

# Hybrid Applications Using MongoDB and MySQL

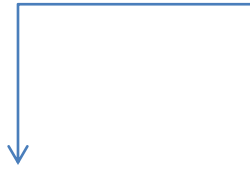
Kristina Chodorow  
[kristina@mongodb.org](mailto:kristina@mongodb.org)

what is MongoDB?



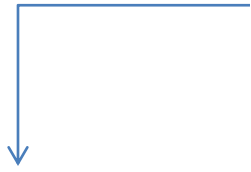
server

server



databases

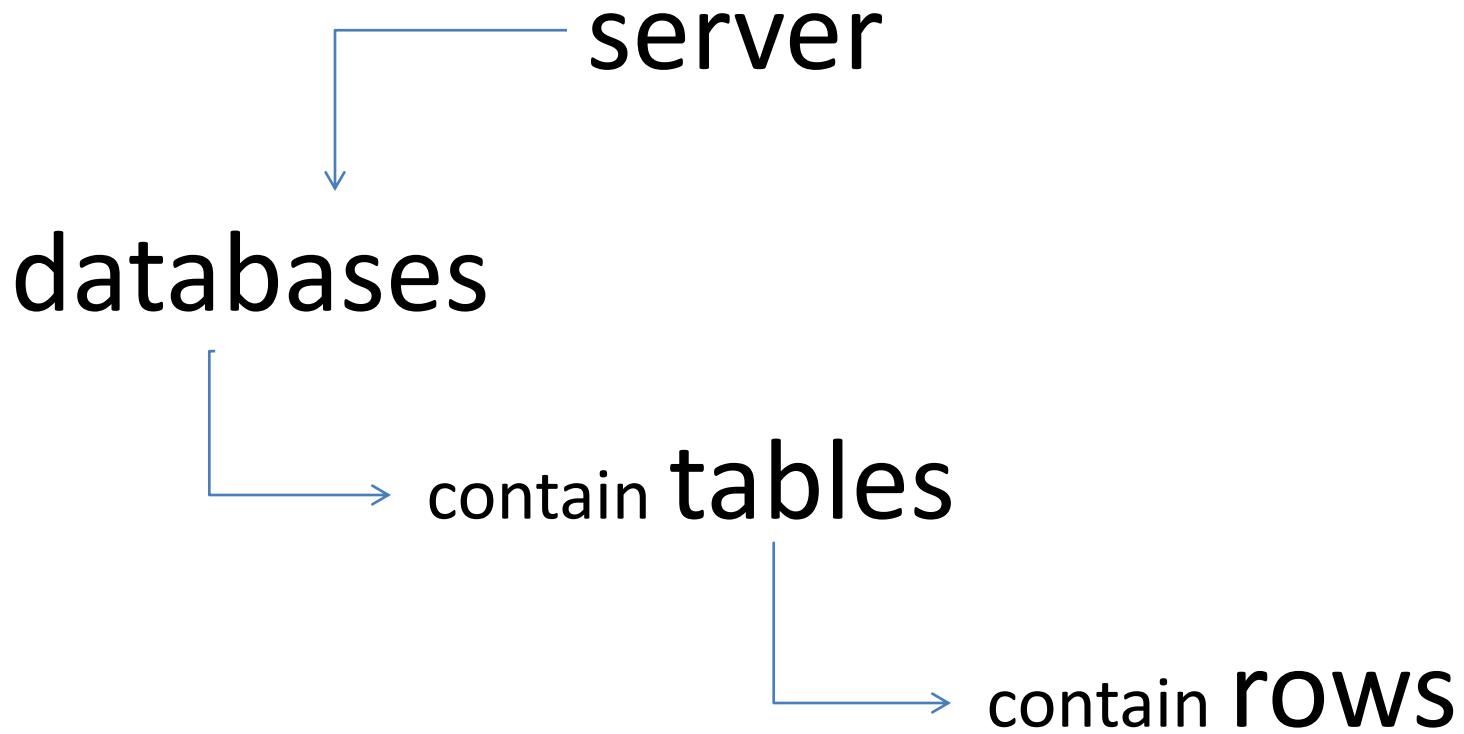
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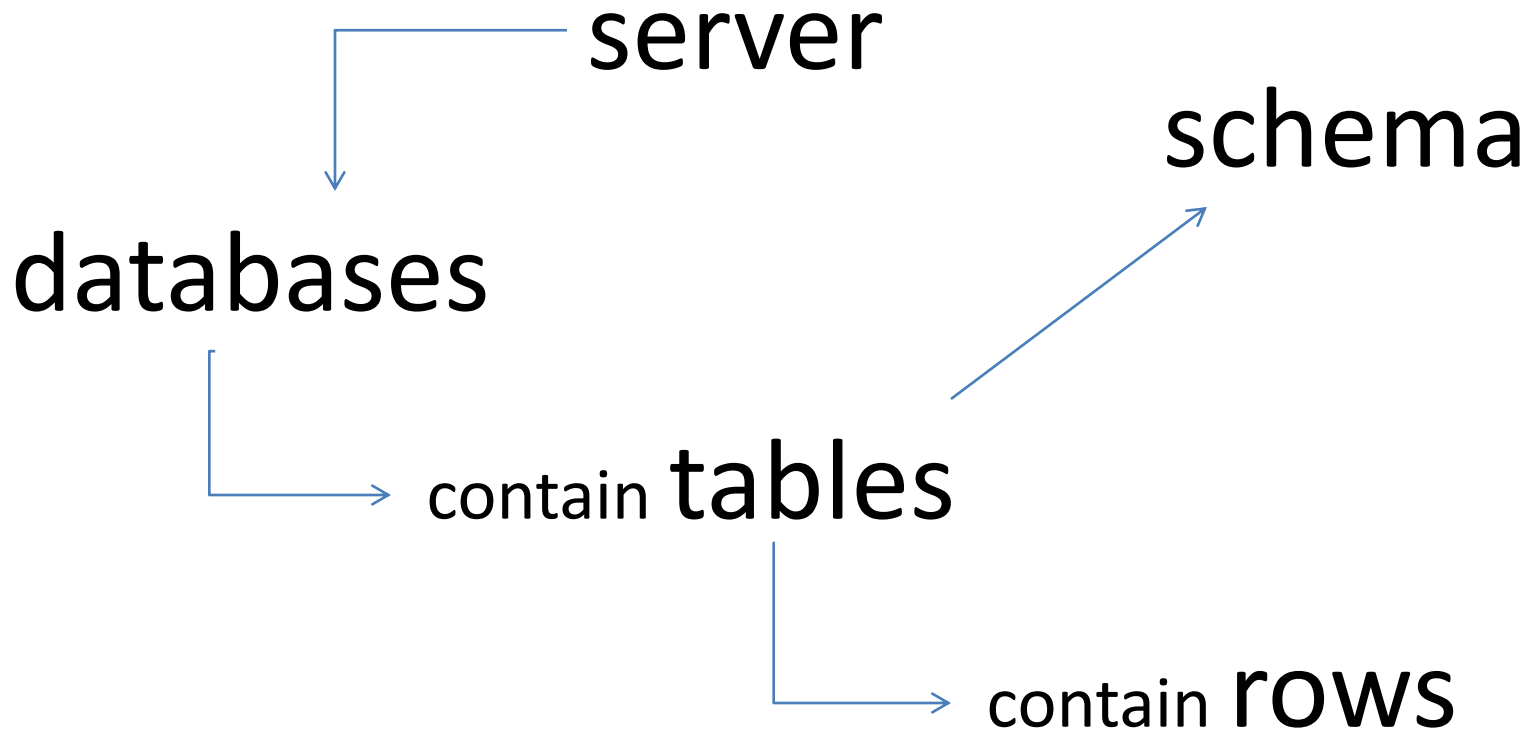


