class marsha.core.admin.ConsumerSiteAdmin (model, admin_site)
    Bases: marsha.core.admin.BaseModelAdmin

    Admin class for the ConsumerSite model.

    inlines = [<class 'marsha.core.admin.SiteAdminsInline'>, <class 'marsha.core.admin.SiteAdminsInline'>]
    list_display = ('name',)

    media

class marsha.core.admin.ManagedOrganizationsInline (parent_model, admin_site)
    Bases: marsha.core.admin.BaseTabularInline

    Inline for organizations managed by a user.

    media

    model
        alias of marsha.core.models.OrganizationManager

    verbose_name = 'managed organization'
    verbose_name_plural = 'managed organizations'

class marsha.core.admin.MarshaAdminSite (name='admin')
    Bases: django.contrib.admin.sites.AdminSite

    Admin site for Marsha.
```

```
site_header = 'Marsha'
site_title = 'Marsha administration'

class marsha.core.admin.OrganizationAdmin(model, admin_site)
    Bases: marsha.core.admin.BaseModelAdmin
    Admin class for the Organization model.
    inlines = [<class 'marsha.core.admin.OrganizationManagersInline'>, <class 'marsha.core
list_display = ('name',)
media

class marsha.core.admin.OrganizationAuthorsInline(parent_model, admin_site)
    Bases: marsha.core.admin.BaseTabularInline
    Inline for authors in an organization.
    media
    model
        alias of marsha.core.models.Authoring
    verbose_name = 'author'
    verbose_name_plural = 'authors'

class marsha.core.admin.OrganizationManagersInline(parent_model, admin_site)
    Bases: marsha.core.admin.BaseTabularInline
    Inline for managers in an organization.
    media
    model
        alias of marsha.core.models.OrganizationManager
    verbose_name = 'manager'
    verbose_name_plural = 'managers'

class marsha.core.admin.OrganizationSitesInline(parent_model, admin_site)
    Bases: marsha.core.admin.BaseTabularInline
    Inline for sites for an organization.
    media
    model
        alias of marsha.core.models.SiteOrganization
    verbose_name = 'site'
    verbose_name_plural = 'sites'

class marsha.core.admin.PlaylistAdmin(model, admin_site)
    Bases: marsha.core.admin.BaseModelAdmin
    Admin class for the Playlist model.
    exclude = ('duplicated_from',)
    inlines = [<class 'marsha.core.admin.PlaylistVideosInline'>, <class 'marsha.core.admin
list_display = ('name', 'organization', 'author', 'is_public')
media
```



```
class marsha.core.admin.PlaylistVideosInline (parent_model, admin_site)
    Bases: marsha.core.admin.BaseTabularInline

    Inline for videos in a playlist.

    media

    model
        alias of marsha.core.models.PlaylistVideo

    verbose_name = 'video'
    verbose_name_plural = 'videos'

class marsha.core.admin.PlaystlistAccessesInline (parent_model, admin_site)
    Bases: marsha.core.admin.BaseTabularInline

    Inline for with right to write access to a playlist.

    media

    model
        alias of marsha.core.models.PlaylistAccess

    verbose_name = 'user access'
    verbose_name_plural = 'users accesses'

class marsha.core.admin.SignTrackInline (parent_model, admin_site)
    Bases: marsha.core.admin.BaseTabularInline

    Inline for sign tracks of a video.

    media

    model
        alias of marsha.core.models.SignTrack

class marsha.core.admin.SiteAdminsInline (parent_model, admin_site)
    Bases: marsha.core.admin.BaseTabularInline

    Inline for admins of a site.

    media

    model
        alias of marsha.core.models.SiteAdmin

    verbose_name = 'admin'
    verbose_name_plural = 'admins'

class marsha.core.admin.SiteOrganizationsInline (parent_model, admin_site)
    Bases: marsha.core.admin.BaseTabularInline

    Inline for organizations in a site.

    media

    model
        alias of marsha.core.models.SiteOrganization

    verbose_name = 'organization'
    verbose_name_plural = 'organizations'
```

```
class marsha.core.admin.SubtitleTrackInline (parent_model, admin_site)
```

Bases: *marsha.core.admin.BaseTabularInline*

Inline for subtitle tracks of a video.

**media**

**model**

alias of *marsha.core.models.SubtitleTrack*

```
class marsha.core.admin.UserAdmin (model, admin_site)
```

Bases: *django.contrib.auth.admin.UserAdmin*

Admin class for the User model.

```
inlines = [<class 'marsha.core.admin.ManagedOrganizationsInline'>, <class 'marsha.core
```

**media**

```
class marsha.core.admin.VideoAdmin (model, admin_site)
```

Bases: *marsha.core.admin.BaseModelAdmin*

Admin class for the Video model.

```
exclude = ('duplicated_from',)
```

```
inlines = [<class 'marsha.core.admin.AudioTrackInline'>, <class 'marsha.core.admin.Sub
```

```
list_display = ('name', 'author', 'language')
```

**media**

## marsha.core.apps module

Defines the django app config for the core app.

```
class marsha.core.apps.CoreConfig (app_name, app_module)
```

Bases: *django.apps.config.AppConfig*

Django app config for the core app.

```
name = 'marsha.core'
```

```
verbose_name = 'Marsha'
```

## marsha.core.base\_models module

Base models for the core app of the Marsha project.

```
class marsha.core.base_models.BaseModel (*args, **kwargs)
```

Bases: *safedelete.models.SafeDeleteModel*

Base model for all our models.

It is based on *SafeDeleteModel* to easily manage how we want the instances to be deleted/soft-deleted, with or without its relationships. The default *safedelete* policy is *SOFT\_DELETE\_CASCADE*, ie the object to delete and its relations will be soft deleted: their *deleted* field will be filled with the current date-time (the opposite, *None*, is the same as “not deleted”)

Also it adds some checks run with **django check**:

- check that all fields are correctly annotated.

- same for fields pointing to other models: final models must have all related

names properly annotated. - check that every `ManyToManyField` use a defined through table. - check that every model have a `db_table` defined, not prefixed with the name of the app or the project.

**Parameters** `deleted` (*DateTimeField*) – Deleted

**classmethod** `check` (*\*\*kwargs*) → List[django.core.checks.messages.CheckMessage]

Add checks for related names.

**Parameters** `kwargs` (*Any*) – Actually not used but asked by django to be present “for possible future usage”.

**Returns** A list of the check messages representing problems found on the model.

**Return type** List[checks.CheckMessage]

**validate\_unique** (*exclude: List[str] = None*) → None

Add validation for our `NonDeletedUniqueIndex` replacing `unique_together`.

For the parameters, see `django.db.models.base.Model.validate_unique`.

**class** `marsha.core.base_models.NonDeletedUniqueIndex` (*fields: Sequence, name: str = None*) → None

Bases: `psqlextra.indexes.conditional_unique_index.ConditionalUniqueIndex`

A special `ConditionalUniqueIndex` for non deleted objects.

**\_\_init\_\_** (*fields: Sequence, name: str = None*) → None

Override default init to pass our predefined condition.

For the parameters, see `ConditionalUniqueIndex.__init__`.

**condition** = `'"deleted" IS NULL'`

**deconstruct** ()

Remove `condition` as an argument to be defined in migrations.

## marsha.core.managers module

This module holds the managers for the marsha models.

**class** `marsha.core.managers.UserManager` (*queryset\_class=None, \*args, \*\*kwargs*)

Bases: `django.contrib.auth.models.UserManager`, `safeddelete.managers.SafeDeleteManager`

Extends the default manager for users with the one for soft-deletion.

## marsha.core.models module

This module holds the models for the marsha project.

**class** `marsha.core.models.AudioTrack` (*\*args, \*\*kwargs*)

Bases: `marsha.core.models.BaseTrack`

Model representing an additional audio track for a video.

**Parameters**

- `id` (*AutoField*) – Id
- `deleted` (*DateTimeField*) – Deleted

- **video** (ForeignKey to *Video*) – video for which this track is
- **language** (*CharField*) – language of this track

**exception DoesNotExist**

Bases: `django.core.exceptions.ObjectDoesNotExist`

**exception MultipleObjectsReturned**

Bases: `django.core.exceptions.MultipleObjectsReturned`

**get\_language\_display** (\*, *field=<django.db.models.fields.CharField: language>*)

**Autogenerated:** Shows the label of the language

**id**

**Model field:** ID

**video**

**Model field:** video, accesses the *Video* model.

**class** `marsha.core.models.Authoring` (\*args, \*\*kwargs)

Bases: `marsha.core.base_models.BaseModel`

Model representing authors in an organization.

through model between `Organization.authors` and `User.authoring`.

**Parameters**

- **id** (*AutoField*) – Id
- **deleted** (*DateTimeField*) – Deleted
- **user** (ForeignKey to *User*) – user having authoring access in this organization
- **organization** (ForeignKey to *Organization*) – organization on which the user is an author

**exception DoesNotExist**

Bases: `django.core.exceptions.ObjectDoesNotExist`

**exception MultipleObjectsReturned**

Bases: `django.core.exceptions.MultipleObjectsReturned`

**id**

**Model field:** ID

**organization**

**Model field:** organization, accesses the *Organization* model.

**organization\_id**

**Model field:** organization

**user**

**Model field:** author, accesses the *User* model.

**user\_id**

**Model field:** author

**class** `marsha.core.models.BaseTrack` (\*args, \*\*kwargs)

Bases: `marsha.core.base_models.BaseModel`

Base model for different kinds of tracks tied to a video.

**Parameters**

- **deleted** (*DateTimeField*) – Deleted

- **video** (ForeignKey to *Video*) – video for which this track is
- **language** (*CharField*) – language of this track

**get\_language\_display** (\*, field=<django.db.models.fields.CharField: language>)

Autogenerated: Shows the label of the *language*

**language**

Model field: track language

**video**

Model field: video, accesses the *Video* model.

**video\_id**

Model field: video

**class** marsha.core.models.**ConsumerSite** (\*args, \*\*kwargs)

Bases: *marsha.core.base\_models.BaseModel*

Model representing an external site with access to the Marsha instance.

**Parameters**

- **id** (*AutoField*) – Id
- **deleted** (*DateTimeField*) – Deleted
- **name** (*CharField*) – Name of the site
- **admins** (*ManyToManyField*) – users able to manage this site

**exception DoesNotExist**

Bases: *django.core.exceptions.ObjectDoesNotExist*

**exception MultipleObjectsReturned**

Bases: *django.core.exceptions.MultipleObjectsReturned*

**admins**

Model field: administrators, accesses the M2M *ConsumerSite* model.

**id**

Model field: ID

**name**

Model field: name

**organizations**

Model field: sites, accesses the M2M *Organization* model.

**organizations\_links**

Model field: site, accesses the M2M *SiteOrganization* model.

**sites\_admins**

Model field: site, accesses the M2M *SiteAdmin* model.

**class** marsha.core.models.**Organization** (\*args, \*\*kwargs)

Bases: *marsha.core.base\_models.BaseModel*

Model representing an organization to manage its playlists on one or many sites.

**Parameters**

- **id** (*AutoField*) – Id
- **deleted** (*DateTimeField*) – Deleted
- **name** (*CharField*) – name of the organization

- **sites** (*ManyToManyField*) – sites where this organization is present
- **managers** (*ManyToManyField*) – users able to manage this organization
- **authors** (*ManyToManyField*) – users able to manage playlists in this organization

**exception DoesNotExist**

Bases: `django.core.exceptions.ObjectDoesNotExist`

**exception MultipleObjectsReturned**

Bases: `django.core.exceptions.MultipleObjectsReturned`

**authoring**

**Model field:** organization, accesses the M2M *Authoring* model.

**authors**

**Model field:** authors, accesses the M2M *Organization* model.

**id**

**Model field:** ID

**managers**

**Model field:** managers, accesses the M2M *Organization* model.

**managers\_links**

**Model field:** organization, accesses the M2M *OrganizationManager* model.

**name**

**Model field:** name

**playlists**

**Model field:** organization, accesses the M2M *Playlist* model.

**sites**

**Model field:** sites, accesses the M2M *Organization* model.

**sites\_links**

**Model field:** organization, accesses the M2M *SiteOrganization* model.

**class** `marsha.core.models.OrganizationManager(*args, **kwargs)`

Bases: `marsha.core.base_models.BaseModel`

Model representing managers of organizations.

through model between `Organization.managers` and `User.managed_organizations`.

**Parameters**

- **id** (*AutoField*) – Id
- **deleted** (*DateTimeField*) – Deleted
- **user** (*ForeignKey* to *User*) – user managing this organization
- **organization** (*ForeignKey* to *Organization*) – organization managed by this user

**exception DoesNotExist**

Bases: `django.core.exceptions.ObjectDoesNotExist`

**exception MultipleObjectsReturned**

Bases: `django.core.exceptions.MultipleObjectsReturned`

**id**

**Model field:** ID

**organization**

**Model field:** organization, accesses the *Organization* model.

**organization\_id**

**Model field:** organization

**user**

**Model field:** manager, accesses the *User* model.

**user\_id**

**Model field:** manager

**class** `marsha.core.models.Playlist(*args, **kwargs)`

Bases: `marsha.core.base_models.BaseModel`

Model representing a playlist which is a list of videos.

**Parameters**

- **id** (*AutoField*) – Id
- **deleted** (*DateTimeField*) – Deleted
- **name** (*CharField*) – name of the playlist
- **organization** (*ForeignKey* to *Organization*) – Organization
- **author** (*ForeignKey* to *User*) – Author
- **is\_public** (*BooleanField*) – if this playlist can be viewed without any access control
- **duplicated\_from** (*ForeignKey* to *Playlist*) – original playlist this one was duplicated from
- **editors** (*ManyToManyField*) – users allowed to manage this playlist
- **videos** (*ManyToManyField*) – videos in this playlist

**exception DoesNotExist**

Bases: `django.core.exceptions.ObjectDoesNotExist`

**exception MultipleObjectsReturned**

Bases: `django.core.exceptions.MultipleObjectsReturned`

**author**

**Model field:** author, accesses the *User* model.

**author\_id**

**Model field:** author

**duplicated\_from**

**Model field:** duplicate from, accesses the *Playlist* model.

**duplicated\_from\_id**

**Model field:** duplicate from

**duplicates**

**Model field:** duplicate from, accesses the M2M *Playlist* model.

**editors**

**Model field:** editors, accesses the M2M *Playlist* model.

**id**

**Model field:** ID

**is\_public**

Model field: is public

**name**

Model field: name

**organization**

Model field: organization, accesses the *Organization* model.

**organization\_id**

Model field: organization

**users\_accesses**

Model field: playlist, accesses the M2M *PlaylistAccess* model.

**videos**

Model field: videos, accesses the M2M *Playlist* model.

**videos\_links**

Model field: playlist, accesses the M2M *PlaylistVideo* model.

**class** `marsha.core.models.PlaylistAccess(*args, **kwargs)`

Bases: `marsha.core.base_models.BaseModel`

Model representing a user having right to manage a playlist.

through model between `Playlist.editors` and `User.managed_playlists`.

**Parameters**

- **id** (*AutoField*) – Id
- **deleted** (*DateTimeField*) – Deleted
- **user** (ForeignKey to *User*) – user having rights to manage this playlist
- **playlist** (ForeignKey to *Playlist*) – playlist the user has rights to manage

**exception** `DoesNotExist`

Bases: `django.core.exceptions.ObjectDoesNotExist`

**exception** `MultipleObjectsReturned`

Bases: `django.core.exceptions.MultipleObjectsReturned`

**id**

Model field: ID

**playlist**

Model field: playlist, accesses the *Playlist* model.

**playlist\_id**

Model field: playlist

**user**

Model field: user, accesses the *User* model.

**user\_id**

Model field: user

**class** `marsha.core.models.PlaylistVideo(*args, **kwargs)`

Bases: `marsha.core.base_models.BaseModel`

Model representing a video in a playlist.

through model between `Playlist.videos` and `Video.playlists`.



**Parameters**

- **id** (*AutoField*) – Id
- **deleted** (*DateTimeField*) – Deleted
- **video** (ForeignKey to *Video*) – video contained in this playlist
- **playlist** (ForeignKey to *Playlist*) – playlist containing this video
- **order** (*PositiveIntegerField*) – video order in the playlist

**exception DoesNotExist**

Bases: `django.core.exceptions.ObjectDoesNotExist`

**exception MultipleObjectsReturned**

Bases: `django.core.exceptions.MultipleObjectsReturned`

**id**

Model field: ID

**order**

Model field: order

**playlist**

Model field: playlist, accesses the *Playlist* model.

**playlist\_id**

Model field: playlist

**video**

Model field: video, accesses the *Video* model.

**video\_id**

Model field: video

**class** `marsha.core.models.SignTrack(*args, **kwargs)`

Bases: `marsha.core.models.BaseTrack`

Model representing a signs language track for a video.

**Parameters**

- **id** (*AutoField*) – Id
- **deleted** (*DateTimeField*) – Deleted
- **video** (ForeignKey to *Video*) – video for which this track is
- **language** (*CharField*) – language of this track

**exception DoesNotExist**

Bases: `django.core.exceptions.ObjectDoesNotExist`

**exception MultipleObjectsReturned**

Bases: `django.core.exceptions.MultipleObjectsReturned`

**get\_language\_display** (\*, field=<*django.db.models.fields.CharField: language*>)

**Autogenerated:** Shows the label of the language

**id**

Model field: ID

**video**

Model field: video, accesses the *Video* model.

