



CLOUDANT

FTER **FAILURE** AFTER FA
URE **AFTER** FAILURE AF
FTER **FAILURE** AFTER FA

A PRESENTATION BY @TIMANGLADE
FROM YOUR FRIENDS @CLOUDANT

CLOUDANT?

- **Founded by 3 MIT grad students**
- **YCombinator S08**
- **Based in Boston, MA with employees in California, Washington State & the UK**
- **Hosted, distributed database service, ~compatible with CouchDB**
- **Open Core BigCouch**
- **Value-added technologies are available as licenses**

complex
relationships

MVCC:
provenance,
replication
and cache-ready

JSON, typed

attachments:
image, audio, ...

malbek_A68_Z32_in_Active

View source Previous revision Reload View raw Delete document

_id : malbek_A68_Z32_in_ActiveCrystal0CrystalColumn0_50000_2520

_rev : 16-a124726776f13df1d25f382ad9d731e8

time_uploaded_at_p : 1281404216.426296

job_status : View source

root : true

combined : true

stderr : true

stdout : true

Add field

time_uploaded_at_L : Tue, 10 Aug 2010 01:36:56 GMT

datatype : simulation

provenance : {...}

mac_arguments : {...}

RunStartTime : 2010-04:01:21-28-Apr-Wed-GMT

Geant4versionName : 18-December-2009

output : {...}

Geant4versionName : geant4-09-03

upload_hostname : pdsf2

mac_fname : malbek_A68_Z32_in_ActiveCrystal0CrystalColumn0_50000_2520.mac

_attachments :

malbek_A68_Z32_in_ActiveCrystal0CrystalColumn0_50000_2520.out

109.04 KB

malbek_A68_Z32_in_ActiveCrystal0CrystalColumn0_50000_2520.mac

1.11 KB

malbek_A68_Z32_in_ActiveCrystal0CrystalColumn0_50000_2520.err

14 B

COUCHDB BASICS

- **Written in Erlang**
- **REST API**
- **Bulk upload/edit**
- **Feed of changes**
- **Append-only, B+Tree, copy-on-write**
- **Durable MapReduce views (indices), in javascript, ruby, python, java, etc.**
- **ACID at the single document level**

WE HAVE FAILED.
REPEATEDLY.

WE'RE NOT NECESSARILY BAD AT OUR JOBS THOUGH...

BACK IN 2007...

**“THE WORLD
NEEDS A DATABASE
LIKE THIS”**

**— ADAM KOCOLOSKI, CLOUDANT CTO
(IN A MOMENT OF WEAKNESS)**

C LUSTER OF
U NRELIABLE
C OMMODITY
H ARDWARE

~~C~~ ~~CLUSTER~~ ~~OF~~
U NRELIABLE
C OMMODITY
H ARDWARE

WITHOUT THE 'C' IT'S JUST "OUCHDB"

→ **BIGCOUCH**
PUTTING THE 'C'
BACK IN
COUCHDB

**STARTING A NEW
CODE PROJECT:
GOOD IDEA,
RIGHT?**

FAILURE #1?

**DISREGARDING
PRIOR ART**

YET
ANOTHER
WANKING
NOSQL
SOLUTION

**DISTRIBUTED
SYSTEMS ARE HARD**
**LET'S GO
SHOPPING!**

DYNAMO!

WERNER, I ♥ YOU – WHY DON'T YOU RETURN MY CALLS?

D-D-D-D-DYNOMITE!

CLIFF, I ♥ YOU, BUT DON'T EVER CALL ME AGAIN.

**PERUSING
PRIOR ART:
GOOD IDEA,
RIGHT?**

FAILURE #2

**USING
PRIOR ART**

YOUR PROJECT

≠

MY PROJECT

→ **MEM3**

**RIDICULOUSLY
SIMPLE SHARD
MANAGEMENT**

**DISTRIBUTED
SYSTEMS
MEANS
DISTRIBUTED
TASKS**

**EXECUTING CODE
REMOTELY
NOT COOL, MAN.**

SCIENCE SAYS:
82% OF CODERS'
TIME IS SPENT
DESIGNING AN RPC
MECHANISM

THE OTHER 18% IS SPENT AT THE COFFEE MACHINE

**USING YOUR
LANGUAGE'S
NATIVE RPC
MECHANISM
GOOD IDEA,
RIGHT?**

FAILURE #3

~~PREMATURE~~

IMMATURE

OPTIMIZATION

→ **REXI**
LIGHTWEIGHT
RPC SERVER

2X

**THROUGHPUT
IMPROVEMENT**

WELL, ALRIGHT. I CAN LIVE WITH THAT, I GUESS...

MEANWHILE...

SCRUM'ING IT UP
GOOD IDEA,
RIGHT?

FAILURE #4

ITERATE OFTEN

ITERATE FAST

HIT&ATE THE WALL

→ **FABRIC**
DB OPS
ABSTRACTION

MEANWHILE...

**“WE NEED TO BE
WEBSCALE”**

— ALAN HOFFMAN, CLOUDANT CEO
FEBRUARY 31, 2009

**USING STATE
OF THE ART
CLOUD HOSTING
GOOD IDEA,
RIGHT?**

FAILURE #5

**AMAZON
LULZ
SERVICES™**

**THE MOST INTENSE
TECH BOOTCAMP
YOU CAN EVER
PUT DISTRIBUTED
CODE THROUGH**

MEANWHILE...

**THEY SEE ME
COMPACTIN'
THEY HATIN'**

**BEING GOOD
APACHE CITIZENS
GOOD IDEA,
RIGHT?**

FAILURE #6

**OH,
APACHE...**

MEANWHILE...

**AUTOMATING
YOUR MONITORING
GOOD IDEA,
RIGHT?**

FAILURE #7

**THERE IS NO
SUCH THING
AS AUTOMATED
MONITORING**

MEANWHILE...

**WHICH ONE
WOULD YOU
RATHER SERVE?**

LARGE USER STORY

SMALL USER STORY

FAILURE #8

**HOPE YOUR USERS
ARE SMART.
(PLAN FOR WHEN
THEY'RE STUPID.)**

RECAP!

- 1. DON'T DISREGARD PRIOR ART**
- 2. DISREGARD PRIOR ART**
- 3. DON'T BE AFRAID TO RELAX THE RULES**
- 4. CLEAN UP REGULARLY**
- 5. GET HOSTED ON AWS (OR NOT)**
- 6. LEARN THAT APACHE CAN DO WRONG**
- 7. MONITOR WHAT MATTERS**
- 8. THERE ARE NO “NICE” USERS**

WHAT'S NEXT?

VERSION 0.4

MORE PACKAGES

GEOCOUCH?

Free plan

CLOUDANT.COM

**FREE
CLOUD
FOR
YOU**

FROM YOUR FRIENDS AT
CLOUDANT

Open Source

**GITHUB.COM
/CLOUDANT/BIGCOUCH**



**FAILING
NEAR YOU,
SOON!**

CLOUDANT.COM/EUROPE

(BECAUSE WE CARE.)



CLOUDANT.COM

TIM@CLOUDANT.COM

@CLOUDANT

@TIMANGLADE