

**РАБОТАЕТ — НЕ ТРОГАЙ!**

**ИЛИ ЗАЧЕМ МЫ ОПЯТЬ  
ПЕРЕДЕЛАЛИ ВСЮ АРХИТЕКТУРУ**

# Ты кто такой?

- @jbaruch – это я
- @real\_jbaruch – это не я, но тоже ОК
- Developer Advocate @ JFrog
- Artifactory, Bintray, лягушки, вот это всё



**JFrog Bintray**



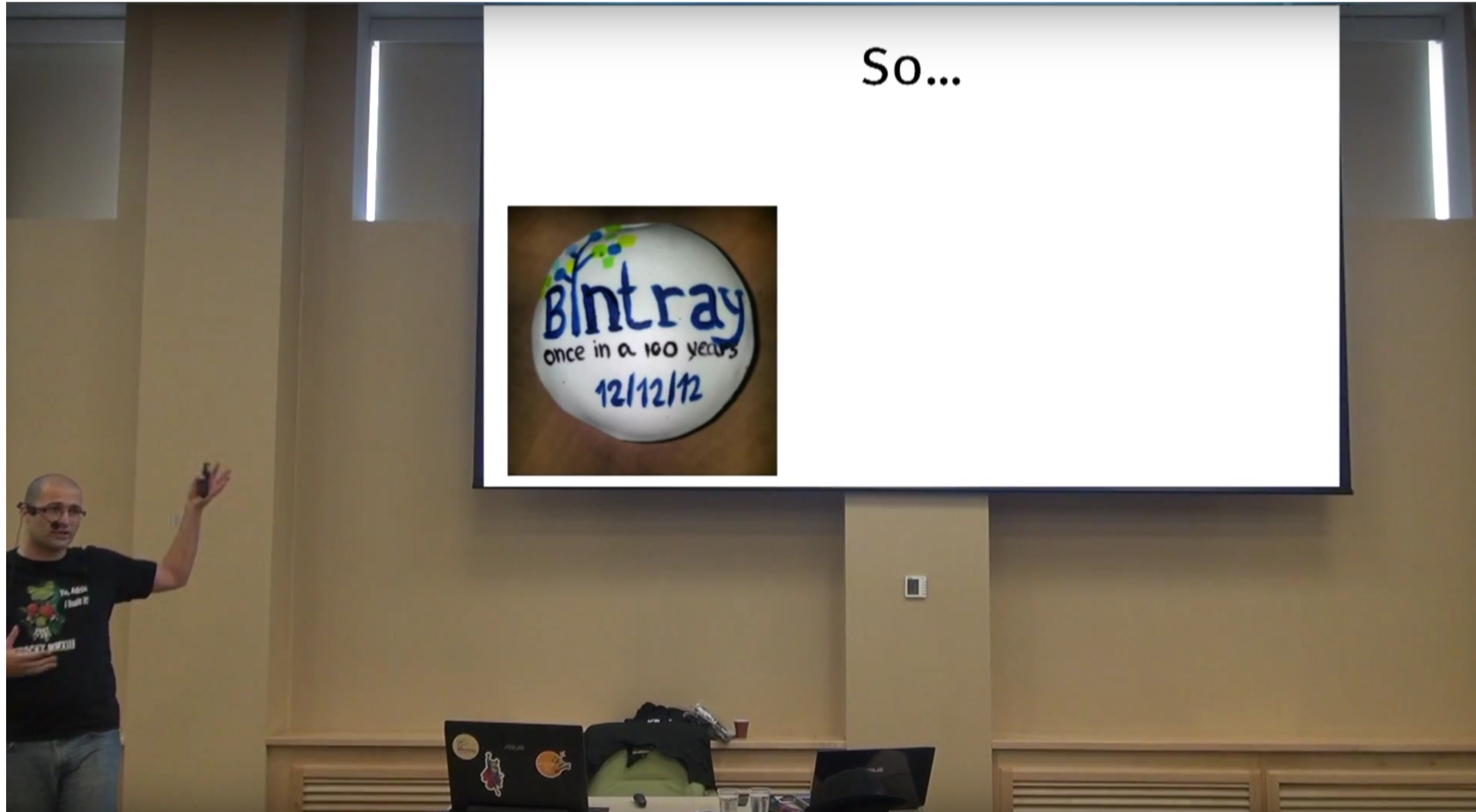
## DISTRIBUTION MADE EASY!

Your package hosting and download center infrastructure for automated software distribution

(Serving 346,786 packages in 154,567 repositories)

**МИЛЛИАРД ЗАПРОСОВ В МЕСЯЦ.**

30 Августа 2013 г.



требования

требования

– Раздача файлов

# требования

- Раздача файлов
- Веб морда



# требования

- Раздача файлов
- Веб морда
- REST API

# требования

- Раздача файлов
- Веб морда
- REST API
- Всякие сервисы

# ЗНАЕМ МЫ ЭТИХ ПРОГРАММИСТОВ

The screenshot displays the Typesafe Repository Browser interface. At the top, there is a navigation bar with the Typesafe logo and buttons for Home, Artifacts, Deploy, and Admin. A left sidebar contains navigation options under 'Browse' (Tree Browser, Simple Browser, Search Results, Builds) and 'Search' (Quick Search, Class Search, GAVC Search, Property Search, Checksum Search, Remote Search). The main content area is titled 'Repository Browser' and shows a tree view of artifacts. The 'akka-old-dependencies' artifact is selected, and its details are shown in a panel on the right. This panel has tabs for 'General' and 'Properties', with 'Properties' currently active. The 'Info' section provides details about the artifact, including its name, description, creation time, artifact count, repository path, and layout. Below this, there are sections for 'Actions' (Refresh), 'Virtual Repository Associations' (repo, internal-releases, releases), and 'Distribution Management' (XML snippet).

**Typesafe**

Home Artifacts Deploy Admin

### Repository Browser

- akka-old-dependencies
  - fresh-timestamps
  - ide-2.10
  - ide-2.11
  - ide-2.8
  - ide-2.9
  - ivy-releases
  - ivy-snapshots
  - maven-releases
  - maven-snapshots
  - sbt-2.10
  - sbt-2.9
  - scala-fresh-2.10.x
  - scala-pr-validation-snapshots
  - scala-sha-bootstrap
  - temp-distributed-build-snapshot
  - temp-distributed-builds
  - test-ivy-releases
  - third-party
  - windows-releases
  - zinc
  - akka-releases-cache
  - akka-repo-cache
  - akka-snapshots-cache

**akka-old-dependencies**

**General** **Properties**

**Info**

Name: akka-old-dependencies ?

Description: Old dependencies required by akka, not known to be available via maven central

Created: 30-01-13 14:45:55 UTC

Artifact Count: Show...

Repository Path: akka-old-dependencies: ?