```
class marsha.core.models.SiteAdmin(*args, **kwargs)
```

Bases: [marsha.core.base\\_models.BaseModel](#)

Model representing users with access to manage a site.

through model between [ConsumerSite.admins](#) and [User.administrated\\_sites](#).

#### Parameters

- **id** ([AutoField](#)) – Id
- **deleted** ([DateTimeField](#)) – Deleted
- **user** (ForeignKey to [User](#)) – user with access to the site
- **site** (ForeignKey to [ConsumerSite](#)) – site to which the user has access

```
exception DoesNotExist
```

Bases: [django.core.exceptions.ObjectDoesNotExist](#)

```
exception MultipleObjectsReturned
```

Bases: [django.core.exceptions.MultipleObjectsReturned](#)

**id**

Model field: ID

**site**

Model field: site, accesses the [ConsumerSite](#) model.

**site\_id**

Model field: site

**user**

Model field: user, accesses the [User](#) model.

**user\_id**

Model field: user

```
class marsha.core.models.SiteOrganization(*args, **kwargs)
```

Bases: [marsha.core.base\\_models.BaseModel](#)

Model representing organizations in sites.

through model between [Organization.sites](#) and [ConsumerSite.organizations](#).

#### Parameters

- **id** ([AutoField](#)) – Id
- **deleted** ([DateTimeField](#)) – Deleted
- **site** (ForeignKey to [ConsumerSite](#)) – site having this organization
- **organization** (ForeignKey to [Organization](#)) – organization in this site

```
exception DoesNotExist
```

Bases: [django.core.exceptions.ObjectDoesNotExist](#)

```
exception MultipleObjectsReturned
```

Bases: [django.core.exceptions.MultipleObjectsReturned](#)

**id**

Model field: ID

**organization**

Model field: organization, accesses the [Organization](#) model.

**organization\_id**

Model field: organization

**site**

Model field: site, accesses the *ConsumerSite* model.

**site\_id**

Model field: site

**class** marsha.core.models.SubtitleTrack(\*args, \*\*kwargs)

Bases: *marsha.core.models.BaseTrack*

Model representing a subtitle track for a video.

#### Parameters

- **id** (*AutoField*) – Id
- **deleted** (*DateTimeField*) – Deleted
- **video** (*ForeignKey* to *Video*) – video for which this track is
- **language** (*CharField*) – language of this track
- **has\_closed\_captioning** (*BooleanField*) – if closed captioning (for deaf or hard of hearing viewers) is on for this subtitle track

**exception** DoesNotExist

Bases: *django.core.exceptions.ObjectDoesNotExist*

**exception** MultipleObjectsReturned

Bases: *django.core.exceptions.MultipleObjectsReturned*

**get\_language\_display** (\*, field=<*django.db.models.fields.CharField: language*>)

Autogenerated: Shows the label of the language

**has\_closed\_captioning**

Model field: closed captioning

**id**

Model field: ID

**video**

Model field: video, accesses the *Video* model.

**class** marsha.core.models.User(\*args, \*\*kwargs)

Bases: *marsha.core.base\_models.BaseModel*, *django.contrib.auth.models.AbstractUser*

Model representing a user that can be authenticated to act on the Marsha instance.

#### Parameters

- **id** (*AutoField*) – Id
- **password** (*CharField*) – Password
- **last\_login** (*DateTimeField*) – Last login
- **is\_superuser** (*BooleanField*) – Designates that this user has all permissions without explicitly assigning them.
- **username** (*CharField*) – Required. 150 characters or fewer. Letters, digits and @/./+/-/\_ only.
- **first\_name** (*CharField*) – First name

- **last\_name** (*CharField*) – Last name
- **email** (*EmailField*) – Email address
- **is\_staff** (*BooleanField*) – Designates whether the user can log into this admin site.
- **is\_active** (*BooleanField*) – Designates whether this user should be treated as active. Unselect this instead of deleting accounts.
- **date\_joined** (*DateTimeField*) – Date joined
- **deleted** (*DateTimeField*) – Deleted
- **groups** (*ManyToManyField*) – The groups this user belongs to. A user will get all permissions granted to each of their groups.
- **user\_permissions** (*ManyToManyField*) – Specific permissions for this user.

**exception DoesNotExist**

Bases: `django.core.exceptions.ObjectDoesNotExist`

**exception MultipleObjectsReturned**

Bases: `django.core.exceptions.MultipleObjectsReturned`

**administrated\_sites**

**Model field:** administrators, accesses the M2M *ConsumerSite* model.

**author\_organizations**

**Model field:** authors, accesses the M2M *Organization* model.

**authored\_videos**

**Model field:** author, accesses the M2M *Video* model.

**authoring**

**Model field:** author, accesses the M2M *Authoring* model.

**created\_playlists**

**Model field:** author, accesses the M2M *Playlist* model.

**get\_next\_by\_date\_joined** (\*, *field=<django.db.models.fields.DateTimeField: date\_joined>*,  
*is\_next=True*, \*\*kwargs)

**Autogenerated:** Finds next instance based on `date_joined`.

**get\_previous\_by\_date\_joined** (\*, *field=<django.db.models.fields.DateTimeField: date\_joined>*,  
*is\_next=False*, \*\*kwargs)

**Autogenerated:** Finds previous instance based on `date_joined`.

**groups**

**Model field:** groups, accesses the M2M *User* model.

**id**

**Model field:** ID

**logentry\_set**

**Model field:** user, accesses the M2M *LogEntry* model.

**managed\_organizations**

**Model field:** managers, accesses the M2M *Organization* model.

**managed\_organizations\_links**

**Model field:** manager, accesses the M2M *OrganizationManager* model.

**managed\_playlists**

**Model field:** editors, accesses the M2M *Playlist* model.

**objects** = `<marsha.core.managers.UserManager object>`

**playlists\_accesses**

**Model field:** user, accesses the M2M *PlaylistAccess* model.

**sites\_admins**

**Model field:** user, accesses the M2M *SiteAdmin* model.

**user\_permissions**

**Model field:** user permissions, accesses the M2M *User* model.

**class** marsha.core.models.Video(\*args, \*\*kwargs)

Bases: *marsha.core.base\_models.BaseModel*

Model representing a video, by an author.

**Parameters**

- **id** (*AutoField*) – Id
- **deleted** (*DateTimeField*) – Deleted
- **name** (*CharField*) – name of the video
- **description** (*TextField*) – description of the video
- **author** (ForeignKey to *User*) – author of the video
- **language** (*CharField*) – language of the video
- **duplicated\_from** (ForeignKey to *Video*) – original video this one was duplicated from

**exception DoesNotExist**

Bases: *django.core.exceptions.ObjectDoesNotExist*

**exception MultipleObjectsReturned**

Bases: *django.core.exceptions.MultipleObjectsReturned*

**audiotracks**

**Model field:** video, accesses the M2M *AudioTrack* model.

**author**

**Model field:** author, accesses the *User* model.

**author\_id**

**Model field:** author

**description**

**Model field:** description

**duplicated\_from**

**Model field:** duplicate from, accesses the *Video* model.

**duplicated\_from\_id**

**Model field:** duplicate from

**duplicates**

**Model field:** duplicate from, accesses the M2M *Video* model.

**get\_language\_display** (\*, field=<*django.db.models.fields.CharField: language*>)

**Autogenerated:** Shows the label of the *language*

**id**

**Model field:** ID

**language**

**Model field:** language

**name**  
Model field: name

**playlists**  
Model field: videos, accesses the M2M *Playlist* model.

**playlists\_links**  
Model field: video, accesses the M2M *PlaylistVideo* model.

**signtracks**  
Model field: video, accesses the M2M *SignTrack* model.

**subtitletracks**  
Model field: video, accesses the M2M *SubtitleTrack* model.

## marsha.core.views module

Views of the `core` app of the Marsha project.

## Module contents

The `core` app of the Marsha project.

### 5.1.2 Submodules

### 5.1.3 marsha.settings module

Django settings for marsha project.

Uses django-configurations to manage environments inheritance and the loading of some config from the environment

