MongoDB

Introduction

Current World

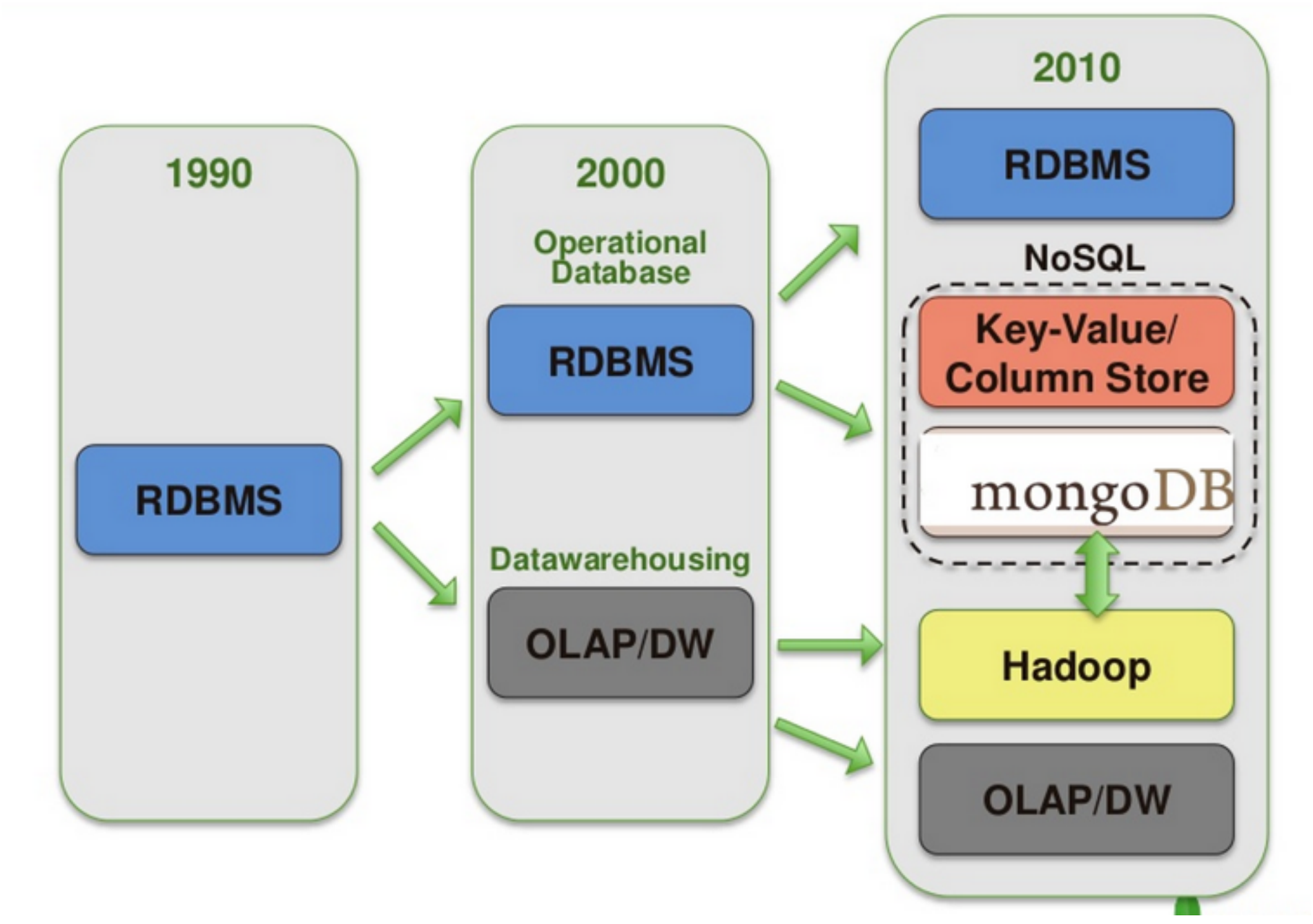
RDBMS

NOSQL

