
flask-s3 Documentation

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Edward Robinson

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Contents

1	How it works	3
2	Installation	5
2.1	Dependencies	5
3	Using Flask-S3	7
3.1	Uploading your Static Assets	7
3.2	Flask-S3 Options	8
4	API Documentation	11
4.1	The FlaskS3 Object	11
4.2	S3 Interaction	11
	Python Module Index	13

Flask-S3 allows you to easily serve all your [Flask](#) application's static assets from [Amazon S3](#), without having to modify your templates.

CHAPTER 1

How it works

Flask-S3 has two main functions:

1. Walk through your application's static folders, gather all your static assets together, and upload them to a bucket of your choice on S3;
2. Replace the URLs that Flask's `flask.url_for()` function would insert into your templates, with URLs that point to the static assets in your S3 bucket.

The process of gathering and uploading your static assets to S3 need only be done once, and your application does not need to be running for it to work. The location of the S3 bucket can be inferred from Flask-S3 *settings* specified in your Flask application, therefore when your application is running there need not be any communication between the Flask application and Amazon S3.

Internally, every time `url_for` is called in one of your application's templates, `flask_s3.url_for` is instead invoked. If the endpoint provided is deemed to refer to static assets, then the S3 URL for the asset specified in the `filename` argument is instead returned. Otherwise, `flask_s3.url_for` passes the call on to `flask.url_for`.

CHAPTER 2

Installation

If you use pip then installation is simply:

```
$ pip install flask-s3
```

or, if you want the latest github version:

```
$ pip install git+git://github.com/e-dard/flask-s3.git
```

You can also install Flask-S3 via Easy Install:

```
$ easy_install flask-s3
```

Dependencies

Aside from the obvious dependency of Flask itself, Flask-S3 makes use of the [boto](#) library for uploading assets to Amazon S3. **Note:** Flask-S3 currently only supports applications that use the [jinja2](#) templating system.

CHAPTER 3

Using Flask-S3

Flask-S3 is incredibly simple to use. In order to start serving your Flask application's assets from Amazon S3, the first thing to do is let Flask-S3 know about your `flask.Flask` application object.

```
from flask import Flask
from flask_s3 import FlaskS3

app = Flask(__name__)
app.config['FLASKS3_BUCKET_NAME'] = 'mybucketname'
s3 = FlaskS3(app)
```

In many cases, however, one cannot expect a Flask instance to be ready at import time, and a common pattern is to return a Flask instance from within a function only after other configuration details have been taken care of. In these cases, Flask-S3 provides a simple function, `init_app`, which takes your application as an argument.

```
from flask import Flask
from flask_s3 import FlaskS3

s3 = FlaskS3()

def start_app():
    app = Flask(__name__)
    s3.init_app(app)
    return app
```

In terms of getting your application to use external Amazon S3 URLs when referring to your application's static assets, passing your `Flask` object to the `FlaskS3` object is all that needs to be done. Once your app is running, any templates that contained relative static asset locations, will instead contain hosted counterparts on Amazon S3.

Uploading your Static Assets

You only need to upload your static assets to Amazon S3 once. Of course, if you add or modify your existing assets then you will need to repeat the uploading process.

Uploading your static assets from a Python console is as simple as follows.

```
>>> import flask_s3
>>> from my_application import app
>>> flask_s3.create_all(app)
>>>
```

Flask-S3 will proceed to walk through your application's static assets, including those belonging to *registered blueprints*, and upload them to your Amazon S3 bucket.

Static Asset URLs

Within your bucket on S3, Flask-S3 replicates the static file hierarchy defined in your application object and any registered blueprints. URLs generated by Flask-S3 will look like the following:

`/static/foo/style.css` becomes `https://mybucketname.s3.amazonaws.com/static/foo/style.css`, assuming that `mybucketname` is the name of your S3 bucket, and you have chosen to have assets served over HTTPS.

Setting Custom HTTP Headers

To set custom HTTP headers on the files served from S3 specify what headers you want to use with the `FLASKS3_HEADERS` option.

```
FLASKS3_HEADERS = {
    'Expires': 'Thu, 15 Apr 2010 20:00:00 GMT',
    'Cache-Control': 'max-age=86400',
}
```

See [Yahoo!](#) more information on how to set good values for your headers.