```
class marsha.settings.Base
    Bases: configurations.base.Configuration

    Base configuration every configuration (aka environment) should inherit from.

    It depends on an environment variable that SHOULD be defined: - DJANGO_SECRET_KEY

    You may also want to override default configuration by setting the following environment variables: -
    DJANGO_DEBUG - DATABASE_URL

    ABSOLUTE_URL_OVERRIDES = {}

    ADMINS = []

    ALLOWED_HOSTS = []

    APPEND_SLASH = True

    AUTHENTICATION_BACKENDS = ['django.contrib.auth.backends.ModelBackend']

    AUTH_PASSWORD_VALIDATORS = [{'NAME': 'django.contrib.auth.password_validation.UserAttr...
    AUTH_USER_MODEL = 'core.User'

    BASE_DIR = '/home/docs/checkouts/readthedocs.org/user_builds/marsha/envs/latest/lib/py...
    CACHES = {'default': {'BACKEND': 'django.core.cache.backends.locmem.LocMemCache'}}
```

```

CACHE_MIDDLEWARE_ALIAS = 'default'
CACHE_MIDDLEWARE_KEY_PREFIX = ''
CACHE_MIDDLEWARE_SECONDS = 600
CSRF_COOKIE_AGE = 31449600
CSRF_COOKIE_DOMAIN = None
CSRF_COOKIE_HTTPONLY = False
CSRF_COOKIE_NAME = 'csrftoken'
CSRF_COOKIE_PATH = '/'
CSRF_COOKIE_SECURE = False
CSRF_FAILURE_VIEW = 'django.views.csrf.csrf_failure'
CSRF_HEADER_NAME = 'HTTP_X_CSRFTOKEN'
CSRF_TRUSTED_ORIGINS = []
CSRF_USE_SESSIONS = False
DATABASES = {}
DATABASE_ROUTERS = []
DATA_UPLOAD_MAX_MEMORY_SIZE = 2621440
DATA_UPLOAD_MAX_NUMBER_FIELDS = 1000
DATETIME_FORMAT = 'N j, Y, P'
DATETIME_INPUT_FORMATS = ['%Y-%m-%d %H:%M:%S', '%Y-%m-%d %H:%M:%S.%f', '%Y-%m-%d %H:%M']
DATE_FORMAT = 'N j, Y'
DATE_INPUT_FORMATS = ['%Y-%m-%d', '%m/%d/%Y', '%m/%d/%y', '%b %d %Y', '%b %d, %Y', '%d %b %Y']
DEBUG = False
DEBUG_PROPAGATE_EXCEPTIONS = False
DECIMAL_SEPARATOR = '.'
DEFAULT_CHARSET = 'utf-8'
DEFAULT_CONTENT_TYPE = 'text/html'
DEFAULT_EXCEPTION_REPORTER_FILTER = 'django.views.debug.SafeExceptionReporterFilter'
DEFAULT_FILE_STORAGE = 'django.core.files.storage.FileSystemStorage'
DEFAULT_FROM_EMAIL = 'webmaster@localhost'
DEFAULT_INDEX_TABLESPACE = ''
DEFAULT_TABLESPACE = ''
DISALLOWED_USER_AGENTS = []
DOTENV_LOADED = None
EMAIL_BACKEND = 'django.core.mail.backends.smtp.EmailBackend'
EMAIL_HOST = 'localhost'
EMAIL_HOST_PASSWORD = ''

```

```
EMAIL_HOST_USER = ''
EMAIL_PORT = 25
EMAIL_SSL_CERTFILE = None
EMAIL_SSL_KEYFILE = None
EMAIL_SUBJECT_PREFIX = '[Django] '
EMAIL_TIMEOUT = None
EMAIL_USE_LOCALTIME = False
EMAIL_USE_SSL = False
EMAIL_USE_TLS = False
FILE_CHARSET = 'utf-8'
FILE_UPLOAD_DIRECTORY_PERMISSIONS = None
FILE_UPLOAD_HANDLERS = ['django.core.files.uploadhandler.MemoryFileUploadHandler', 'dj
FILE_UPLOAD_MAX_MEMORY_SIZE = 2621440
FILE_UPLOAD_PERMISSIONS = None
FILE_UPLOAD_TEMP_DIR = None
FIRST_DAY_OF_WEEK = 0
FIXTURE_DIRS = []
FORCE_SCRIPT_NAME = None
FORMAT_MODULE_PATH = None
FORM_RENDERER = 'django.forms.renderers.DjangoTemplates'
IGNORABLE_404_URLS = []
INSTALLED_APPS = ['django.contrib.admin.apps.SimpleAdminConfig', 'django.contrib.auth'
INTERNAL_IPS = []
LANGUAGES = [('en', 'english'), ('fr', 'french')]
LANGUAGES_BIDI = ['he', 'ar', 'fa', 'ur']
LANGUAGE_CODE = 'en-us'
LANGUAGE_COOKIE_AGE = None
LANGUAGE_COOKIE_DOMAIN = None
LANGUAGE_COOKIE_NAME = 'django_language'
LANGUAGE_COOKIE_PATH = '/'
LOCALE_PATHS = []
LOGGING = {}
LOGGING_CONFIG = 'logging.config.dictConfig'
LOGIN_REDIRECT_URL = '/accounts/profile/'
LOGIN_URL = '/accounts/login/'
LOGOUT_REDIRECT_URL = None
```



```
MANAGERS = []
MEDIA_ROOT = ''
MEDIA_URL = ''
MESSAGE_STORAGE = 'django.contrib.messages.storage.fallback.FallbackStorage'
MIDDLEWARE = ['django.middleware.security.SecurityMiddleware', 'django.contrib.sessions.middleware.SessionMiddleware']
MIGRATION_MODULES = {}
MONTH_DAY_FORMAT = 'F j'
NUMBER_GROUPING = 0
PASSWORD_HASHERS = ['django.contrib.auth.hashers.PBKDF2PasswordHasher', 'django.contrib.auth.hashers.Argon2PasswordHasher', 'django.contrib.auth.hashers.BCryptSHA256PasswordHasher']
PASSWORD_RESET_TIMEOUT_DAYS = 3
PREPEND_WWW = False
ROOT_URLCONF = 'marsha.urls'
SECRET_KEY = 'FooBar'
SECURE_BROWSER_XSS_FILTER = False
SECURE_CONTENT_TYPE_NOSNIFF = False
SECURE_HSTS_INCLUDE_SUBDOMAINS = False
SECURE_HSTS_PRELOAD = False
SECURE_HSTS_SECONDS = 0
SECURE_PROXY_SSL_HEADER = None
SECURE_REDIRECT_EXEMPT = []
SECURE_SSL_HOST = None
SECURE_SSL_REDIRECT = False
SERVER_EMAIL = 'root@localhost'
SESSION_CACHE_ALIAS = 'default'
SESSION_COOKIE_AGE = 1209600
SESSION_COOKIE_DOMAIN = None
SESSION_COOKIE_HTTPONLY = True
SESSION_COOKIE_NAME = 'sessionid'
SESSION_COOKIE_PATH = '/'
SESSION_COOKIE_SECURE = False
SESSION_ENGINE = 'django.contrib.sessions.backends.db'
SESSION_EXPIRE_AT_BROWSER_CLOSE = False
SESSION_FILE_PATH = None
SESSION_SAVE_EVERY_REQUEST = False
SESSION_SERIALIZER = 'django.contrib.sessions.serializers.JSONSerializer'
SHORT_DATETIME_FORMAT = 'm/d/Y P'
```

```
SHORT_DATE_FORMAT = 'm/d/Y'
SIGNING_BACKEND = 'django.core.signing.TimestampSigner'
SILENCED_SYSTEM_CHECKS = []
STATICFILES_DIRS = []
STATICFILES_FINDERS = ['django.contrib.staticfiles.finders.FileSystemFinder', 'django.
STATICFILES_STORAGE = 'django.contrib.staticfiles.storage.StaticFilesStorage'
STATIC_ROOT = None
STATIC_URL = '/static/'
TEMPLATES = [{'BACKEND': 'django.template.backends.django.DjangoTemplates', 'DIRS': []}
TEST_NON_SERIALIZED_APPS = []
TEST_RUNNER = 'django.test.runner.DiscoverRunner'
THOUSAND_SEPARATOR = ','
TIME_FORMAT = 'P'
TIME_INPUT_FORMATS = ['%H:%M:%S', '%H:%M:%S.%f', '%H:%M']
TIME_ZONE = 'UTC'
USE_ETAGS = False
USE_I18N = True
USE_L10N = True
USE_THOUSAND_SEPARATOR = False
USE_TZ = True
USE_X_FORWARDED_HOST = False
USE_X_FORWARDED_PORT = False
WSGI_APPLICATION = 'marsha.wsgi.application'
X_FRAME_OPTIONS = 'SAMEORIGIN'
YEAR_MONTH_FORMAT = 'F Y'

class marsha.settings.Dev
    Bases: marsha.settings.Base
    Development environment settings.

