



Developing Java EE 6 MongoDB Applications

By Shekhar Gulati

Promo Code – **JUDCON.IN**

About Me ~ Shekhar Gulati

- OpenShift Evangelist at Red Hat
- Hands on developer
- Speaker
- Writer and Blogger
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Agenda

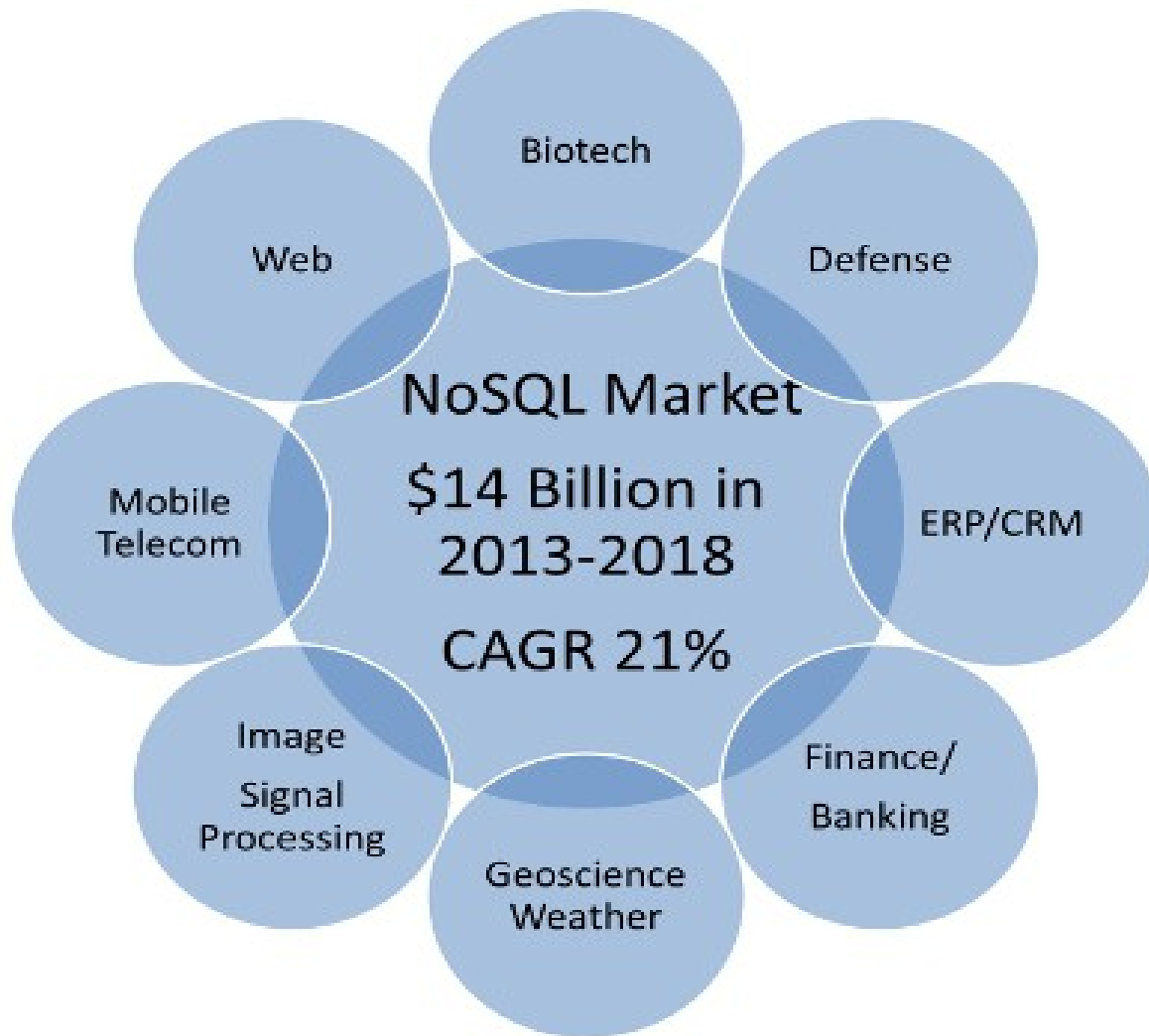
- NoSQL Ecosystem
- Hibernate OGM
- MongoDB in Action
- Demo
 - Developing Todo Application
 - Deploying to OpenShift