Repository Layout: maven-2-default

**Actions**

Refresh

**Virtual Repository Associations**

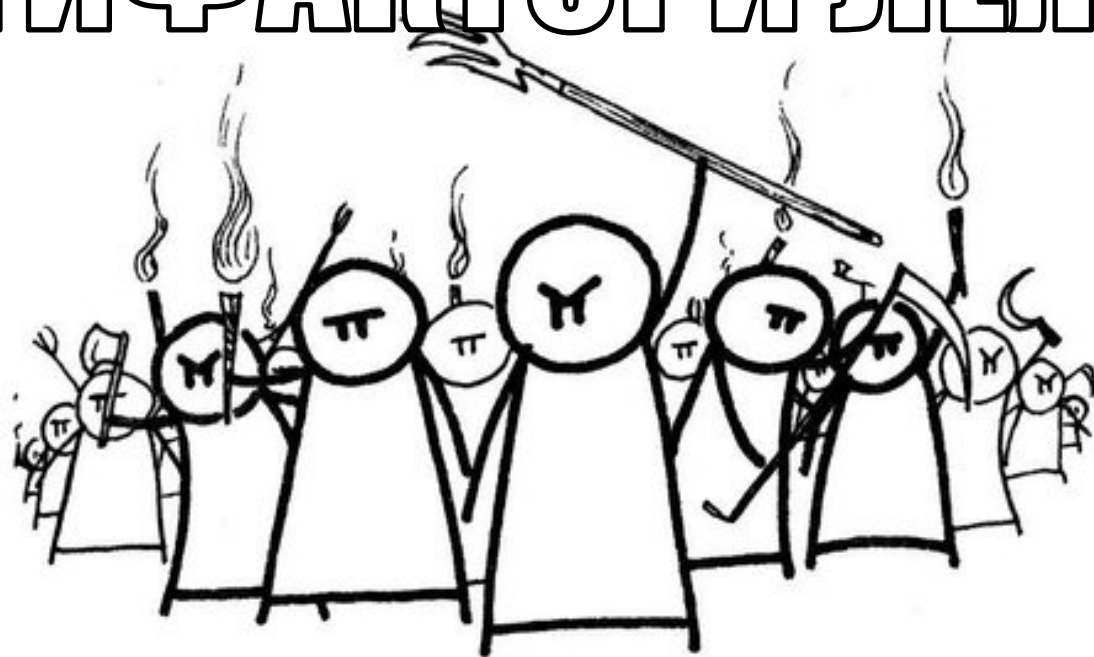
repo internal-releases releases

**Distribution Management**

```
<distributionManagement>
  <repository>
    <id>typesafe</id>
```

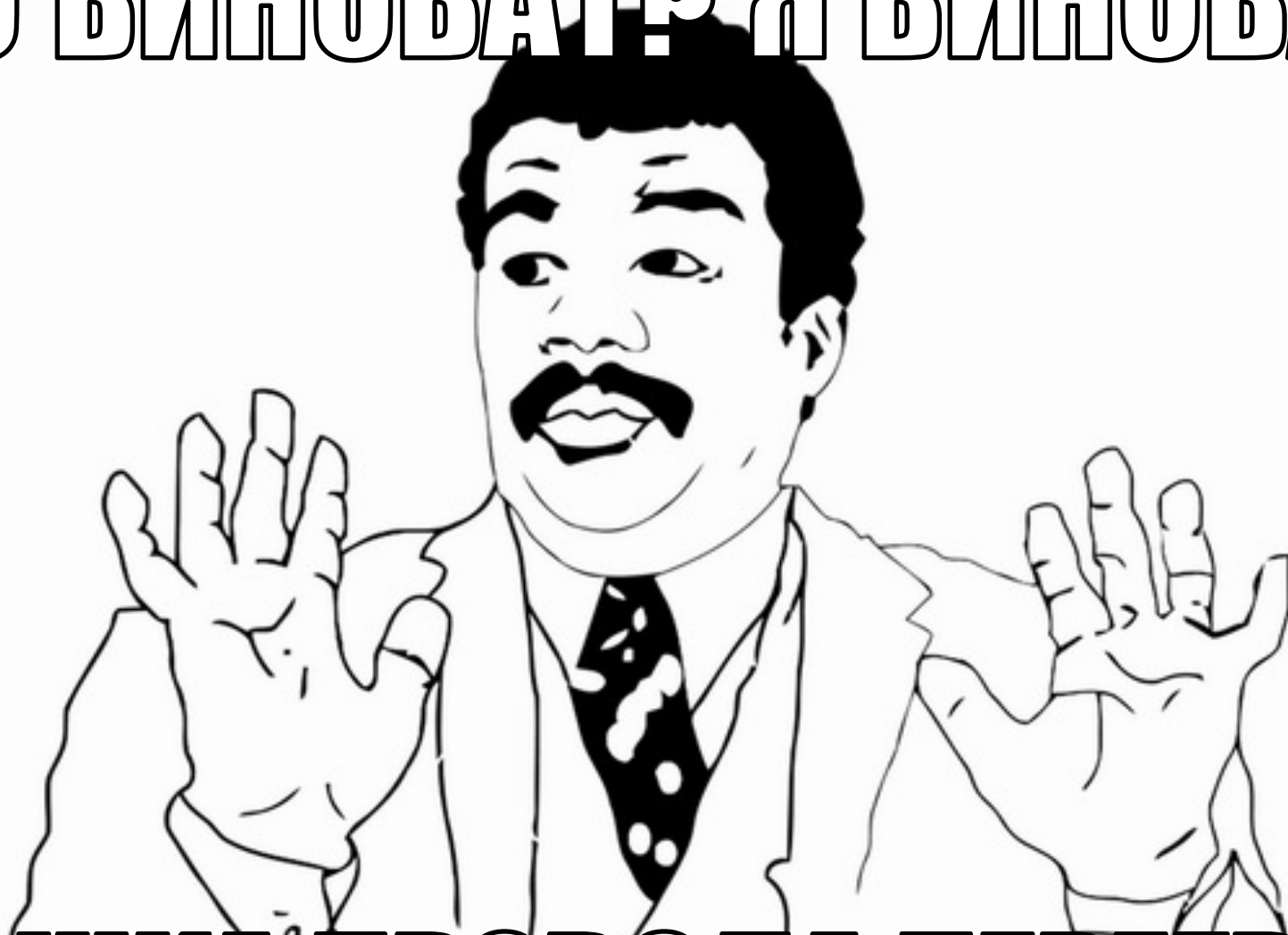
КРИКЛИВЫЕ АДЕПТЫ ОЧЕРЕДНОГО \$ { LANG }

АРТИФАКТОРИ ЛЕЖИТ!



БИЛДЫ ПАДАЮТ!

КТО ВИНОВАТ? Я ВИНОВАТ?



ЭТО КОШКА ПРОВОДА ПЕРЕГРЫЗЛА!

Раздача файлов должна...



Веб морда должна...



Всякие сервисы должны...





# требования

сервис

RPS доступность

# требования

сервис

Download

RPS

10K

доступность

Кровь из носа

# требования

сервис	RPS	доступность
Download	10K	Кровь из носа
Interaction	100	Практически всегда

# требования

сервис	RPS	доступность
Download	10K	Кровь из носа
Interaction	100	Практически всегда
Services	1	Должно работать

Простой и умный

**DOWNLOAD SERVER**

# Metadata-rich Storage

Browser UPLOAD FILES CI

Buckets / jad-artifactory-test-01 / filestore / 0d

Name
0d02c0af622aa6a0c86e81c519299e888e0a32a3
0d1121871c43c95d00e540ce4ef7f519d48683d6
0d2ad4d1498d1048abc6c6948fd3f835d8fdafb0
0d3c36fad639666bcb5ad1d2de6e3d4c275625cb
0d46ad8895cab52f24b37be02c8bdbc4f8005f00
0d64ba4819699c0f9da0e1265d3ee44bffc3d08b
0d6b705c43b5bbf4b506af83b9a6d6591c820989
0d885f164e5cfbb103febb297b7bb88ab43db9fb
0de20e1eea680fc277fddb66bc24ba40d449168b

Artifact on disk

Record in DB

sha1_actual	repo	node_path	node_name	bin_length
0cf8057f4afbc32f6d5955bd8154f72f75f6e239	nuget-stage-local	JFrog/MyTestProject/20160120.3	VSODemo.Service.1.0.0.0.nupkg	4229
0cf9149103fd1be36f87cc5b9ef5656f77c575bd	jcenter-cache	org/sonatype/aether/aether-spi/1.13...	aether-spi-1.13.1.pom	1448
0d2ad4d1498d1048abc6c6948fd3f835d8fdafb0	jcenter-cache	javax/validation/validation-api/1.1...	validation-api-1.1.0.Final.pom	7860
0d46ad8895cab52f24b37be02c8bdbc4f8005f00	maven-test-local	org/jfrog/test/multi3/3.7-SNAPSHOT	multi3-3.7-20160321.235600-65.war	2533328
0d64ba4819699c0f9da0e1265d3ee44bffc3d08b	npm-remote-cache	.npm/errorhandler	package.json	40638
0d6b705c43b5bbf4b506af83b9a6d6591c820989	maven-test-local	org/jfrog/test/multi2/3.7-SNAPSHOT	multi2-3.7-20160322.174630-89.jar	1019
0d885f164e5cfbb103febb297b7bb88ab43db9fb	maven-test-local	org/jfrog/test/multi1/3.7-SNAPSHOT	multi1-3.7-20160322.191609-98-tests...	1309
0e22a6bcaa8245e834ee3bc884a0c4fee4bbd079	jcenter-cache	org/apache/maven/maven-builder-supp...	maven-builder-support-3.3.3.jar	14964
0e803c5b6fff51bfa3ff5419f0a908006dh4e400	npm-remote-cache	.npm/is-dotfile	package.json	9198

# Проще некуда (На самом деле есть)

NGINX



SWIFT   
Object Storage



Project Grizzly



Jersey

RESTful Web Services in Java.

Гибкий и мощный

**WEB APPLICATION**





elastic



NGINX

Асинхронные сервисы:  
Например, обсчет индексов



Очереди + состояние

# What is the best mongodb hosting?

What is the best hosting solution for mongodb?



Write Answer



Re-Ask

Follow

70

Comment

Share

Downvote



## 13 Answers



**Gaëtan Voyer-Perrault**, Software Engineer, DB & Node.JS enthusiast

16.7k Views • Gaëtan is a Most Viewed Writer in MongoDB with 270+ answers.

For most people there are basically three major players:

1. MongoLab
2. MongoHQ
3. ObjectRocket

 This image cannot currently be displayed.