    We set DEBUG to True by default, configure the server to respond to all hosts, and use a local sqlite database
    by default.

    ABSOLUTE_URL_OVERRIDES = {}
    ADMINS = []
    ALLOWED_HOSTS = ['*']
    APPEND_SLASH = True
    AUTHENTICATION_BACKENDS = ['django.contrib.auth.backends.ModelBackend']
    AUTH_PASSWORD_VALIDATORS = [{'NAME': 'django.contrib.auth.password_validation.UserAttr
    AUTH_USER_MODEL = 'core.User'
```

```
BASE_DIR = '/home/docs/checkouts/readthedocs.org/user_builds/marsha/envs/latest/lib/python3.6/site-packages/marsha/'
CACHES = {'default': {'BACKEND': 'django.core.cache.backends.locmem.LocMemCache'}}
CACHE_MIDDLEWARE_ALIAS = 'default'
CACHE_MIDDLEWARE_KEY_PREFIX = ''
CACHE_MIDDLEWARE_SECONDS = 600
CSRF_COOKIE_AGE = 31449600
CSRF_COOKIE_DOMAIN = None
CSRF_COOKIE_HTTPONLY = False
CSRF_COOKIE_NAME = 'csrftoken'
CSRF_COOKIE_PATH = '/'
CSRF_COOKIE_SECURE = False
CSRF_FAILURE_VIEW = 'django.views.csrf.csrf_failure'
CSRF_HEADER_NAME = 'HTTP_X_CSRFTOKEN'
CSRF_TRUSTED_ORIGINS = []
CSRF_USE_SESSIONS = False
DATABASES = {'default': {'NAME': '/home/docs/checkouts/readthedocs.org/user_builds/marsha/envs/latest/lib/python3.6/site-packages/marsha/db.sqlite3'}}
DATABASE_ROUTERS = []
DATA_UPLOAD_MAX_MEMORY_SIZE = 2621440
DATA_UPLOAD_MAX_NUMBER_FIELDS = 1000
DATETIME_FORMAT = 'N j, Y, P'
DATETIME_INPUT_FORMATS = ['%Y-%m-%d %H:%M:%S', '%Y-%m-%d %H:%M:%S.%f', '%Y-%m-%d %H:%M']
DATE_FORMAT = 'N j, Y'
DATE_INPUT_FORMATS = ['%Y-%m-%d', '%m/%d/%Y', '%m/%d/%y', '%b %d %Y', '%b %d, %Y', '%d %b %Y']
DEBUG = False
DEBUG_PROPAGATE_EXCEPTIONS = False
DECIMAL_SEPARATOR = '.'
DEFAULT_CHARSET = 'utf-8'
DEFAULT_CONTENT_TYPE = 'text/html'
DEFAULT_EXCEPTION_REPORTER_FILTER = 'django.views.debug.SafeExceptionReporterFilter'
DEFAULT_FILE_STORAGE = 'django.core.files.storage.FileSystemStorage'
DEFAULT_FROM_EMAIL = 'webmaster@localhost'
DEFAULT_INDEX_TABLESPACE = ''
DEFAULT_TABLESPACE = ''
DISALLOWED_USER_AGENTS = []
DOTENV_LOADED = None
EMAIL_BACKEND = 'django.core.mail.backends.smtp.EmailBackend'
```

```
EMAIL_HOST = 'localhost'
EMAIL_HOST_PASSWORD = ''
EMAIL_HOST_USER = ''
EMAIL_PORT = 25
EMAIL_SSL_CERTFILE = None
EMAIL_SSL_KEYFILE = None
EMAIL_SUBJECT_PREFIX = '[Django] '
EMAIL_TIMEOUT = None
EMAIL_USE_LOCALTIME = False
EMAIL_USE_SSL = False
EMAIL_USE_TLS = False
FILE_CHARSET = 'utf-8'
FILE_UPLOAD_DIRECTORY_PERMISSIONS = None
FILE_UPLOAD_HANDLERS = ['django.core.files.uploadhandler.MemoryFileUploadHandler', 'dj
FILE_UPLOAD_MAX_MEMORY_SIZE = 2621440
FILE_UPLOAD_PERMISSIONS = None
FILE_UPLOAD_TEMP_DIR = None
FIRST_DAY_OF_WEEK = 0
FIXTURE_DIRS = []
FORCE_SCRIPT_NAME = None
FORMAT_MODULE_PATH = None
FORM_RENDERER = 'django.forms.renderers.DjangoTemplates'
IGNORABLE_404_URLS = []
INSTALLED_APPS = ['django.contrib.admin.apps.SimpleAdminConfig', 'django.contrib.auth'
INTERNAL_IPS = []
LANGUAGES = [('en', 'english'), ('fr', 'french')]
LANGUAGES_BIDI = ['he', 'ar', 'fa', 'ur']
LANGUAGE_CODE = 'en-us'
LANGUAGE_COOKIE_AGE = None
LANGUAGE_COOKIE_DOMAIN = None
LANGUAGE_COOKIE_NAME = 'django_language'
LANGUAGE_COOKIE_PATH = '/'
LOCALE_PATHS = []
LOGGING = {}
LOGGING_CONFIG = 'logging.config.dictConfig'
LOGIN_REDIRECT_URL = '/accounts/profile/'
```

```
LOGIN_URL = '/accounts/login/'
LOGOUT_REDIRECT_URL = None
MANAGERS = []
MEDIA_ROOT = ''
MEDIA_URL = ''
MESSAGE_STORAGE = 'django.contrib.messages.storage.fallback.FallbackStorage'
MIDDLEWARE = ['django.middleware.security.SecurityMiddleware', 'django.contrib.sessions.middleware.SessionMiddleware']
MIGRATION_MODULES = {}
MONTH_DAY_FORMAT = 'F j'
NUMBER_GROUPING = 0
PASSWORD_HASHERS = ['django.contrib.auth.hashers.PBKDF2PasswordHasher', 'django.contrib.auth.hashers.Argon2PasswordHasher', 'django.contrib.auth.hashers.BCryptSHA256PasswordHasher']
PASSWORD_RESET_TIMEOUT_DAYS = 3
PREPEND_WWW = False
ROOT_URLCONF = 'marsha.urls'
SECRET_KEY = 'FooBar'
SECURE_BROWSER_XSS_FILTER = False
SECURE_CONTENT_TYPE_NOSNIFF = False
SECURE_HSTS_INCLUDE_SUBDOMAINS = False
SECURE_HSTS_PRELOAD = False
SECURE_HSTS_SECONDS = 0
SECURE_PROXY_SSL_HEADER = None
SECURE_REDIRECT_EXEMPT = []
SECURE_SSL_HOST = None
SECURE_SSL_REDIRECT = False
SERVER_EMAIL = 'root@localhost'
SESSION_CACHE_ALIAS = 'default'
SESSION_COOKIE_AGE = 1209600
SESSION_COOKIE_DOMAIN = None
SESSION_COOKIE_HTTPONLY = True
SESSION_COOKIE_NAME = 'sessionid'
SESSION_COOKIE_PATH = '/'
SESSION_COOKIE_SECURE = False
SESSION_ENGINE = 'django.contrib.sessions.backends.db'
SESSION_EXPIRE_AT_BROWSER_CLOSE = False
SESSION_FILE_PATH = None
SESSION_SAVE_EVERY_REQUEST = False
```

```
SESSION_SERIALIZER = 'django.contrib.sessions.serializers.JSONSerializer'
SHORT_DATETIME_FORMAT = 'm/d/Y P'
SHORT_DATE_FORMAT = 'm/d/Y'
SIGNING_BACKEND = 'django.core.signing.TimestampSigner'
SILENCED_SYSTEM_CHECKS = []
STATICFILES_DIRS = []
STATICFILES_FINDERS = ['django.contrib.staticfiles.finders.FileSystemFinder', 'django.
STATICFILES_STORAGE = 'django.contrib.staticfiles.storage.StaticFilesStorage'
STATIC_ROOT = None
STATIC_URL = '/static/'
TEMPLATES = [{'BACKEND': 'django.template.backends.django.DjangoTemplates', 'DIRS': []}
TEST_NON_SERIALIZED_APPS = []
TEST_RUNNER = 'django.test.runner.DiscoverRunner'
THOUSAND_SEPARATOR = ','
TIME_FORMAT = 'P'
TIME_INPUT_FORMATS = ['%H:%M:%S', '%H:%M:%S.%f', '%H:%M']
TIME_ZONE = 'UTC'
USE_ETAGS = False
USE_I18N = True
USE_L10N = True
USE_THOUSAND_SEPARATOR = False
USE_TZ = True
USE_X_FORWARDED_HOST = False
USE_X_FORWARDED_PORT = False
WSGI_APPLICATION = 'marsha.wsgi.application'
X_FRAME_OPTIONS = 'SAMEORIGIN'
YEAR_MONTH_FORMAT = 'F Y'
```

### 5.1.4 marsha.stubs module

Stubs for the whole project to be used for typing annotations.

```
class marsha.stubs.M2MType
    Bases: typing.Generic

    Stub to represent both sides of a django ManyToManyField.

    add (*objs) → None
    clear () → None
    create (**kwargs) → T
```

```

get_or_create (**kwargs) → Tuple[T, bool]
remove (*objs) → None
set (objs: Iterable[T], clear: Union[bool, NoneType] = False) → None
update_or_create (**kwargs) → Tuple[T, bool]

```

```
class marsha.stubs.ReverseFKType
```

```
Bases: typing.Generic
```

```
Stub to represent the related field of a django ForeignKey/OneToOneField.
```

```

add (*objs, bulk: Union[bool, NoneType] = True) → None
clear (bulk: bool = True) → None
create (**kwargs) → T
get_or_create (**kwargs) → Tuple[T, bool]
remove (*objs, bulk: Union[bool, NoneType] = True) → None
set (objs: Iterable[T], bulk: Union[bool, NoneType] = True, clear: Union[bool, NoneType] = False) → None
update_or_create (**kwargs) → Tuple[T, bool]

```

```
marsha.stubs.ReverseO2O
```

```
alias of marsha.stubs.ReverseFKType
```

## 5.1.5 marsha.test\_runner module

Provides a test-runner to avoid running django checks.