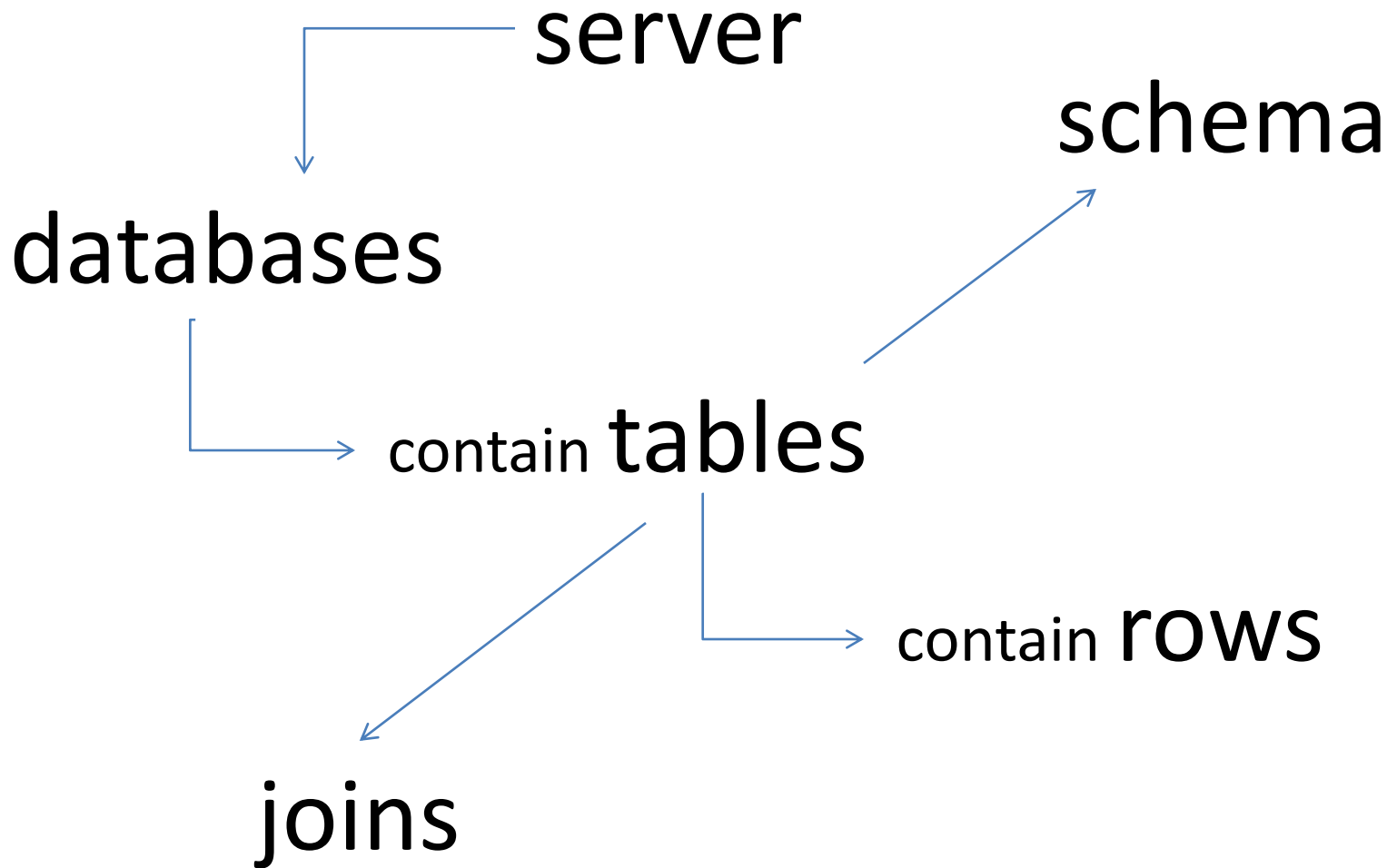
databases



contain tables

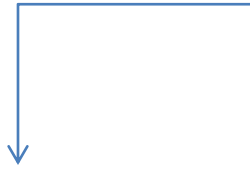






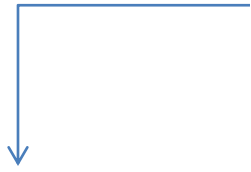
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databases

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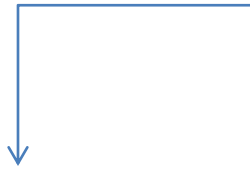


