Breizhcamp - Nosql - Ruby

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Depuis bientôt 5 ans

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Chef de projet technique

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http ://www.breizhcamp.org/

Cloud et NoSQL

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http ://www.rennesonrails.com/
Coding Dojo & Confs

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http ://www.granit.org/
Forum Graphotech Cloud

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Plan

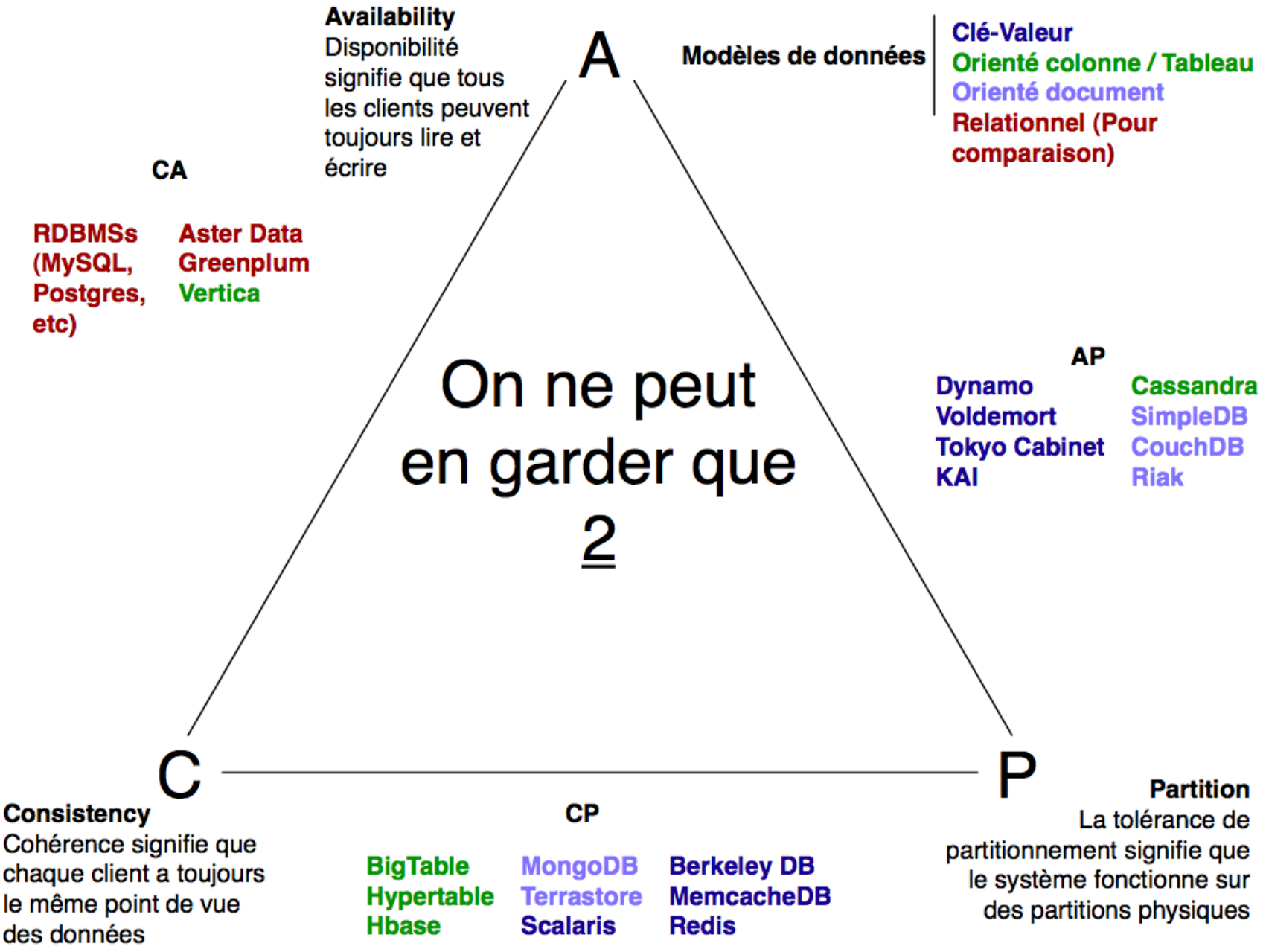
Qui connaît ?

- NoSQL
  - SQL
  - Clé/valeur
  - Document
- Ruby On Rails
  - Ruby
  - Rails

NoSQL

Not Only SQL

Choix du moteur



Ruby & Rails

- Ruby
  - Plusieurs VM Ruby (MRI, JRuby, MacRuby, Rubinus)
  - 24,898 gems (en juin 2011)
  - +185 000 projets Ruby sur Github
- Rails
  - DRY
  - Convention over Configuration
  - MVC, migrations, Active Record, etc

Ruby On Rails - i18n

```
$ cat config/locales/fr.yml

fr:
  listing_tickets: "Liste des tickets"
  name: "Nom"
  unknown: "Inconnu"
  back: "Retour"
  are_you_sure: "Etes-vous sur ?"
  editing_ticket: "Edition du ticket"

$ grep listing_tickets app/views/tickets/index.html
<h1><%= t('listing_tickets') %></h1>
```

Ruby On Rails - generators

```
$ rails generate model ticket name:string
  description:text
$ cat db/migrate/20110602142024_create_tickets.rb
```

```
class CreateTickets < ActiveRecord::Migration
  def change
    create_table :tickets do |t|
      t.string :name
      t.text :description

      t.timestamps
    end
  end
end
```