```

class marsha.test_runner.NoCheckDiscoverRunner (pattern=None, top_level=None,
                                                    verbosity=1, interactive=True,
                                                    failfast=False, keepdb=False, reverse=False,
                                                    debug_mode=False, debug_sql=False,
                                                    parallel=0, tags=None,
                                                    exclude_tags=None, **kwargs)

Bases: django.test.runner.DiscoverRunner

A Django test runner that do not run checks.

run_checks () → None
    Do not run checks.

```

## 5.1.6 marsha.urls module

Marsha URLs configuration.

## 5.1.7 marsha.wsgi module

WSGI script for the marsha project.

## 5.1.8 Module contents

Marsha project.





## CHAPTER 6

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### Indices and tables

---

- `genindex`
- `modindex`
- `search`



### m

- `marsha`, [43](#)
- `marsha.core`, [34](#)
- `marsha.core.admin`, [18](#)
- `marsha.core.apps`, [22](#)
- `marsha.core.base_models`, [22](#)
- `marsha.core.managers`, [23](#)
- `marsha.core.migrations`, [18](#)
- `marsha.core.migrations.0001_initial_models`,  
[17](#)
- `marsha.core.migrations.0002_soft_deletion`,  
[17](#)
- `marsha.core.migrations.0003_missing_text_fields`,  
[18](#)
- `marsha.core.migrations.0004_duplicated_from__blank`,  
[18](#)
- `marsha.core.migrations.0005_use_our__nondeleteduniqueindex`,  
[18](#)
- `marsha.core.models`, [23](#)
- `marsha.core.tests`, [18](#)
- `marsha.core.views`, [34](#)
- `marsha.settings`, [34](#)
- `marsha.stubs`, [42](#)
- `marsha.test_runner`, [43](#)
- `marsha.urls`, [43](#)
- `marsha.wsgi`, [43](#)



## Symbols

`__init__()` (marsha.core.base\_models.NonDeletedUniqueIndex method), 23

## A

`ABSOLUTE_URL_OVERRIDES` (marsha.settings.Base attribute), 34

`ABSOLUTE_URL_OVERRIDES` (marsha.settings.Dev attribute), 38

`add()` (marsha.stubs.M2MType method), 42

`add()` (marsha.stubs.ReverseFKType method), 43

`administrated_sites` (marsha.core.models.User attribute), 32

`admins` (marsha.core.models.ConsumerSite attribute), 25

`ADMINS` (marsha.settings.Base attribute), 34

`ADMINS` (marsha.settings.Dev attribute), 38

`ALLOWED_HOSTS` (marsha.settings.Base attribute), 34

`ALLOWED_HOSTS` (marsha.settings.Dev attribute), 38

`APPEND_SLASH` (marsha.settings.Base attribute), 34

`APPEND_SLASH` (marsha.settings.Dev attribute), 38

`AudioTrack` (class in marsha.core.models), 23

`AudioTrack.DoesNotExist`, 24

`AudioTrack.MultipleObjectsReturned`, 24

`AudioTrackInline` (class in marsha.core.admin), 18

`audiotracks` (marsha.core.models.Video attribute), 33

`AUTH_PASSWORD_VALIDATORS` (marsha.settings.Base attribute), 34

`AUTH_PASSWORD_VALIDATORS` (marsha.settings.Dev attribute), 38

`AUTH_USER_MODEL` (marsha.settings.Base attribute), 34

`AUTH_USER_MODEL` (marsha.settings.Dev attribute), 38

`AUTHENTICATION_BACKENDS` (marsha.settings.Base attribute), 34

`AUTHENTICATION_BACKENDS` (marsha.settings.Dev attribute), 38

`author` (marsha.core.models.Playlist attribute), 27

`author` (marsha.core.models.Video attribute), 33

`author_id` (marsha.core.models.Playlist attribute), 27

`author_id` (marsha.core.models.Video attribute), 33

`author_organizations` (marsha.core.models.User attribute), 32

`authored_videos` (marsha.core.models.User attribute), 32

`Authoring` (class in marsha.core.models), 24

`authoring` (marsha.core.models.Organization attribute), 26

`authoring` (marsha.core.models.User attribute), 32

`Authoring.DoesNotExist`, 24

`Authoring.MultipleObjectsReturned`, 24

`AuthorOrganizationsInline` (class in marsha.core.admin), 19

`authors` (marsha.core.models.Organization attribute), 26

## B

`Base` (class in marsha.settings), 34

`BASE_DIR` (marsha.settings.Base attribute), 34

`BASE_DIR` (marsha.settings.Dev attribute), 38

`BaseModel` (class in marsha.core.base\_models), 22

`BaseModelAdmin` (class in marsha.core.admin), 19

`BaseTabularInline` (class in marsha.core.admin), 19

`BaseTrack` (class in marsha.core.models), 24

## C

`CACHE_MIDDLEWARE_ALIAS` (marsha.settings.Base attribute), 34

`CACHE_MIDDLEWARE_ALIAS` (marsha.settings.Dev attribute), 39

`CACHE_MIDDLEWARE_KEY_PREFIX` (marsha.settings.Base attribute), 35

`CACHE_MIDDLEWARE_KEY_PREFIX` (marsha.settings.Dev attribute), 39

`CACHE_MIDDLEWARE_SECONDS` (marsha.settings.Base attribute), 35

`CACHE_MIDDLEWARE_SECONDS` (marsha.settings.Dev attribute), 39

`CACHES` (marsha.settings.Base attribute), 34

`CACHES` (marsha.settings.Dev attribute), 39

`check()` (marsha.core.base\_models.BaseModel class method), 23

`clear()` (marsha.stubs.M2MType method), 42

`clear()` (marsha.stubs.ReverseFKType method), 43

`condition` (marsha.core.base\_models.NonDeletedUniqueIndex attribute), 23

`ConsumerSite` (class in marsha.core.models), 25

`ConsumerSite.DoesNotExist`, 25

`ConsumerSite.MultipleObjectsReturned`, 25

`ConsumerSiteAdmin` (class in marsha.core.admin), 19

`CoreConfig` (class in marsha.core.apps), 22

`create()` (marsha.stubs.M2MType method), 42

`create()` (marsha.stubs.ReverseFKType method), 43

`created_playlists` (marsha.core.models.User attribute), 32

`CSRF_COOKIE_AGE` (marsha.settings.Base attribute), 35

`CSRF_COOKIE_AGE` (marsha.settings.Dev attribute), 39

`CSRF_COOKIE_DOMAIN` (marsha.settings.Base attribute), 35

`CSRF_COOKIE_DOMAIN` (marsha.settings.Dev attribute), 39

`CSRF_COOKIE_HTTPONLY` (marsha.settings.Base attribute), 35

`CSRF_COOKIE_HTTPONLY` (marsha.settings.Dev attribute), 39

`CSRF_COOKIE_NAME` (marsha.settings.Base attribute), 35

`CSRF_COOKIE_NAME` (marsha.settings.Dev attribute), 39

`CSRF_COOKIE_PATH` (marsha.settings.Base attribute), 35

`CSRF_COOKIE_PATH` (marsha.settings.Dev attribute), 39

`CSRF_COOKIE_SECURE` (marsha.settings.Base attribute), 35

`CSRF_COOKIE_SECURE` (marsha.settings.Dev attribute), 39

`CSRF_FAILURE_VIEW` (marsha.settings.Base attribute), 35

`CSRF_FAILURE_VIEW` (marsha.settings.Dev attribute), 39

`CSRF_HEADER_NAME` (marsha.settings.Base attribute), 35

`CSRF_HEADER_NAME` (marsha.settings.Dev attribute), 39

`CSRF_TRUSTED_ORIGINS` (marsha.settings.Base attribute), 35

`CSRF_TRUSTED_ORIGINS` (marsha.settings.Dev attribute), 39

`CSRF_USE_SESSIONS` (marsha.settings.Base attribute), 35

`CSRF_USE_SESSIONS` (marsha.settings.Dev attribute), 39

## D

`DATA_UPLOAD_MAX_MEMORY_SIZE` (marsha.settings.Base attribute), 35

`DATA_UPLOAD_MAX_MEMORY_SIZE` (marsha.settings.Dev attribute), 39

`DATA_UPLOAD_MAX_NUMBER_FIELDS` (marsha.settings.Base attribute), 35

`DATA_UPLOAD_MAX_NUMBER_FIELDS` (marsha.settings.Dev attribute), 39

`DATABASE_ROUTERS` (marsha.settings.Base attribute), 35

`DATABASE_ROUTERS` (marsha.settings.Dev attribute), 39

`DATABASES` (marsha.settings.Base attribute), 35

`DATABASES` (marsha.settings.Dev attribute), 39

`DATE_FORMAT` (marsha.settings.Base attribute), 35

`DATE_FORMAT` (marsha.settings.Dev attribute), 39

`DATE_INPUT_FORMATS` (marsha.settings.Base attribute), 35

`DATE_INPUT_FORMATS` (marsha.settings.Dev attribute), 39

`DATETIME_FORMAT` (marsha.settings.Base attribute), 35

`DATETIME_FORMAT` (marsha.settings.Dev attribute), 39

`DATETIME_INPUT_FORMATS` (marsha.settings.Base attribute), 35

`DATETIME_INPUT_FORMATS` (marsha.settings.Dev attribute), 39

`DEBUG` (marsha.settings.Base attribute), 35

`DEBUG` (marsha.settings.Dev attribute), 39

`DEBUG_PROPAGATE_EXCEPTIONS` (marsha.settings.Base attribute), 35

`DEBUG_PROPAGATE_EXCEPTIONS` (marsha.settings.Dev attribute), 39

`DECIMAL_SEPARATOR` (marsha.settings.Base attribute), 35

`DECIMAL_SEPARATOR` (marsha.settings.Dev attribute), 39

`deconstruct()` (marsha.core.base\_models.NonDeletedUniqueIndex method), 23

`DEFAULT_CHARSET` (marsha.settings.Base attribute), 35

`DEFAULT_CHARSET` (marsha.settings.Dev attribute), 39

`DEFAULT_CONTENT_TYPE` (marsha.settings.Base attribute), 35

`DEFAULT_CONTENT_TYPE` (marsha.settings.Dev attribute), 39

`DEFAULT_EXCEPTION_REPORTER_FILTER` (marsha.settings.Base attribute), 35

`DEFAULT_EXCEPTION_REPORTER_FILTER` (marsha.settings.Dev attribute), 39

- [DEFAULT\\_FILE\\_STORAGE \(marsha.settings.Base attribute\), 35](#)  
[DEFAULT\\_FILE\\_STORAGE \(marsha.settings.Dev attribute\), 39](#)  
[DEFAULT\\_FROM\\_EMAIL \(marsha.settings.Base attribute\), 35](#)  
[DEFAULT\\_FROM\\_EMAIL \(marsha.settings.Dev attribute\), 39](#)  
[DEFAULT\\_INDEX\\_TABLESPACE \(marsha.settings.Base attribute\), 35](#)  
[DEFAULT\\_INDEX\\_TABLESPACE \(marsha.settings.Dev attribute\), 39](#)  
[DEFAULT\\_TABLESPACE \(marsha.settings.Base attribute\), 35](#)  
[DEFAULT\\_TABLESPACE \(marsha.settings.Dev attribute\), 39](#)  
[dependencies \(marsha.core.migrations.0001\\_initial\\_models.Migration attribute\), 17](#)  
[dependencies \(marsha.core.migrations.0002\\_soft\\_deletion.Migration attribute\), 17](#)  
[dependencies \(marsha.core.migrations.0003\\_missing\\_text\\_files.Migration attribute\), 18](#)  
[dependencies \(marsha.core.migrations.0004\\_duplicated\\_from\\_playlist\\_admin.Migration attribute\), 18](#)  
[dependencies \(marsha.core.migrations.0005\\_use\\_our\\_nondefault\\_index.Migration attribute\), 18](#)  