Not
Only **SQL**

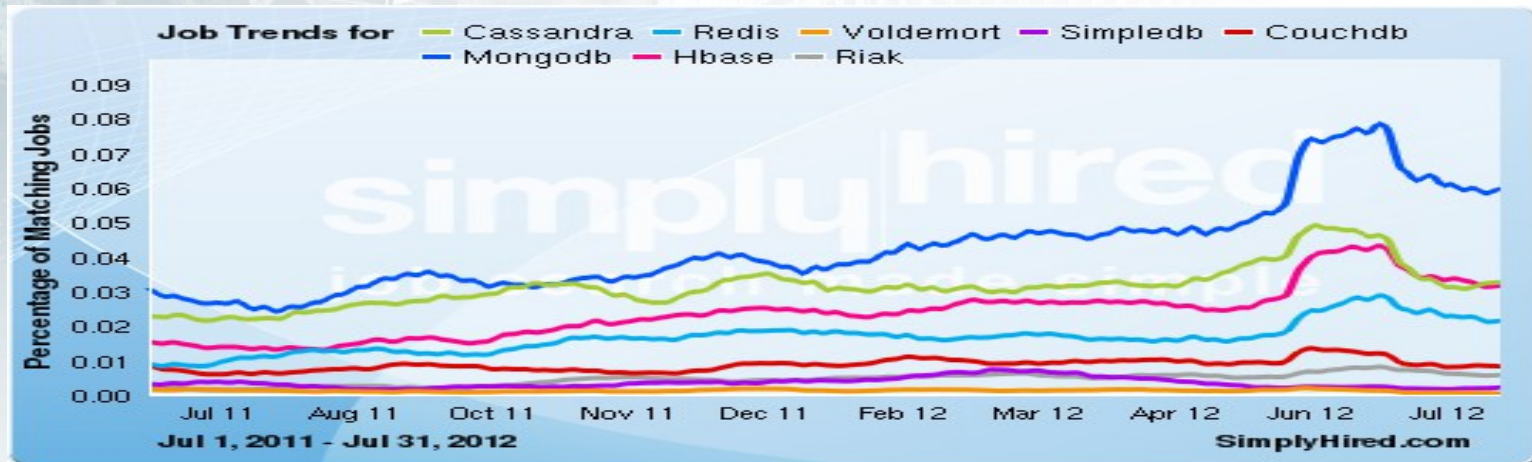
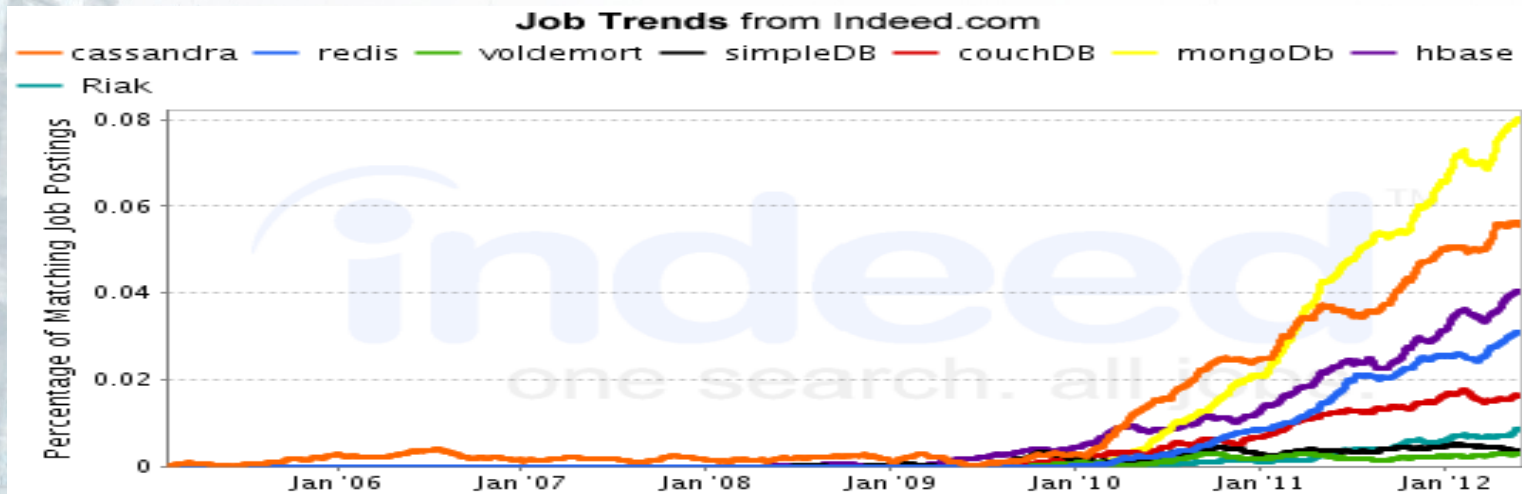


