

ZeroVM Application Registry

Martin . Geisler@rackspace.com

ZeroVM Design Summit
University of Texas at San Antonio
January 2014

Introduction

To be successful as a platform, ZeroVM needs

- ▶ tools to make it **easy** to distribute applications
- ▶ **easy access** to already ported libraries
- ▶ central place for community to **rally** around

Introduction

To be successful as a platform, ZeroVM needs

- ▶ tools to make it **easy** to distribute applications
- ▶ **easy access** to already ported libraries
- ▶ central place for community to **rally** around

Building a ZeroVM registry will

- ▶ connect developers and users
- ▶ make application development easier

This will attract new developers!

Comprehensive T_EX Archive Network


CTAN

Comprehensive T_EX Archive Network

[Settings](#) [Help](#)

[Home](#) [Upload](#) [Browse](#) [Search](#)

Location: [CTAN](#) [Comprehensive T_EX Archive Network](#)



The Comprehensive T_EX Archive Network

The Comprehensive T_EX Archive Network (CTAN) is the central place for all kinds of material around T_EX. CTAN has currently [4625 packages](#). They have been contributed by [2158 authors](#). Most of the packages are free and can be downloaded and used immediately.

Search on CTAN

The contents of CTAN can be searched with full-text search. This search considers the description, the documentation, and the authors.

Did you know?

The topic [letterspace](#) in the T_EX Catalogue has 7 packages for change space between characters.

[more...](#)

Comprehensive Perl Archive Network



Comprehensive Perl Archive Network

YOU CAN NEVER HAVE TOO MANY PERL MODULES

[Home](#)[Modules](#)[Ports](#)[Perl Source](#)[FAQ](#)[Mirrors](#)[Search:](#)

Welcome to CPAN

The Comprehensive Perl Archive Network (CPAN) currently has [128,959 Perl modules](#) in 28,994 distributions, written by 11,170 authors, [mirrored](#) on 264 servers.

The archive has been online since October 1995 and is constantly growing.

Search CPAN via

- [metacpan.org](#)
- [search.cpan.org](#)

Recent Uploads

- [Acme-MetaSyntactic-legomarvelsuperheroes-0.04](#)
- [CryptX-0.019_3](#)
- [App-RecordStream-3.7.5](#)
- [Mail-POP3-3.05](#)
- [Net-Telnet-Gearman-0.05000](#)
- [Gearman-Driver-0.02008](#)
- [Data-Validate-WithYAML-0.15](#)
- [App-RecordStream-3.7.4](#)
- [File-ShareDir-Install-0.06](#)
- [Acme-Override-INET-0.004](#)
- [more...](#)

Getting Started

- [Installing Perl Modules](#)
- [Learn Perl](#)

Perl Resources

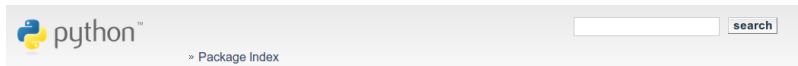
- [The Perl Programming language](#)
- [Perl Documentation](#)
- [Mailing Lists](#)
- [Perl FAQ](#)
- [Scripts Repository](#)

Yours Eclectically, The Self-Appointed Master Librarians (OOK?) of the CPAN.
© 1995-2010 Jarkko Hietaniemi. © 2011-2013 [Perl.org](#). All rights reserved. [Disclaimer](#).

Master mirror hosted by [YellowBot](#)®



Python Package Index



PACKAGE INDEX »

- Browse packages
- Package submission
- List trove classifiers
- List packages
- RSS (latest 40 updates)
- RSS (newest 40 packages)
- Python 3 Packages
- PyPI Tutorial
- PyPI Security
- PyPI Support
- PyPI Bug Reports
- PyPI Discussion
- PyPI Developer Info

ABOUT »

NEWS »

DOCUMENTATION »

DOWNLOAD »

COMMUNITY »

FOUNDATION »

CORE DEVELOPMENT »

LINKS »

PyPI - the Python Package Index

The **Python Package Index** is a repository of software for the Python programming language. There are currently **39142** packages here. To contact the PyPI admins, please use the [Support](#) or [Bug reports](#) links.

Package documentation is now at pythonhosted.org

Package documentation is hosted on its own domain, **pythonhosted.org** (it was at [packages.python.org](#) and that domain will still work and automatically redirect to the new documentation home.)

Get Packages

To use a package from this index either "`pip install package`" ([get pip](#)) or download, unpack and "`python setup.py install`" it. [Browse all packages](#) or use the search box above.

