



AZAZO

Rafrænn samskiptavettvangur  
færri fundir  
betra vinnuumhverfi

Jónas Sigurðsson

Framkvæmdarstjóri kerfishönnunar

AZAZO

# Færri fundir?

Gulrótin

Eru færri fundir gulrót?

Betra vinnuumhverfi?

Rafrænn samskiptavettvangur?



Getum við lært af hönnunarmynstrum sem orðið hafa til í hugbúnaðargerð?

# Vinnuumhverfi

Hugbúnaðarsvið GV/AZAZO

20 starfsmenn

Dreifð starfsemi 2013

Hafnarfjörður, Kiev, Croatía, Árhús, San Jose, California, Borgarfjörður eystri,  
Eikarskipið Húni 2, Reykjanesbær, Grikkland, Fíjji

Nokkuð algengt að þátttakendur á fundi séu staðsettir á 2-3 af  
ofangreindum stöðum

# Við fengum skýr skilaboð

„Við eyðum allt of mikilli orku í contex switching!“

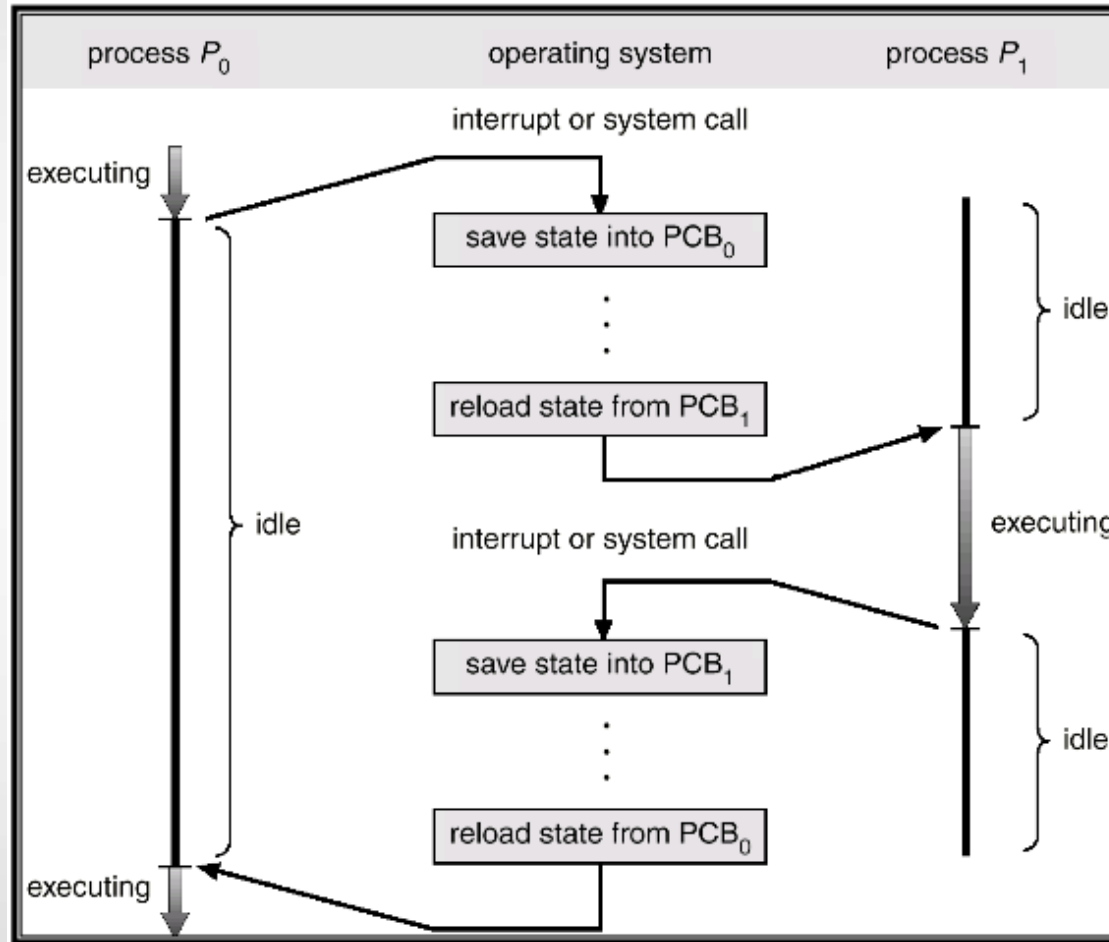
„Við þurfum að vinna meira async!“

Async!