### 3 Answers

active

oldest

votes



9



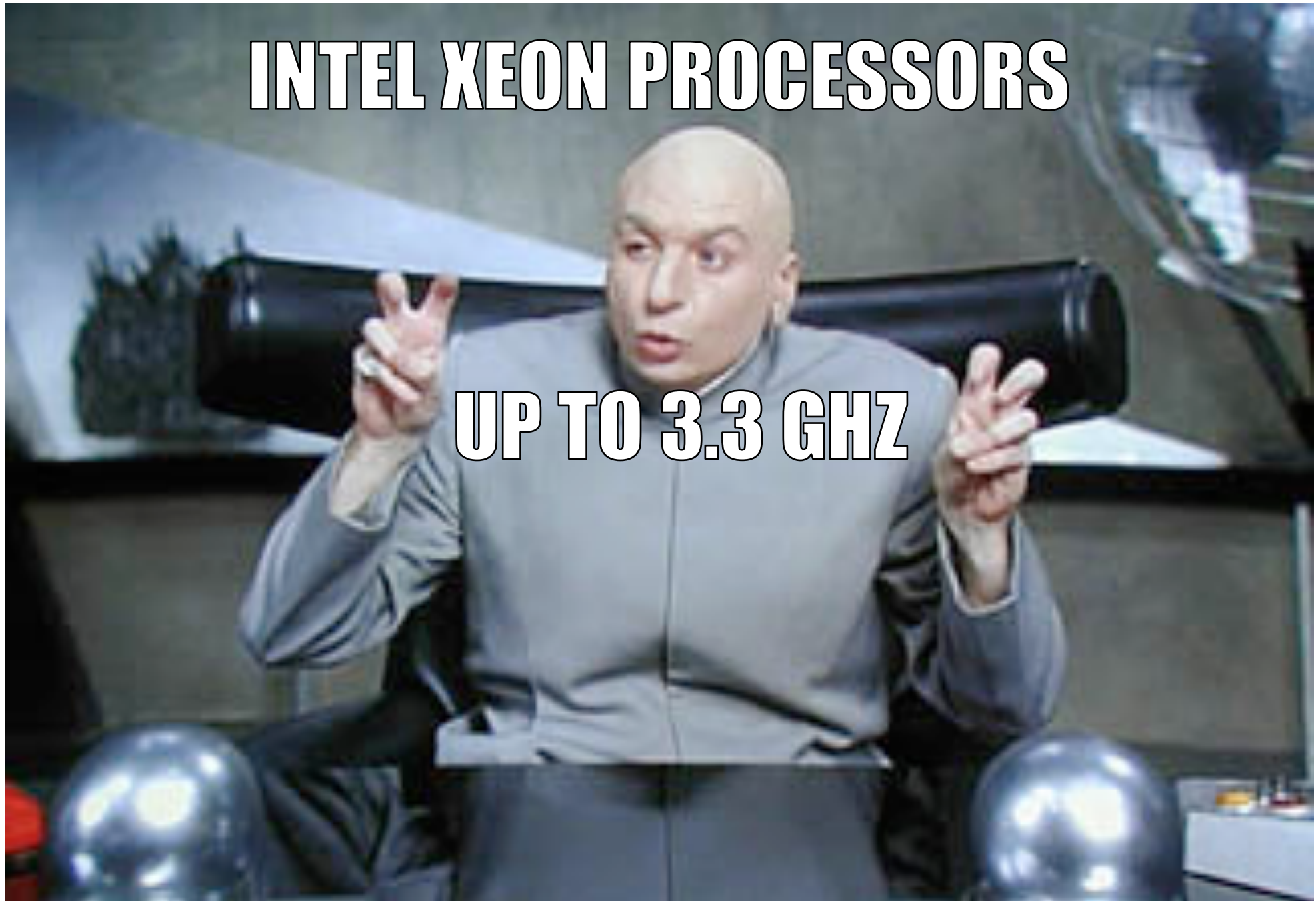
I found that there isn't simple and absolute answer for questions like yours. Each virtualization solution behaves differently on specific performance tests. Also, tests like disk I/O throughput can be split in many different tests (read, write, rewrite, ...) and the results will vary from solution to solution, and from scenario to scenario. This is why it is not trivial to point one solution as being the fastest for disk I/O, and this is why there is no absolute answer for labels like overhead for disk I/O.

#### VM layer overhead, Linux guest:

- CPU and Memory: 14.36%
- Network I/O: 24.46%
- Disk I/O: 8.84%
- Disk latency for reading: 2.41 times slower
- Micro-operations execution time: 10.84 times slower

**INTEL XEON PROCESSORS**

**UP TO 3.3 GHZ**





REMEMBER?



elastic



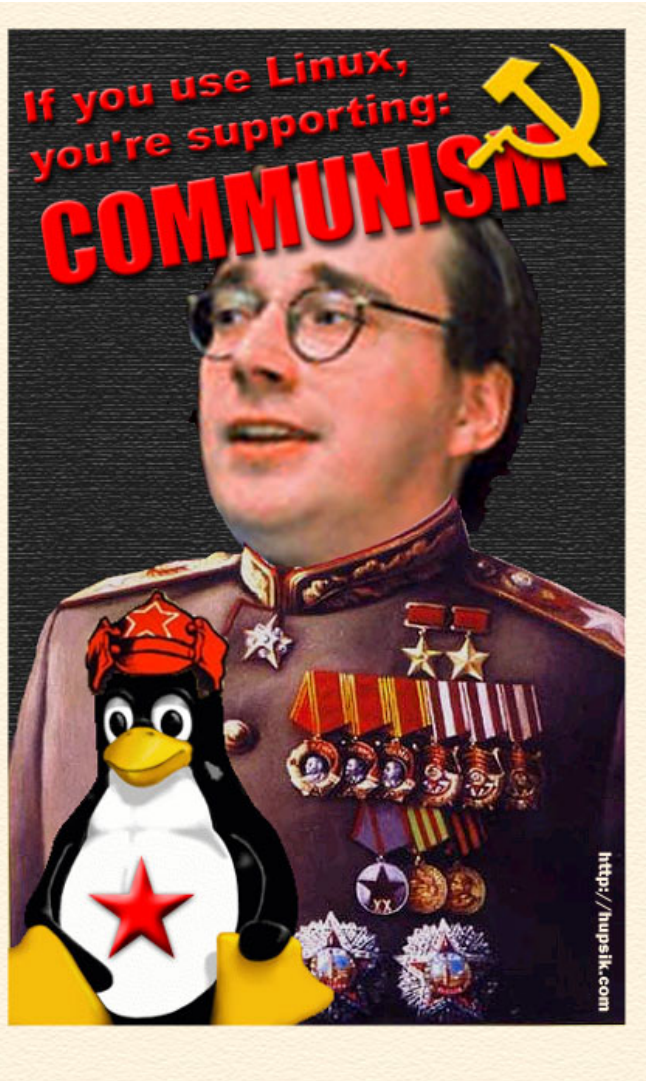
NGINX

**DEVOPS**



WE ARE LIBERAL

WE ARE LIBERAL



# WE ARE LIBERAL



# WE ARE LIBERAL



**НЕЛЬЗЯ ПРОСТО ТАК ВЗЯТЬ И**

**ПОСТАВИТЬ ВСЁ ЭТО НА ВСЁ ТО**

# DevEnv and Deploy



**CHEF**™



**VAGRANT**

# DevEnv and Deploy

Jfokus

[SPEAKERS](#) [TALKS](#) [SCHEDULE](#) [VIDEO](#)

3-5 February  
2014



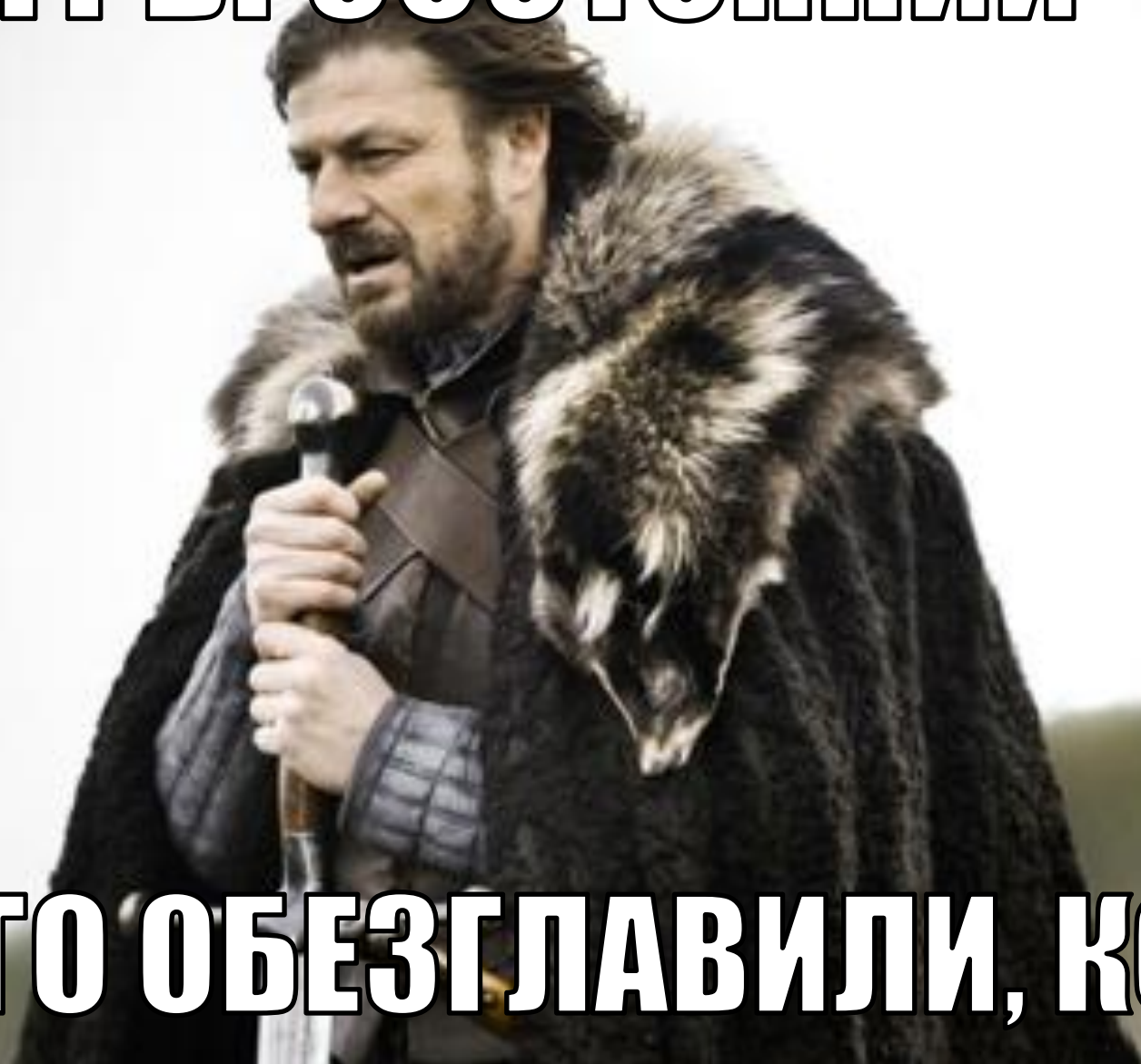
## **Presentation: Developing for multi-component environment while keeping your sanity**