databases



contain tables

server

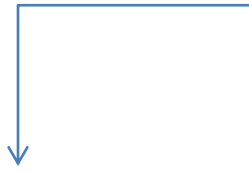


databases



contain ~~tables~~

server



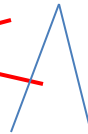
databases

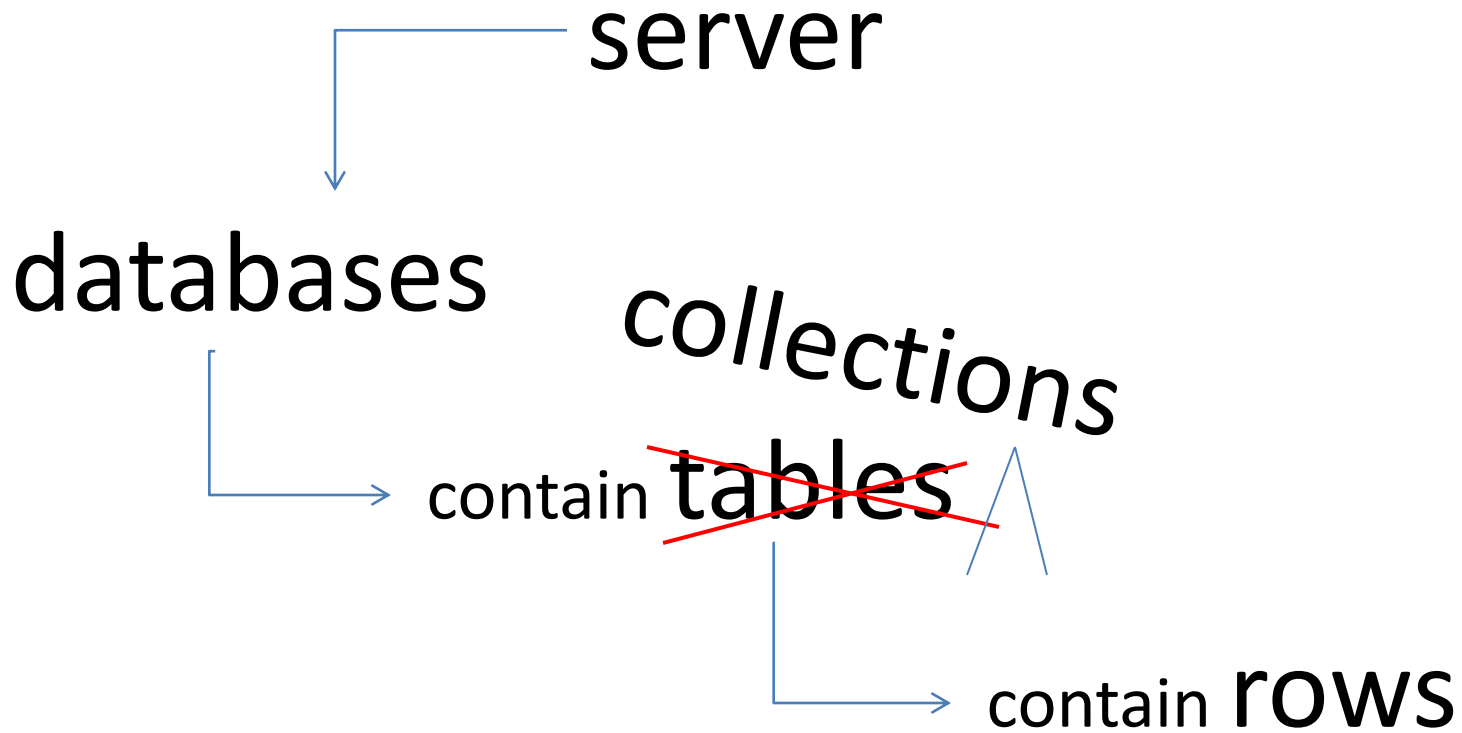
*collections*

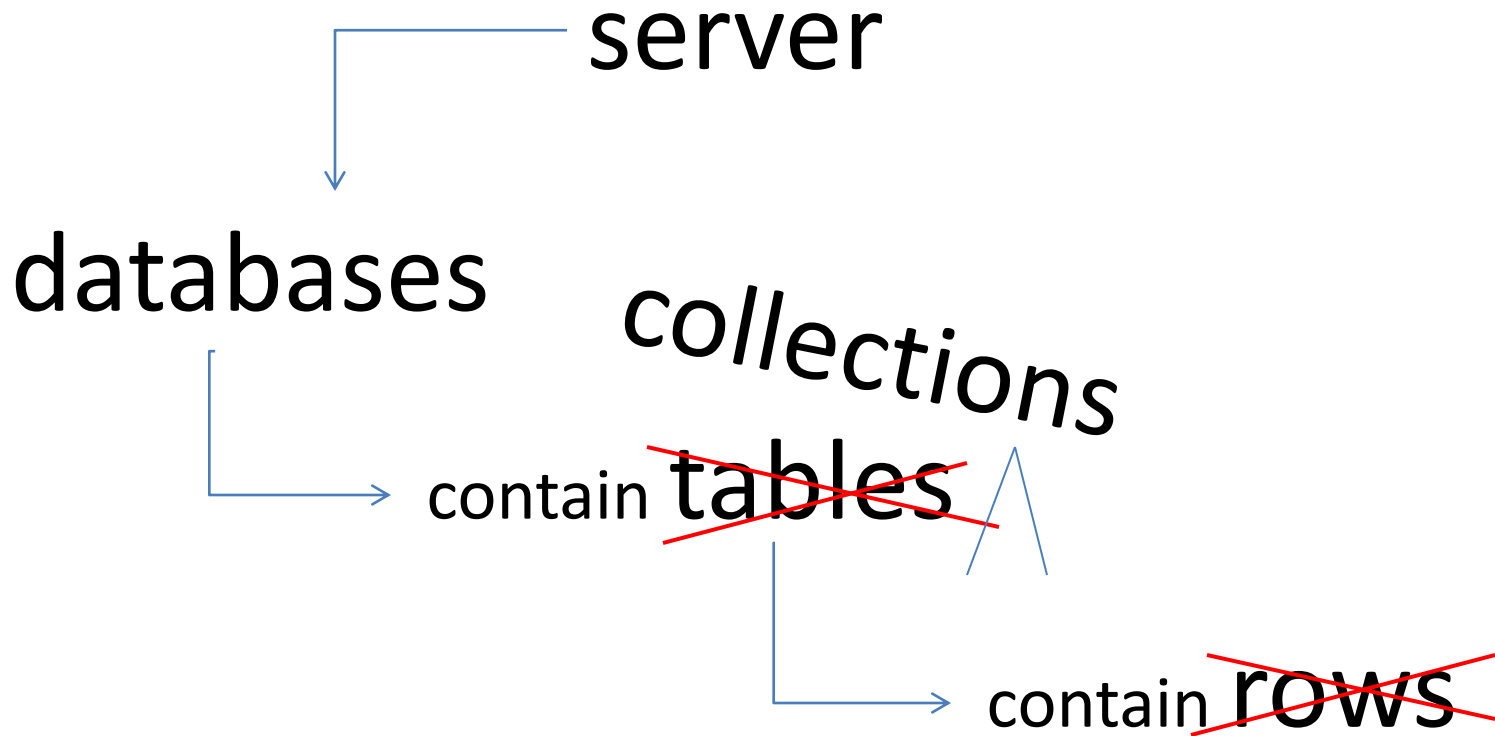


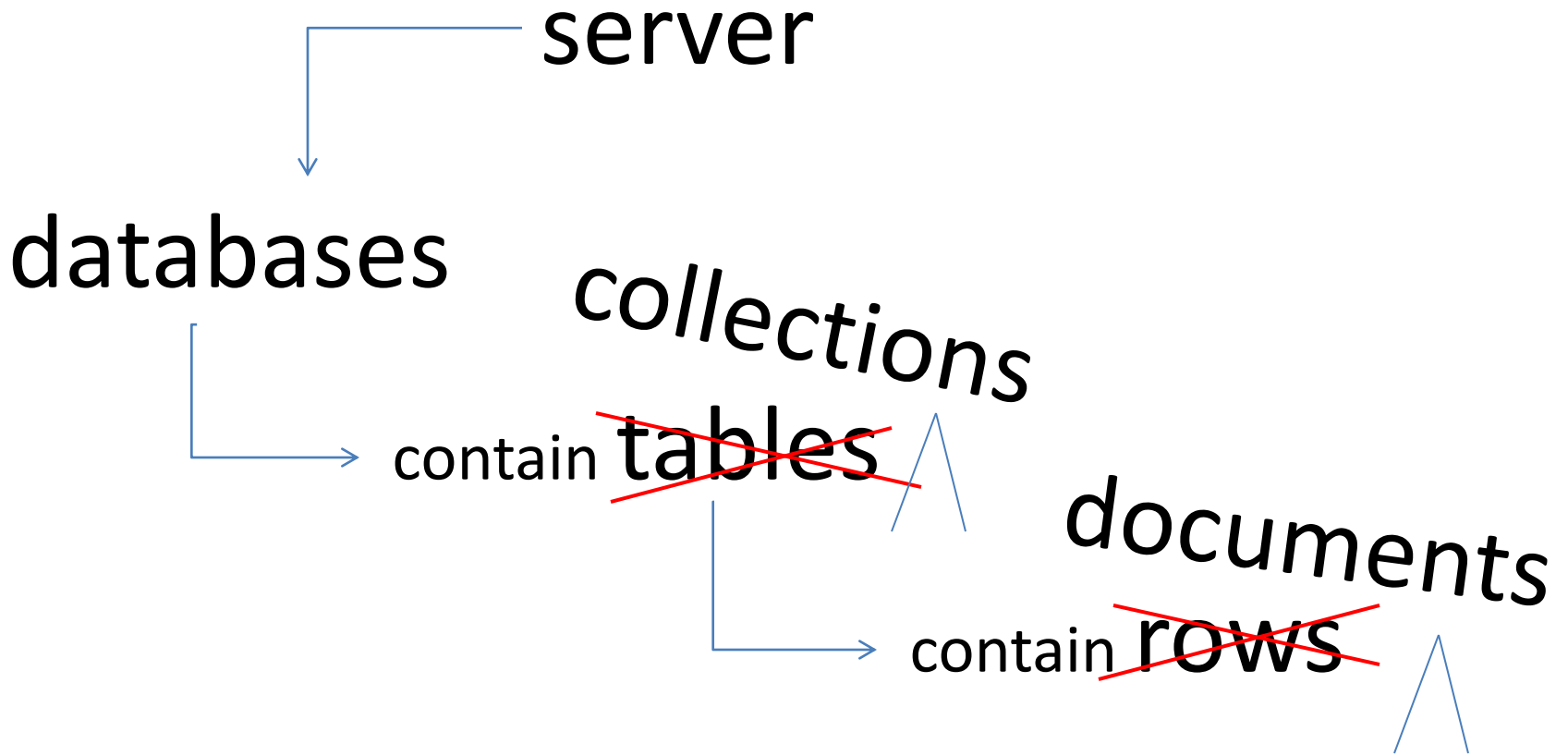
contain

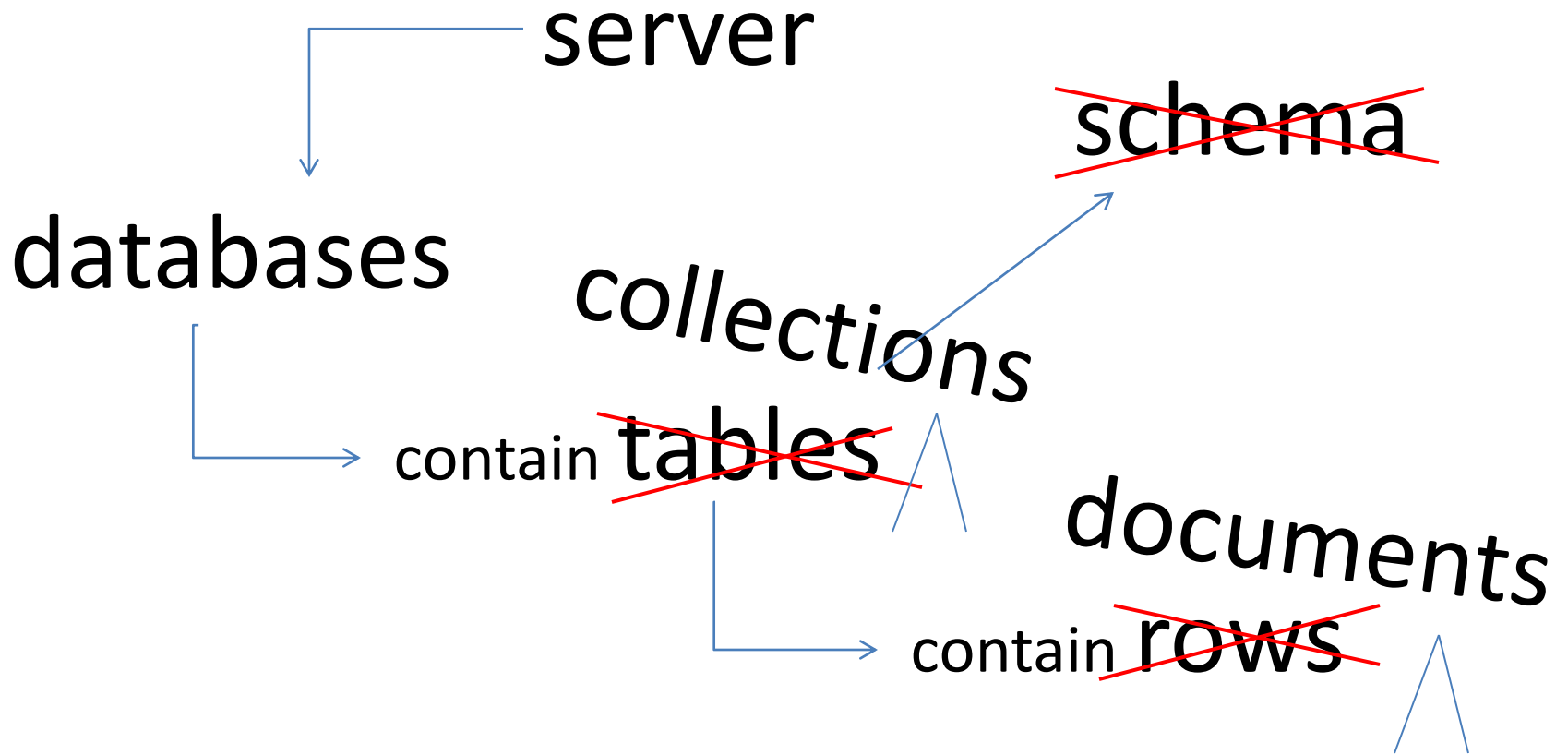
~~tables~~

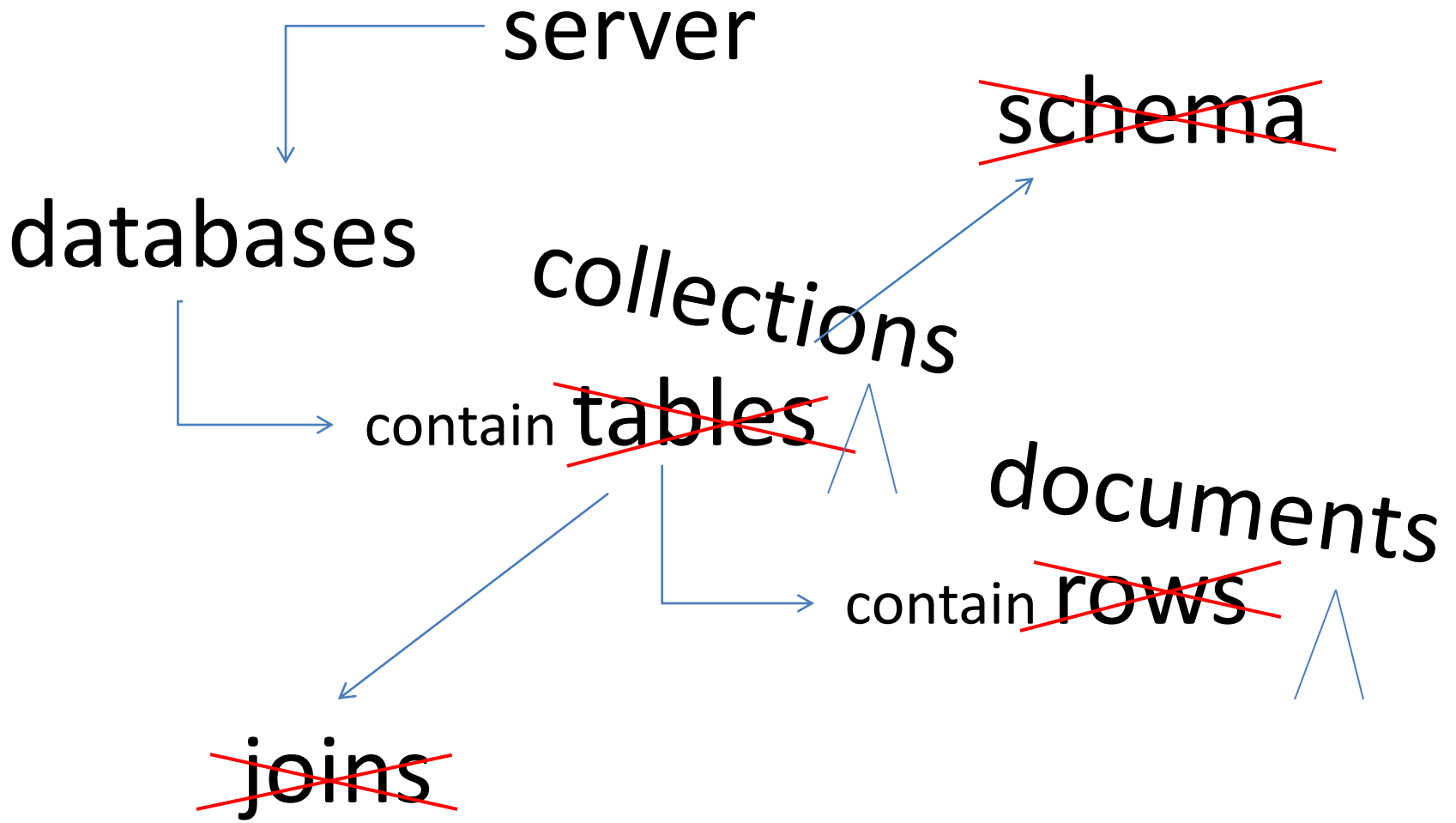




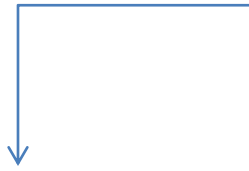








server



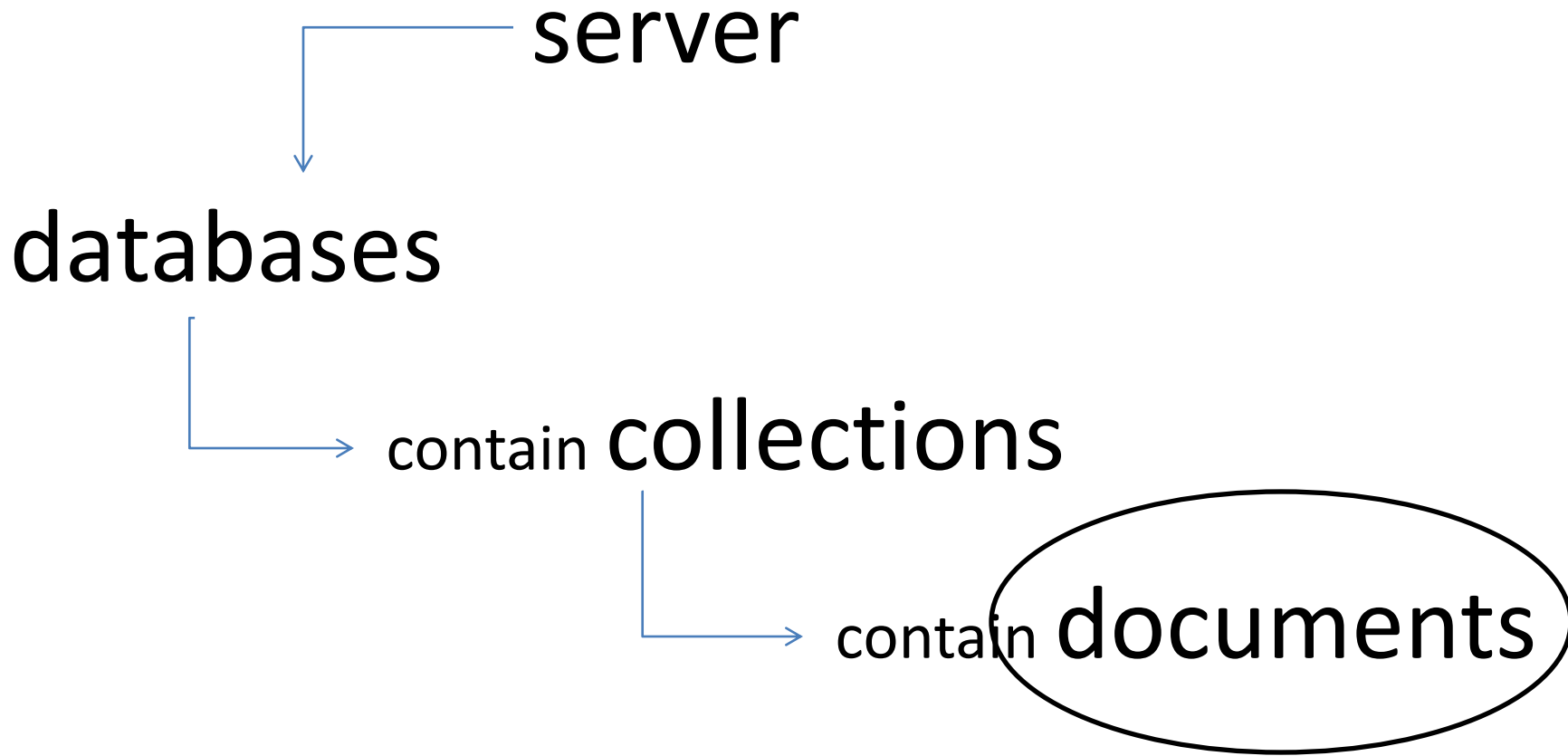
databases



contain collections



contain documents



```
$ mysql
```

```
$ mongod
```

```
$ mysql
```

```
$ mongo
```

```
$ mongo
```

```
MongoDB shell version 1.8.0
```

```
connecting to: test
```

```
>
```

```
$ mongo
MongoDB shell version 1.8.0
connecting to: test
> db
```

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$ mongo
MongoDB shell version 1.8.0
connecting to: test
> db
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MongoDB shell version 1.8.0
connecting to: test
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```

**NO ADMINISTRATION**

```
$ mongo
```

```
MongoDB shell version 1.8.0
```

```
connecting to: test
```

```
> db
```

```
test
```

```
> table = db.foo