NEXT GEN

OLAP

Evolution of database



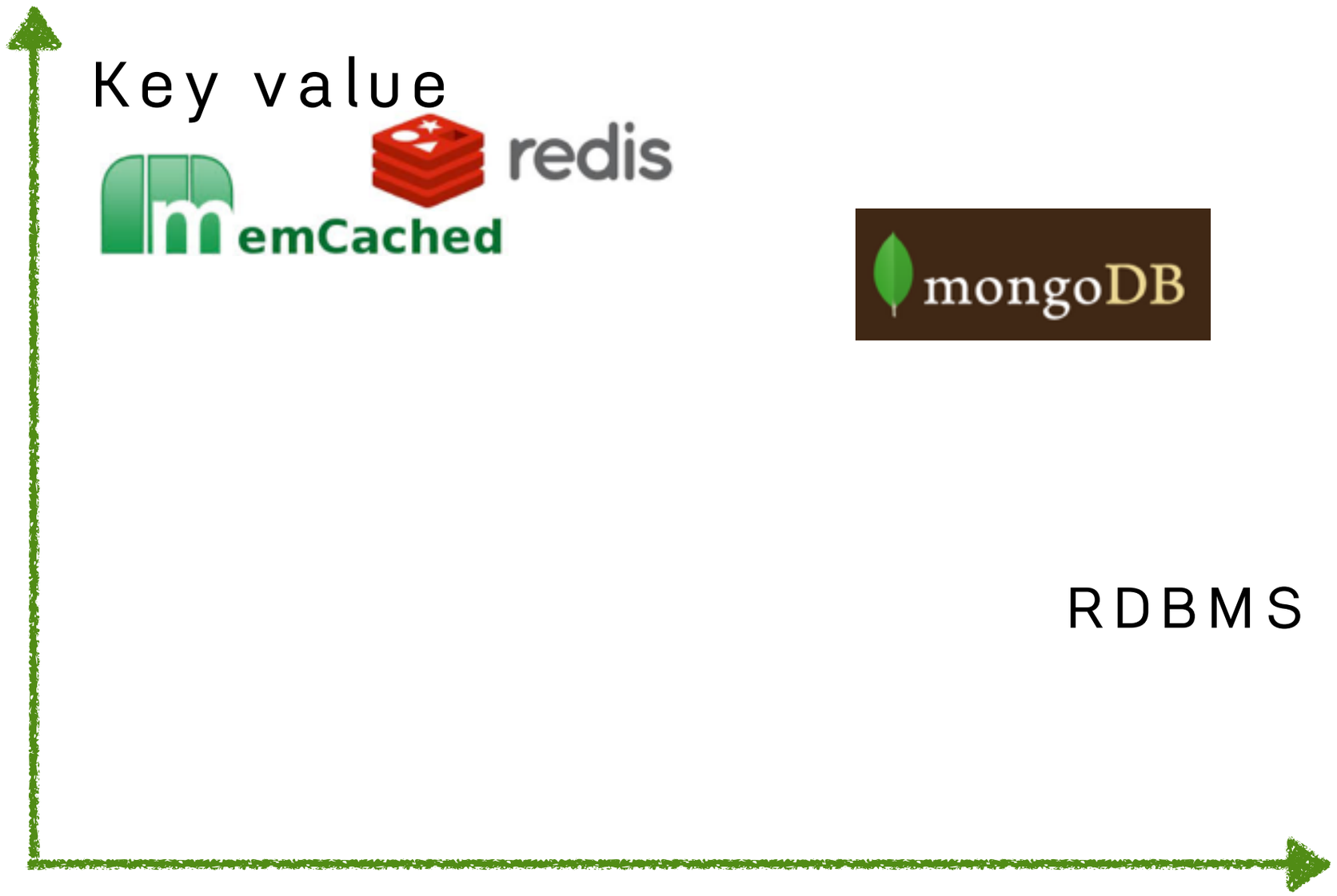
NoSQL ?