**Baruch Sadogursky**, JFrog Ltd.



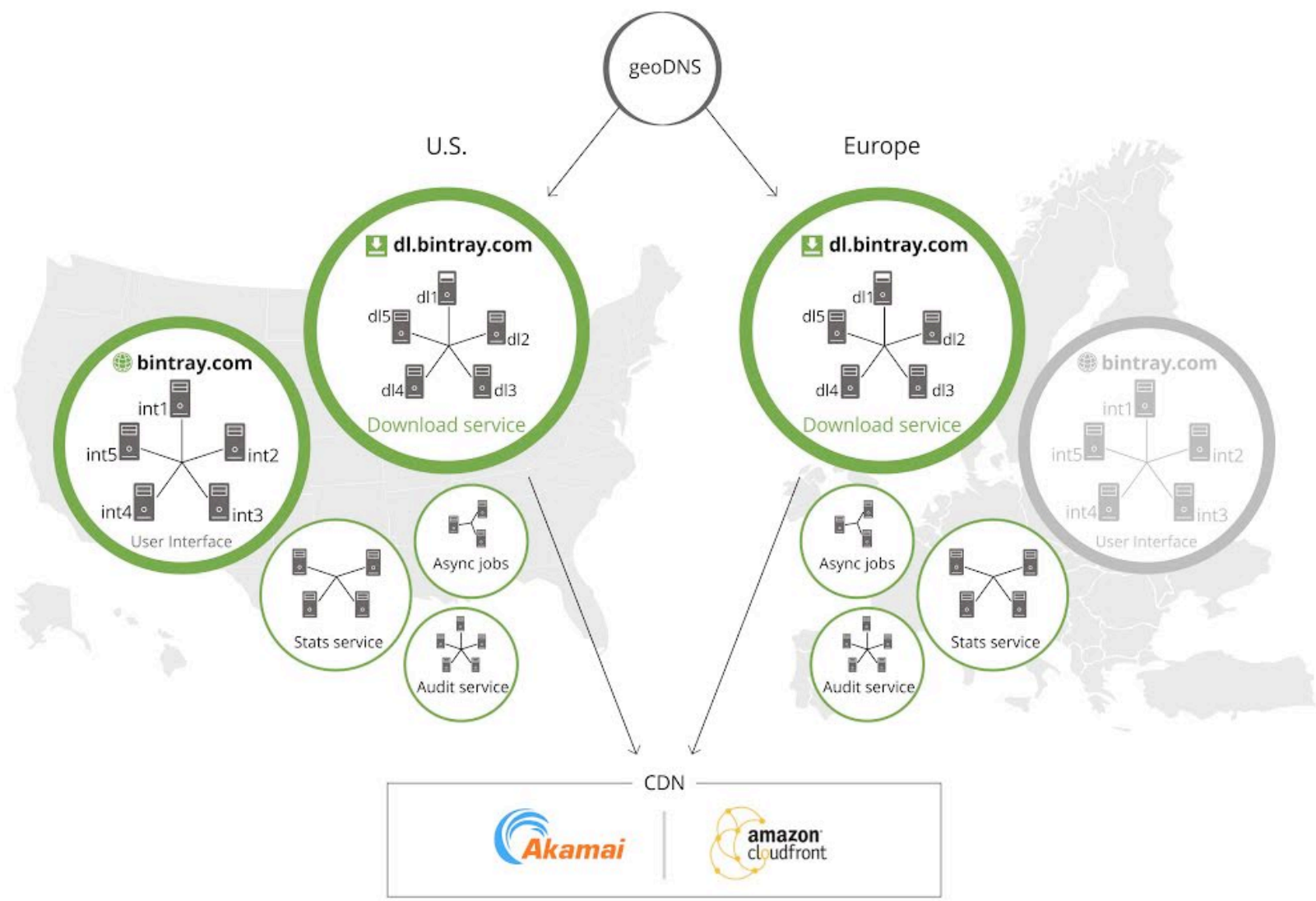
Managing a modern multi-component application in a continuous integration/deployment environment can be very tricky. In this session we will concentrate on two of the aspects - environment setup, showcasing tools like Vagrant, Chef and Puppet for creating and controlling development, testing, staging, production and other environments and pushing the deliverables through those environments, using tools like Gradle, Jenkins and Artifactory. Join us and get all the little tips and tricks that will help you rule your development world.

ИГРЫ СОСТОЯНИЙ



В КОНЦЕ ЕГО ОБЕЗГЛАВИЛИ, КОНЕЧНО





# ВЫВОДЫ

# Выводы

– Определяйте критичность

# Выводы

- Определяйте критичность
- полюбите изменения

# Выводы

- Определяйте критичность
- полюбите изменения
- готовьтесь к росту, но будьте реалистами

# Выводы

- Определяйте критичность
- полюбите изменения
- готовьтесь к росту, но будьте реалистами
- Redundancy не избыточна!

## December 2015

---

### Degraded performance when downloading from Europe

Issue has been resolved. Downloads from Europe are back to normal speed.

Dec 22, 12:30-13:41 UTC

### File Download

Intermittent download outage due to connectivity issues with the main object storage service. Our fallback was not auto...

Dec 7, 11:40 UTC

## November 2015

---

### Degraded Download Performance

This incident has been resolved.

Nov 16, 10:20-12:11 UTC

## October 2015

---

No incidents reported for this month.

## September 2015

---

### REST and UI timeouts due to unexpected request bursts

This incident has been resolved.

Sep 1, 20:55 UTC

## March 2016

---

### UI and API is currently having some issues we are investigating the issue

Issue was fixed, both UI and rest API are back to normal.

Mar 20, 11:42-12:11 UTC

### Partial outage of UI and API

This incident has been resolved.

Mar 2, 14:10-14:15 UTC

## February 2016

---

### Stuck log rotation. Some logs may be suspended.

Log rotation recovery completed successfully.

Feb 28, 23:05 - Feb 29, 17:54 UTC

### Experiencing database indexing slowdown

We have identified and resolved the issue.

Feb 18, 09:30-10:05 UTC

### Publishing is temporarily paused due a connectivity issues in one of our backend networks

Network issue was resolved. Publishing process back to normal.

Feb 3, 05:15-07:53 UTC

### UI Upgrade

UI was temporarily down due to stuck version upgrade.

Feb 1, 15:46 UTC

## January 2016

---

No incidents reported for this month.

## August 2015

---

### Slowr EU download initialization

This incident has been resolved.

Aug 21, 16:07 - Aug 22, 17:04 UTC

### Degraded Download Performance

This incident has been resolved.

Aug 19, 17:18-18:10 UTC

### Downloads initialization slowdown

Continued cluster maintenance in order to improve the performance

Aug 13, 05:11-18:10 UTC

### Downloads initialization slowdown

Downloads and directory listing from the certain US regions were slow to start due to issues with the backend database ...

Aug 12, 14:21 UTC

## July 2015

---

No incidents reported for this month.

## June 2015

---

### Payment gateway issues

This incident has been resolved.

Jun 29, 09:32-14:36 UTC

### Uploads are slower than usual

This incident has been resolved.

Jun 11, 23:43 - Jun 12, 00:06 UTC

### Uploads temporarily disabled

This incident has been resolved.

Jun 7, 09:07-10:24 UTC

**#RAZBORPOLETOV**



# Доступность Шредингера

- Dear support, it looks like the service is down.

Thanks, JFrog DevOps.

- Dear JFrog DevOps, the service is just fine.

Thanks, Service as a Service support.

# What is the best mongodb hosting?

What is the best hosting solution for mongodb?

 Write Answer

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Downvote



## 13 Answers



**Gaëtan Voyer-Perrault**, Software Engineer, DB & Node.JS enthusiast

16.7k Views • Gaëtan is a Most Viewed Writer in MongoDB with 270+ answers.

The best hosting is a bunch of computers you own, in two different data centers, supported by a certified MongoDB & Linux expert who knows everything about your system :)

For most people there are basically three major players:

1. MongoLab
2. MongoHQ
3. ObjectRocket



**IF YOU WANT SOMETHING DONE, DO IT YOURSELF. YEP!**

REDUNDANCY  
REDUNDANCY  
REDUNDANCY  
REDUNDANCY

REDUNDANCY

REDUNDANCY

REDUNDANCY

Never too much of a good thing!

REDUNDANCY

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REDUNDANCY

Never too much of a good thing!