[description \(marsha.core.models.Video attribute\), 33](#)  
[Dev \(class in marsha.settings\), 38](#)  
[DISALLOWED\\_USER\\_AGENTS \(marsha.settings.Base attribute\), 35](#)  
[DISALLOWED\\_USER\\_AGENTS \(marsha.settings.Dev attribute\), 39](#)  
[DOTENV\\_LOADED \(marsha.settings.Base attribute\), 35](#)  
[DOTENV\\_LOADED \(marsha.settings.Dev attribute\), 39](#)  
[duplicated\\_from \(marsha.core.models.Playlist attribute\), 27](#)  
[duplicated\\_from \(marsha.core.models.Video attribute\), 33](#)  
[duplicated\\_from\\_id \(marsha.core.models.Playlist attribute\), 27](#)  
[duplicated\\_from\\_id \(marsha.core.models.Video attribute\), 33](#)  
[duplicates \(marsha.core.models.Playlist attribute\), 27](#)  
[duplicates \(marsha.core.models.Video attribute\), 33](#)
- ## E
- [editors \(marsha.core.models.Playlist attribute\), 27](#)  
[EMAIL\\_BACKEND \(marsha.settings.Base attribute\), 35](#)  
[EMAIL\\_BACKEND \(marsha.settings.Dev attribute\), 39](#)  
[EMAIL\\_HOST \(marsha.settings.Base attribute\), 35](#)  
[EMAIL\\_HOST \(marsha.settings.Dev attribute\), 39](#)  
[EMAIL\\_HOST\\_PASSWORD \(marsha.settings.Base attribute\), 35](#)  
[EMAIL\\_HOST\\_PASSWORD \(marsha.settings.Dev attribute\), 40](#)  
[EMAIL\\_HOST\\_USER \(marsha.settings.Base attribute\), 35](#)  
[EMAIL\\_HOST\\_USER \(marsha.settings.Dev attribute\), 40](#)  
[EMAIL\\_PORT \(marsha.settings.Base attribute\), 36](#)  
[EMAIL\\_PORT \(marsha.settings.Dev attribute\), 40](#)  
[EMAIL\\_SSL\\_CERTFILE \(marsha.settings.Base attribute\), 36](#)  
[EMAIL\\_SSL\\_CERTFILE \(marsha.settings.Dev attribute\), 40](#)  
[EMAIL\\_SSL\\_KEYFILE \(marsha.settings.Base attribute\), 36](#)  
[EMAIL\\_SSL\\_KEYFILE \(marsha.settings.Dev attribute\), 40](#)  
[EMAIL\\_SUBJECT\\_PREFIX \(marsha.settings.Base attribute\), 36](#)  
[EMAIL\\_SUBJECT\\_PREFIX \(marsha.settings.Dev attribute\), 40](#)  
[EMAIL\\_TIMEOUT \(marsha.settings.Base attribute\), 36](#)  
[EMAIL\\_TIMEOUT \(marsha.settings.Dev attribute\), 40](#)  
[EMAIL\\_USE\\_LOCALTIME \(marsha.settings.Base attribute\), 36](#)  
[EMAIL\\_USE\\_LOCALTIME \(marsha.settings.Dev attribute\), 40](#)  
[EMAIL\\_USE\\_SSL \(marsha.settings.Base attribute\), 36](#)  
[EMAIL\\_USE\\_SSL \(marsha.settings.Dev attribute\), 40](#)  
[EMAIL\\_USE\\_TLS \(marsha.settings.Base attribute\), 36](#)  
[EMAIL\\_USE\\_TLS \(marsha.settings.Dev attribute\), 40](#)  
[exclude \(marsha.core.admin.PlaylistAdmin attribute\), 20](#)  
[exclude \(marsha.core.admin.VideoAdmin attribute\), 22](#)
- ## F
- [FILE\\_CHARSET \(marsha.settings.Base attribute\), 36](#)  
[FILE\\_CHARSET \(marsha.settings.Dev attribute\), 40](#)  
[FILE\\_UPLOAD\\_DIRECTORY\\_PERMISSIONS \(marsha.settings.Base attribute\), 36](#)  
[FILE\\_UPLOAD\\_DIRECTORY\\_PERMISSIONS \(marsha.settings.Dev attribute\), 40](#)  
[FILE\\_UPLOAD\\_HANDLERS \(marsha.settings.Base attribute\), 36](#)  
[FILE\\_UPLOAD\\_HANDLERS \(marsha.settings.Dev attribute\), 40](#)  
[FILE\\_UPLOAD\\_MAX\\_MEMORY\\_SIZE \(marsha.settings.Base attribute\), 36](#)  
[FILE\\_UPLOAD\\_MAX\\_MEMORY\\_SIZE \(marsha.settings.Dev attribute\), 40](#)  
[FILE\\_UPLOAD\\_PERMISSIONS \(marsha.settings.Base attribute\), 36](#)  
[FILE\\_UPLOAD\\_PERMISSIONS \(marsha.settings.Dev attribute\), 40](#)  
[FILE\\_UPLOAD\\_TEMP\\_DIR \(marsha.settings.Base attribute\), 36](#)

- FILE\_UPLOAD\_TEMP\_DIR (marsha.settings.Dev attribute), 40
- FIRST\_DAY\_OF\_WEEK (marsha.settings.Base attribute), 36
- FIRST\_DAY\_OF\_WEEK (marsha.settings.Dev attribute), 40
- FIXTURE\_DIRS (marsha.settings.Base attribute), 36
- FIXTURE\_DIRS (marsha.settings.Dev attribute), 40
- FORCE\_SCRIPT\_NAME (marsha.settings.Base attribute), 36
- FORCE\_SCRIPT\_NAME (marsha.settings.Dev attribute), 40
- FORM\_RENDERER (marsha.settings.Base attribute), 36
- FORM\_RENDERER (marsha.settings.Dev attribute), 40
- FORMAT\_MODULE\_PATH (marsha.settings.Base attribute), 36
- FORMAT\_MODULE\_PATH (marsha.settings.Dev attribute), 40
- ## G
- get\_language\_display() (marsha.core.models.AudioTrack method), 24
- get\_language\_display() (marsha.core.models.BaseTrack method), 25
- get\_language\_display() (marsha.core.models.SignTrack method), 29
- get\_language\_display() (marsha.core.models.SubtitleTrack method), 31
- get\_language\_display() (marsha.core.models.Video method), 33
- get\_next\_by\_date\_joined() (marsha.core.models.User method), 32
- get\_or\_create() (marsha.stubs.M2MType method), 42
- get\_or\_create() (marsha.stubs.ReverseFKType method), 43
- get\_previous\_by\_date\_joined() (marsha.core.models.User method), 32
- groups (marsha.core.models.User attribute), 32
- ## H
- has\_closed\_captioning (marsha.core.models.SubtitleTrack attribute), 31
- ## I
- id (marsha.core.models.AudioTrack attribute), 24
- id (marsha.core.models.Authoring attribute), 24
- id (marsha.core.models.ConsumerSite attribute), 25
- id (marsha.core.models.Organization attribute), 26
- id (marsha.core.models.OrganizationManager attribute), 26
- id (marsha.core.models.Playlist attribute), 27
- id (marsha.core.models.PlaylistAccess attribute), 28
- id (marsha.core.models.PlaylistVideo attribute), 29
- id (marsha.core.models.SignTrack attribute), 29
- id (marsha.core.models.SiteAdmin attribute), 30
- id (marsha.core.models.SiteOrganization attribute), 30
- id (marsha.core.models.SubtitleTrack attribute), 31
- id (marsha.core.models.User attribute), 32
- id (marsha.core.models.Video attribute), 33
- IGNORABLE\_404\_URLS (marsha.settings.Base attribute), 36
- IGNORABLE\_404\_URLS (marsha.settings.Dev attribute), 40
- initial (marsha.core.migrations.0001\_initial\_models.Migration attribute), 17
- inlines (marsha.core.admin.ConsumerSiteAdmin attribute), 19
- inlines (marsha.core.admin.OrganizationAdmin attribute), 20
- inlines (marsha.core.admin.PlaylistAdmin attribute), 20
- inlines (marsha.core.admin.UserAdmin attribute), 22
- inlines (marsha.core.admin.VideoAdmin attribute), 22
- INSTALLED\_APPS (marsha.settings.Base attribute), 36
- INSTALLED\_APPS (marsha.settings.Dev attribute), 40
- INTERNAL\_IPS (marsha.settings.Base attribute), 36
- INTERNAL\_IPS (marsha.settings.Dev attribute), 40
- is\_public (marsha.core.models.Playlist attribute), 27
- ## L
- language (marsha.core.models.BaseTrack attribute), 25
- language (marsha.core.models.Video attribute), 33
- LANGUAGE\_CODE (marsha.settings.Base attribute), 36
- LANGUAGE\_CODE (marsha.settings.Dev attribute), 40
- LANGUAGE\_COOKIE\_AGE (marsha.settings.Base attribute), 36
- LANGUAGE\_COOKIE\_AGE (marsha.settings.Dev attribute), 40
- LANGUAGE\_COOKIE\_DOMAIN (marsha.settings.Base attribute), 36
- LANGUAGE\_COOKIE\_DOMAIN (marsha.settings.Dev attribute), 40
- LANGUAGE\_COOKIE\_NAME (marsha.settings.Base attribute), 36
- LANGUAGE\_COOKIE\_NAME (marsha.settings.Dev attribute), 40
- LANGUAGE\_COOKIE\_PATH (marsha.settings.Base attribute), 36
- LANGUAGE\_COOKIE\_PATH (marsha.settings.Dev attribute), 40
- LANGUAGES (marsha.settings.Base attribute), 36
- LANGUAGES (marsha.settings.Dev attribute), 40
- LANGUAGES\_BIDI (marsha.settings.Base attribute), 36
- LANGUAGES\_BIDI (marsha.settings.Dev attribute), 40
- list\_display (marsha.core.admin.ConsumerSiteAdmin attribute), 19



- `list_display` (`marsha.core.admin.OrganizationAdmin` attribute), 20
  - `list_display` (`marsha.core.admin.PlaylistAdmin` attribute), 20
  - `list_display` (`marsha.core.admin.VideoAdmin` attribute), 22
  - `LOCALE_PATHS` (`marsha.settings.Base` attribute), 36
  - `LOCALE_PATHS` (`marsha.settings.Dev` attribute), 40
  - `logentry_set` (`marsha.core.models.User` attribute), 32
  - `LOGGING` (`marsha.settings.Base` attribute), 36
  - `LOGGING` (`marsha.settings.Dev` attribute), 40
  - `LOGGING_CONFIG` (`marsha.settings.Base` attribute), 36
  - `LOGGING_CONFIG` (`marsha.settings.Dev` attribute), 40
  - `LOGIN_REDIRECT_URL` (`marsha.settings.Base` attribute), 36
  - `LOGIN_REDIRECT_URL` (`marsha.settings.Dev` attribute), 40
  - `LOGIN_URL` (`marsha.settings.Base` attribute), 36
  - `LOGIN_URL` (`marsha.settings.Dev` attribute), 40
  - `LOGOUT_REDIRECT_URL` (`marsha.settings.Base` attribute), 36
  - `LOGOUT_REDIRECT_URL` (`marsha.settings.Dev` attribute), 41
- ## M
- `M2MType` (class in `marsha.stubs`), 42
  - `managed_organizations` (`marsha.core.models.User` attribute), 32
  - `managed_organizations_links` (`marsha.core.models.User` attribute), 32
  - `managed_playlists` (`marsha.core.models.User` attribute), 32
  - `ManagedOrganizationsInline` (class in `marsha.core.admin`), 19
  - `managers` (`marsha.core.models.Organization` attribute), 26
  - `MANAGERS` (`marsha.settings.Base` attribute), 36
  - `MANAGERS` (`marsha.settings.Dev` attribute), 41
  - `managers_links` (`marsha.core.models.Organization` attribute), 26
  - `marsha` (module), 43
  - `marsha.core` (module), 34
  - `marsha.core.admin` (module), 18
  - `marsha.core.apps` (module), 22
  - `marsha.core.base_models` (module), 22
  - `marsha.core.managers` (module), 23
  - `marsha.core.migrations` (module), 18
  - `marsha.core.migrations.0001_initial_models` (module), 17
  - `marsha.core.migrations.0002_soft_deletion` (module), 17