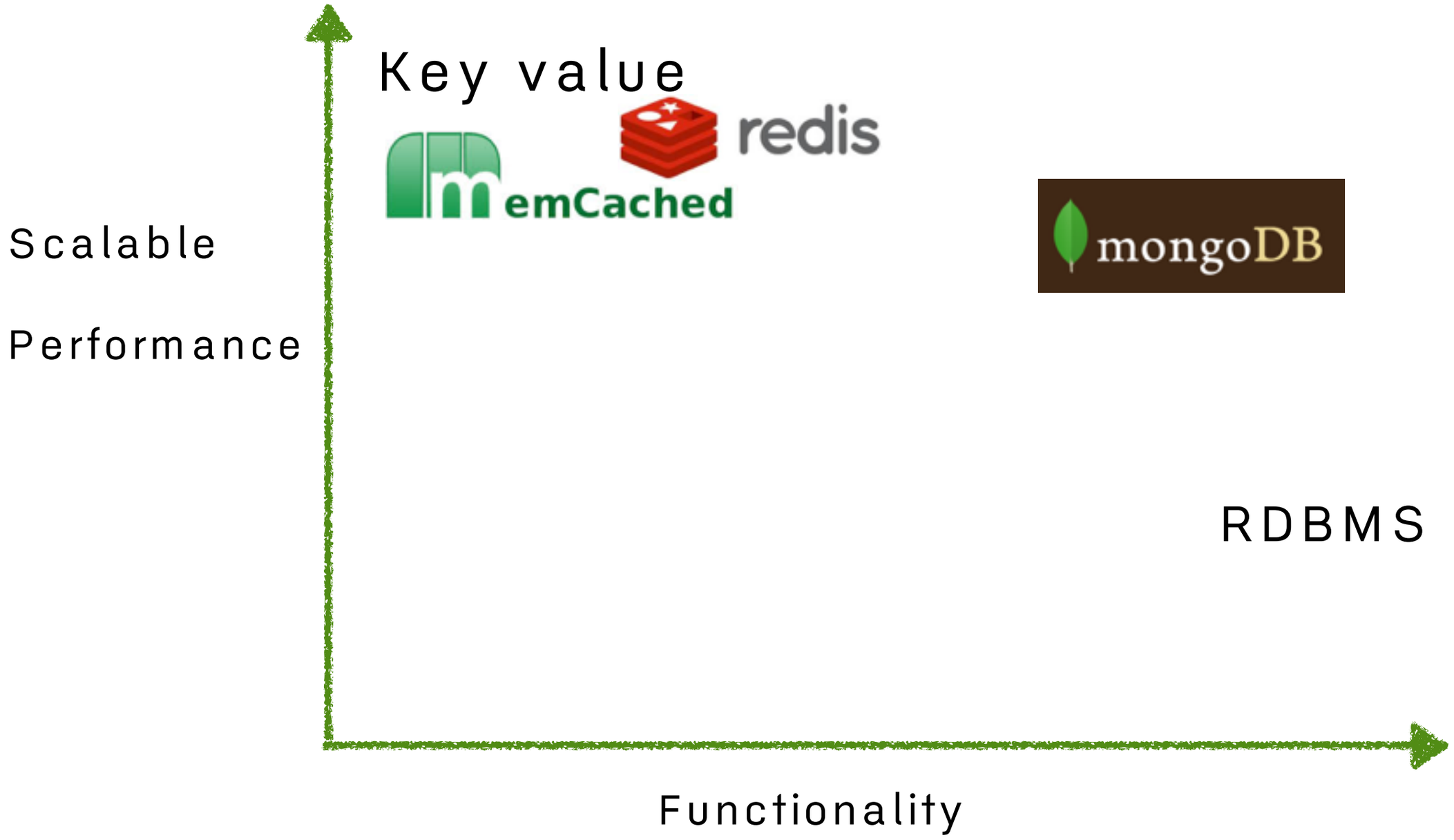
- Not Only SQL
- Non-relational database
- No joins
- No complex transaction
- Focus on Horizontal scalable
- Need new data model