Total Countries

2

Total Servers

128,673

Total Domains Active

130,287

Global NOCCs

4

Lifetime Statistics

21,371.24 Gbps

Bits Delivered

CDN

# CDN

– Redundancy

# CDN

- Redundancy
- Скорость



# CDN

- Redundancy
- Скорость
- редирект



**ЭТО ЧТО-ЖЕ ПОЛУЧАЕТСЯ?**

**У МЕЛКИХ ФАЙЛОВ НЕТ  
REDUNDANCY?!**

We tried a lot of them

**SOFTLAYER®**

We tried a lot of them

**fastly**<sup>®</sup>

**SOFTLAYER**<sup>®</sup>

We tried a lot of them

**fastly**<sup>®</sup>



**SOFTLAYER**<sup>®</sup>

We tried a lot of them

**fastly**<sup>®</sup>



**SOFTLAYER**<sup>®</sup>

We tried a lot of them





We tried a lot of them



# Swift

Что я вам скажу за Swift?

Ну, скажем так, мы переехали на S3.

# S3 Consistency

Какая модель consistency у S3 для новых объектов?

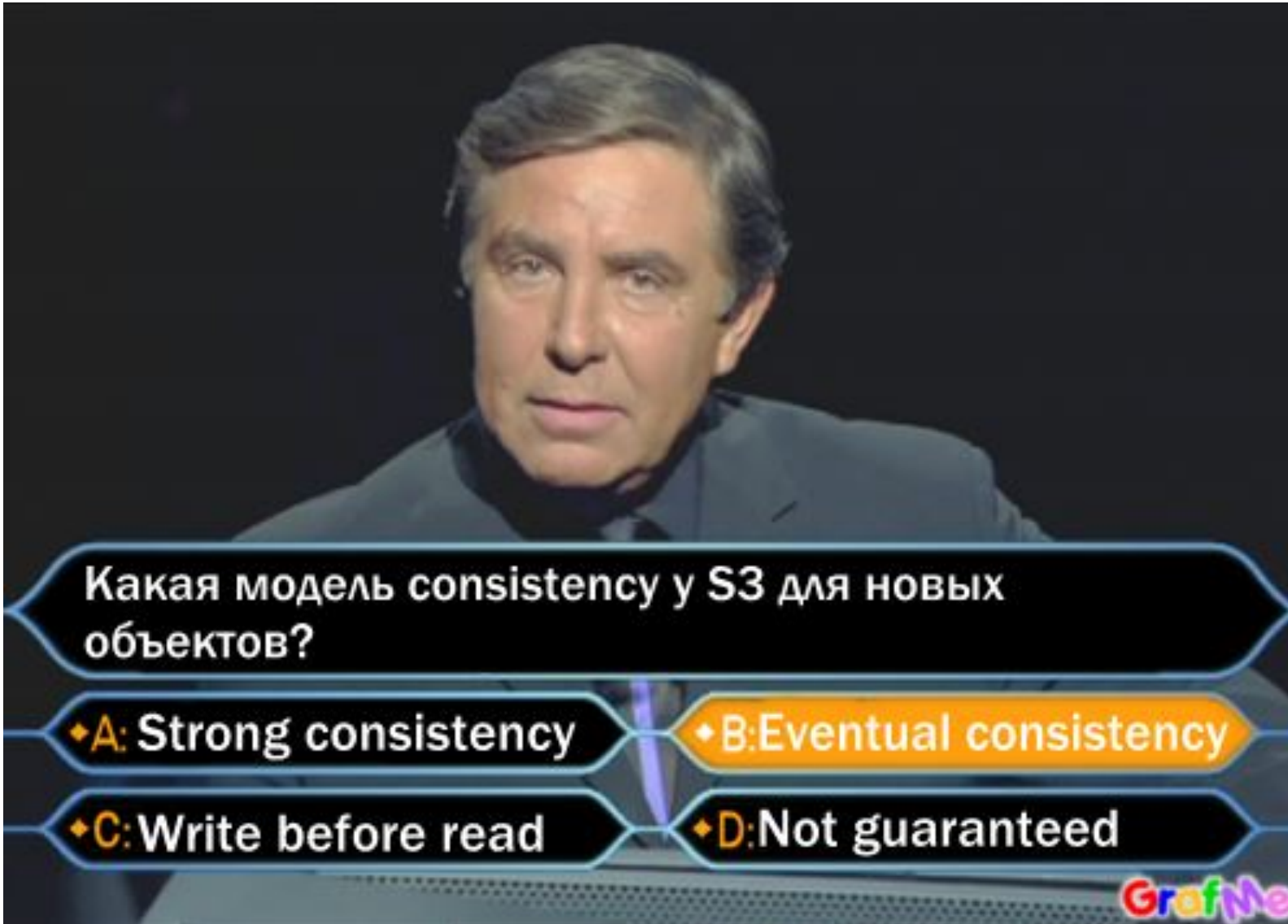
♦ A: Strong consistency

♦ B: Eventual consistency

♦ C: Write before read

♦ D: Not guaranteed

# S3 Consistency

A man with grey hair, wearing a dark suit and tie, is shown from the chest up. He is looking towards the camera with a neutral expression. The background is dark. In the foreground, there is a quiz interface with a question and four options. The question is in Russian. The options are in English. The option 'B: Eventual consistency' is highlighted in orange. The logo 'GrafMe' is in the bottom right corner.

Какая модель consistency у S3 для новых объектов?

- ♦ A: Strong consistency
- ♦ B: Eventual consistency
- ♦ C: Write before read
- ♦ D: Not guaranteed

GrafMe

# S3 Consistency

A man in a dark suit and tie is speaking. Overlaid on the bottom half of the image is a quiz interface. The quiz consists of a question and four options, each in a colored speech bubble. The question is in Russian. The options are: A: Strong consistency (orange), B: Eventual consistency (yellow), C: Write before read (green), and D: Not guaranteed (black). The 'C' option is highlighted with a green border. In the bottom right corner, there is a logo for 'GrafMe' in colorful letters.

Какая модель consistency у S3 для новых объектов?

- ♦ A: Strong consistency
- ♦ B: Eventual consistency
- ♦ C: Write before read
- ♦ D: Not guaranteed

GrafMe

**ЕСЛИ НЕ EVENTUAL CONSISTENCY,**



**ТО ЧТО?!**

# Что вместо?

Чем поступились ради отказа от eventual consistency?

♦ А: Убрали multizone redundancy

♦ В: Загрузки стали медленнее

♦ С: Больше обрывов

♦ D: Ничем, просто меджик

# Что вместо?



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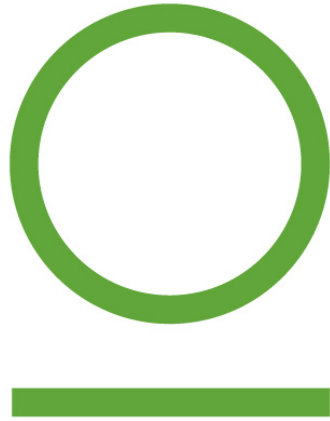
♦ С: Больше обрывов

♦ D: Ничем, просто меджик

Хмм, чем бы кэшировать файлы?



Внезапно!



**JFrog Artifactory**

Спасены!

# Спасены!

- Все первым делом заливается в artifactory

# Спасены!

- Все первым делом заливается в artifactory
- Большие файлы кэшируются пока не зальются на s3

# Спасены!

- Все первым делом заливается в artifactory
- Большие файлы кэшируются пока не зальются на s3
- Маленькие файлы кэшируются навсегда (redundancy)

# Спасены!

- Все первым делом заливается в artifactory
- Большие файлы кэшируются пока не зальются на s3
- Маленькие файлы кэшируются навсегда (redundancy)
- Все раздается вместе через virtual repository (оба кэша + s3)



# Асинхронные сервисы



Очереди + состояние



Очереди

A close-up, high-contrast image of Morpheus from the movie The Matrix. He is wearing his signature black sunglasses and has a serious, intense expression. The background is dark and out of focus. The text is overlaid in a bold, white, sans-serif font with a black outline.