There are so many choices .. <http://nosql-database.org/> list 150+ NoSQL data stores

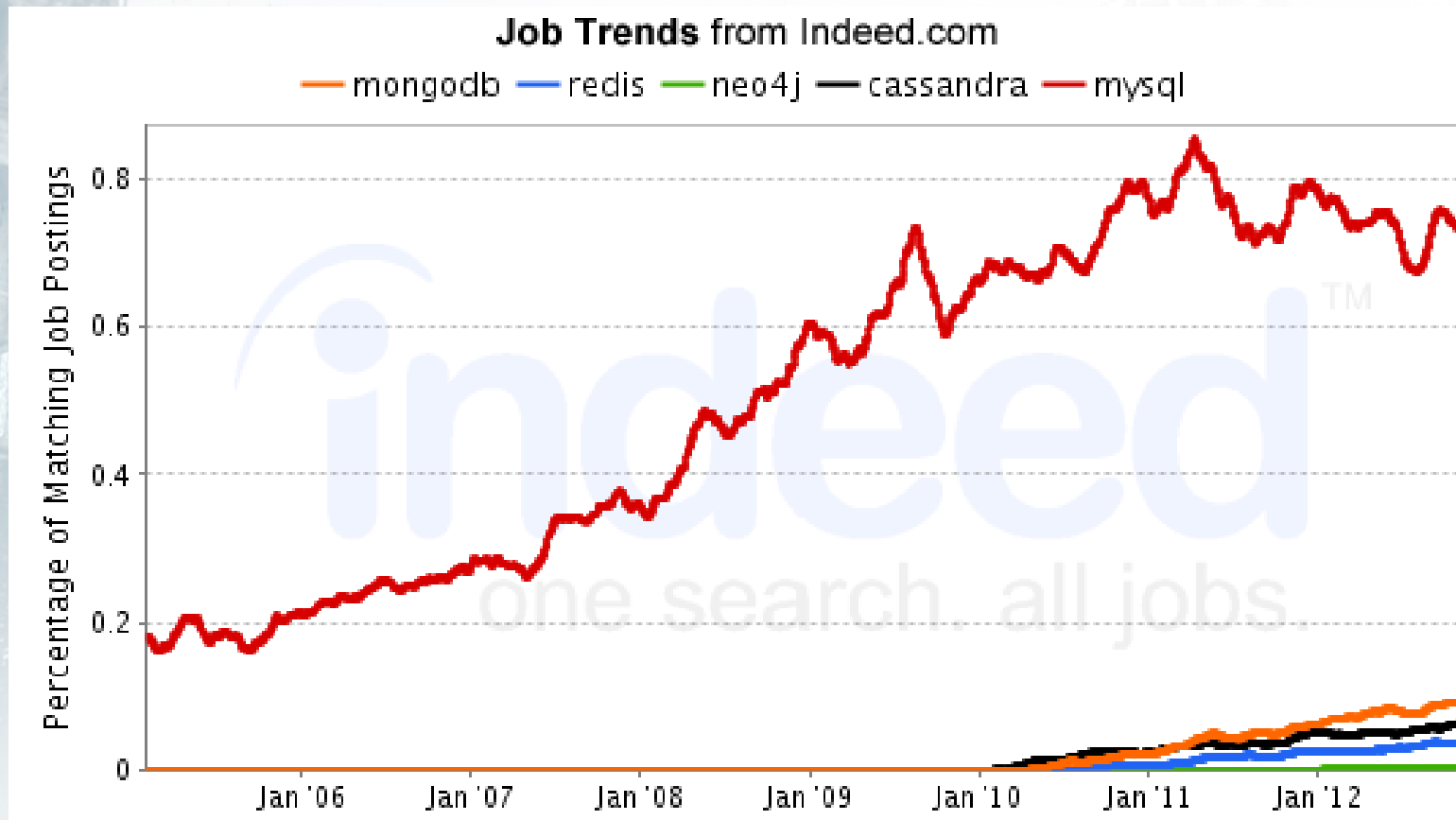


<http://www.marketresearchmedia.com/?p=568>

Various NoSQL DBs Job Trends



Job Trends with MySQL





kristina
@kchodorow



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twittercounter.com/compare/MongoD... i've been waiting ages for that one!