Flask-S3 Options

Within your Flask application's settings you can provide the following settings to control the behaviour of Flask-S3. None of the settings are required, but if not present, some will need to be provided when uploading assets to S3.

AWS_ACCESS_KEY	Your AWS access key. This does not need to be stored in your configuration if you choose to pass it directly when uploading your assets.
AWS_SECRET_ACCESS_KEY	Your AWS secret key. As with the access key, this need not be stored in your configuration if passed in to <code>create_all</code> .
FLASKS3_BUCKET_DOMAIN	The domain part of the URI for your S3 bucket. You probably won't need to change this. Default: <code>u's3.amazonaws.com'</code>
FLASKS3_CDN_DOMAIN	AWS makes it easy to attach CloudFront to an S3 bucket. If you want to use this or another CDN, set the base domain here. This is distinct from the <code>FLASKS3_BUCKET_DOMAIN</code> since it will not include the bucket name in the base url.
FLASKS3_BUCKET_NAME	The desired name for your Amazon S3 bucket. Note: the name will be visible in all your assets' URLs.
FLASKS3_REGION	The AWS region to host the bucket in; an empty string indicates the default region should be used, which is the US Standard region. Possible location values include: <code>'DEFAULT'</code> , <code>'EU'</code> , <code>'USWest'</code> , <code>'APSoutheast'</code>
FLASKS3_URL_STYLE	Set to <code>'host'</code> to use virtual-host-style URLs, e.g. <code>bucketname.s3.amazonaws.com</code> . Set to <code>'path'</code> to use path-style URLs, e.g. <code>s3.amazonaws.com/bucketname</code> . Default: <code>'host'</code>
FLASKS3_USE_HTTPS	Specifies whether or not to serve your assets stored in S3 over HTTPS. Can be overridden per url, by using the <code>_scheme</code> argument as per usual Flask <code>url_for</code> . Default: <code>True</code>
FLASKS3_ACTIVE	This setting allows you to toggle whether Flask-S3 is active or not. When set to <code>False</code> your application's templates will revert to including static asset locations determined by <code>flask.url_for</code> . Default: <code>True</code> Note: if you run your application in <code>debug</code> mode (and <code>FLASKS3_DEBUG</code> is <code>False</code> - see next item), <code>FLASKS3_ACTIVE</code> will be changed to <code>False</code> . This allows the <code>FLASKS3_ACTIVE</code> config variable to be the definitive check as to whether <code>flask_s3.url_for</code> is overriding <code>flask.url_for</code> .
FLASKS3_DEBUG	By default, Flask-S3 will be switched off when running your application in <code>debug</code> mode, so that your templates include static asset locations specified by <code>flask.url_for</code> . If you wish to enable Flask-S3 in debug mode, set this value to <code>True</code> . Note: if <code>FLASKS3_ACTIVE</code> is set to <code>False</code> then templates will always include asset locations specified by <code>flask.url_for</code> .
FLASKS3_HEADERS	Sets custom headers to be sent with each file to S3. Default: <code>{}</code>
FLASKS3_FILEPATH_HEADERS	Sets custom headers for files whose filepath matches certain regular expressions. (Note that this cannot be used for CORS, that must be set per S3 bucket using an XML config string.) E.g. to add custom metadata when serving text files, set this to: <code>{r'.txt\$': {'Texted-Up-By': 'Mister Foo'}}</code> Default: <code>{}</code>
FLASKS3_ONLY_MODIFIED	Only upload files that have been modified since last upload to S3. SHA-1 file hashes are used to compute file changes. You can delete file-hashes from your S3 bucket to force all files to upload again. Defaults to <code>False</code> .
FLASKS3_GZIP	Compress all assets using GZIP and set the corresponding Content-Type and Content-Encoding headers on the S3 files. Defaults to <code>False</code> .
FLASKS3_GZIP_EXTENSIONS	A list of file extensions that should be gzipped. <code>FLASKS3_GZIP</code> should be <code>True</code> for this to take effect. If mentioned and non-empty, then only files with the specified extensions are gzipped. Defaults to empty list, meaning all files will be gzipped. Eg:- <code>['.js', '.css']</code> will gzip only js and css files.
FLASKS3_FORCE_MIME_TYPE	Always set the Content-Type header on the S3 files irrespective of gzipping. Defaults to <code>False</code> .