**ЧТО ЕСЛИ Я СКАЖУ ТЕБЕ,**

**ЧТО ТВОИ МИКРОСЕРВИСЫ НЕ  
ДОСТАТОЧНО МИКРО?**

# RPM

Redhat  
YUM  
4 XML+GZ  
Repository

# POM

Java  
Maven  
1 XML  
Module

# DEB

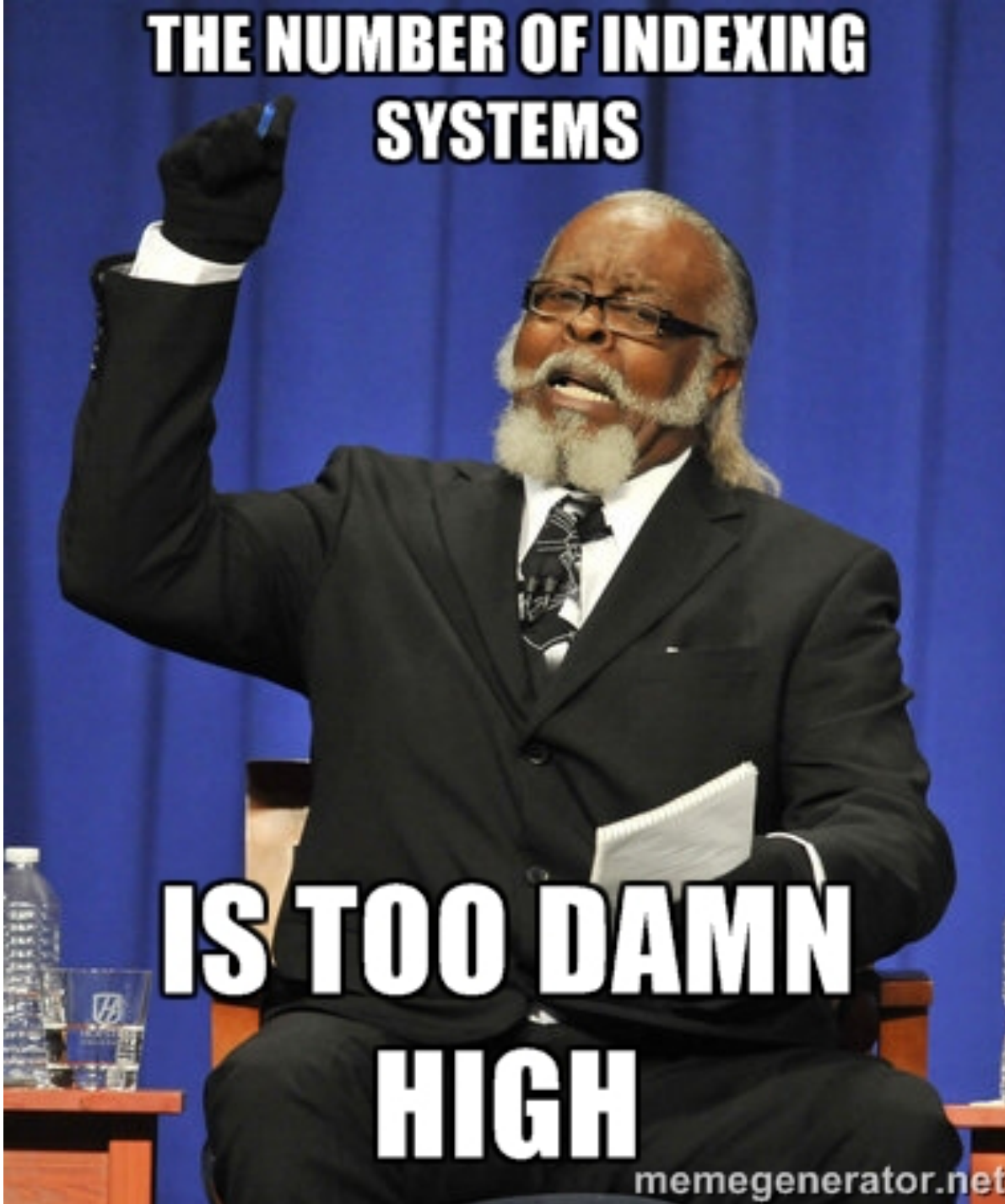
Debian  
APT  
1 TEXT/GZ  
Structured

# Достаточно тяжелая операция

Для 100к файлов:

- Час индексации
- 100мв индекс-файл

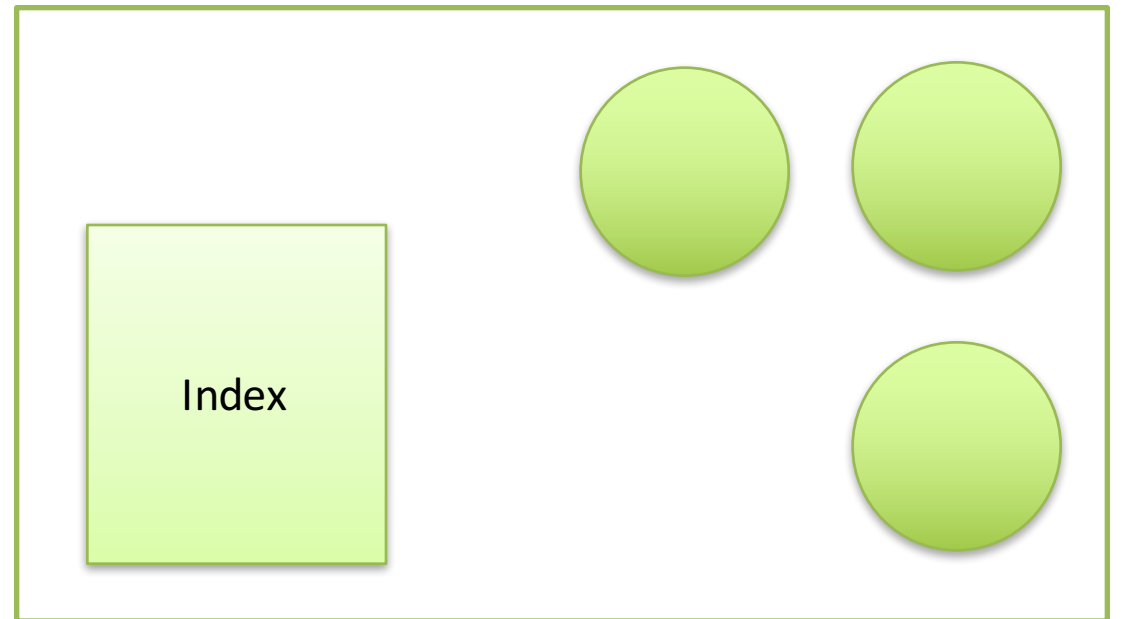
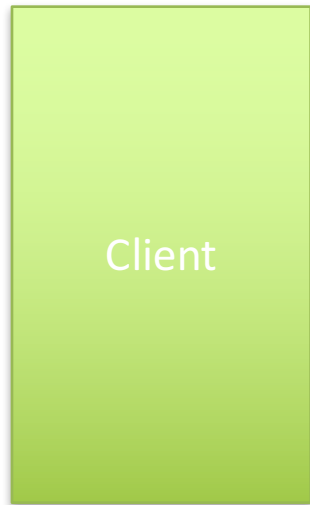
**THE NUMBER OF INDEXING  
SYSTEMS**