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6

RETWEETS

1

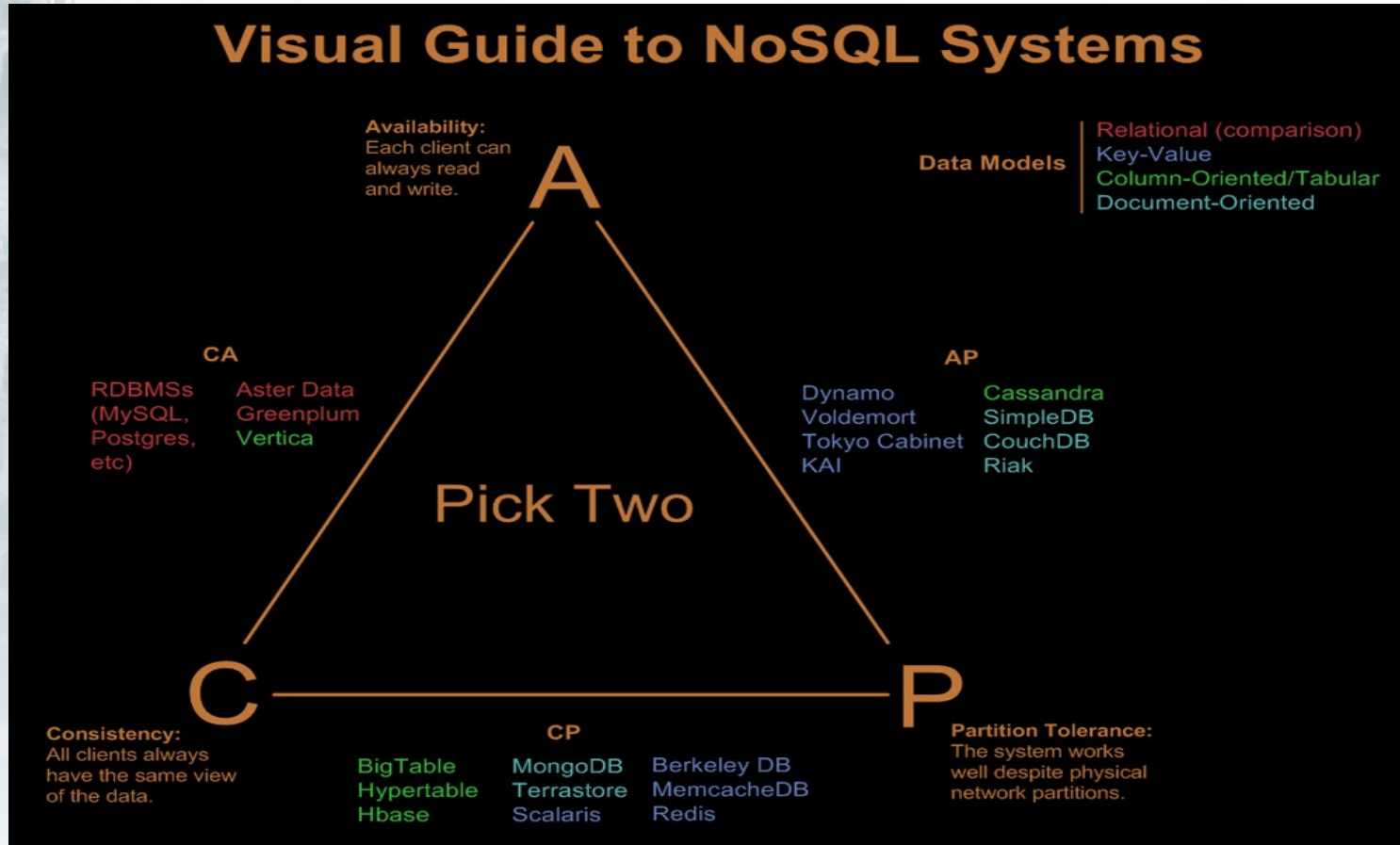
FAVORITE



Why NoSQL?