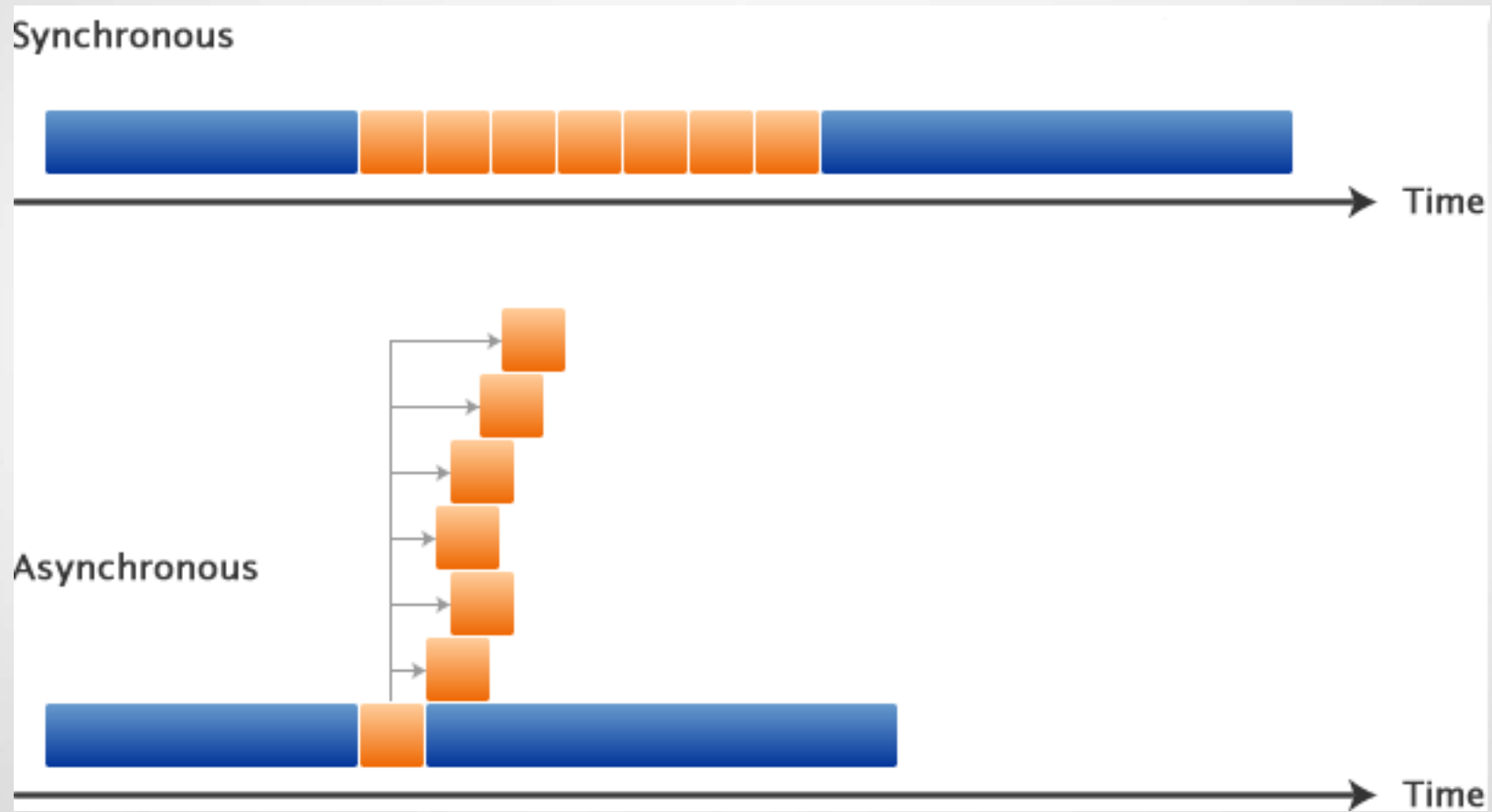
# Context Switching | Asynchronous



# Context Switching

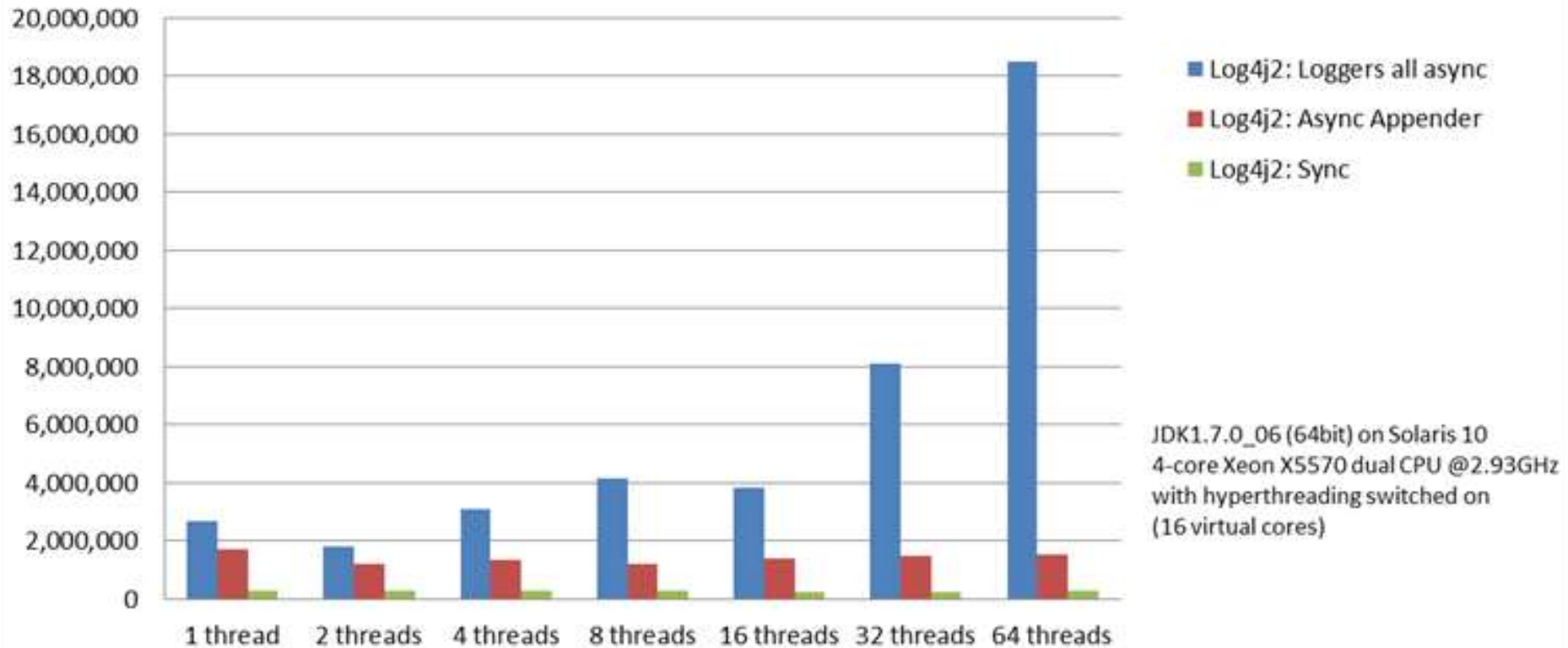


# Async



# Async

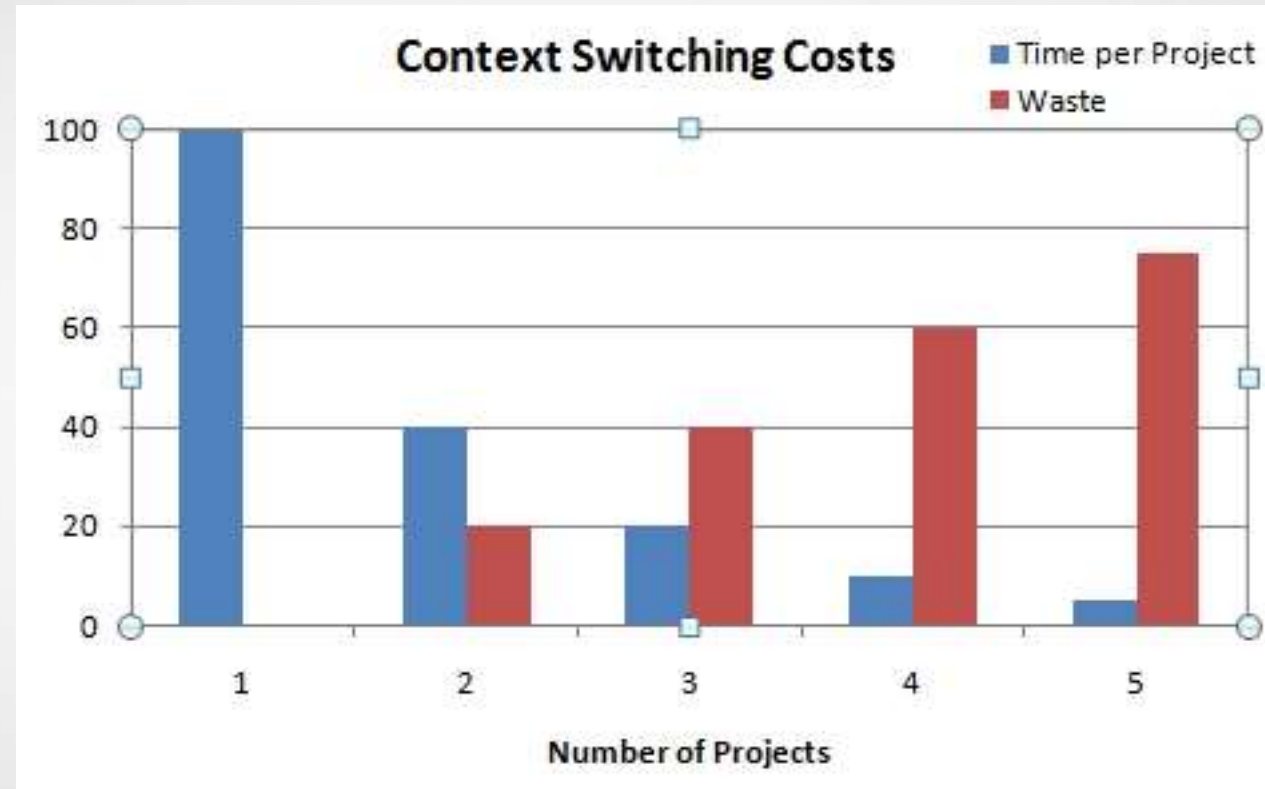
**Sync vs Async Logging Throughput (msg/sec)**  
- higher is better







# Context Switch



Weinberg, G.M. Quality Software Management: Vol. 1 System Thinking. New York. Dorset House, 1992.

# Hvað gerðum við áður?

Við vildum tryggja að sem **flestir** væru inn í **ákvörðunum**. Því væri mikilvægt að **funda** um allar slíkar ákvarðanir. **Virkja alla** sem þáttakendur í ákvarðanatöku með **fundum og samtölum**. Oft erfitt að finna aftur nákvæm atriði tengd ákvarðanatöku aftur í tímann. **Forritara vildu fá meira næði** til að **geta einbeitt sér að þróun** án þess að vera truflaðir.

# Hvað gerum við núna?

**Vinum beint í skjölum og skráum með upplýsingakerfum jafnóðum.** Í CoreData, Google Docs, Github og HipChat. **Föngum þar með umræður og smáatriði í tengslum við ákvarðanir.** Umræður fara að miklu leyti fram í einhverju af þessum tólum og varðveitast þannig. Starfsmenn geta svarað fyrirspurnum og fylgst með umræðu **þegar þeim hentar best.** Umhverfið styður við og fellur að því **hvernig fólk vill vinna** til að fá sem mesta ánægju og þar með afköst og gæði.

