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# **Pacifica UniqueID Documentation**

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The Pacifica UniqueID service provides unique auto-incrementing integers to the Pacifica Core services.



# CHAPTER 1

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## Installation

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The Pacifica software is available through PyPi so creating a virtual environment to install is what is shown below. Please keep in mind compatibility with the Pacifica Core services.

### 1.1 Installation in Virtual Environment

These installation instructions are intended to work on both Windows, Linux, and Mac platforms. Please keep that in mind when following the instructions.

Please install the appropriate tested version of Python for maximum chance of success.

#### 1.1.1 Linux and Mac Installation

```
mkdir ~/.virtualenvs
python -m virtualenv ~/.virtualenvs/pacifica
. ~/.virtualenvs/pacifica/bin/activate
pip install pacifica-uniqueid
```

#### 1.1.2 Windows Installation

This is done using PowerShell. Please do not use Batch Command.

```
mkdir "$Env:LOCALAPPDATA\virtualenvs"
python.exe -m virtualenv "$Env:LOCALAPPDATA\virtualenvs\pacifica"
& "$Env:LOCALAPPDATA\virtualenvs\pacifica\Scripts\activate.ps1"
pip install pacifica-uniqueid
```



# CHAPTER 2

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## Configuration

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The Pacifica Core services require two configuration files. The REST API utilizes [CherryPy](#) and review of their [configuration documentation](#) is recommended. The service configuration file is a INI formatted file containing configuration for database connections.

### 2.1 CherryPy Configuration File

An example of UniqueID server CherryPy configuration:

```
[global]
log.screen: True
log.access_file: 'access.log'
log.error_file: 'error.log'
server.socket_host: '0.0.0.0'
server.socket_port: 8051

[/>
request.dispatch: cherrypy.dispatch.MethodDispatcher()
tools.response_headers.on: True
tools.response_headers.headers: [('Content-Type', 'application/json')]
```

### 2.2 Service Configuration File

The service configuration is an INI file and an example is as follows:

```
[database]
; This section contains database connection configuration

; peewee_url is defined as the URL PeeWee can consume.
; http://docs.peewee-orm.com/en/latest/peewee/database.html#connecting-using-a-
˓→database-url
```

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```
peewee_url = sqliteext:///db.sqlite3

; connect_attempts are the number of times the service will attempt to
; connect to the database if unavailable.
connect_attempts = 10

; connect_wait are the number of seconds the service will wait between
; connection attempts until a successful connection to the database.
connect_wait = 20
```

# CHAPTER 3

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## Example Usage

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The usage of this API is through REST endpoint /getid.

### 3.1 The API

Get a range of unique IDs for a given mode.

```
$ curl 'http://localhost:8051/getid?range=10&mode=file'  
{"endIndex": 9, "startIndex": 0}
```

Select a different mode to get different unique IDs. If a mode is currently unsupported by the database, a new row will be started to support it.

```
$ curl 'http://localhost:8000/getid?range=10&mode=file'  
{"endIndex": 9, "startIndex": 0}  
$ curl 'http://localhost:8000/getid?range=10&mode=upload'  
{"endIndex": 9, "startIndex": 0}
```



# CHAPTER 4

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## UniqueID Python Module

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### 4.1 Configuration Python Module

Configuration reading and validation module.

```
pacifica.uniqueid.config.get_config()  
    Return the ConfigParser object with defaults set.
```

### 4.2 Globals Python Module

Global configuration options expressed in environment variables.

### 4.3 ORM Python Module

ORM for index server.

```
class pacifica.uniqueid.orm.OrmSync  
    Special module for syncing the orm.
```

This module should incorporate a schema migration strategy.

The supported versions migrating forward must be in a versions array containing tuples for major and minor versions.

The version tuples are directly translated to method names in the `OrmSync` class for the update between those versions.

Example Version Control:

```
class OrmSync:  
    versions = [  
        (0, 1),  
        (0, 2),  
        (1, 0),  
        (1, 1)  
    ]  
    def update_0_1_to_0_2():  
        pass  
    def update_0_2_to_1_0():  
        pass
```

The body of an update method should follow peewee migration practices. <http://docs.peewee-orm.com/en/latest/peewee/playhouse.html#migrate>

### \_\_weakref\_\_

list of weak references to the object (if defined)

### **static dbconn\_blocking()**

Wait for the db connection.

### **classmethod update\_0\_0\_to\_1\_0()**

Update by adding the boolean column.

### **classmethod update\_tables()**

Update the database to the current version.

## **class pacifica.uniqueid.orm.UniqueIndex(\*args, \*\*kwargs)**

Auto-generated by pwiz maps a python record to a mysql table.

### **DoesNotExist**

alias of UniqueIndexDoesNotExist

### **classmethod atomic()**

Get the atomic context or decorator.

### **classmethod database\_close()**

Close the database connection.

Closing already closed database throws an error so catch it and continue on.

### **classmethod database\_connect()**

Make sure database is connected.

Trying to connect a second time doesn't cause any problems.

## **class pacifica.uniqueid.orm.UniqueIndexBase(\*args, \*\*kwargs)**

UniqueIndex base model for database setup.

### **DoesNotExist**

alias of UniqueIndexBaseDoesNotExist

## **class pacifica.uniqueid.orm.UniqueIndexSystem(\*args, \*\*kwargs)**

UniqueIndex Schema Version Model.

### **DoesNotExist**

alias of UniqueIndexSystemDoesNotExist

### **classmethod get\_or\_create\_version()**

Set or create the current version of the schema.

### **classmethod get\_version()**

Get the current version as a tuple.

```
classmethod is_equal()
    Check to see if schema version matches code version.

classmethod is_safe()
    Check to see if the schema version is safe for the code.

pacifica.uniqueid.orm.update_index(id_range, id_mode)
    Update the index for a mode and returns a unique start and stop index.
```

## 4.4 REST Python Module

UniqueID CherryPy Module.

```
class pacifica.uniqueid.rest.GetID
    CherryPy GetID object.

    static GET(**kwargs)
        Get an id range for the mode.

    __weakref__
        list of weak references to the object (if defined)

class pacifica.uniqueid.rest.Root
    CherryPy Root object.

    __weakref__
        list of weak references to the object (if defined)

pacifica.uniqueid.rest.error_page_default(**kwargs)
    The default error page should always enforce json.
```

## 4.5 WSGI Python Module

The WSGI interface module for uniqueid. This is the uniqueid module.



# CHAPTER 5

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