mysolr Documentation

Release 0.6

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mysolr was born to be a fast and easy-to-use client for Apache Solr's API and because existing Python clients didn't fulfill these conditions.

Since version 0.5 mysolr supports Python 3 except concurrent search feature.

CHAPTER ONE

BASIC USAGE

```python
from mysolr import Solr

# Default connection to localhost:8080
solr = Solr()

# All solr params are supported!
query = {'q' : '*:*', 'facet' : 'true', 'facet.field' : 'foo'}
response = solr.search(**query)

# do stuff with documents
for document in response.documents:
    # modify field 'foo'
    document['foo'] = 'bar'

# update index with modified documents
solr.update(response.documents, commit=True)
```

CHAPTER

TWO

CONTENTS

2.1 Installation

To install mysolr from Pypi:

```
pip install mysolr
```

From source code:

```
python setup.py install
```

2.1.1 Dependencies

Mysolr uses requests module for sending HTTP requests. So, if you install mysolr from source code you have to install it.

2.2 User Guide

2.2.1 Connecting to Solr

Use mysolr.Solr object to connect to a Solr instance.

```
from mysolr import Solr

# Default connection. Connecting to http://localhost:8080/solr/
solr = Solr()

# Custom connection
solr = Solr('http://foo.bar:9090/solr/')
```

2.2.2 Queriying to Solr

Making a query to Solr is very easy, just call search method with your query.

```
from mysolr import Solr

solr = Solr()
# Search for all documents
```

```
response = solr.search(q='*:*')
# Get documents
documents = response.documents
```

Besides, all available Solr query params are supported. So making a query using pagination would be as simple as

```
from mysolr import Solr

solr = Solr()

# Get 10 documents
response = solr.search(q='*:*', rows=10, start=0)
```

2.2.3 Cursors

The typical concept of cursor in relational databases is also implemented in mysolr.

```
from mysolr import Solr

solr = Solr()

cursor = solr.search_cursor(q='*:*')

# Get all the documents
for response in cursor.fetch(100):
    # Do stuff with the current 100 documents
    pass
```

2.2.4 Facets

This is a query example using facets with mysolr.

```
from mysolr import Solr

solr = Solr()
# Search for all documents facets by field foo
query = {'q' : '*:*', 'facet' : 'true', 'facet.field' : 'foo'}
response = solr.search(**query)
# Get documents
documents = response.documents
# Get facets
facets = response.facets
```

Facets are parsed and can be accessed by retrieving `facets` attribute from the SolrResponse object. Facets look like this:

```
{
    'facet_dates': {},
    'facet_fields': {'foo': {'value1': 2, 'value2': 2}},
    'facet_queries': {},
    'facet_ranges': {}
}
```

2.2.5 Spellchecker

This is an example of a query that uses the spellcheck component.

```
from mysolr import Solr

solr = Solr()

# Spell check query
query = {
    'q' : 'helo wold',
    'spellcheck' : 'true',
    'spellcheck.collate': 'true',
    'spellcheck.build':'true'
}

response = solr.search(**query)
```

Spellchecker results are parsed and can be accessed by getting the `spellcheck` attribute from the SolrResponse object.:

```
{'collation': 'Hello world',
'correctlySpelled': False,
'suggestions': {
                'helo': {'endOffset': 4,
                             'numFound': 1,
                             'origFreq': 0,
                             'startOffset': 0,
                             'suggestion': [{'freq': 14,
                                             'word': 'hello'}]},
                'wold': {'endOffset': 9,
                         'numFound': 1,
                         'origFreq': 0,
                         'startOffset': 5,
                         'suggestion': [{'freq': 14, 'word': 'world'}]}}}
```

2.2.6 Stats

`stats` attribute is just a shortcut to stats result. It is not parsed and has the format sent by Solr.

2.2.7 Highlighting

Like stats, `highlighting` is just a shortcut.

