base10

Release 0.6.3

Jun 28, 2018

Contents

Release v0.6.3. (*Changelog*)

Base10 is a metrics abstractoin layer for linking multiple metrics source and stores. It also simplifies metric creation and proxying.

CHAPTER 1

Guide

1.1 Installation

1.1.1 From PyPi

```
$ pip install base10
```

1.1.2 From source

Base10 is developed on Github.

You can clone the public repo:

```
$ git clone https://github.com/mattdavis90/base10.git
```

Once you have the source, you can install it into your site-packages with

```
$ python setup.py install
```

1.2 Usage

Use `MetricHelper` to aid *`Metric`* creation, and `MetricHandler` to aid reading and writing metrics.

1.2.1 Metric Generator

This shows a simple metric generator that writes a JSON formatted metric, containing a random value, to RabbitMQ.

```
from random import random
from time import sleep

from base10 import MetricHelper, MetricHandler
from base10.dialects import JSONDialect
from base10.transports import RabbitMQWriter

if __name__ == '__main__':

    class MyMetric(MetricHelper):
        _name = 'metric'

        _fields = [
            'value',
        ]

        _metadata = [
            'hostname',
        ]

    class JSON(MetricHandler):
        _dialect = JSONDialect()
        _writer = RabbitMQWriter(
            broker='127.0.0.1', exchange='amq.topic', topic='metrics.example')

    json = JSON()

    while True:
        json.write(MyMetric(value=random(), hostname='test'))
        sleep(1)
```

1.2.2 Metric Proxy

This shows a simple proxy that reads JSON formatted metrics from RabbitMQ and outputs them in InfluxDB format over a UDP socket.

```
from base10 import MetricHandler
from base10.dialects import JSONDialect, SplunkDialect  #InfluxDBDialect
from base10.transports import RabbitMQReader, UDPWriter

if __name__ == '__main__':

    class RabbitMQ(MetricHandler):
        _dialect = JSONDialect()
        _reader = RabbitMQReader(
            broker='127.0.0.1', exchange='amq.topic', routing_key='metrics.#')

    class InfluxDB(MetricHandler):
        _dialect = SplunkDialect()  #InfluxDBDialect()
        _writer = UDPWriter(host='127.0.0.1', port=10000)

    rabbitmq = RabbitMQ()
    influxdb = InfluxDB()

    for metric in rabbitmq.read():
        influxdb.write(metric)
```

1.3 API Reference

1.3.1 Base Classes

class base10.base.**Dialect**(**args*, ***kwargs*)

__init__(**args*, ***kwargs*)
x.__init__(...) initializes x; see help(type(x)) for signature

from_string(*string*)

to_string(*metric*)

class base10.base.**Metric**(*name*, *fields*, *metadata*, ***kwargs*)
Generic Metric class

__init__(*name*, *fields*, *metadata*, ***kwargs*)
Create a new Metric

Parameters

- **name** – Name of the metric.
- **fields** – List of field names to include.
- **metadata** – List of metadata field names to include.
- ****kwargs** – Keyword values for the fields and metadata.

fields
Get Metric fields

metadata
Get Metric metadata

name
Get Metric name

values
Get Metric values

class base10.base.**Reader**(**args*, ***kwargs*)

__init__(**args*, ***kwargs*)
x.__init__(...) initializes x; see help(type(x)) for signature

read()

class base10.base.**Writer**(**args*, ***kwargs*)

__init__(**args*, ***kwargs*)
x.__init__(...) initializes x; see help(type(x)) for signature

write(*string*)

1.3.2 Helper CLasses

class base10.helpers.**MetricHelper**(***kwargs*)

1.3.3 Exceptions

exception base10.exceptions.**Base10Error**

exception base10.exceptions.**DialectError**

exception base10.exceptions.**TransportError**

1.3.4 Dialects

class base10.dialects.json_dialect.**JSONDialect**(**args*, ***kwargs*)

{ name: 'cpu_usage', fields: {
user: 0.2, free: 0.75
}, metadata: {
hostname: 'host-1'
}, timestamp: 1489478831
}

1.3.5 Transports

CHAPTER 2

Project Info

2.1 Changelog

2.1.1 0.5.3

- **Removed:** Python2.6 support (It didn't work anyway)

2.1.2 0.5.2

- **Added:** base10.__version__

2.1.3 0.5.1 - README on PyPi

- **Changed:** README on PyPi (Again!)

2.1.4 0.5.0 - Testing, Docs, Coverage

- **Changed:** Semantic versioning
- **Changed:** Testing using Travis-CI
- **Changed:** Docs on Read the Docs
- **Changed:** Coverage on Coveralls

2.1.5 0.5 - Splunk Support

- **Added:** Splunk Dialect (Write-only)
- **Changed:** RabbitMQ kwarg pass-through

- **Changed:** Faster time() function

2.1.6 0.4 - README on PyPi

- **Changed:** Added README to PyPi

2.1.7 0.3 - RabbitMQ Support

- **Added:** RabbitMQ Transport
- **Changed:** Nanosecond timestamp
- **Changed:** Breaking changes to API

2.1.8 0.2 - Influx and UDP Support

- **Added:** InfluxDB Dialect (Write-only)
- **Added:** UDP Transport (Send-only)
- **Changed:** Millisecond timestamp
- **Changed:** Breaking changes to API

2.1.9 0.1 - Initial Release

- **Added:** File Transport
- **Added:** JSON Dialect

2.2 License

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