```

```
$ mongo
```

```
MongoDB shell version 1.8.0
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connecting to: test
```

```
> db
```

```
test
```

```
> collection = db.foo
```

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$ mongo
MongoDB shell version 1.8.0
connecting to: test
> db
test
> collection = db.foo
```

**NO ADMINISTRATION**

```
{  
  "name" : "mysql",  
  "contact" : {  
    "twitter" : "@mysql",  
    "email" : "mysql@oracle.com"  
  },  
  "friends" : 400232,  
  "pic" : BinData(...)  
  "member since" : new Date()  
}
```

```
> doc = {  
  "name" : "mysql",  
  "contact" : {  
    "twitter" : "@mysql",  
    "email" : "mysql@oracle.com"  
  },  
  "friends" : 400232,  
  "pic" : BinData(...)  
  "member since" : new Date()  
}
```

```
> db.foo.insert(doc)
```

```
> db.foo.findOne( {"name" : "mysql" } )
```

```
> db.foo.findOne({ "name" : "mysql" })
```

```
> db.foo.findOne({  
  "contact.twitter" : "@mysql" })
```

```
> db.foo.findOne({ "name" : "mysql" })

> db.foo.findOne({
  "contact.twitter" : "@mysql" })

> db.foo.find({
  "member since" : {
    "$gt" : yesterday,
    "$lt" : today
  }})
```

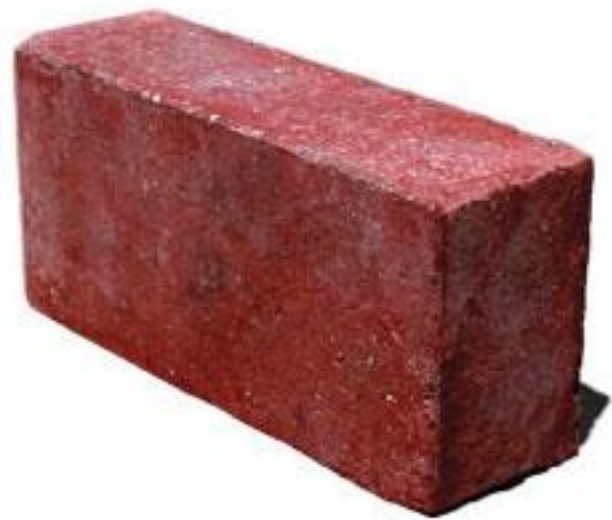
```
> db.foo.findOne({"name" : "mysql"})
```

