Do zero à publicação de um pacote de distribuição no PyPI

Alexandre Yukio Harano

São Paulo, 14 de Julho de 2018 – Just Python

alexandre@harano.net.br
https://alexandre.harano.net.br/

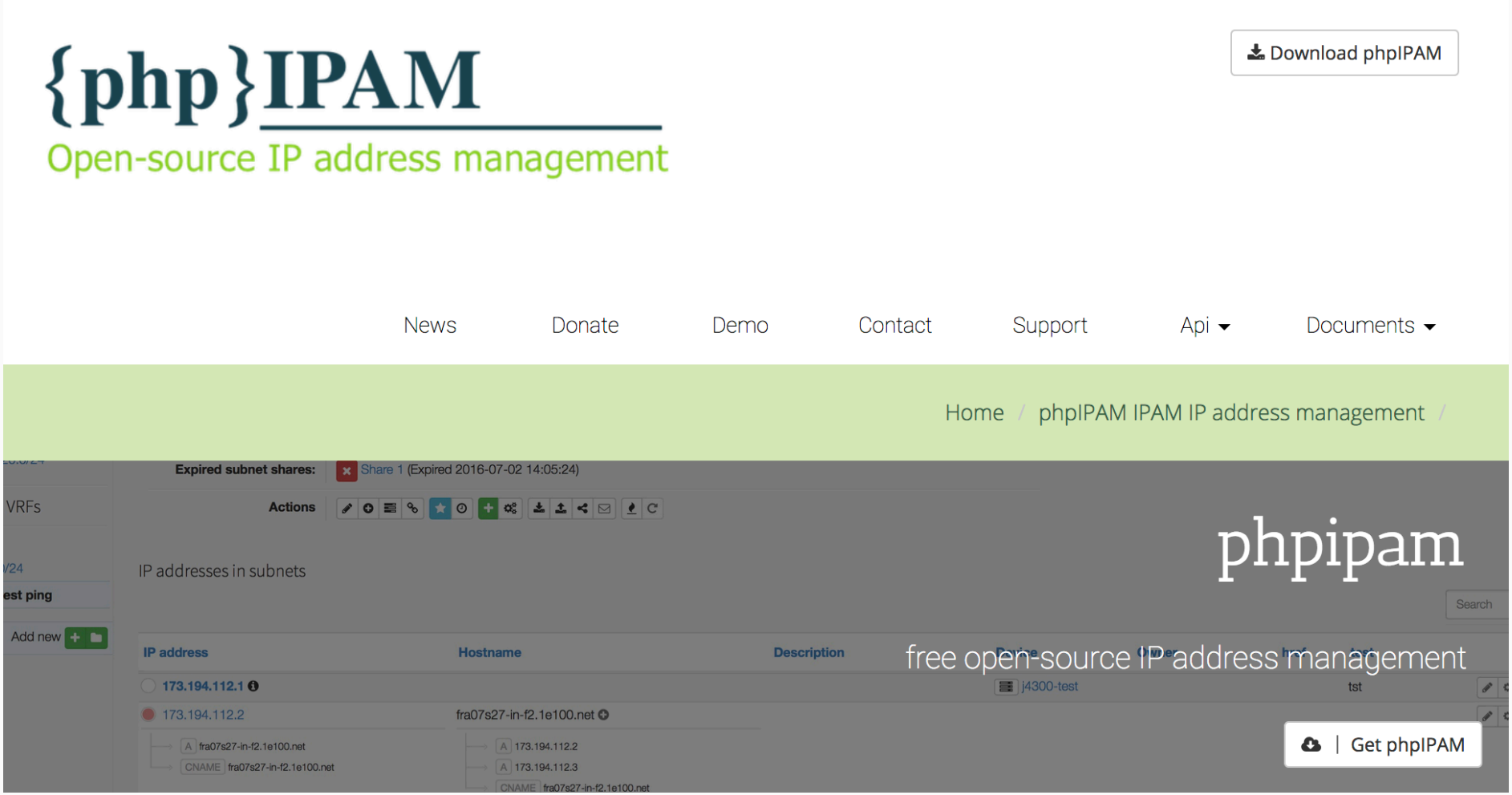
O que implementar?

IPAM - IP Address Management

- Gerenciadores de endereços IP: ferramentas em software usadas para planejar, rastrear e gerenciar endereços e subredes.
- Usado por administradores de redes corporativas, principalmente Provedores de Serviço Internet (ISPs): administrar redes delegadas, subredes de um bloco IP e endereços de equipamentos.