- Read Scalability
- Write Scalability
- Tries to solve a particular problem – are not one size fit all
- Schema less
- Write configurability

Visual Guide to NoSQL





Hibernate OGM

What is Hibernate OGM?

- Persistence engine providing JPA support for NoSQL datastores.
- Reuses mature projects like hibernate core, hibernate search
- Keeps good part of relational model
- Still evolving

Hibernate OGM Goals

- Simplify programmatic model for NoSQL
- Provide full JPA support
- Help scale existing applications with a NoSQL front end to a traditional database
- Provide familiar environment to developers which leads to productivity

Note : Currently does not meet all the goals

OGM Current Status

- Store data in key/value stores Infinispan's datagrid and Ehcache
- Store data in MongoDB
- Create, Read, Update and Delete operations (CRUD) for entities
- Polymorphic entities (support for superclasses, subclasses etc).
- Embeddable objects (aka components)
- Support for basic types (numbers, String, URL, Date, enums, etc)
- Support for associations
- Support for collections (Set, List, Map, etc)
- Support for Hibernate Search's full-text queries
- JPA and native Hibernate ORM API support

MongoDB in Action



What is MongoDB?

- Document based NoSQL database
 - Each document can be heterogeneous, and may have completely different structure compared to other documents
- Stores data in BSON(Binary JSON)
- Fast
- Smart
- Scalable

MongoDB Terminology

Database	→	Database
Table	→	Collection
Row	→	Document
Index	→	Index

Getting started with MongoDB

```
$ wget  
http://fastdl.mongodb.org/osx/mongodb-osx-x86_64-2.2.2.tgz  
$ tar -xf mongodb-osx-x86_64-2.2.2.tgz  
$ mkdir -p /data/db (might face permission issues)  
$ mongodb-osx-x86_64-2.2.2/bin/mongod
```

Running some commands

- show dbs
- use demo
- show collections
- db.todos.help()
- db.todos.insert({todo:"learn openshift",createdOn : new Date(),tags:["openshift","cloud","paas"]})
- db.todos.findOne()

```
{
  "_id" : ObjectId("50f588127104f8d8c81b2c77"),
  "todo" : "Learning OpenShift",
  "createdOn" : ISODate("2013-01-15T16:47:14.163Z"),
  "tags" : ["openshift","cloud","paas"]
}
```

MongoDB Dynamic Queries

- `db.todos.find({"todo":"Learning OpenShift"})`
- `db.todos.find({"todo":/openshift/i,"tags":"paas"})`
- `db.todos.find({todo : {$regex : /openshift/i}})`
- `db.todos.find({tags:{$in : ["cloud","java"]})`
- `db.todos.find({tags:{$nin : ["cloud","java"]})`
- `db.todos.find({tags:{$all : ["cloud","java"]})`

Lot of other operators available

<http://docs.mongodb.org/manual/reference/operator/>

MongoDB Update Query

```
db.todos.update({todo : "Learning  
OpenShift"},{$push : {tags :  
"java"}},true)
```



Demo : Building Todo Application

Getting Started with OpenShift

<https://openshift.redhat.com/app/account/new>

Sign up with
Promo Code

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Create an account

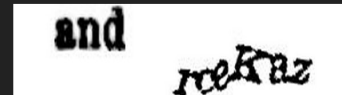
Email

Password

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Promotional Code

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Creating JBossAS7 MongoDB OpenShift Application using Eclipse

- 1) Download Eclipse
- 2) Install JBoss Tools Plugin

Setting up OGM template project

```
$ git remote add template -m master
```

```
git://github.com/shekhargulati/hibernate-ogm-openshift-  
template.git
```

```
$ git pull -s recursive -X theirs template master
```

Demo Steps

- Create domain model
- Create EJB service
- Make service RESTFul by @Path
- Make web service calls

Association Management

hibernate.ogm.mongodb.associations.store

GLOBAL_COLLECTION | IN_ENTITY |
COLLECTION



Deploying to OpenShift

Making changes in persistence.xml

```
$ git push
```

Thanks

Source code is on github

<https://github.com/shekhargulati/todo-ogm-rest>

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