NoSQL World

Document Database	Graph Databases
   	 
Wide Column Stores	**Key-Value Databases**
   	     

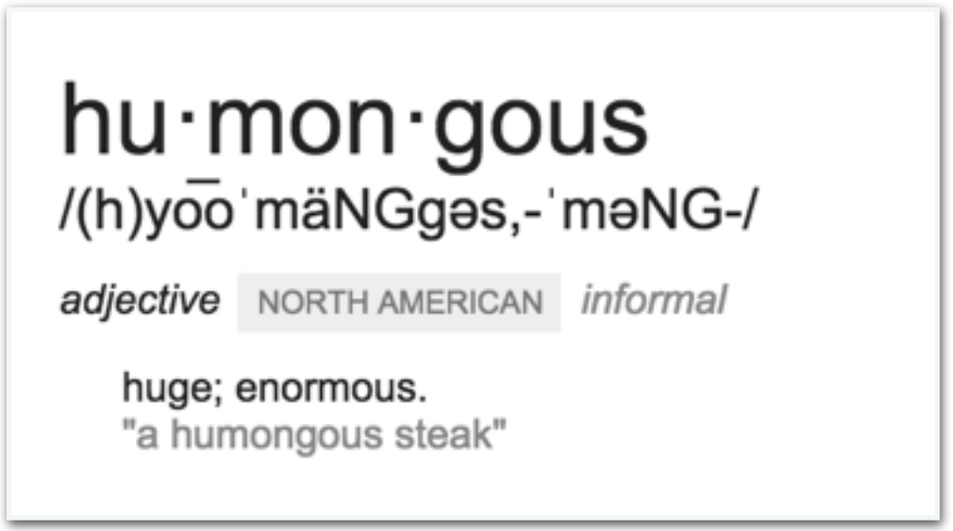
@cloudtxt http://www.aryannava.com


Key value
redis
memCached
mongoDB
RDBMS


Key value
redis
memCached
mongoDB
RDBMS
Scalable
Performance
Functionality

What is MongoDB ?

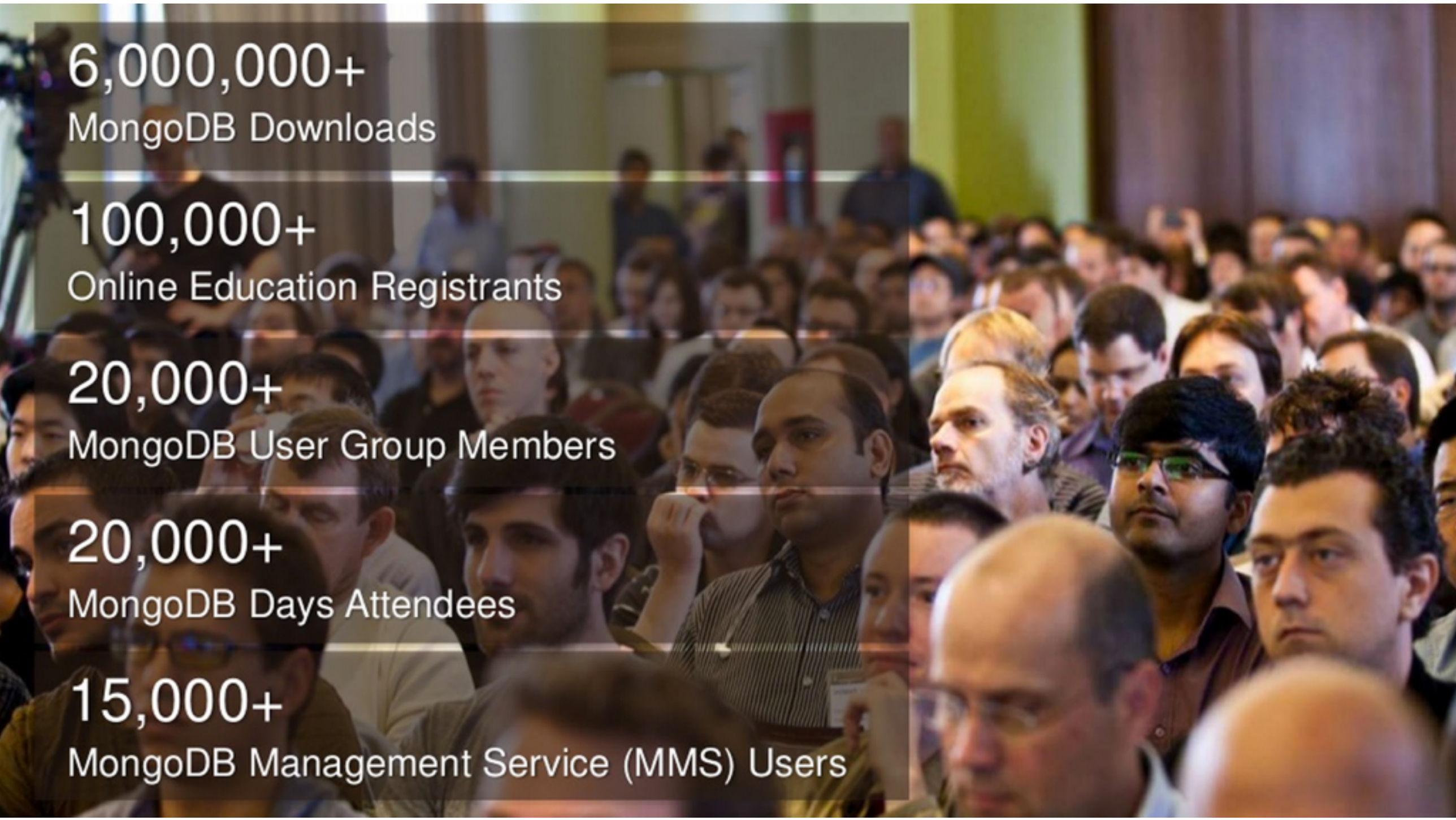
- Hu**mongo**us
- Scalable
- High-performance
- Open source
- Schema free, flexible
- Document-oriented database