Baseado em `https://en.wikipedia.org/wiki/IP_address_management`

phpIPAM


{php}IPAM
Open-source IP address management
Download phpIPAM
News
Donate
Demo
Contact
Support
Api
Documents
Home / phpIPAM IPAM IP address management /
Expired subnet shares:
Share 1 (Expired 2016-07-02 14:05:24)
VRFs
Actions
IP addresses in subnets
Add new
IP address
Hostname
Description
173.194.112.1
173.194.112.2
fra07s27-in-f2.1e100.net
j4300-test
tst
phpipam
free open-source IP address management
Get phpIPAM

Features do phpIPAM

phpIPAM Feature list

- IPv4/IPv6 IP address management
- Section / Subnet management
- Automatic free space display for subnets
- Visual subnet display
- Automatic subnet scanning / IP status checks
- PowerDNS integration
- NAT support
- RACK management
- Domain authentication (AD, LDAP, Radius)
- Per-group section/subnet permissions
- Device / device types management
- RIPE subnets import
- XLS / CVS subnets import
- IP request module
- REST API
- Locations module
- VLAN management
- VRF management
- IPv4 / IPv6 calculator
- IP database search
- E-mail notifications
- Custom fields support
- Translations
- Changelogs

E agora?

PPPIPAM - Poor's Person Python IP Address Manager

- Baseado na expressão *poor's man*: usado para comparar algo menos bem sucedido comparado a outra pessoa: `He's a kind of poor man's James Bond`.
- *Person* em vez de *man* para ser generalista.
- Similar ao bem conhecido phpIPAM.
- Python no nome.
- Referência fraca a PPPoE, um protocolo usado em Provedores de Serviço Internet.

Por quê?

ipaddress

Python Software Foundation (US) https://docs.python.org/3/library/ipaddress.html

Python » English 3.7.0 Documentation » The Python Standard Library » 22. Internet Protocols and Support » Quick search

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22.28. ipaddress — IPv4/IPv6 manipulation library

Source code: Lib/ipaddress.py

`ipaddress` provides the capabilities to create, manipulate and operate on IPv4 and IPv6 addresses and networks.

The functions and classes in this module make it straightforward to handle various tasks related to IP addresses, including checking whether or not two hosts are on the same subnet, iterating over all hosts in a particular subnet, checking whether or not a string represents a valid IP address or network definition, and so on.

This is the full module API reference—for an overview and introduction, see An introduction to the ipaddress module.

New in version 3.3.

22.28.1. Convenience factory functions

The `ipaddress` module provides factory functions to conveniently create IP addresses, networks and interfaces:

`ipaddress.`**`ip_address`**(*address*)

Return an `IPv4Address` or `IPv6Address` object depending on the IP address passed as argument. Either IPv4 or IPv6 addresses may be supplied; integers less than `2**32` will be considered to be IPv4 by default. A `ValueError` is raised if *address* does not represent a valid IPv4 or IPv6 address.

ipaddress

```
>>> import ipaddress
>>> rede_ipv6 = ipaddress.ip_network(
...     "2001:db8:01a::/64")
>>> endereco_ipv6 = ipaddress.ip_address(
...     "2001:db8:01a::a10")
>>> endereco_ipv6 in rede_ipv6
True
>>> doc_ipv6 = ipaddress.IPv6Network("2001:db8::/32")
>>> doc_ipv6.supernet_of(rede_ipv6)
True
>>> endereco_ipv6.version
6
>>>
```

Como começar do zero?

venv

Python Software Foundation (US) https://docs.python.org/3/library/venv.html

Python » English 3.7.0 Documentation » The Python Standard Library » 29. Software Packaging and Distribution » Quick search

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29.2. ensurepip — Bootstrapping the pip installer

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29.4. zipapp — Manage executable python zip archives

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Report a Bug
Show Source

29.3. venv — Creation of virtual environments

New in version 3.3.

Source code: Lib/venv/

The venv module provides support for creating lightweight "virtual environments" with their own site directories, optionally isolated from system site directories. Each virtual environment has its own Python binary (allowing creation of environments with various Python versions) and can have its own independent set of installed Python packages in its site directories.

See PEP 405 for more information about Python virtual environments.

> **Note:** The `pyvenv` script has been deprecated as of Python 3.6 in favor of using `python3 -m venv` to help prevent any potential confusion as to which Python interpreter a virtual environment will be based on.