Flask-S3 is a very simple extension. The few exposed objects, methods and functions are as follows.

The FlaskS3 Object

class `flask_s3.FlaskS3` (*app=None*)

The FlaskS3 object allows your application to use Flask-S3.

When initialising a FlaskS3 object you may optionally provide your `flask.Flask` application object if it is ready. Otherwise, you may provide it later by using the `init_app()` method.

Parameters `app` (`flask.Flask` or `None`) – optional `flask.Flask` application object

init_app (*app*)

An alternative way to pass your `flask.Flask` application object to Flask-S3. `init_app()` also takes care of some default *settings*.

Parameters `app` – the `flask.Flask` application object.

S3 Interaction

`flask_s3.create_all` (*app*, *user=None*, *password=None*, *bucket_name=None*, *location=None*, *include_hidden=False*, *filepath_filter_regex=None*, *put_bucket_acl=True*)

Uploads of the static assets associated with a Flask application to Amazon S3.

All static assets are identified on the local filesystem, including any static assets associated with *registered* blueprints. In turn, each asset is uploaded to the bucket described by `bucket_name`. If the bucket does not exist then it is created.

Flask-S3 creates the same relative static asset folder structure on S3 as can be found within your Flask application.

Many of the optional arguments to `create_all` can be specified instead in your application's configuration using the Flask-S3 *configuration* variables.

Parameters

- **app** – a `flask.Flask` application object.
- **user** (`basestring` or `None`) – an AWS Access Key ID. You can find this key in the Security Credentials section of your AWS account.
- **password** (`basestring` or `None`) – an AWS Secret Access Key. You can find this key in the Security Credentials section of your AWS account.
- **bucket_name** (`basestring` or `None`) – the name of the bucket you wish to server your static assets from. **Note:** while a valid character, it is recommended that you do not include periods in `bucket_name` if you wish to serve over HTTPS. See Amazon’s [bucket restrictions](#) for more details.
- **location** (`basestring` or `None`) – the AWS region to host the bucket in; an empty string indicates the default region should be used, which is the US Standard region. Possible location values include: 'DEFAULT', 'EU', 'us-east-1', 'us-west-1', 'us-west-2', 'ap-south-1', 'ap-northeast-2', 'ap-southeast-1', 'ap-southeast-2', 'ap-northeast-1', 'eu-central-1', 'eu-west-1', 'sa-east-1'
- **include_hidden** (`bool`) – by default Flask-S3 will not upload hidden files. Set this to true to force the upload of hidden files.
- **filepath_filter_regex** (`basestring` or `None`) – if specified, then the upload of static assets is limited to only those files whose relative path matches this regular expression string. For example, to only upload files within the ‘css’ directory of your app’s static store, set to `r'^css'`.
- **put_bucket_acl** (`bool`) – by default Flask-S3 will set the bucket ACL to public. Set this to false to leave the policy unchanged.

`flask_s3.url_for(endpoint, **values)`

Generates a URL to the given endpoint.

If the endpoint is for a static resource then an Amazon S3 URL is generated, otherwise the call is passed on to `flask.url_for`.

Because this function is set as a jinja environment variable when `FlaskS3.init_app` is invoked, this function replaces `flask.url_for` in templates automatically. It is unlikely that this function will need to be directly called from within your application code, unless you need to refer to static assets outside of your templates.

f

`flask_s3`, 3

C

`create_all()` (in module `flask_s3`), [11](#)

F

`flask_s3` (module), [1](#)

`FlaskS3` (class in `flask_s3`), [11](#)

I

`init_app()` (`flask_s3.FlaskS3` method), [11](#)

U

`url_for()` (in module `flask_s3`), [12](#)