
twelvefactor Documentation

Release 0.1.2

Daniel Knell

May 04, 2020

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twelvefactor is a library that provides utilities for creating a 12 factor application, at present it allows you to parse the processes environment variables into a configuration dictionary.

1.1 Installation

An install can be performed with the following:

```
pip install twelfefactor
```

1.2 Quickstart Guide

```
# settings.py
from twelfefactor import config

globals().update(config({
    'DEBUG': {
        'type': bool,
        'default': False,
    },
    'SECRET_KEY': str
}))
```

The above will create two variables, the first named `DEBUG` a boolean defaulting to `False`, and the second named `SECRET_KEY` a string which will throw an exception if not set. Both variables will be populated from the processes environment variables.

1.3 Schema

1.3.1 Example

```
{
  'DEBUG': {
    'type': bool,
    'default': False,
  },
  'SECRET_KEY': str,
  'DATABASE': {
    'key': 'DATABASE_URL',
    'mapper': dj_database_url.parse
  },
  'SOME_SET': {
    'type': set,
    'subtype': int
  }
}
```

1.3.2 Properties

key

The name of the environment variable to look up, this allows you map map values in the environment to differently named configuration variables, it defaults to the name of the configuration variable.

default

A value to use should no environment variable be found, if no default is provided then an error will be thrown.

type

A function to convert the string value to the correct type, this can be the type itself or a factory method to convert the value to the desired type.

When `list`, `tuple`, or `set` are provided then the value will be interpreted as a comma separated list and interpreted based on the subtype setting.

If no subtype is set then `str` is assumed.

subtype

A function to convert the string sub-value to the correct type, like with `type` this can be the type itself or a factory method.

If no type is set then `str` is assumed.

mapper

A method to post process the value after it has been converted to the correct type, it is the last transformation to be applied and should take the value and transform it into a more suitable configuration value.

A mapper should not be used to instantiate complex classes such as database adapters, these should be instantiated outside of the configuration code.

If no mapper is provided then the value is returned as is.

1.3.3 Shorthand

When only a type is required you can specify a callable instead of a dictionary defining the config value.

The following two examples are identical

```
{
  'DEBUG': bool
}
```

```
{
  'DEBUG': {
    'type': bool
  }
}
```


2.1 API

class `twelvefactor.Config` (*environ=None*)

Bases: `object`

Config environment parser.

This class allows chosen configuration values to be extracted from the processes environment variables and converted into the relevant types.

```
parser = Config()

config = parser({
    'DEBUG': {
        'type': bool,
        'default': False,
    },
    'SECRET_KEY': str,
})
```

The above will populate the `config` variable with two values, `DEBUG` will be populated with a `bool` from the environment variable of the same name, throwing an exception on invalid values and defaulting to `False` when none is provided, and `SECRET_KEY` will be a `str` and throw a `ConfigError` when no value is found in the environment.

An optional `environ` param can be passed in order to override the environment.

Parameters `environ` (*dict*) – environment dictionary, defaults to `os.environ`

__call__ (*schema*)

Parse the environment according to a schema.

Parameters `schema` (*dict*) – the schema to parse

Returns a dictionary of config values

Return type `dict`

get (*key*, *default*=<object object>, *type_*=<class 'str'>, *subtype*=<class 'str'>, *mapper*=None)
Parse a value from an environment variable.

```
>>> os.environ['FOO']
<<< '12345'
>>>
>>> os.environ['BAR']
<<< '1,2,3,4'
>>>
>>> 'BAZ' in os.environ
<<< False
>>>
>>> parser = Config()
>>> parser.get('FOO', type_=int)
<<< 12345
>>>
>>> parser.get('BAR', type_=list, subtype=int)
<<< [1, 2, 3, 4]
>>>
>>> parser.get('BAZ', default='abc123')
<<< 'abc123'
>>>
>>> parser.get('FOO', type_=int, mapper=lambda x: x*10)
<<< 123450
```

Parameters

- **key** (*str*) – the key to look up the value under
- **default** (*object*) – default value to return when when no value is present
- **type_** (*type*) – the type to return or factory function
- **subtype** (*type*) – subtype for iterator types
- **mapper** (*callable*) – a function to post-process the value with

Returns the parsed config value

Return type `object`

parse (*value*, *type_*=<class 'str'>, *subtype*=<class 'str'>)
Parse value from string.

Convert value to

```
>>> parser = Config()
>>> parser.parse('12345', type_=int)
<<< 12345
>>>
>>> parser.parse('1,2,3,4', type_=list, subtype=int)
<<< [1, 2, 3, 4]
```

Parameters

- **value** (*str*) – string
- **type_** (*type*) – the type to return or factory function
- **subtype** (*str*) – subtype for iterator types

Returns the parsed config value

Return type `object`

class `twelvefactor.ConfigError`

Bases: `Exception`

Exception to throw on configuration errors.

`twelvefactor.config`

3.1 Change Log

Here you can see the full list of changes.

3.1.1 Version 0.1.2

Released on 2016-08-11

- First public preview release.

3.2 License

twelvefactor is licensed under the MIT license. Basically, you can do whatever you want as long as you include the original copyright and license notice in any copy of the software/source.

3.2.1 MIT License

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