29.3.1. Creating virtual environments

Creation of virtual environments is done by executing the command `venv`:

```
python3 -m venv /path/to/new/virtual/environment
```

venv

- virtual environments (ambientes virtuais)
- Não confundir com máquina virtual
- Ambientes leves isolados com cópias próprias dos binários
- Isola dependências entre projetos
- Isola o ambiente do python usado pelo sistema

venv

```
$ python -m venv .venv
$ source ./.venv/bin/activate
(.venv) pppipam y$
```

Python Packaging User Guide

Python Software Foundation (US) | https://packaging.python.org

PyPA » Python Packaging User Guide »

Quick

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Python Packaging User Guide

Welcome to the *Python Packaging User Guide*, a collection of tutorials and references to help you distribute and install Python packages with modern tools.

This guide is maintained on GitHub by the Python Packaging Authority. We happily accept any contributions and feedback. 😊

Note: Looking for guidance on migrating from legacy PyPI to pypi.org? Please see Migrating to PyPI.org.

Get started

Essential tools and concepts for working with the Python packaging ecosystem are covered in our Tutorials section:

- to learn how to install packages, see the tutorial on installing packages.
- to learn how to manage dependencies in a version controlled project, see the tutorial on managing application dependencies.
- to learn how to package and distribute your projects, see the tutorial on packaging and distributing

Packaging Python Projects

Python Software Foundation (US) https://packaging.python.org/tutorials/packaging-projects/

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Guides

Packaging Python Projects

This tutorial walks you through how to package a simple Python project. It will show you how to add the necessary files and structure to create the package, how to build the package, and how to upload it to the Python Package Index.

A simple project

This tutorial uses a simple project named `example_pkg`. If you are unfamiliar with Python's modules and import packages, take a few minutes to read over the Python documentation for packages and modules.

To create this project locally, create the following file structure:

```
/example_pkg
  /example_pkg
    __init__.py
```

Once you create this structure, you'll want to run all of the commands in this tutorial within the top-level folder – so be sure to `cd example_pkg`.

You should also edit `example_pkg/__init__.py` and put the following code in there:

```
name = "example_pkg"
```

This is just so that you can verify that it installed correctly later in this tutorial.

Estrutura de mínima pelo tutorial

```
.
└── example_pkg
    ├── LICENSE
    ├── README.md
    ├── example_pkg
    │   └── __init__.py
    └── setup.py
```

Estrutura inicial usada no PPPIPAM

```
.
└── pppipam
    ├── LICENSE
    ├── README.md
    ├── pppipam
    │   └── __init__.py
    └── tests
        └── __init__.py
```

Test Driven Development (TDD)

Imagem obtida de `http://tdd.caelum.com.br/`

Dicas relacionadas a TDD (e em geral)

- Use bastante o REPL para testar o comportamento esperado
- Leia com atenção os erros e falhas
- Gerou erro? Procure entender o que está escrito
- Não tenha medo de voltar alguns passos

Exemplo de `TestCase` do `unittest`

```
import dataclass
import unittest

from pppipam.pppipam import AddressSpace

class AddressSpace_dataclass_TestCase(unittest.TestCase):
    """Tests related to verify if AddressSpace is a dataclass."""
    def test_address_space_is_dataclass(self):
        """Validate if AddressSpace is a dataclass."""
        self.assertTrue(
            dataclasses.is_dataclass(AddressSpace),
            "AddressSpace expected to be a dataclass"
        )
```

pydoc

Exibe `docstrings` ao acionar a buitin `help`.

```
>>> help(helpers.clean_network)
```

pydoc

```
Help on function clean_network in module pppipam.helpers:

clean_network(network_parameter: Union[str, ipaddress.IPv4Network, ipaddress.IPv6Network]) ->
    Process given parameter as a Network instance.

    If parameter results into a valid IPv4 or IPv6 network,
    it respectively returns IPv4Network or IPv6Network.
    Otherwise, returns None.

    >>> clean_network("invalid network")
    >>> clean_network("10.0.0.0/8")
    IPv4Network('10.0.0.0/8')
    >>> clean_network("fe80::/64")
    IPv6Network('fe80::/64')

    Args:
        network_parameter: value to be processed as an IP network.

    Returns:
        IPv4Network instance, IPv6Network instance or None.
```

doctest

- Fornece exemplo executável no REPL
- Diferente do propósito do unittest: apresenta exatamente o resultado esperado após execução

Exemplo de integração `unittest` e `doctest`

```
import doctest
import unittest

from pppipam import helpers, pppipam


def load_tests(loader, tests, ignore):
    """Base example provided in doctest documentation."""

    tests.addTests(doctest.DocTestSuite(helpers))
    tests.addTests(doctest.DocTestSuite(pppipam))
    return tests
```

Exceptions

```
class StrictSupernetError(Exception):
    """Error related to supernet missing or present."""
    pass

class SameDelegationAsNewError(Exception):
    """Attempt to insert already existing delegated network."""
    pass
```