Package Authors




Submit packages with "`python setup.py upload`" (full [tutorial](#)). The index also [hosts package docs](#). You may also use [SSH](#) or the [web form](#). You must [register](#). Testing? Use [testpypi](#).

Not Logged In

[Login](#)

[Register](#)

[Lost Login?](#)

Use [OpenID](#)    

Status

[Nothing to report](#)

Infrastructure

To interoperate with the index use the [JSON](#), [OAuth](#), [XML-RPC](#) or [HTTP](#) interfaces. Use the [mirror infrastructure](#) to download even if the primary site is unavailable.

Updated	Package	Description
2014-01-17	Django-UserService 1.0.2	User abstraction and impersonation for Django
2014-01-17	AuthZ-Group 1.1.1	Group interface and implementations
2014-01-17	boilerpipy 0.2.1	Readability/Boilerpipe extractor in Python
2014-01-17	prom 0.9.24	An opinionated lightweight db orm for Postgres



RubyGems.org

your community gem host

[all gems](#)[sign in](#)[sign up](#)

2,547,329,826 downloads
of 69,005 gems cut since July 2009

Welcome to your community RubyGem host.
Find your gems easier, publish them faster, and have fun doing it.

LEARN

Install RubyGems 2.2.1
Ruby's premier packaging system

Browse the Guides
In depth explanations, tutorials, and references

Gem Specification
Your gem's interface to the world

SHARE

`gem update --system`
Update to the latest RubyGems version

`gem build foo.gemspec`
Build your gem

`gem push foo-1.0.0.gem`
Deploy your gem instantly

Operations

We would like to support basic operations:

- ▶ searching for packages
- ▶ browsing packages by category/tag/author/...
- ▶ downloading packages with dependencies
- ▶ uploading new packages

Architecture

We want to support two types of clients:

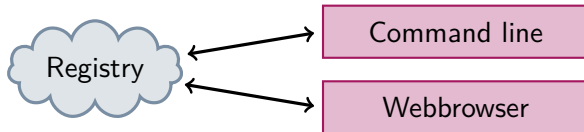
- ▶ command line client like `apt-get` or `pip`
- ▶ webbrowser interface

Architecture

We want to support two types of clients:

- ▶ command line client like `apt-get` or `pip`
- ▶ webbrowser interface

We want **single back-end** to handle both types of clients:



- ▶ RESTful API for clients
- ▶ simple, mostly static server — easy deployment!
- ▶ logic moved to rich clients — easy development!

Target Platform

We would like to show-case ZeroVM:

- ▶ registry deployed on Zebra: ZeroVM + Swift

Target Platform

We would like to show-case ZeroVM:

- ▶ registry deployed on Zebra: ZeroVM + Swift

Swift can serve read-only data directly:

- ▶ package data
- ▶ extracted meta data
- ▶ indexes used by clients

Target Platform

We would like to show-case ZeroVM:

- ▶ registry deployed on Zebra: ZeroVM + Swift

Swift can serve read-only data directly:

- ▶ package data
- ▶ extracted meta data
- ▶ indexes used by clients

Server-side ZeroVM is needed for write operations:

- ▶ user registration and authentication
- ▶ accepting package uploads
- ▶ index generation?

Avoiding Explicit Server-Side Indexes

Use the Swift containers as the index?

```
PUT /v1/registry/name/version/data.zar  
...package data...
```

```
PUT /v1/registry/name/version/meta.json  
...meta data...
```

Avoiding Explicit Server-Side Indexes

Use the Swift containers as the index?

```
PUT /v1/registry/name/version/data.zar  
...package data...
```

```
PUT /v1/registry/name/version/meta.json  
...meta data...
```

Getting package list is now easy:

```
GET /v1/registry?format=json&path=
```

Avoiding Explicit Server-Side Indexes

Use the Swift containers as the index?

```
PUT /v1/registry/name/version/data.zar  
...package data...
```

```
PUT /v1/registry/name/version/meta.json  
...meta data...
```

Getting package list is now easy:

```
GET /v1/registry?format=json&path=
```

Clients can now retrieve versions, meta data and packages:

```
GET /v1/registry?format=json&path=name  
GET /v1/registry/name/version/meta.json  
GET /v1/registry/name/version/data.zar
```


Authentication

Simple permission scheme:

- ▶ packages can of course be downloaded without authentication
- ▶ users must authenticate themselves before they can upload
- ▶ authentication via OAuth?

Thank you!

Thank you!

Questions?