2.2.8 Concurrent searchs

As mysolr is using requests, it is posible to make concurrent queries thanks to requests.async

```
from mysolr import Solr
solr = Solr()
# queries
queries = [
    {
        'q' : '*:*'
    },
```

```
    {
        'q' : 'foo:bar'
    }
]

# using 10 threads
responses = solr.async_search(queries, size=10)
```

Using concurrent searchs

It's needed Gevent module in order to use requests.async, so if you need concurrent searchs, you must install Gevent

2.2.9 Indexing documents

```
from mysolr import Solr

solr = Solr()

# Create documents
documents = [
    {'id' : 1,
     'field1' : 'foo'
    },
    {'id' : 2,
     'field2' : 'bar'
    }
]
# Index using json is faster!
solr.update(documents, 'json', commit=False)

# Manual commit
solr.commit()
```

2.3 Recipes

2.3.1 Solr backup

How to copy all documents from one solr server to another.

```
from mysolr import Solr

PACKET_SIZE = 5000

solr_source = Solr('http://server1:8080/solr/')
solr_target = Solr('http://server2:8080/solr/')

# Get the number of documents of the source index
n_documents = solr_source.search(q='*:*', rows=0).total_results

for start in range(0, n_documents, PACKET_SIZE):
    resp = solr_source.search(q='*:*', rows=PACKET_SIZE, start=start)
    source_docs = resp.documents
    solr_target.update(source_docs)
```

2.4 Classes

2.4.1 Solr class

class `mysolr.Solr`(*base_url='http://localhost:8080/solr/'*)

Acts as an easy-to-use interface to Solr.

`async_search`(*queries*, *size=10*, *resource='select'*)

Asynchronous search using async module from requests.

Parameters

- **queries** – List of queries. Each query is a dictionary containing any of the available Solr query parameters described in http://wiki.apache.org/solr/CommonQueryParameters. 'q' is a mandatory parameter.
- **size** – Size of threadpool
- **resource** – Request dispatcher. 'select' by default.

`commit`(*wait_flush=True*, *wait_searcher=True*, *expunge_deletes=False*)

Sends a commit message to Solr.

Parameters

- **wait_flush** – Block until index changes are flushed to disk (default is True).
- **wait_searcher** – Block until a new searcher is opened and registered as the main query searcher, making the changes visible (default is True).
- **expunge_deletes** – Merge segments with deletes away (default is False)

`delete_by_key`(*identifier*, *commit=True*)

Sends an ID delete message to Solr.

Parameters **commit** – If True, sends a commit message after the operation is executed.

`delete_by_query`(*query*, *commit=True*)

Sends a query delete message to Solr.

Parameters **commit** – If True, sends a commit message after the operation is executed.

`optimize`(*wait_flush=True*, *wait_searcher=True*, *max_segments=1*)

Sends an optimize message to Solr.

Parameters

- **wait_flush** – Block until index changes are flushed to disk (default is True)
- **wait_searcher** – Block until a new searcher is opened and registered as the main query searcher, making the changes visible (default is True)
- **max_segments** – Optimizes down to at most this number of segments (default is 1)

`rollback`()

Sends a rollback message to Solr server.

`search`(*resource='select'*, ***kwargs*)

Queries Solr with the given kwargs and returns a SolrResponse object.

Parameters

- **resource** – Request dispatcher. 'select' by default.

- ****kwargs** – Dictionary containing any of the available Solr query parameters described in http://wiki.apache.org/solr/CommonQueryParameters. 'q' is a mandatory parameter.

search_cursor (*resource='select'*, ***kwargs*)

update (*documents*, *input_type='json'*, *commit=True*)
Sends an update/add message to add the array of hashes(documents) to Solr.

Parameters

- **documents** – A list of solr-compatible documents to index. You should use unicode strings for text/string fields.
- **input_type** – The format which documents are sent. Remember that json is not supported until version 3.
- **commit** – If True, sends a commit message after the operation is executed.