What is MongoDB ?

- No-joins
- No distributed transaction
- Atomic transaction per document

Community



SPRINT3R

Siam Chamnankit Co., Ltd., Odd-e (Thailand) Co., Ltd. and Alliance

One size fit all

SPRINT3R

Siam Chamnankit Co., Ltd., Odd-e (Thailand) Co., Ltd. and Alliance

One size fit all ไม่มีอยู่จริง !!

SPRINT3R

Siam Chamnankit Co., Ltd., Odd-e (Thailand) Co., Ltd. and Alliance

มาดู feature กันดีกว่า

JSON document as BSON

{ “hello” : “world” }

\x16\x00\x00\x00\x02hello

\x00\x06\x00\x00\x00world

\x00\x00

http://bsonspec.org/

Flexible schema

Book schema

```
{
   “name” : “MongoDB”,
   “detail” : “……”
}
```

```
{
   “name” : “MongoDB”,
   “detail” : “……”,
   “tags” : [“computer”]
}
```

Dynamic query

Javascript-based query language

```
db.books.find( {tags : “computer”} )
```

อื่นๆ อีกมากมาย

Atomic Update

Auto sharding

Replication

Many supported platform & language

Programming language

Java

Ruby

JavaScript

Perl

Python

Haskell

Best use case

Scale out

Web

Caching

High volume

http://docs.mongodb.org/ecosystem/use-cases/

Less good use case

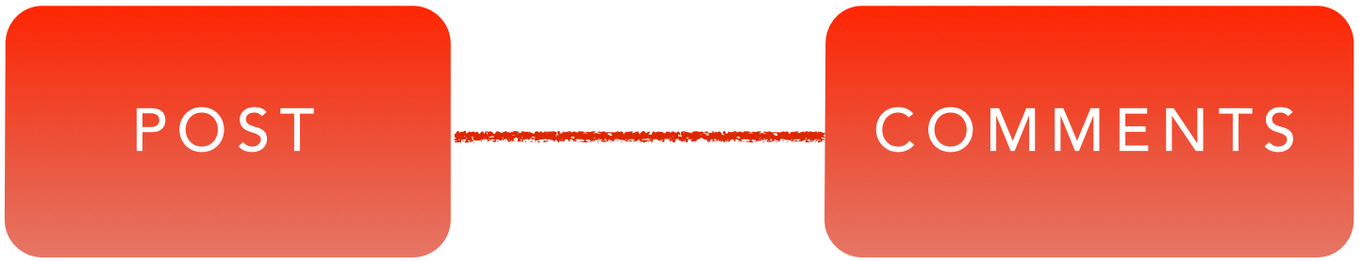
Highly transactional

Business intelligence

Require SQL

Download และ ติดตั้ง

Hello MongoDB



01_blog.txt

Post

```
{    _id: "1",
     topic: "Hello my blog",
     text: "this is my first blog",
     tag: [ "intro", "mongodb" ],
     author: "somkiat",
     date: new Date()
}
```

Comment

```
{   text: "Cool post!",
    author: "somkiat",
    date: new Date()
}
```

New post

post =

```
{    _id: "1",
     topic: "Hello my blog",
     text: "this is my first blog",
     tag: [ "intro", "mongodb" ],
     author: "somkiat",
     date: new Date()
}
```

db.posts.insert(post)

Add comment with embedding

```
db.posts.update(
  {
     _id: post._id
  },
  {
     $push: { comments : comment }
  }
)
```

Let’s go with query

Post by author

```
db.posts.find(
   { author: "somkiat" }
)
```

Last 10 posts

```
db.posts.find()
        .sort( {date:-1} )
        .limit(10)
```

1 = Ascending

-1 = Decending

http://docs.mongodb.org/manual/reference/operator/aggregation/sort/

Post from 15 Jan 2015

```
jan_1_2015 = new Date(2015, 1, 15)