Python Packaging User Guide

Python Software Foundation (US) | https://packaging.python.org

PyPA » Python Packaging User Guide »

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```

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pypa/sampleproject

GitHub, Inc. (US) | https://github.com/pypa/sampleproject

Search or jump to... / Pull requests Issues Marketplace Explore

pypa / sampleproject

Watch 90 | Star 1,866 | Fork 829

Code | Issues 13 | Pull requests 4 | Projects 0 | Wiki | Insights

A sample project that exists for PyPUG's "Tutorial on Packaging and Distributing Projects"

117 commits | 1 branch | 0 releases | 28 contributors | MIT

Branch: master | New pull request | Create new file | Upload files | Find file | Clone or download

di Merge pull request #74 from ncoghlan/patch-1 ... Latest commit 129382f on 6 Jun

data	add data_files example	4 years ago
sample	defer the topic of single-sourcing the version to the PPUG.	4 years ago
tests	have the tests we're including actually run and pass	3 years ago
.gitignore	have the tests we're including actually run and pass	3 years ago
.travis.yml	Test against 3.5 and 3.6	7 months ago
LICENSE.txt	Add a LICENSE.txt file	3 years ago
MANIFEST.in	Migrated README to Markdown (PEP 566)	4 months ago
README.md	Fix README links	3 months ago
setup.cfg	Removed confusing minutiae	3 months ago

Estrutura final usada no PPPIPAM

```
.
└── pppipam
    ├── CHANGELOG.rst
    ├── CONTRIBUTORS.rst
    ├── LICENSE
    ├── README.md
    ├── setup.py
    ├── setup.cfg
    ├── pppipam
    │   ├── __init__.py
    │   ├── helpers.py
    │   └── pppipam.py
    │   └── test_strictness.py
    .
    .
    .
```

Estrutura final usada no PPPIPAM

```
.
└── pppipam
    .
    .
    .
    └── tests
        ├── __init__.py
        ├── test_dataclass.py
        ├── test_description.py
        ├── test_helpers.py
        ├── test_pppipam_doctests.py
        └── test_strictness.py
```

Empacotamento

- Source distribution
- Wheels
  - Universal Wheels (Python 2 e 3)
  - Pure Python Wheels (Python somente 2 ou somente 3)
  - Platform Wheels (Linux, macOS, Windows, ...)

TestPyPI

https://test.pypi.org

You are using TestPyPI – a separate instance of the Python Package Index that allows you to try distribution tools and processes without affecting the real index.

Welcome back, ayharano

Test Python package publishing with the Test Python Package Index

Search projects

Or browse projects

25,835 projects 113,987 releases 142,452 files 33,724 users

python™ Package Index

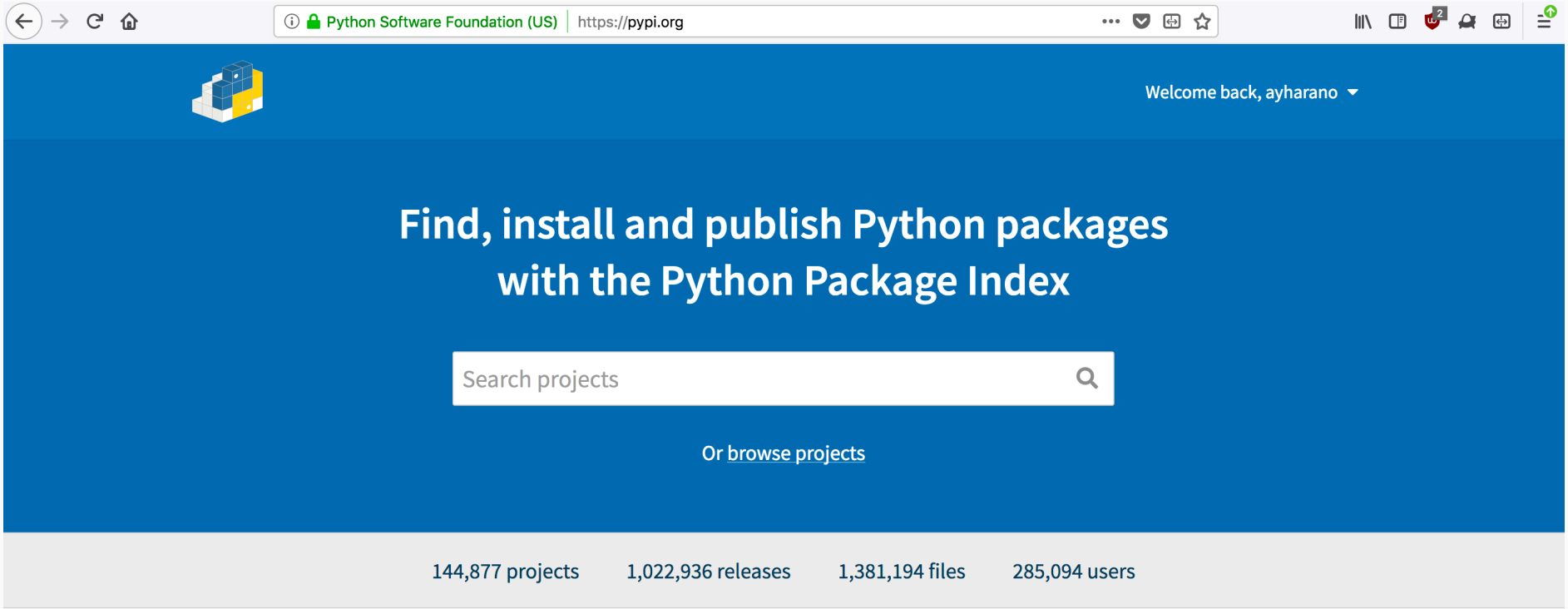
The Python Package Index (PyPI) is a repository of software for the Python programming language.