  - `marsha.core.migrations.0003_missing_text_fields` (module), 18
  - `marsha.core.migrations.0004_duplicated_from__blank` (module), 18
  - `marsha.core.migrations.0005_use_our__nondeleteduniqueindex` (module), 18
  - `marsha.core.models` (module), 23
  - `marsha.core.tests` (module), 18
  - `marsha.core.views` (module), 34
  - `marsha.settings` (module), 34
  - `marsha.stubs` (module), 42
  - `marsha.test_runner` (module), 43
  - `marsha.urls` (module), 43
  - `marsha.wsgi` (module), 43
  - `MarshaAdminSite` (class in `marsha.core.admin`), 19
  - `media` (`marsha.core.admin.AudioTrackInline` attribute), 19
  - `media` (`marsha.core.admin.AuthorOrganizationsInline` attribute), 19
  - `media` (`marsha.core.admin.BaseModelAdmin` attribute), 19
  - `media` (`marsha.core.admin.BaseTabularInline` attribute), 19
  - `media` (`marsha.core.admin.ConsumerSiteAdmin` attribute), 19
  - `media` (`marsha.core.admin.ManagedOrganizationsInline` attribute), 19
  - `media` (`marsha.core.admin.OrganizationAdmin` attribute), 20
  - `media` (`marsha.core.admin.OrganizationAuthorsInline` attribute), 20
  - `media` (`marsha.core.admin.OrganizationManagersInline` attribute), 20
  - `media` (`marsha.core.admin.OrganizationSitesInline` attribute), 20
  - `media` (`marsha.core.admin.PlaylistAdmin` attribute), 20
  - `media` (`marsha.core.admin.PlaylistVideosInline` attribute), 21
  - `media` (`marsha.core.admin.PlaystlistAccessesInline` attribute), 21
  - `media` (`marsha.core.admin.SignTrackInline` attribute), 21
  - `media` (`marsha.core.admin.SiteAdminsInline` attribute), 21
  - `media` (`marsha.core.admin.SiteOrganizationsInline` attribute), 21
  - `media` (`marsha.core.admin.SubtitleTrackInline` attribute), 22
  - `media` (`marsha.core.admin.UserAdmin` attribute), 22
  - `media` (`marsha.core.admin.VideoAdmin` attribute), 22
  - `MEDIA_ROOT` (`marsha.settings.Base` attribute), 37
  - `MEDIA_ROOT` (`marsha.settings.Dev` attribute), 41
  - `MEDIA_URL` (`marsha.settings.Base` attribute), 37
  - `MEDIA_URL` (`marsha.settings.Dev` attribute), 41
  - `MESSAGE_STORAGE` (`marsha.settings.Base` attribute), 37
  - `MESSAGE_STORAGE` (`marsha.settings.Dev` attribute), 41
  - `MIDDLEWARE` (`marsha.settings.Base` attribute), 37

MIDDLEWARE (marsha.settings.Dev attribute), [41](#)  
Migration (class in marsha.core.migrations.0001\_initial\_models), [17](#)  
Migration (class in marsha.core.migrations.0002\_soft\_deletion), [17](#)  
Migration (class in marsha.core.migrations.0003\_missing\_text\_fields), [18](#)  
Migration (class in marsha.core.migrations.0004\_duplicated\_from\_\_blank), [18](#)  
Migration (class in marsha.core.migrations.0005\_use\_our\_\_nondeleteduniqueindex), [18](#)  
MIGRATION\_MODULES (marsha.settings.Base attribute), [37](#)  
MIGRATION\_MODULES (marsha.settings.Dev attribute), [41](#)  
model (marsha.core.admin.AudioTrackInline attribute), [19](#)  
model (marsha.core.admin.AuthorOrganizationsInline attribute), [19](#)  
model (marsha.core.admin.ManagedOrganizationsInline attribute), [19](#)  
model (marsha.core.admin.OrganizationAuthorsInline attribute), [20](#)  
model (marsha.core.admin.OrganizationManagersInline attribute), [20](#)  
model (marsha.core.admin.OrganizationSitesInline attribute), [20](#)  
model (marsha.core.admin.PlaylistVideosInline attribute), [21](#)  
model (marsha.core.admin.PlaystlistAccessesInline attribute), [21](#)  
model (marsha.core.admin.SignTrackInline attribute), [21](#)  
model (marsha.core.admin.SiteAdminsInline attribute), [21](#)  
model (marsha.core.admin.SiteOrganizationsInline attribute), [21](#)  
model (marsha.core.admin.SubtitleTrackInline attribute), [22](#)  
MONTH\_DAY\_FORMAT (marsha.settings.Base attribute), [37](#)  
MONTH\_DAY\_FORMAT (marsha.settings.Dev attribute), [41](#)

## N

name (marsha.core.apps.CoreConfig attribute), [22](#)  
name (marsha.core.models.ConsumerSite attribute), [25](#)  
name (marsha.core.models.Organization attribute), [26](#)  
name (marsha.core.models.Playlist attribute), [28](#)  
name (marsha.core.models.Video attribute), [33](#)

NoCheckDiscoverRunner (class in marsha.test\_runner), [43](#)  
NonDeletedUniqueIndex (class in marsha.core.base\_models), [23](#)  
NUMBER\_GROUPING (marsha.settings.Base attribute), [37](#)  
NUMBER\_GROUPING (marsha.settings.Dev attribute), [41](#)

## O

objects (marsha.core.models.User attribute), [32](#)  
operations (marsha.core.migrations.0001\_initial\_models.Migration attribute), [17](#)  
operations (marsha.core.migrations.0002\_soft\_deletion.Migration attribute), [17](#)  
operations (marsha.core.migrations.0003\_missing\_text\_fields.Migration attribute), [18](#)  
operations (marsha.core.migrations.0004\_duplicated\_from\_\_blank.Migration attribute), [18](#)  
operations (marsha.core.migrations.0005\_use\_our\_\_nondeleteduniqueindex attribute), [18](#)  
order (marsha.core.models.PlaylistVideo attribute), [29](#)  
Organization (class in marsha.core.models), [25](#)  
organization (marsha.core.models.Authoring attribute), [24](#)  
organization (marsha.core.models.OrganizationManager attribute), [26](#)  
organization (marsha.core.models.Playlist attribute), [28](#)  
organization (marsha.core.models.SiteOrganization attribute), [30](#)  
Organization.DoesNotExist, [26](#)  
Organization.MultipleObjectsReturned, [26](#)  
organization\_id (marsha.core.models.Authoring attribute), [24](#)  
organization\_id (marsha.core.models.OrganizationManager attribute), [27](#)  
organization\_id (marsha.core.models.Playlist attribute), [28](#)  
organization\_id (marsha.core.models.SiteOrganization attribute), [30](#)  
OrganizationAdmin (class in marsha.core.admin), [20](#)  
OrganizationAuthorsInline (class in marsha.core.admin), [20](#)  
OrganizationManager (class in marsha.core.models), [26](#)  
OrganizationManager.DoesNotExist, [26](#)  
OrganizationManager.MultipleObjectsReturned, [26](#)  
OrganizationManagersInline (class in marsha.core.admin), [20](#)  
organizations (marsha.core.models.ConsumerSite attribute), [25](#)  
organizations\_links (marsha.core.models.ConsumerSite attribute), [25](#)  
OrganizationSitesInline (class in marsha.core.admin), [20](#)

## P

PASSWORD\_HASHERS (marsha.settings.Base attribute), 37

PASSWORD\_HASHERS (marsha.settings.Dev attribute), 41

PASSWORD\_RESET\_TIMEOUT\_DAYS (marsha.settings.Base attribute), 37

PASSWORD\_RESET\_TIMEOUT\_DAYS (marsha.settings.Dev attribute), 41

Playlist (class in marsha.core.models), 27

playlist (marsha.core.models.PlaylistAccess attribute), 28

playlist (marsha.core.models.PlaylistVideo attribute), 29

Playlist.DoesNotExist, 27

Playlist.MultipleObjectsReturned, 27

playlist\_id (marsha.core.models.PlaylistAccess attribute), 28

playlist\_id (marsha.core.models.PlaylistVideo attribute), 29

PlaylistAccess (class in marsha.core.models), 28

PlaylistAccess.DoesNotExist, 28

PlaylistAccess.MultipleObjectsReturned, 28

PlaylistAdmin (class in marsha.core.admin), 20

playlists (marsha.core.models.Organization attribute), 26

playlists (marsha.core.models.Video attribute), 34

playlists\_accesses (marsha.core.models.User attribute), 32

playlists\_links (marsha.core.models.Video attribute), 34

PlaylistVideo (class in marsha.core.models), 28

PlaylistVideo.DoesNotExist, 29

PlaylistVideo.MultipleObjectsReturned, 29

PlaylistVideosInline (class in marsha.core.admin), 20

PlaystlistAccessesInline (class in marsha.core.admin), 21

PREPEND\_WWW (marsha.settings.Base attribute), 37

PREPEND\_WWW (marsha.settings.Dev attribute), 41

## R

remove() (marsha.stubs.M2MType method), 43

remove() (marsha.stubs.ReverseFKType method), 43

ReverseFKType (class in marsha.stubs), 43

ReverseO2O (in module marsha.stubs), 43

ROOT\_URLCONF (marsha.settings.Base attribute), 37

ROOT\_URLCONF (marsha.settings.Dev attribute), 41

run\_checks() (marsha.test\_runner.NoCheckDiscoverRunner method), 43

## S

SECRET\_KEY (marsha.settings.Base attribute), 37

SECRET\_KEY (marsha.settings.Dev attribute), 41

SECURE\_BROWSER\_XSS\_FILTER (marsha.settings.Base attribute), 37

SECURE\_BROWSER\_XSS\_FILTER (marsha.settings.Dev attribute), 41

SECURE\_CONTENT\_TYPE\_NOSNIFF (marsha.settings.Base attribute), 37

SECURE\_CONTENT\_TYPE\_NOSNIFF (marsha.settings.Dev attribute), 41

SECURE\_HSTS\_INCLUDE\_SUBDOMAINS (marsha.settings.Base attribute), 37

SECURE\_HSTS\_INCLUDE\_SUBDOMAINS (marsha.settings.Dev attribute), 41

SECURE\_HSTS\_PRELOAD (marsha.settings.Base attribute), 37

SECURE\_HSTS\_PRELOAD (marsha.settings.Dev attribute), 41

SECURE\_HSTS\_SECONDS (marsha.settings.Base attribute), 37

SECURE\_HSTS\_SECONDS (marsha.settings.Dev attribute), 41

SECURE\_PROXY\_SSL\_HEADER (marsha.settings.Base attribute), 37

SECURE\_PROXY\_SSL\_HEADER (marsha.settings.Dev attribute), 41

SECURE\_REDIRECT\_EXEMPT (marsha.settings.Base attribute), 37

SECURE\_REDIRECT\_EXEMPT (marsha.settings.Dev attribute), 41

SECURE\_SSL\_HOST (marsha.settings.Base attribute), 37

SECURE\_SSL\_HOST (marsha.settings.Dev attribute), 41

SECURE\_SSL\_REDIRECT (marsha.settings.Base attribute), 37

SECURE\_SSL\_REDIRECT (marsha.settings.Dev attribute), 41