Ruby On Rails - Active Record

```
$ cat app/models/ticket.rb
class Ticket < ActiveRecord::Base
  validates_presence_of :name
  validates_presence_of :status
end

$ rake db:migrate
-- create_table("tickets", {:force=>true})
   -> 0.0696s
```

DB -> Model -> Controller -> Vue

Redis

- Manipulation de clés / valeurs
- Commandes simples
- Valeurs : string, list, set, sorted set, hashes
- Expiration des clés possible
- Utilisation : cache, session, compteurs, queue

Redis exemples

Clé/valeur
SET key "value"
GET key
DEL key
INCR key
EXPIRE key 5
EXPIREAT key <timestp>
TTL key

List
LPUSH key 1
LRANGE key 0 -1
RPOP key
LLEN key
LTRIM key 0 1

Sets
SADD key 1
SMEMBERS key
SISMEMBER key 2
SRANDMEMBER key
SREM key 3

Redis avec Ruby On Rails - backend

Ajout de "gem 'redis'" dans le Gemfile

```
$ cat config/initializers/i18n_backend.rb

I18n.backend = I18n::Backend::KeyValue.new(
  Redis.new)

$ cat config/initializers/i18n_backend.rb

TRANSLATION_STORE = Redis.new
I18n.backend = I18n::Backend::Chain.new(
  I18n::Backend::KeyValue.new(TRANSLATION_STORE),
  I18n.backend)
```

Redis avec Ruby On Rails - frontend

```
$ cat app/controllers/translations_controller.rb
```

```ruby
class TranslationsController < ApplicationController
  def index
    @translations = TRANSLATION_STORE
  end

  def create
    I18n.backend.store_translations(params[:locale],
      {params[:key] => params[:value]}, :escape => false)
    redirect_to translations_url,
      :notice => "Added translations"
  end
end
```

Redis avec Ruby On Rails - hack ROR 3.1 rc1 1/3

```
$ cat config/environment.rb
```

```ruby
# Load the rails application
require File.expand_path('../application', __FILE__)

module I18n
 module Backend
  class KeyValue
   module Implementation
    def store_translations(locale, data, options = {})
       #@store[key] = ActiveSupport::JSON.encode(value) unless
       @store[key] = ActiveSupport::JSON.encode([value]) unles
      end
    end
   end
  end
 end
end
```

Redis avec Ruby On Rails - hack ROR 3.1 rc1 2/3

```ruby
module I18n
 module Backend
  class KeyValue
   module Implementation
   protected
    def lookup(locale, key, scope = [], options = {})
     #value = ActiveSupport::JSON.decode(value) if value
     value = ActiveSupport::JSON.decode(value)[0] if value
    end
   end
  end
 end
end

# Initialize the rails application
Tickets::Application.initialize!
```

Redis avec Ruby On Rails - hack ROR 3.1 rc1 3/3

```ruby
module I18n
  module Backend
    class KeyValue
      module Implementation
        def store_translations(locale, data, options = {})
          escape = options.fetch(:escape, true)
          flatten_translations(locale, data, escape, @subtrees).each do |key, value|
            key = "#{locale}.#{key}"

            case value
            when Hash
              if @subtrees && (old_value = @store[key])
                old_value = ActiveSupport::JSON.decode(old_value)
                value = old_value.deep_symbolize_keys.deep_merge!(value) if old_value.is_a?(Hash)
              end
            when Proc
              raise "Key-value stores cannot handle procs"
            end

            #@store[key] = ActiveSupport::JSON.encode(value) unless value.is_a?(Symbol)
            @store[key] = ActiveSupport::JSON.encode([value]) unless value.is_a?(Symbol)
          end
        end

      protected

        def lookup(locale, key, scope = [], options = {})
          key   = normalize_flat_keys(locale, key, scope, options[:separator])
          value = @store["#{locale}.#{key}"]
          #value = ActiveSupport::JSON.decode(value) if value
          value = ActiveSupport::JSON.decode(value)[0] if value
          value.is_a?(Hash) ? value.deep_symbolize_keys : value
        end
      end
    end
  end
end
```

MongoDB

- Base orientée documents (BSON)
- Un système de requêtes évolué
- Scalable
- Hautes performances
- Sans schéma

MongoDB exemples 1/2

```
show dbs
use db_name
show collections

db.foo.find();

db.foo.save({ name : "sara"});

person = db.people.findOne( { name : "sara" } );
person.city = "New York";
db.people.save( person );
```

MongoDB exemples 2/2

```
db.foo.drop()

db.foo.remove()
db.foo.remove( { name : "sara" } )

db.foo.getIndexKeys()
db.foo.ensureIndex({ _field_ : 1 })
```

Avec Rails - config

config/initializers/mongo.rb

```
MongoMapper.connection = Mongo::Connection.new('localhost', 27
MongoMapper.database = "#myapp-#{Rails.env}"

if defined?(PhusionPassenger)
   PhusionPassenger.on_event(:starting_worker_process) do |for
     MongoMapper.connection.connect if forked
   end
end
```

Avec Rails - model

app/models/note.rb

```
class Note
  include MongoMapper::Document

  key :title, String, :required => true
  key :body, String
end
```

Avec Rails - à la place d'Active Record

- Pas de migration du schéma de la BDD
- Tolérance du modèle

Conclusion

Conclusion

Questions

Questions ?

Sources

- http ://blog.nahurst.com/visual-guide-to-nosql-systems
- http ://nosql-database.org/
- http ://www.camilleroux.com/2010/08/16/pourquoi-ruby-on-rails-est-genial-1-sur-2/
- http ://railscasts.com/episodes/256-i18n-backends
- http ://www.slideshare.net/karmi/redis-the-ak47-of-postrelational-databases

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