2.4.2 SolrResponse class

class mysolr.**SolrResponse** (*solr_response*)
Parse solr response and make it accesible.

documents = None
Documents list.

facets = None
Facets parsed as a OrderedDict (Order matters).

highlighting = None
Shorcut to highlighting result

qtime = None
Query time.

raw_response = None
Solr full response.

spellcheck = None
Spellcheck result parsed into a more readable object.

start = None
Offset.

stats = None
Shorcut to stats resuts

status = None
Response status.

total_results = None
Number of results.

url = None
Solr query URL

2.4.3 Cursor class

class mysolr.**Cursor** (*url*, *query*)
Implements the concept of cursor in relational databases

fetch (*rows=None*)
Generator method that grabs all the documents in bulk sets of 'rows' documents

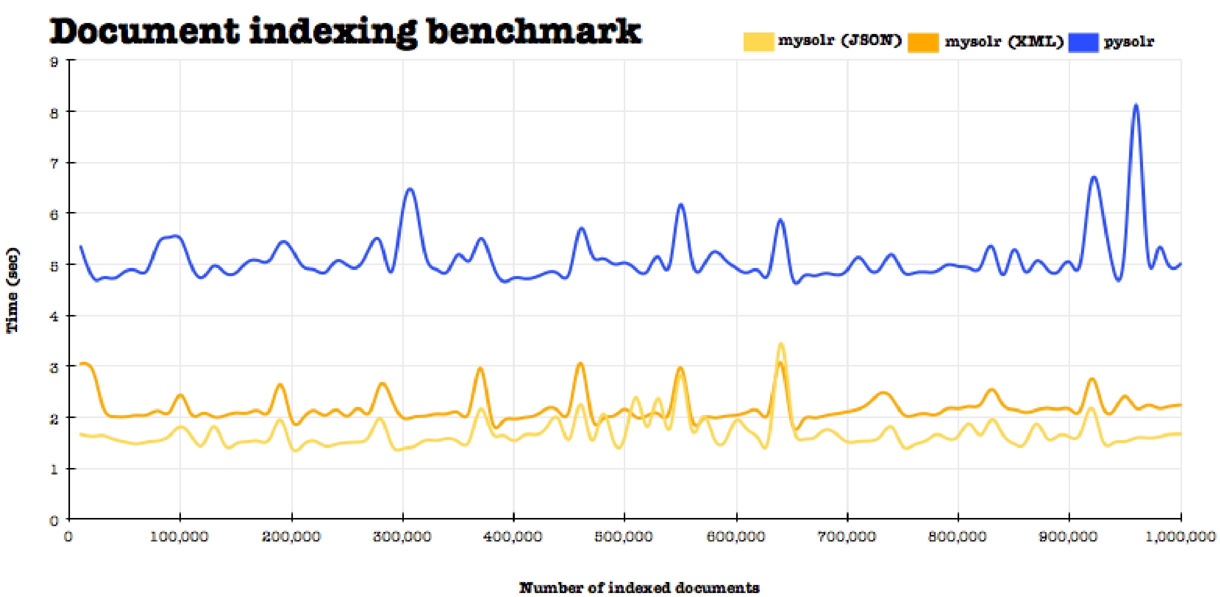
Parameters rows – number of rows for each request

2.5 Benchmark

One of the main goals of mysolr is to be the fastest python client of Solr. In this section you can see the performance of mysolr in different situations.

2.5.1 Indexing

The picture below is a comparison between mysolr and other clients at indexing time.



CHAPTER

THREE

REFERENCES

We would like to thank the following developers their work and inspiration:

- The Apache Solr 's committers
- Kenneth Reitz, Requests creator

CHAPTER

FOUR

RELATED PROJECTS

Other Python projects Apache Solr related:

- solrpy
- pysolr
- djangosolr

PYTHON MODULE INDEX

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