```
> db.foo.findOne({  
  "contact.twitter" : "@mysql"})
```

```
> db.foo.find({  
  "member since" : {  
    "$gt" : yesterday,  
    "$lt" : today  
  }}).sort({friends : 1}).limit(10)  
  .skip(100)
```

MySQL's sweet spot

MySQL + MongoDB







but...

"we didn't want to bet the farm"

archiving

us cities	us states	countries
atlanta	alabama	argentina
austin	alaska	australia
boston	arizona	austria
chicago	arkansas	bangladesh
dallas	california	belgium
denver	colorado	brazil
houston	connecticut	canada
las vegas	dc	caribbean
los angeles	delaware	chile
miami	florida	china
minneapolis	georgia	colombia
new york	guam	costa rica
orange co	hawaii	czech repub
philadelphia	idaho	denmark
phoenix	illinois	egypt
portland	indiana	finland
raleigh	iowa	france
sacramento	kansas	germany
san diego	kentucky	great britain
seattle	louisiana	greece
sf bayarea	maine	hungary
wash dc	maryland	india
more ...	mass	indonesia
	michigan	ireland
	minnesota	israel
canada	mississippi	italy
calgary	missouri	japan
edmonton	montana	korea
halifax	n carolina	lebanon
montreal	n hampshire	malaysia
ottawa	nebraska	mexico
toronto	nevada	micronesia
vancouver	new jersey	netherlands
victoria	new mexico	new zealand
winnipeg	new york	norway
more ...	north dakota	pakistan
	ohio	panama
intl cities	oklahoma	peru
amsterdam	oregon	philippines
bangalore	pennsylvania	poland
bangkok	puerto rico	portugal
barcelona	rhode island	russia
berlin	s carolina	singapore
buenosaires	south dakota	south africa
hongkong		

### community

artists	activities
classes	childcare
events	local news
general	lost+found
groups	musicians
pets	rideshare
politics	volunteers

### personals

strictly platonic
women seek women
women seeking men
men seeking women
men seeking men
misc romance
casual encounters
missed connections
rants and raves

### discussion forums

1099	gifts	pets
apple	haiku	philos
arts	health	politic
atheist	help	psych
autos	history	queer
beauty	housing	recover
bikes	jobs	religion
celebs	jokes	rofo
comp	kink	science
crafts	l.t.r.	shop
diet	legal	spirit
divorce	linux	sports
dying	loc pol	t.v.
eco	m4m	tax
educ	money	testing
etiquet	motocy	transg
feedbk	music	travel
film	npo	vegan
fitness	open	w4w
fixit	outdoor	wed
food	over 50	wine

### housing

apts / housing
housing swap
housing wanted
office / commercial
parking / storage
real estate for sale
rooms / shared
sublets / temporary
vacation rentals

### for sale

barter	arts+crafts
bikes	auto parts
boats	baby+kids
books	cars+trucks
business	cds/dvd/vhs
computer	clothes+acc
free	collectibles
general	electronics
jewelry	farm+garden
material	furniture
rvs	games+toys
sporting	garage sale
tickets	household
tools	motorcycles
wanted	music instr
	photo+video

### services

beauty	financial
computer	household
creative	labor/move
erotic	real estate
event	skill'd trade
legal	sm biz ads
lessons	therapeutic
automotive	travel/vac
	write/ed/tr8

### jobs

accounting+finance
admin / office
arch / engineering
art / media / design
biotech / science
business / mgmt
customer service
education
food / bev / hosp
general labor
government
human resources
internet engineers
legal / paralegal
manufacturing
marketing / pr / ad
medical / health
nonprofit sector
real estate
retail / wholesale
sales / biz dev
salon / spa / fitness
security
skilled trade / craft
software / qa / dba
systems / network
technical support
transport
tv / film / video
web / info design
writing / editing
[ETC] [part time]

### gigs

crew	creative
event	domestic
labor	talent
computer	writing
	adult

post to classifieds

my account

help, faq, abuse, legal

search craigslist

for sale

event calendar

S	M	T	W	T	F	S
24	25	26	27	28	29	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22

avoid scams & fraud

personal safety tips

craigslist factsheet

best-of-craigslist

job boards compared

lawsuit dismissed

craigslist movie & dvd

craigslist T-shirts

craigslist foundation

defend net neutrality

system status

terms of use privacy

about us help

[Top craigslist](#) > [los angeles](#) > Free Cello

Publié le: Mon, 13 Dec 19:32 PST

## Free Cello

Date: 2010-12-13, 7:32PM PST

[Erreurs lorsque vous répondez aux annonces?](#)

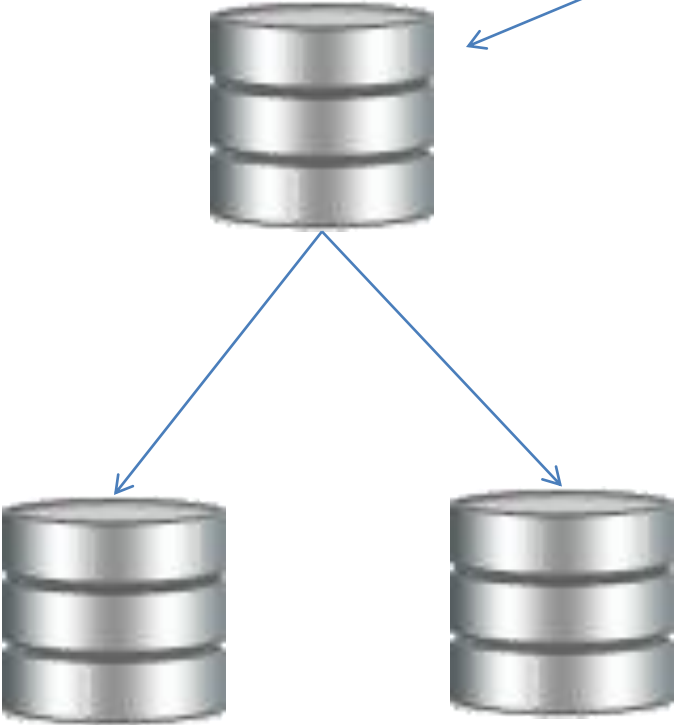
So my sister gave me this cello a couple years ago. It's a nice cello. Actually, it's a great cello. It's probably the best cello I know much about cellos. Also the neck snapped off. Of the cello. So it's really more like 3/4's of a cello, but the other 1/4 is kind of like you're getting two cellos, only one of them doesn't have a body and the other doesn't have a neck. But if you're old times. You could probably fix it with like some music glue or something like that.

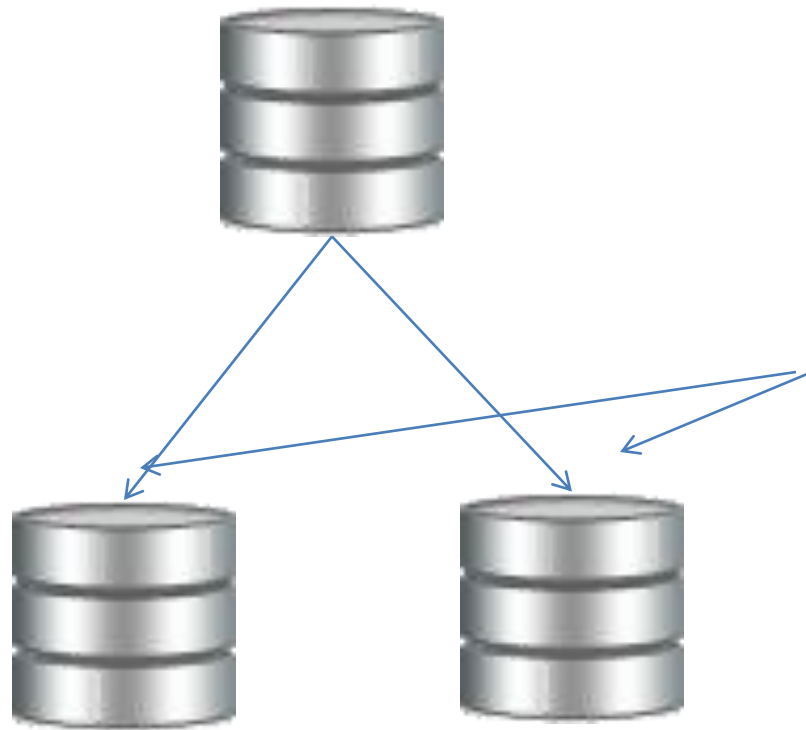
She also gave me a cello bag that I can give to you too, now that I won't have a cello. It's a really nice cello bag. You can even be a bow in the bag, I'm not sure. I don't want you to think that there's 100% a bow in the bag. It's way over there, there it's yours.

If you're like me and you don't know how to play the cello then you could use it as a coin bank. It's hollow and there are holes for the coins through. Then when it's filled up you could drop it off of your roof or carry it around like a change purse. Ooh, if I'd do it but I'm moving across the country and it won't fit in my car. What else could you do with it. You could saw the neck to a baby as like a wizard stick for Christmas. Totally give this cello to someone for Christmas. Or Hanukkah.

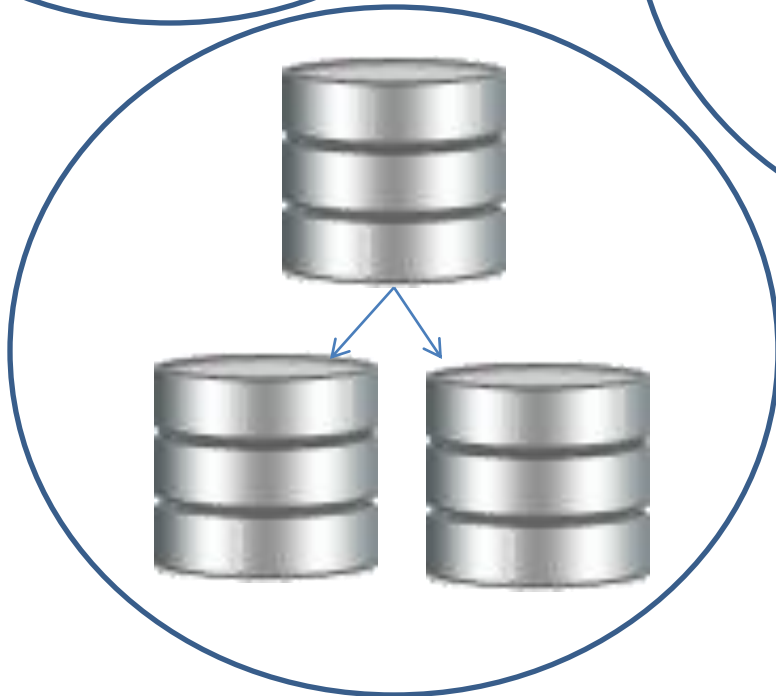
Please come get it. I'm in Echo Park. I'd actually go somewhere to meet you if wherever we're going is a cool place. Like

1 month





**1 month**

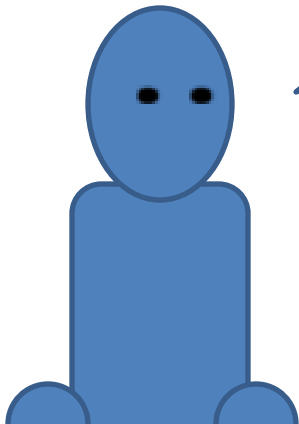


sphinx

scaling



one machine up  
there, right?



```
{
  name : "adam",
  email : "kristina@mongodb.org",
  twitter : "@kchodorow"
  irc : "kchodorow"
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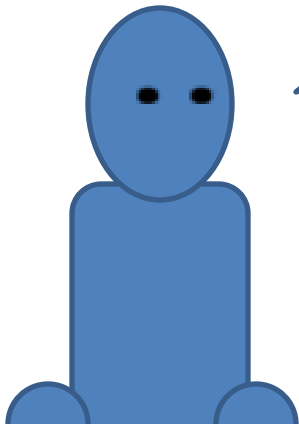


chunks 1, 4

chunks 2, 3



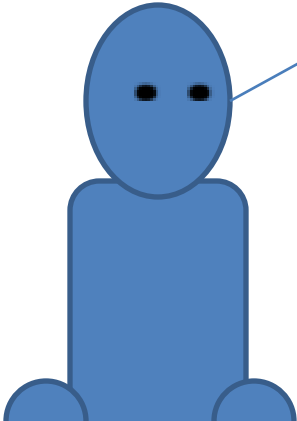
one machine up  
there, right?

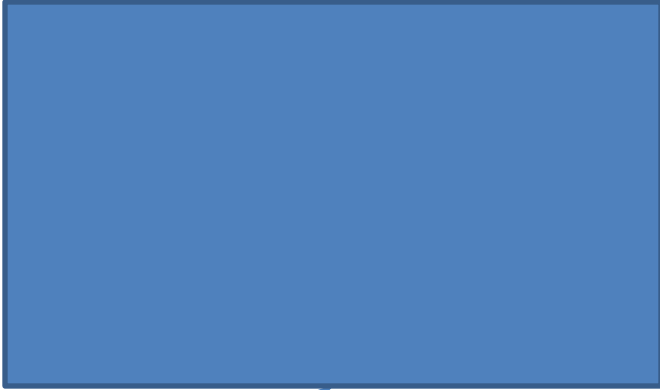




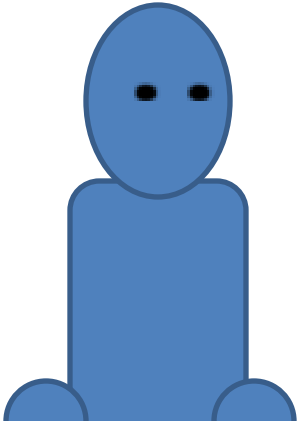
I want Mark through Sarah.