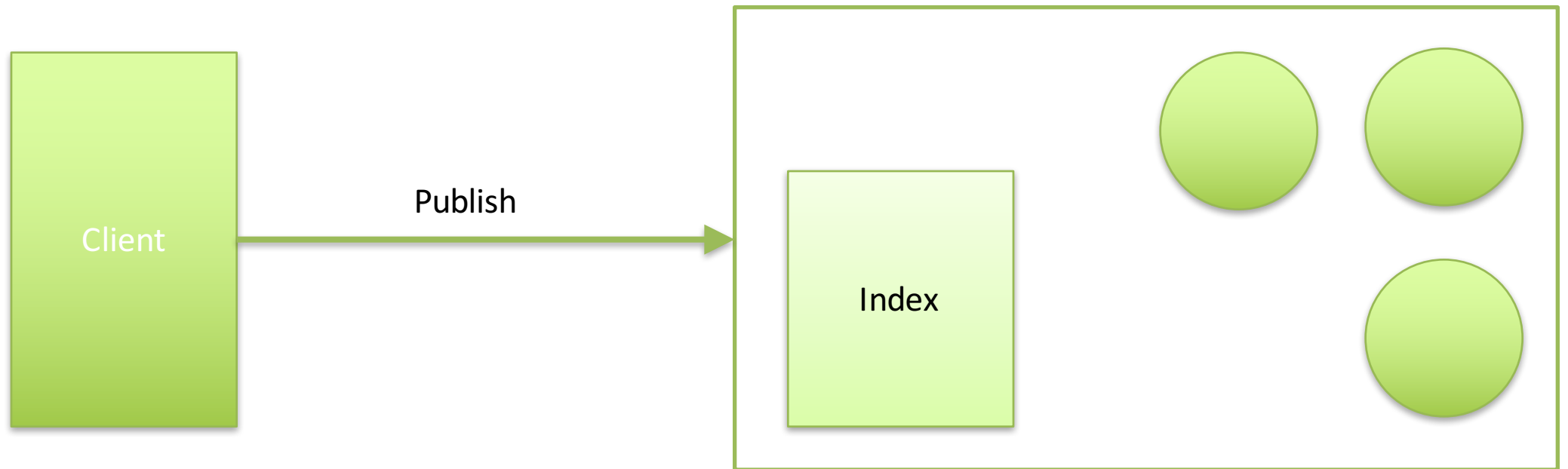
**IS TOO DAMN  
HIGH**

# **FUNDAMENTAL THEOREM OF SOFTWARE ENGINEERING**

# repomd

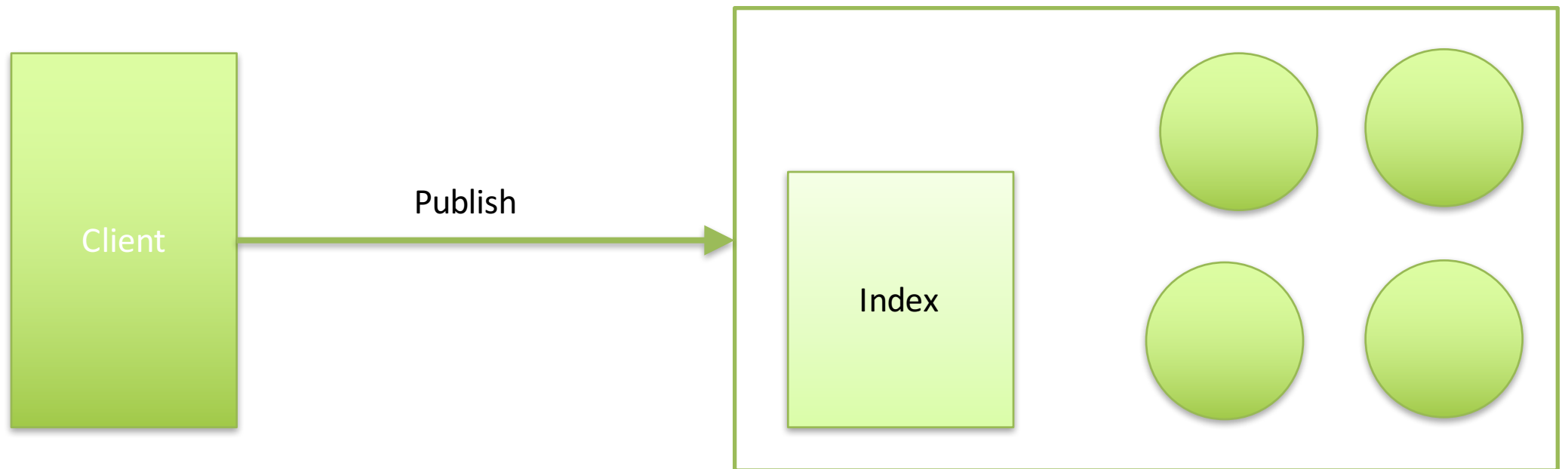


# repomd

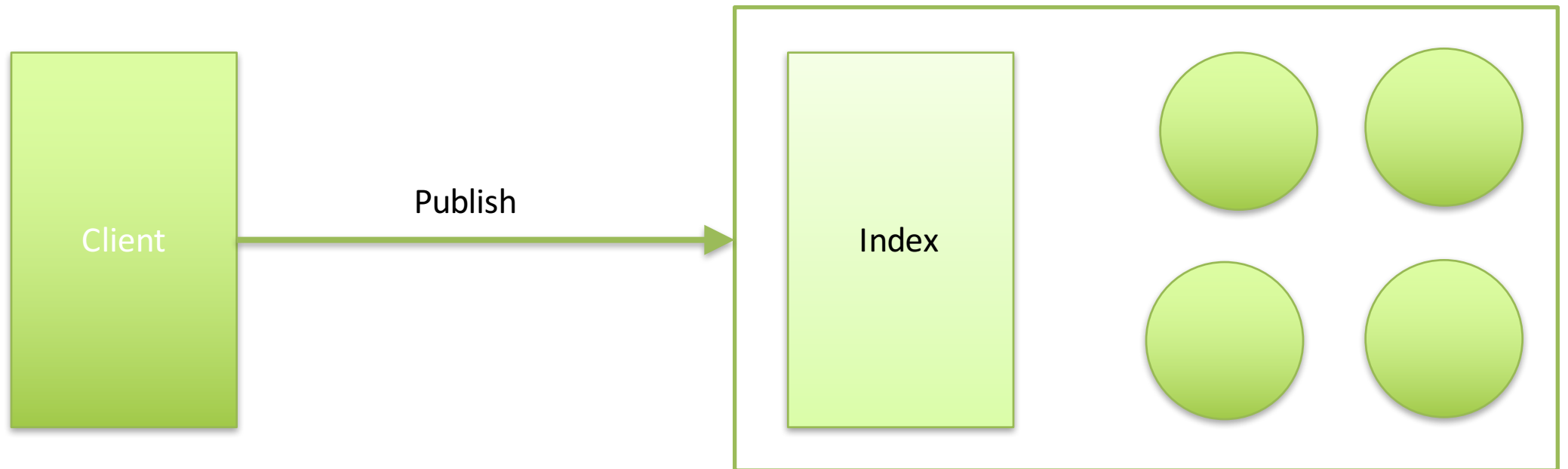




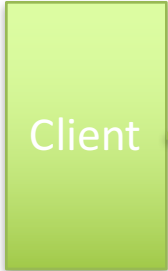
# repomd



# repomd



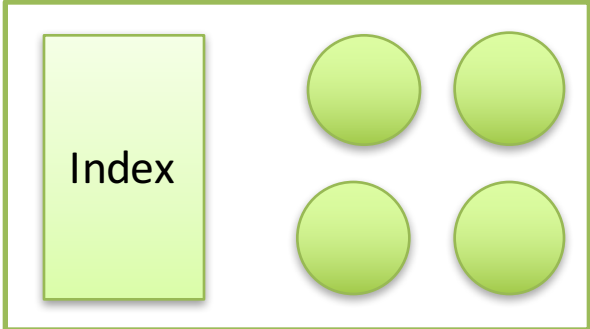
Bintray webapp

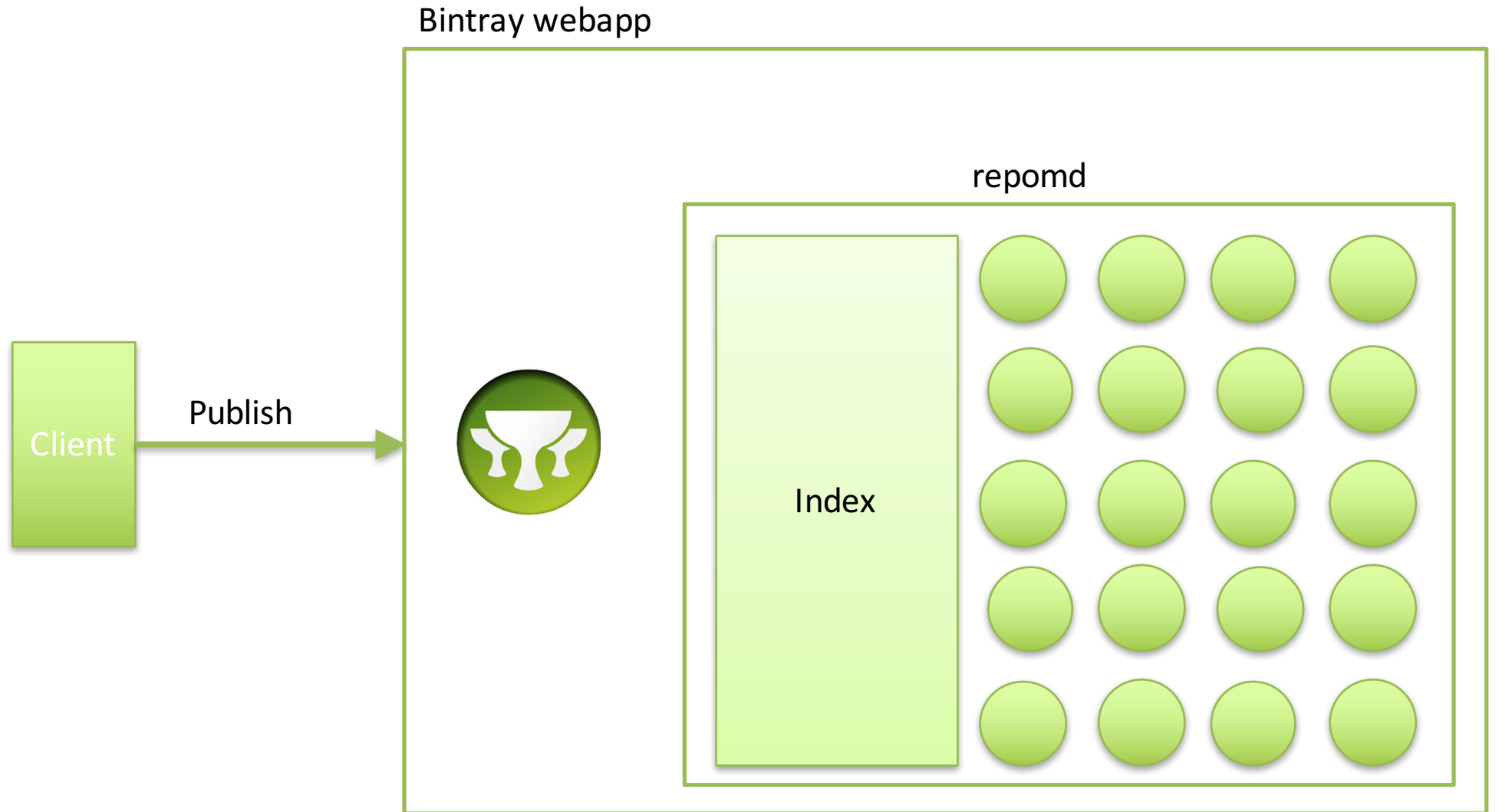


Publish

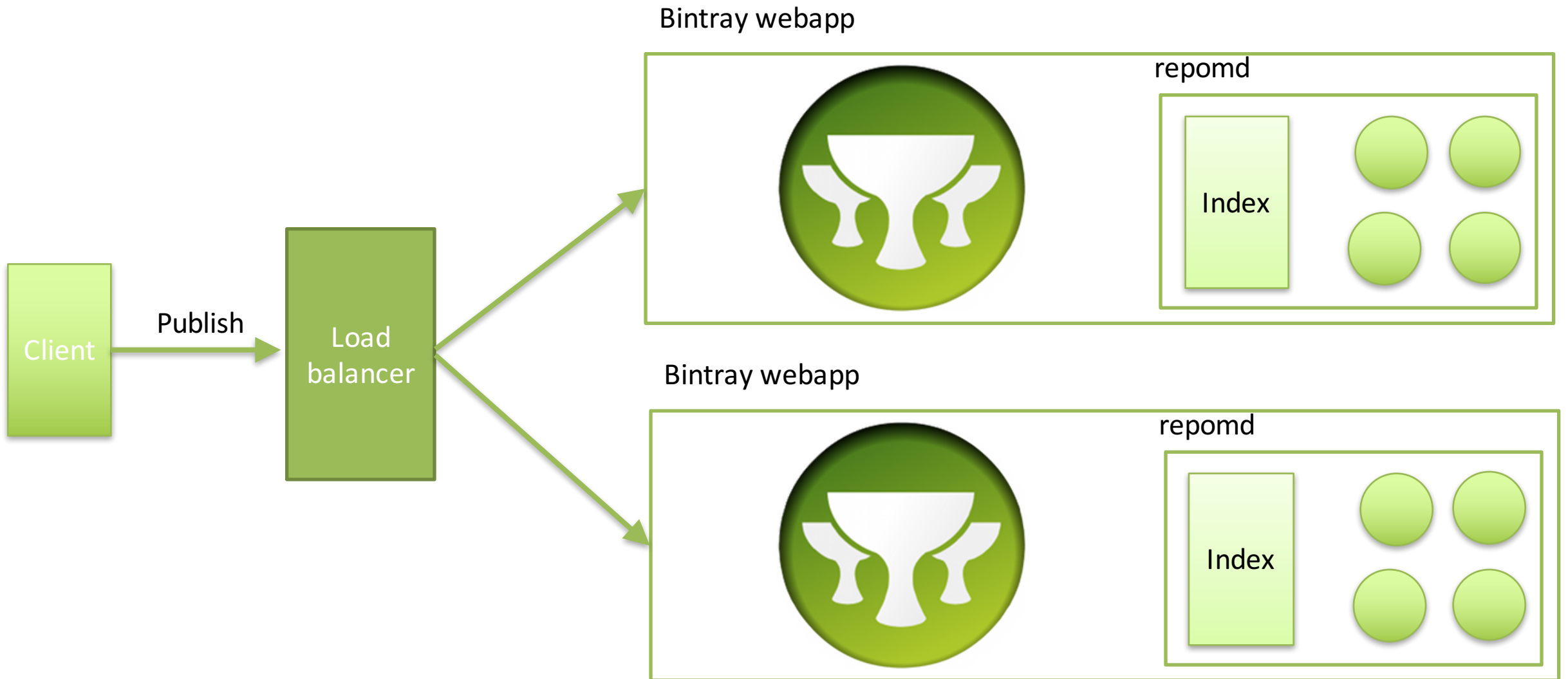


repopmd





# А с кластером то что делать?!





Дробить, дробить и дробить, как завещал  
великий роджерс

Дробить, дробить и дробить, как завещал  
великий роджерс

— Отдельный редис для каждого индекса



# Дробить, дробить и дробить, как завещал великий роджерс

- Отдельный редис для каждого индекса
- Редис принимает запросы

# Дробить, дробить и дробить, как завещал великий роджерс

- Отдельный редис для каждого индекса