SERVER\_EMAIL (marsha.settings.Base attribute), 37

SERVER\_EMAIL (marsha.settings.Dev attribute), 41

SESSION\_CACHE\_ALIAS (marsha.settings.Base attribute), 37

SESSION\_CACHE\_ALIAS (marsha.settings.Dev attribute), 41

SESSION\_COOKIE\_AGE (marsha.settings.Base attribute), 37

SESSION\_COOKIE\_AGE (marsha.settings.Dev attribute), 41

SESSION\_COOKIE\_DOMAIN (marsha.settings.Base attribute), 37

SESSION\_COOKIE\_DOMAIN (marsha.settings.Dev attribute), 41

SESSION\_COOKIE\_HTTPONLY (marsha.settings.Base attribute), 37

SESSION\_COOKIE\_HTTPONLY (marsha.settings.Dev attribute), 41

SESSION\_COOKIE\_NAME (marsha.settings.Base attribute), 37

SESSION\_COOKIE\_NAME (marsha.settings.Dev attribute), 41

SESSION\_COOKIE\_PATH (marsha.settings.Base attribute), 37

SESSION\_COOKIE\_PATH (marsha.settings.Dev attribute), 41

SESSION\_COOKIE\_SECURE (marsha.settings.Base attribute), 37

SESSION\_COOKIE\_SECURE (marsha.settings.Dev attribute), 41

SESSION\_ENGINE (marsha.settings.Base attribute), 37

SESSION\_ENGINE (marsha.settings.Dev attribute), 41

SESSION\_EXPIRE\_AT\_BROWSER\_CLOSE (marsha.settings.Base attribute), 37

SESSION\_EXPIRE\_AT\_BROWSER\_CLOSE (marsha.settings.Dev attribute), 41

SESSION\_FILE\_PATH (marsha.settings.Base attribute), 37

SESSION\_FILE\_PATH (marsha.settings.Dev attribute), 41

SESSION\_SAVE\_EVERY\_REQUEST (marsha.settings.Base attribute), 37

SESSION\_SAVE\_EVERY\_REQUEST (marsha.settings.Dev attribute), 41

SESSION\_SERIALIZER (marsha.settings.Base attribute), 37

SESSION\_SERIALIZER (marsha.settings.Dev attribute), 41

set() (marsha.stubs.M2MType method), 43

set() (marsha.stubs.ReverseFKType method), 43

SHORT\_DATE\_FORMAT (marsha.settings.Base attribute), 37

SHORT\_DATE\_FORMAT (marsha.settings.Dev attribute), 42

SHORT\_DATETIME\_FORMAT (marsha.settings.Base attribute), 37

SHORT\_DATETIME\_FORMAT (marsha.settings.Dev attribute), 42

SIGNING\_BACKEND (marsha.settings.Base attribute), 38

SIGNING\_BACKEND (marsha.settings.Dev attribute), 42

SignTrack (class in marsha.core.models), 29

SignTrack.DoesNotExist, 29

SignTrack.MultipleObjectsReturned, 29

SignTrackInline (class in marsha.core.admin), 21

signtracks (marsha.core.models.Video attribute), 34

SILENCED\_SYSTEM\_CHECKS (marsha.settings.Base attribute), 38

SILENCED\_SYSTEM\_CHECKS (marsha.settings.Dev attribute), 42

site (marsha.core.models.SiteAdmin attribute), 30

site (marsha.core.models.SiteOrganization attribute), 31

site\_header (marsha.core.admin.MarshaAdminSite attribute), 19

site\_id (marsha.core.models.SiteAdmin attribute), 30

site\_id (marsha.core.models.SiteOrganization attribute), 31

site\_title (marsha.core.admin.MarshaAdminSite attribute), 20

SiteAdmin (class in marsha.core.models), 29

SiteAdmin.DoesNotExist, 30

SiteAdmin.MultipleObjectsReturned, 30

SiteAdminsInline (class in marsha.core.admin), 21

SiteOrganization (class in marsha.core.models), 30

SiteOrganization.DoesNotExist, 30

SiteOrganization.MultipleObjectsReturned, 30

SiteOrganizationsInline (class in marsha.core.admin), 21

sites (marsha.core.models.Organization attribute), 26

sites\_admins (marsha.core.models.ConsumerSite attribute), 25

sites\_admins (marsha.core.models.User attribute), 33

sites\_links (marsha.core.models.Organization attribute), 26

STATIC\_ROOT (marsha.settings.Base attribute), 38

STATIC\_ROOT (marsha.settings.Dev attribute), 42

STATIC\_URL (marsha.settings.Base attribute), 38

STATIC\_URL (marsha.settings.Dev attribute), 42

STATICFILES\_DIRS (marsha.settings.Base attribute), 38

STATICFILES\_DIRS (marsha.settings.Dev attribute), 42

STATICFILES\_FINDERS (marsha.settings.Base attribute), 38

STATICFILES\_FINDERS (marsha.settings.Dev attribute), 42

STATICFILES\_STORAGE (marsha.settings.Base attribute), 38

STATICFILES\_STORAGE (marsha.settings.Dev attribute), 42

SubtitleTrack (class in marsha.core.models), 31

SubtitleTrack.DoesNotExist, 31

SubtitleTrack.MultipleObjectsReturned, 31

SubtitleTrackInline (class in marsha.core.admin), 21

subtitletracks (marsha.core.models.Video attribute), 34

## T

TEMPLATES (marsha.settings.Base attribute), 38

TEMPLATES (marsha.settings.Dev attribute), 42

TEST\_NON\_SERIALIZED\_APPS (marsha.settings.Base attribute), 38

TEST\_NON\_SERIALIZED\_APPS (marsha.settings.Dev attribute), 42

TEST\_RUNNER (marsha.settings.Base attribute), 38

TEST\_RUNNER (marsha.settings.Dev attribute), 42

THOUSAND\_SEPARATOR (marsha.settings.Base attribute), 38

THOUSAND\_SEPARATOR (marsha.settings.Dev attribute), 42

TIME\_FORMAT (marsha.settings.Base attribute), 38

TIME\_FORMAT (marsha.settings.Dev attribute), 42

TIME\_INPUT\_FORMATS (marsha.settings.Base attribute), 38

- TIME\_INPUT\_FORMATS (marsha.settings.Dev attribute), 42
- TIME\_ZONE (marsha.settings.Base attribute), 38
- TIME\_ZONE (marsha.settings.Dev attribute), 42
- ## U
- update\_or\_create() (marsha.stubs.M2MType method), 43
- update\_or\_create() (marsha.stubs.ReverseFKType method), 43
- USE\_ETAGS (marsha.settings.Base attribute), 38
- USE\_ETAGS (marsha.settings.Dev attribute), 42
- USE\_I18N (marsha.settings.Base attribute), 38
- USE\_I18N (marsha.settings.Dev attribute), 42
- USE\_L10N (marsha.settings.Base attribute), 38
- USE\_L10N (marsha.settings.Dev attribute), 42
- USE\_THOUSAND\_SEPARATOR (marsha.settings.Base attribute), 38
- USE\_THOUSAND\_SEPARATOR (marsha.settings.Dev attribute), 42
- USE\_TZ (marsha.settings.Base attribute), 38
- USE\_TZ (marsha.settings.Dev attribute), 42
- USE\_X\_FORWARDED\_HOST (marsha.settings.Base attribute), 38
- USE\_X\_FORWARDED\_HOST (marsha.settings.Dev attribute), 42
- USE\_X\_FORWARDED\_PORT (marsha.settings.Base attribute), 38
- USE\_X\_FORWARDED\_PORT (marsha.settings.Dev attribute), 42
- User (class in marsha.core.models), 31
- user (marsha.core.models.Authoring attribute), 24
- user (marsha.core.models.OrganizationManager attribute), 27
- user (marsha.core.models.PlaylistAccess attribute), 28
- user (marsha.core.models.SiteAdmin attribute), 30
- User.DoesNotExist, 32
- User.MultipleObjectsReturned, 32
- user\_id (marsha.core.models.Authoring attribute), 24
- user\_id (marsha.core.models.OrganizationManager attribute), 27
- user\_id (marsha.core.models.PlaylistAccess attribute), 28
- user\_id (marsha.core.models.SiteAdmin attribute), 30
- user\_permissions (marsha.core.models.User attribute), 33
- UserAdmin (class in marsha.core.admin), 22
- UserManager (class in marsha.core.managers), 23
- users\_accesses (marsha.core.models.Playlist attribute), 28
- ## V
- validate\_unique() (marsha.core.base\_models.BaseModel method), 23
- verbose\_name (marsha.core.admin.AuthorOrganizationsInline attribute), 19
- verbose\_name (marsha.core.admin.ManagedOrganizationsInline attribute), 19
- verbose\_name (marsha.core.admin.OrganizationAuthorsInline attribute), 20
- verbose\_name (marsha.core.admin.OrganizationManagersInline attribute), 20
- verbose\_name (marsha.core.admin.OrganizationSitesInline attribute), 20
- verbose\_name (marsha.core.admin.PlaylistVideosInline attribute), 21
- verbose\_name (marsha.core.admin.PlaystlistAccessesInline attribute), 21
- verbose\_name (marsha.core.admin.SiteAdminsInline attribute), 21
- verbose\_name (marsha.core.admin.SiteOrganizationsInline attribute), 21
- verbose\_name (marsha.core.apps.CoreConfig attribute), 22
- verbose\_name\_plural (marsha.core.admin.AuthorOrganizationsInline attribute), 19
- verbose\_name\_plural (marsha.core.admin.ManagedOrganizationsInline attribute), 19
- verbose\_name\_plural (marsha.core.admin.OrganizationAuthorsInline attribute), 20
- verbose\_name\_plural (marsha.core.admin.OrganizationManagersInline attribute), 20
- verbose\_name\_plural (marsha.core.admin.OrganizationSitesInline attribute), 20
- verbose\_name\_plural (marsha.core.admin.PlaylistVideosInline attribute), 21
- verbose\_name\_plural (marsha.core.admin.PlaystlistAccessesInline attribute), 21
- verbose\_name\_plural (marsha.core.admin.SiteAdminsInline attribute), 21
- verbose\_name\_plural (marsha.core.admin.SiteOrganizationsInline attribute), 21
- Video (class in marsha.core.models), 33
- video (marsha.core.models.AudioTrack attribute), 24
- video (marsha.core.models.BaseTrack attribute), 25
- video (marsha.core.models.PlaylistVideo attribute), 29
- video (marsha.core.models.SignTrack attribute), 29
- video (marsha.core.models.SubtitleTrack attribute), 31
- Video.DoesNotExist, 33
- Video.MultipleObjectsReturned, 33
- video\_id (marsha.core.models.BaseTrack attribute), 25



`video_id` (marsha.core.models.PlaylistVideo attribute), [29](#)  
`VideoAdmin` (class in marsha.core.admin), [22](#)  
`videos` (marsha.core.models.Playlist attribute), [28](#)  
`videos_links` (marsha.core.models.Playlist attribute), [28](#)

## W

`WSGI_APPLICATION` (marsha.settings.Base attribute),  
[38](#)  
`WSGI_APPLICATION` (marsha.settings.Dev attribute),  
[42](#)

## X

`X_FRAME_OPTIONS` (marsha.settings.Base attribute),  
[38](#)  
`X_FRAME_OPTIONS` (marsha.settings.Dev attribute),  
[42](#)

## Y

`YEAR_MONTH_FORMAT` (marsha.settings.Base attribute), [38](#)  
`YEAR_MONTH_FORMAT` (marsha.settings.Dev attribute), [42](#)