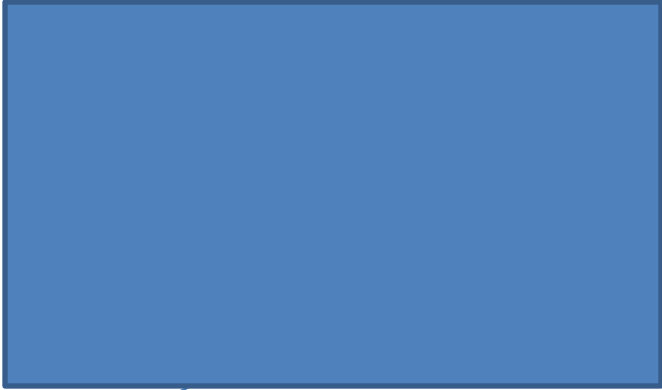
router



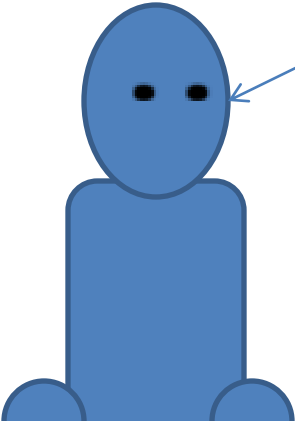


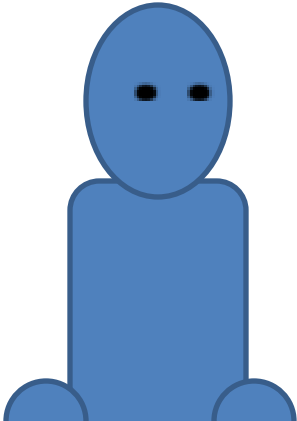
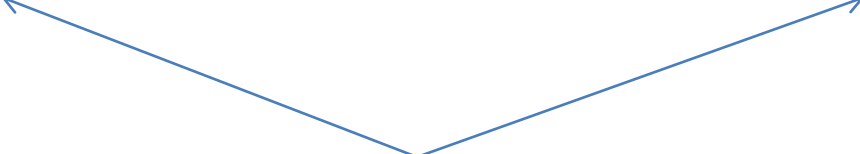
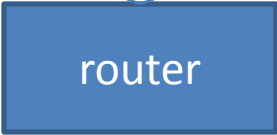
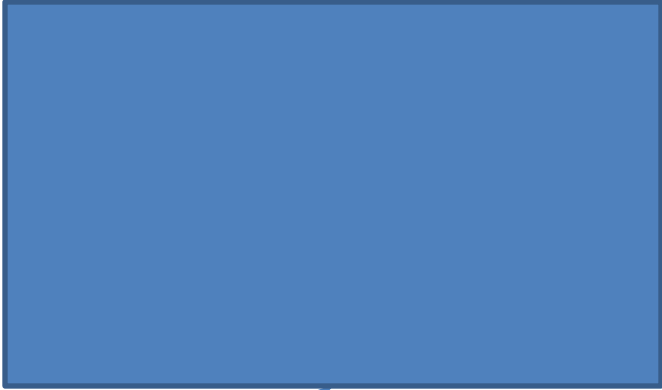
router

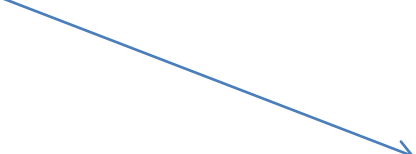
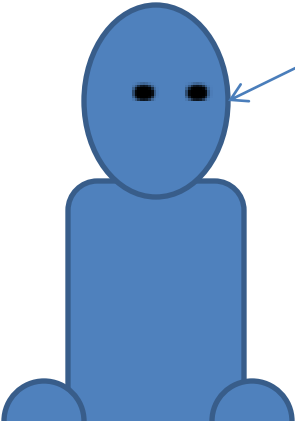
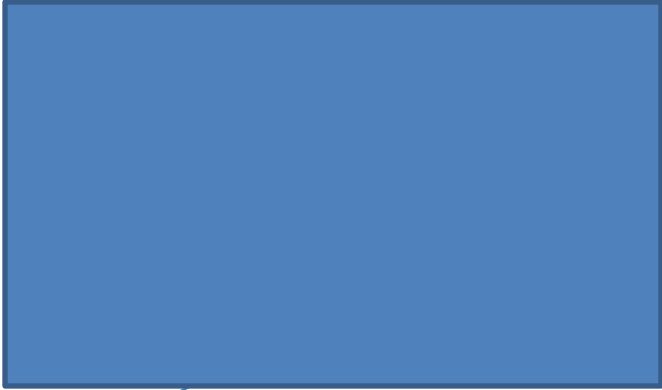




router



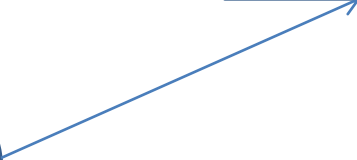
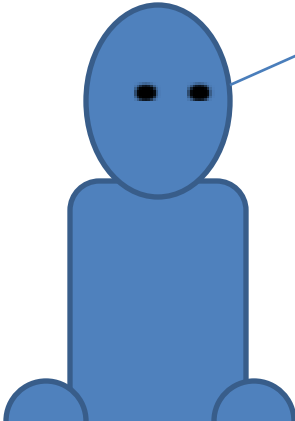


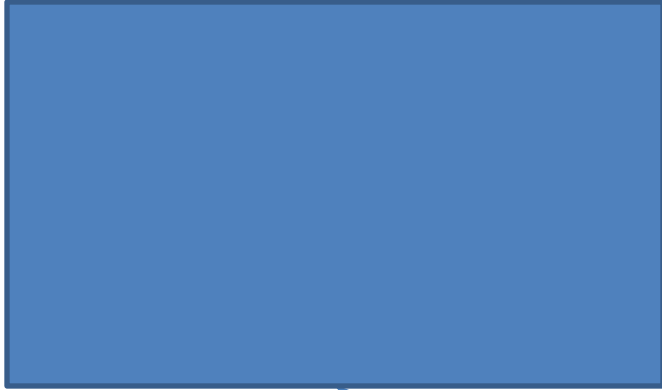




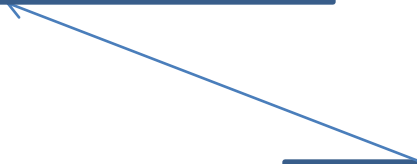
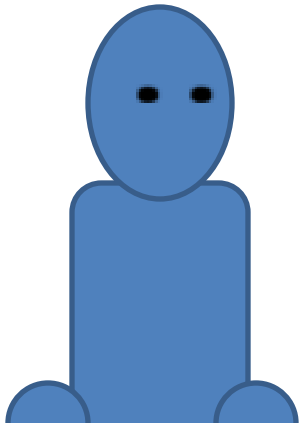
Insert Linus

router



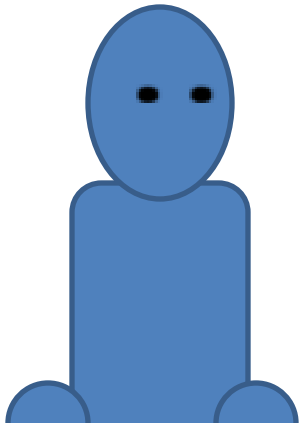


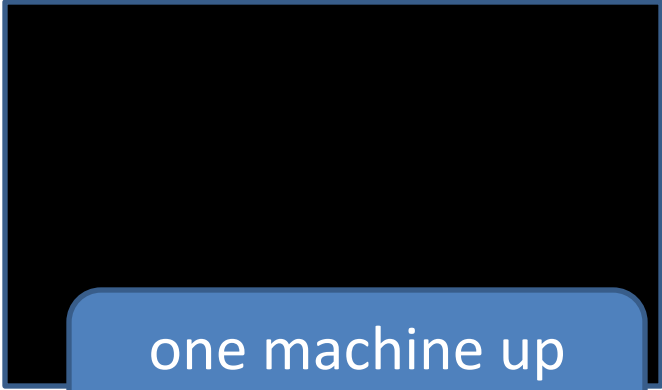
router





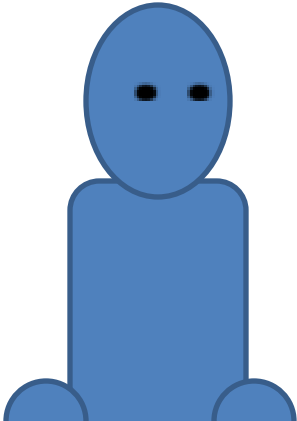
router





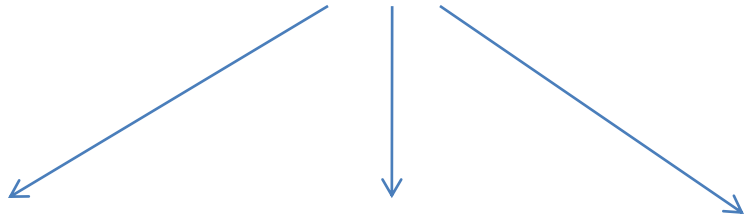
one machine up there, right?