- Редис принимает запросы
- Редис поддерживает состояние

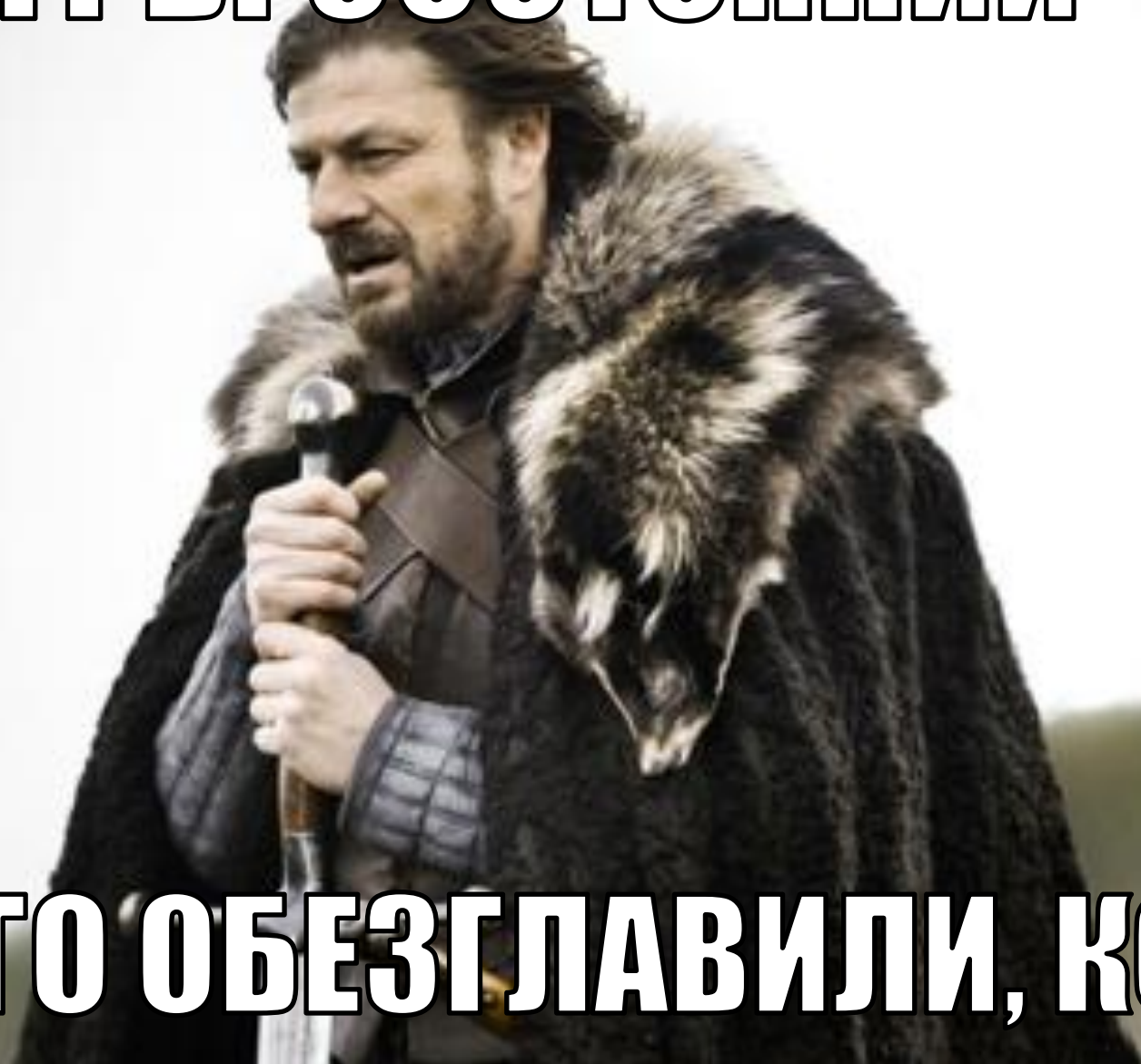
# Дробить, дробить и дробить, как завещал великий роджерс

- Отдельный редис для каждого индекса
- Редис принимает запросы
- Редис поддерживает состояние
- Отдельный `herotd` для каждого индекса

# Старый DevEnv and Deploy

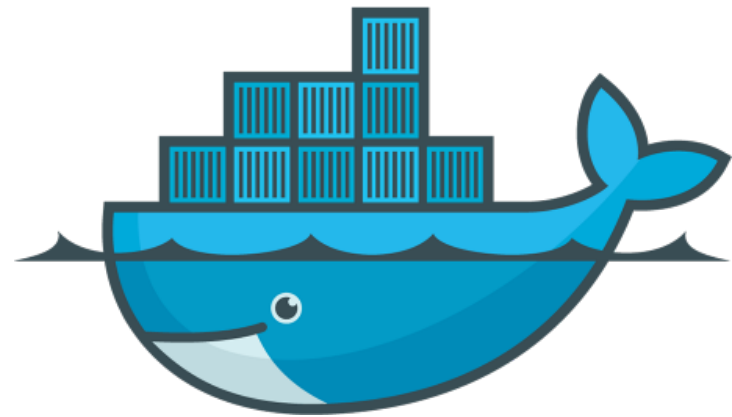


ИГРЫ СОСТОЯНИЙ



В КОНЦЕ ЕГО ОБЕЗГЛАВИЛИ, КОНЕЧНО

# Новый DevEnv and Deploy



# Docker Compose FTW

---

mongo:

image: dev.jfrog.info/mongo

ports:

- 27017:27017

couchdb:

image: dev.jfrog.info/couchdb

- 5984:5984

elasticsearch:

image: dev.jfrog.info/elasticsearch

environment:

- ES\_HEAP\_SIZE=512m

ports:

- 9200:9200

- 9300:9300

redis:

image: dev.jfrog.info/redis

ports:

- 6379:6379





**"Расставашки -  
всегда пичалька".**

**(с) Сократик**