PyPI helps you find and install software developed and shared by the Python community. Learn about installing packages.

Package authors use PyPI to distribute their software. Learn how to package your Python code

```
$ python3 -m pip install \
  --index-url https://test.pypi.org/simple/ pppipam
Looking in indexes: https://test.pypi.org/simple/
Collecting pppipam
  Downloading https://test-files.pythonhosted.org/packages/.../pppipam-0.1.0-py3-none-any.whl
Installing collected packages: pppipam
Successfully installed pppipam-0.1.0
```

PyPI



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Package authors use PyPI to distribute their software. Learn how to package your Python code for PyPI.

PyPI

PyPI: `https://pypi.org/`

- Python Package Index (PyPI)
- Repositório padrão de software para Python

```
(.venv) pppipam y$ twine upload --sign dist/*
Uploading distributions to https://upload.pypi.org/legacy/
Enter your username: ayharano
Enter your password:
Signing pppipam-0.1.0-py3-none-any.whl
Uploading pppipam-0.1.0-py3-none-any.whl
100%|██████████| 15.0k/15.0k [00:02<00:00, 5.64kB/s]
Signing pppipam-0.1.0.tar.gz
Uploading pppipam-0.1.0.tar.gz
100%|██████████| 15.2k/15.2k [00:01<00:00, 10.3kB/s]
(.venv) pppipam y$
```

PPPIPAM

Python Software Foundation (US) | https://pypi.org/project/pppipam/ 67%

Search projects

Help Donate Log in Register

pppipam 0.1.0

```
pip install pppipam
```

Latest version

Last released: About 4 hours ago

Poor person's Python IP Address Manager

Navigation

- Project description
- Release history
- Download files

Project links

- Homepage
- Source
- Bug Reports

Statistics

GitHub statistics:

- **Stars:** 0
- **Forks:** 0
- **Open issues/PRs:** 0

View statistics for this project via Libraries.io, or by using Google BigQuery

Meta

License: MIT License

Project description

PPPIPAM: Poor Person's Python IP Address Manager

pypi v0.1.0

license

python 3.7

PPPIPAM is a distribution package to provide a single IP address space manager for both IPv4 and IPv6 as a Python module for developers.

Installation

PPPIPAM can be installed using `pip`. It requires Python 3.7.0+ to use.

```
$ pip install pppipam
```

Usage

```
>>> from pppipam import AddressSpace
```

Features

- Single address space manager for both IPv4 and IPv6 networks and addresses.
- Strict or loose address space description (if strict, must add delegated networks first).

```
$ pip install pppipam
Collecting pppipam
  Downloading https://files.pythonhosted.org/packages/.../pppi
Installing collected packages: pppipam
Successfully installed pppipam-0.1.0
```

```
$ python
Python 3.7.0 (default, Jun 29 2018, 23:55:57)
[Clang 9.1.0 (clang-902.0.39.2)] on darwin
Type "help", "copyright", "credits" or "license" for more information.
>>> from pppipam import AddressSpace
>>>
```

```
$ pip3 install pppipam

$ python3
>>> from pppipam import AddressSpace
>>>
```

Obrigado!

Alexandre Yukio Harano

alexandre@harano.net.br

https://alexandre.harano.net.br/

https://github.com/ayharano/pppipam
https://pypi.org/project/pppipam/
https://github.com/ayharano/just-python/