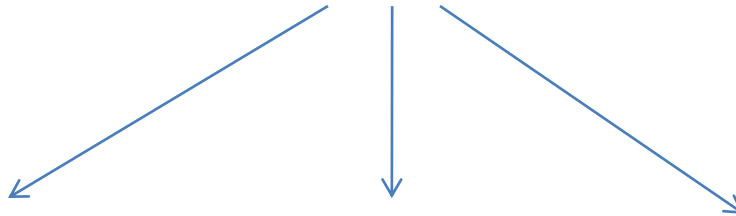
router



[10gen.com/videos](https://10gen.com/videos)

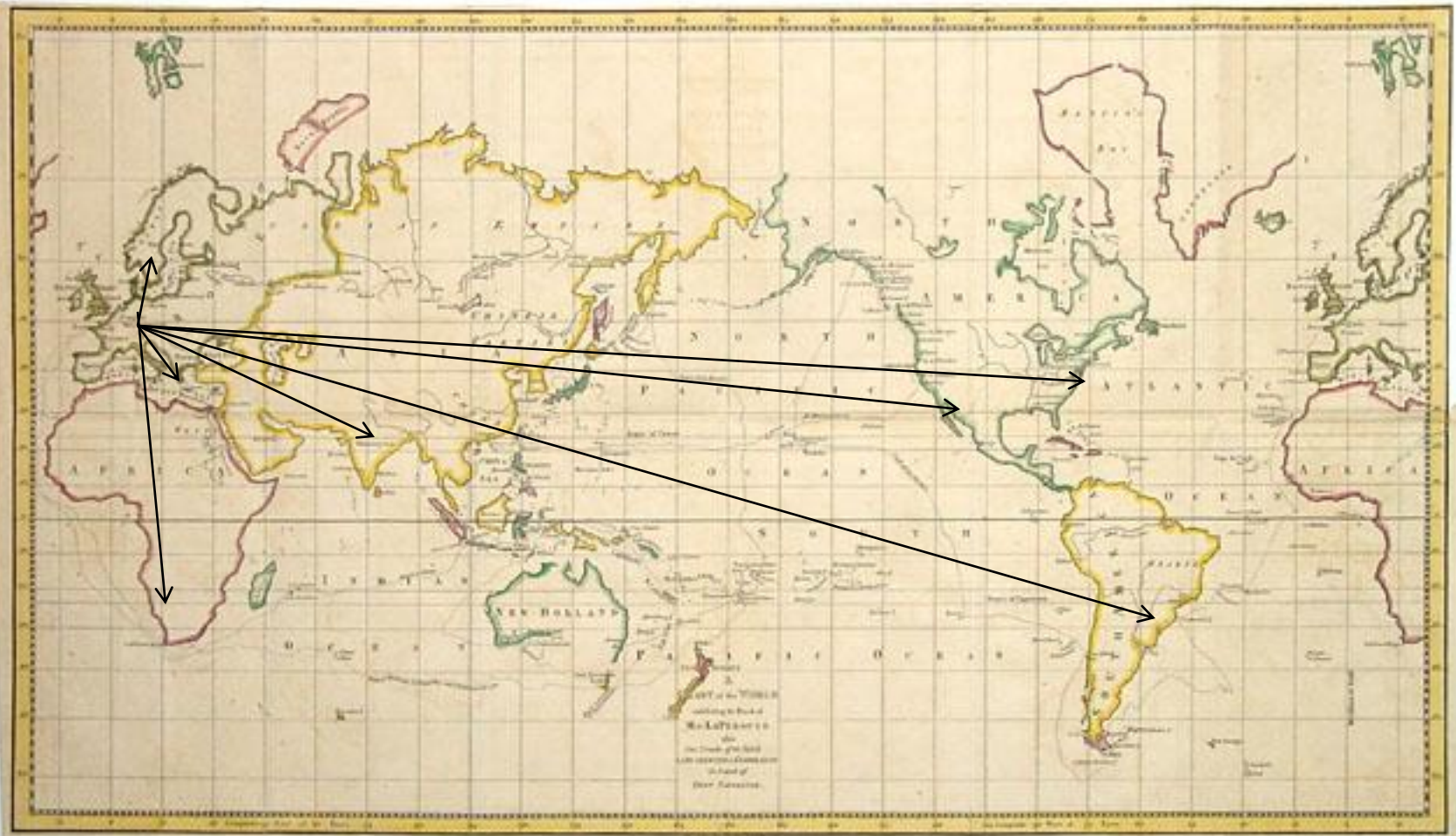
caching





gathering data





agg1



agg2



agg3



.

.

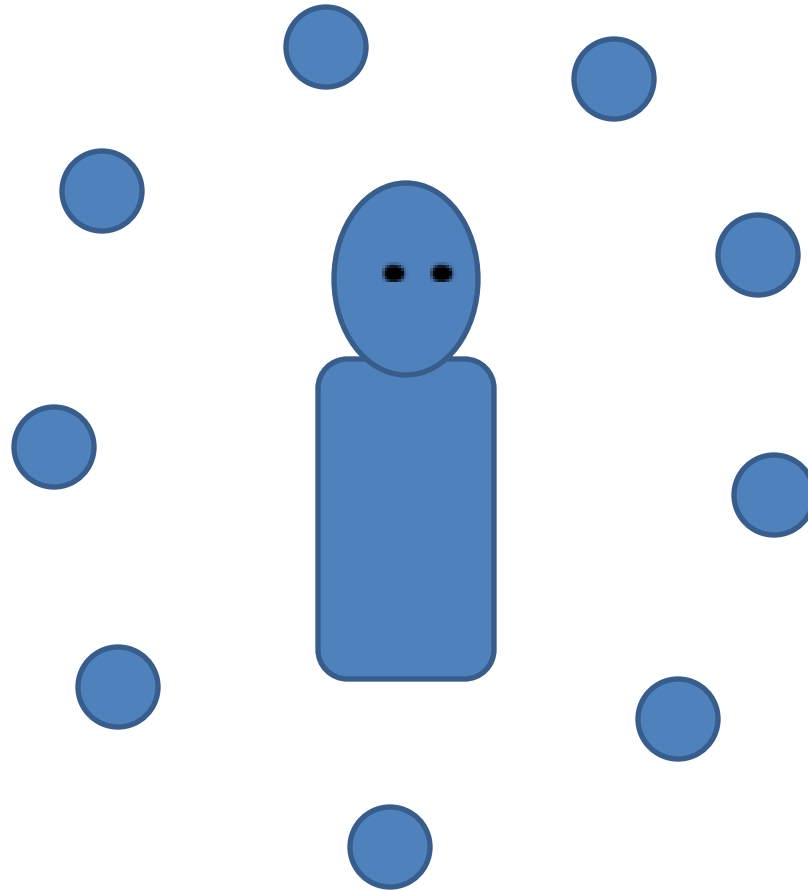
.

aggN



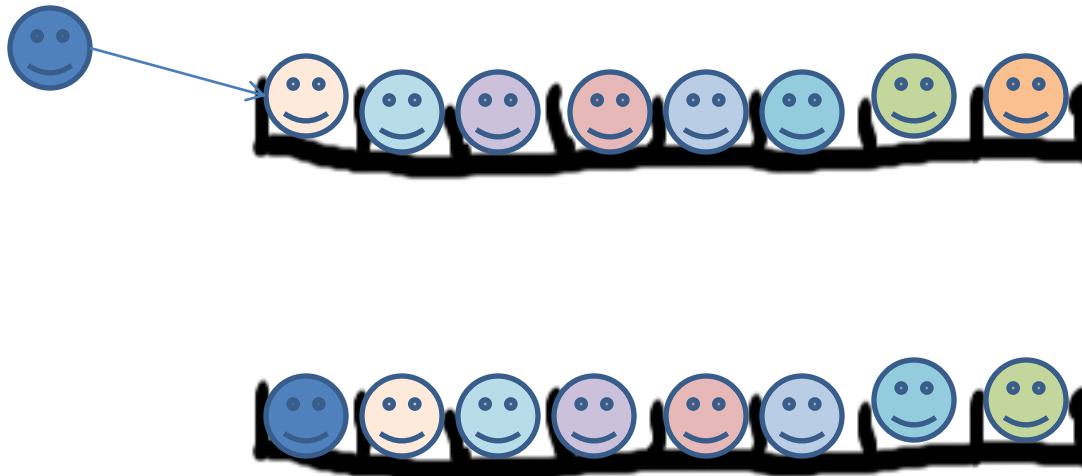
aggregation

# MapReduce



logging

# capped collections





Quickfilter

## Messages

Currently containing 4.034 messages, filtered by 0 blacklisted terms. 371 messages in the last 10 minutes.

Message (regex):

mysql

Timeframe:

Facility:

Severity:

Notice

Host:

Add additional field

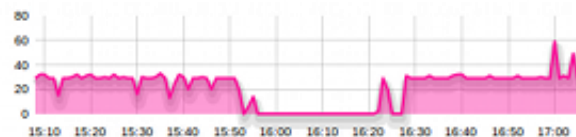
Run filter

Delete all messages hit by this quickfilter

Date	Host	Severity	Facility	Message
09.01.2011 - 17:07:53	sundaysister	Notice	Kernel (0)	sundaysister kernel [15289.884546] type=1400 audit[1294589273.867:25]: apparmor="STATUS" operation="profile_replace" name="/u ...
09.01.2011 - 17:07:51	sundaysister	Notice	Security/Authorization (10)	sundaysister sudo: lennart : TTY=pts/9 ; PWD=/home/lennart/workspace/graylog2-web-interface ; USER=root ; COMMAND=/etc/init.d ...
09.01.2011 - 17:07:48	sundaysister	Notice	Kernel (0)	sundaysister kernel [15284.452269] type=1400 audit[1294589268.437:24]: apparmor="STATUS" operation="profile_replace" name="/u ...
09.01.2011 - 17:07:46	sundaysister	Notice	Security/Authorization (10)	sundaysister sudo: lennart : TTY=pts/9 ; PWD=/home/lennart/workspace/graylog2-web-interface ; USER=root ; COMMAND=/etc/init.d ...
09.01.2011 - 17:04:26	sundaysister	Notice	Kernel (0)	sundaysister kernel [15082.920201] type=1400 audit[1294589066.907:23]: apparmor="STATUS" operation="profile_replace" name="/u ...
09.01.2011 - 17:04:22	sundaysister	Notice	Security/Authorization (10)	sundaysister sudo: lennart : TTY=pts/9 ; PWD=/home/lennart/workspace/graylog2-web-interface ; USER=root ; COMMAND=/etc/init.d ...
09.01.2011 - 17:04:06	sundaysister	Notice	Kernel (0)	sundaysister kernel [15062.504220] type=1400 audit[1294589046.487:22]: apparmor="STATUS" operation="profile_replace" name="/u ...
09.01.2011 - 17:04:03	sundaysister	Notice	Security/Authorization (10)	sundaysister sudo: lennart : TTY=pts/9 ; PWD=/home/lennart/workspace/graylog2-web-interface ; USER=root ; COMMAND=/etc/init.d ...
09.01.2011 - 17:00:14	sundaysister	Notice	Kernel (0)	sundaysister kernel [14830.957114] type=1400 audit[1294588814.937:21]: apparmor="STATUS" operation="profile_replace" name="/u ...
09.01.2011 - 17:00:11	sundaysister	Notice	Security/Authorization	sundaysister sudo: lennart : TTY=pts/10 ; PWD=/home/lennart ; USER=root ;

## Welcome, lennart!

Your current time: 09.01.2011 - 17:08:27



## Favorite streams

MongoDB Replication

Finance (523/15/15m)

## Message collection

Capped: OK

Size: 1020 KB

Capped to: 477 MB

Objects: 4901

Average object size: 213 Bytes

## Jobs & Tasks

Stream subscriptions: running

Stream alerts: running

Open dashboard



# Hosts of group Viz Example

## Add Rules

You can add hosts based on their name or on **regular expressions**. All hosts that names start with **web** will appear in this group when you add **^web** as regular expression. It will always run on your current set of hosts so there is no need to re-add the expression when you have a new host that starts with **web**.

