

Couchbase and Rails

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COUCHBASE



What is Couchbase

Simple. Fast. Elastic.

Easy Scalability

Grow cluster without application changes, without downtime



Bonanza!

Ronanza!

Bonanza!

300725

Simple. Fast. Elastic.

Consistent High Performance

Sub-millisecond read/write response & high throughput



Simple. Fast. Elastic.

Always On 24x365

No downtime for software upgrades, hardware maintenance, etc



Simple. Fast. Elastic.

Flexible Data Model

JSON document model with no fixed schema



gem i couchbase

Basic K/V Operations

```
Couchbase.bucket.incr("user:{id}:hits", :initial => 1)
Couchbase.bucket.set("user:{id}:ip", "192.0.43.10")
Couchbase.bucket.get("user:{id}:token", :ttl => 1.day)
```

Rails Cache Store

```
config.cache_store = :couchbase_store,  
                    :bucket => 'cache',  
                    :expires_in => 1.hour
```

Rails Session Store

```
config.session_store :couchbase_store,  
                     :namespace => "session:",  
                     :couchbase => {  
                         :bucket => 'sessions',  
                         :default_format => :json  
                     }
```

gem i couchbase-model

Generate Configuration

```
$ rails generate couchbase:config  
      create config/couchbase.yml
```

config/couchbase.yml

```
common: &common
  node_list:
    - example.com:8091
    - example.org:8091
    - example.net:8091
  username:
  password:

development:
  <<: *common
  bucket: example_development

production:
  <<: *common
  bucket: example_test
```

Modeling

```
class Beer < Couchbase::Model
  attribute :name
  attribute :abv, :default => 0
  attribute :ibu, :default => 0
  attribute :category

  belongs_to :brewery

  view :all, :limit => 31

  before_save do |doc|
    doc.abv = doc.abv.to_f
    doc.ibu = doc.ibu.to_f
  end
end
```

Views: Generator

```
$ rails generate couchbase:view beer avg_by_category  
create  app/models/beer/avg_by_category/map.js  
create  app/models/beer/avg_by_category/reduce.js
```

Views: Map

```
function(doc, meta) {  
  if (doc.type == "beer" && doc.category && doc.abv > 0) {  
    emit(doc.category, doc.abv);  
  }  
}
```

Views: Reduce

```
function (keys, values, rereduce) {  
    var ret = {sum: 0, count: 0};  
    if (rereduce) {  
        for (var i = 0; i < values.length; ++i) {  
            ret.sum += values[i].sum;  
            ret.count += values[i].count;  
        }  
    } else {  
        ret.sum = sum(values);  
        ret.count = values.length;  
    }  
    ret.avg = ret.sum / ret.count;  
    return ret;  
}
```

Views: Model

```
class Beer < Couchbase::Model  
  ...  
  
  view :avg_by_category, :group => true,  
        :include_docs => false  
  
  ...  
end
```

Views: Execution

```
001:0> Beer.avg_by_category.each do |beer|
002:1*   printf("%s: %.2f\n", beer.key, beer.value["avg"])
003:1> end
Belgian and French Ale: 7.39
British Ale: 6.93
German Ale: 5.67
German Lager: 6.22
Irish Ale: 5.94
North American Ale: 6.79
North American Lager: 4.97
Other Lager: 4.55
Other Style: 5.82
nil
```

Links

- couchbase gem sources
<https://github.com/couchbase/couchbase-ruby-client>
- couchbase issue tracker
<http://couchbase.com/issues/browse/RCBC>
- couchbase-model gem sources
<https://github.com/couchbase/couchbase-ruby-model>
- demo rails application
<https://github.com/couchbaselabs/couchbase-beer.rb>

And Even More

Query your geo data

[http://couchbase.com/docs/couchbase-manual-2.0/
couchbase-views-writing-geo.html](http://couchbase.com/docs/couchbase-manual-2.0/couchbase-views-writing-geo.html)

```
function(doc, meta) {  
    if (doc.geo && doc.geo.lng && doc.geo.lat && doc.name) {  
        var key = {type: "Point",  
                   coordinates: [doc.geo.lng, doc.geo.lat]};  
        var val = {name: doc.name, geo: doc.geo};  
        emit(key, val);  
    }  
}
```

Rich queries with ElasticSearch

<http://couchbase.com/docs/couchbase-elasticsearch/>

Thank you
Questions?