db.posts.find(
   {
      date: { $gte: jan_1_2015}
   }
)
```

http://docs.mongodb.org/manual/reference/operator/query-comparison/

Post with a tag

```
db.posts.find(
   { tag: "mongodb" }
)
```

Improve performance

```
db.posts.ensureIndex(
    { tag: 1 }
)
```

For mongodb 3.0

```
db.posts.createIndex(
    { tag: 1 }
)
```

http://docs.mongodb.org/manual/reference/method/db.collection.ensureIndex/

Count posts

```
db.posts.count()

db.posts.find(
  { tag: "mongodb" }
).count()
```

Basic paging

page = 0

page_size = 10

db.posts.find().**limit**(page_size)

.**skip**(page * page_size)

http://docs.mongodb.org/manual/reference/method/cursor.skip/

Query on embedded document

```
db.posts.find( {"comments.author": "somkiat"} )
```

```
db.posts.ensureIndex( {"comments.author": 1} )
db.posts.createIndex( {"comments.author": 1} )
```

Migrate :: add category

```
post ={
    tag: [ "intro", "mongodb" ],
    author: "somkiat",
    date: new Date(),
    category: ["book"]
}
```

post_id = db.posts.save(post)

http://docs.mongodb.org/manual/reference/method/js-collection/

Advance query

$gt, $lt, $gte, $lte, $ne, $all, $in, $nin

```
db.posts.find({
    $where:"this.author == 'somkiat' ||
            this.topic == ‘foo'"
})
```

http://docs.mongodb.org/manual/reference/operator/query/

คุณเห็นปัญหาไหม ?

db.posts.find({"**comments.author**": "somkiat"})

```
> db.posts.find( {"comments.author": "somkiat"} ).pretty()
{
        "_id" : "1",
        "topic" : "Hello my blog",
        "text" : "this is my first blog",
        "tag" : [
                "intro",
                "mongodb"
        ],
        "author" : "somkiat",
        "date" : ISODate("2015-03-09T17:59:46.089Z"),
        "category" : [
                "book"
        ],
        "comments" : [
                {
                        "text" : "Cool post!",
                        "author" : "somkiat",
                        "date" : ISODate("2015-03-09T18:19:54.180Z")
                },
                {
                        "text" : "Cool post!",
                        "author" : "joe",
                        "date" : ISODate("2015-03-09T18:22:49.245Z")
                }
        ]
}
```