Hostname:  Add Regular expression:  Add

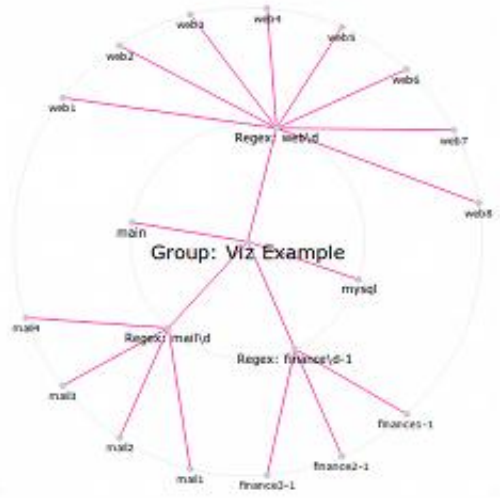
## Rules

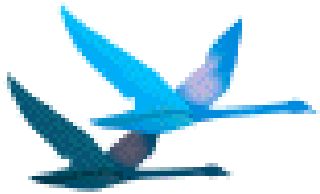
Click on a rule to remove it.

- Host: [mysql](#)
- Host: [main](#)
- Regex: [finance\[0-1\]](#)
- Regex: [mail\[0\]](#)
- Regex: [web\[0\]](#)

## Currently collected hosts

- finance1-1
- finance2-1
- finance3-1
- mail1
- mail2
- mail3
- mail4
- main
- mysql
- web1
- web2
- web3
- web4
- web5
- web6
- web7
- web8





# tungsten-replicator

A high performance, open source, data replication engine for MySQL

analytics

```
db.users.update(  
  {name : "mysql"},
```

```
db.users.update(  
  {name : "mysql"},  
  {$set :  
    {"contact.website" :  
      "oracle.com"  
    }  
  }  
);
```

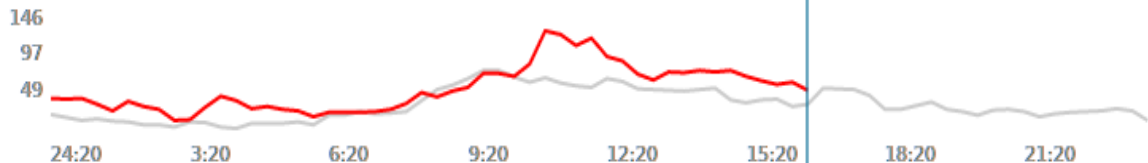
```
> db.pageviews.update(  
  {url : "example.com"},  
  {$inc : {pageviews : 1}},  
  true)
```

4:36:54 PM

Real-time

Replay

Today | 7 days | 30 days



Active Visits

61



30-Day Min 0 30-Day Max 315



New 13 Returning 48

Top Pages

(Paused) More

A VC 13



The Twitter Platform's Inflection 13



Internet Freedom 6



Blackberry Gets Some Social Media 6



Analyzing Financial Statements 3



Cash Flow 3



MBA Mondays : A VC 2



Accounting 2



Does Apple Have A Blind Spot About 1



10 Golden Principles of 1



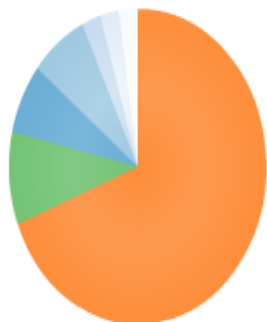
Three Web 2.0 Questions 1



Each ● represents 1 active visit(s). 11 pages shown are 84 percent of active visits.

Traffic Sources

More



Links 19

- twitter.com 3
- pehub.com 3
- bothsidesofthetable.com 1
- google.com 1
- cdixon.org 1
- techcrunch.com 1
- bloglines.com 1

Search 4

- music This is My country 1
- viral 1
- if net income goes up does equity 1
- power of compounding reinvesting 1

Direct 29

Engagement

Reading 11 Writing 4



Idle 46

Minutes on Page

from techmeme.com/ 4:36:08 11 seconds to load Finland

Compounding Interest from search: power of compound 4:36:06 133.14 seconds to load United States

Affiliate Marketing Underv from blog.viglink.com/ 4:36:02 16.01 seconds to load Oregon, United States

Blackberry Gets Some So 4:36:00 3.67 seconds to load California, United States

Cash Flow 4:36:00 24.07 seconds to load New York, United States

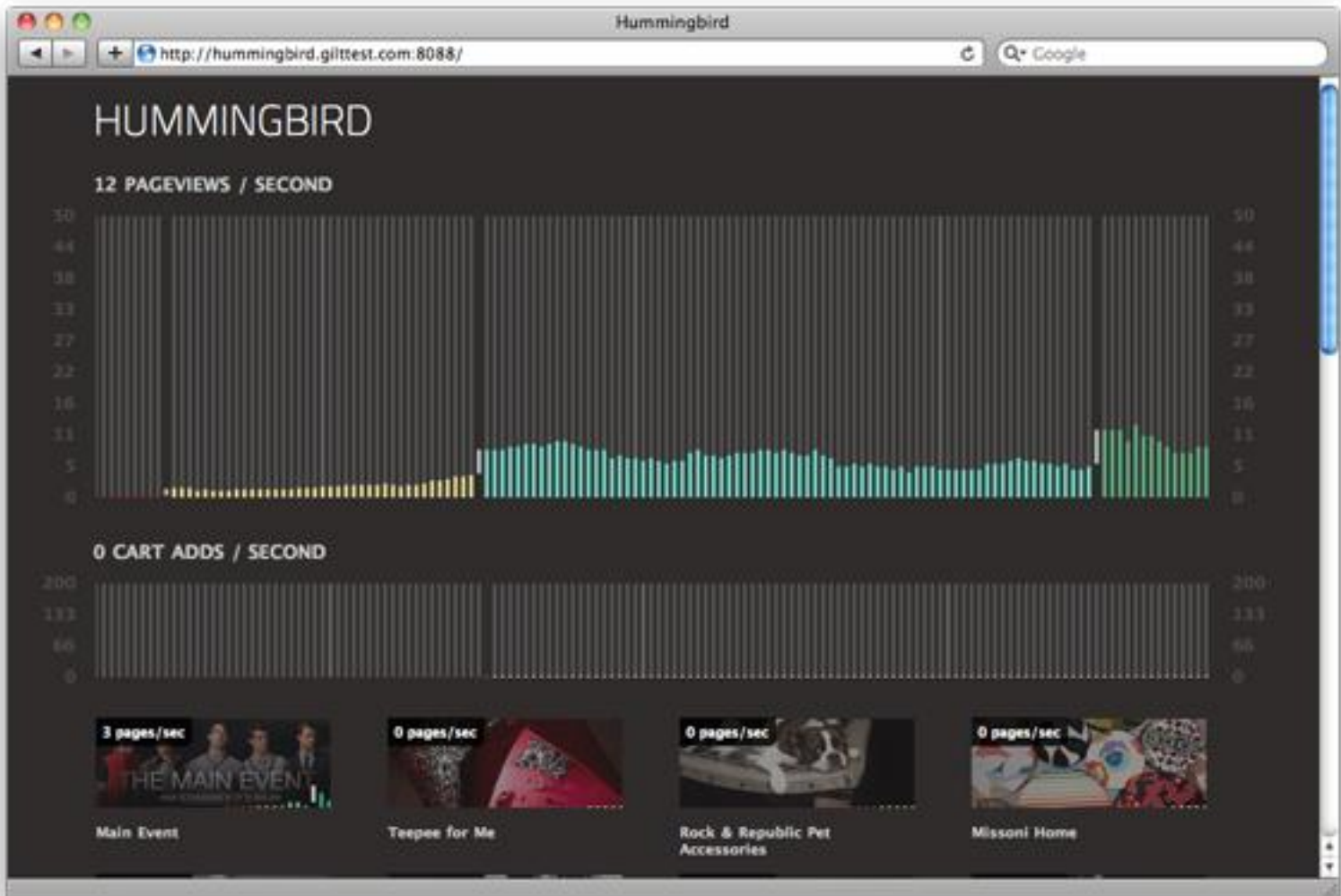
10 Golden Principles of Su Apps 4:36:00 25.08 seconds to load New York, United States

Blackberry Gets Some So from twitter.com/fredwilson/ 4:35:59 24.35 seconds to load Canada

Internet Freedom from google.com/reader/view/ 4:35:58 6.12 seconds to load United States

Cash Flow from search: if net income goes up 4:35:58 9.95 seconds to load New Jersey, United States

Cash Flow 4:35:56 4.45 seconds to load Washington, United States



geospatial

Everywhere

Search

WA  
Memory "Say hi to Greg and Ian"

WA  
ills "Find something beautiful  
me"

ttle, WA  
oods - Interbay "Vanilla latte &  
-best breakfast"

, Washington  
City Basketball Academy  
frest. ECBA!!!

hinese Village "Had

, Washington  
Colin "Enter through the right

updates?



```
db.restaurants.insert({
  "name" : "Joe's coffee",
  "location" : [40.45, 73.59],
  "tags" : ["coffee", "bakery"]
})
```

```
db.restaurants.find({  
  "location" : {"$near" : [40, 73]}  
}))
```

```
db.restaurants.find({
  "location" : {"$near" : [40, 73]},
  "tags" : "coffee"
})
```

# MongoNY

June 7<sup>th</sup>

50% off discount code: percona



# thank you!

@kchodorow  
kristina@mongodb.org

<http://www.snailinaturtleneck.com>