# Hvað gerum við núna?

**Vinum beint í skjölum og skráum með upplýsingakerfum.** Í CoreData, Google Docs, HipChat. **Föngum þar með umræður og smáatriði í tengulum við ákvarðanir.** Umræður fara að mælu leiti til að einhverju af þessu tóli og varðveitast þannig. Starfsmenn geta fylgst með fyrirsögnum og fylgst með umræðu þegar hentar þeim best. Umhverfið styður við og fellur að því **hverja fólk vill vinna** til að fá sem mesta ánægju og þar með afköst og næði.

# Áskorun

Lykilatriði að finna réttu tólin til að styðja við nýtt vinnulag



# Hvaða tól?

## **CoreData**

Byggjum upplýsingaflæðið á eigin lausn. Upplýsingastýringin. Verkefnisstjórnun  
Verkbeiðnir, Verkferli. Skjalastjórnun, Útgáfustýring

## **Google Hangout**

Þægilegt til að halda fundi á netinu (betra en Skype fyrir marga þáttakendur yfir  
misgóðar nettengingar)

## **Github**

Mjög öflugt tól sem styður vel við ferli eins og kóðarýni og hópvinnu

# Hvaða tól?

## Google Docs

Starfsmenn okkar, sem allir eru með Apple eða Linux vélar nota Google Docs í stað MS Word og MS Excel. Það er einnig sérstaklega öflugt þegar kemur að hópvinnu inn í skjölum (margir að skrifa eitt skjal á sama tíma). Dæmigerður fundur hjá okkur gæti verið þáttakendur í Hafnarfirði, Kiev og Arhus. Allir að vinna í sama skjalinu og allir sjá hvað hinir eru að skrifa jafnóðum.

## HipChat

Spjallherbergi sem öðlast nýtt líf með samþættingu við önnur kerfi.



# CoreData fyrir þróun

Dæmi um það hvernig við höldum utan um fíðus í þróun.

Þróunarverkefni „CoreData Customer Extensibility“

Vörupróun Customer x

https://azazo.coredata.is/doc/9a9c6596-ebcb-42a8-bfcd-2828d5d3d1d/

Home Spaces CoreData þróun Contacts Search Jónas Sigurðsson

## Vörupróun Customer Extensibility (Dynamic Types / Templates / Customizations) 2012-06-1735

OVERVIEW TASKS FILES Restore

**Description** Functional specification, requirements and vision roadmap for CoreData in relation with customer customization and extensibility.

**Recent files**

Title	Type	Date modified
2013 CoreData Customization Modules Design	File	6 June 2013, 17:08
Open data access and export (IS)	File	6 June 2013, 14:06
CoreData supported file types	File	6 June 2013, 14:06
Customization Roadmap Meeting Whiteboard	File	6 June 2013, 14:06
CoreData Design - Dynamic Templates	File	6 June 2013, 14:05

[View all files](#) [Upload file](#)

**Recent tasks**

Title	Status	Created	Due
Support for extensible types	Closed	28 June 2012, 17:21	
Support for extensible value lists	Closed	28 June 2012, 17:21	
Support for extensible status lists	Closed	28 June 2012, 17:22	
Localization support in dynamic type system	Closed	28 June 2012, 17:22	
Dynamic type system - Initial version	Closed	28 June 2012, 17:18	

[View all tasks](#) [Create](#)

**PROJECT**

Tags: **coredata-design**, **coredata-dynamictypes**, **coredata-templates**, **coredata-automation**, **coredata**

Status: **In progress**

**HISTORY**

Created **28 June 2012** by **Jónas Sigurðsson**.  
 Current version is **0.5**.  
 Name this version  
 Modified **23 Jan.** by **Jónas Sigurðsson**.  
[View history](#)

**ACCESS**

# Vörupróun Customer Extensibility (Dynamic Types / Templates / Customizations) 2012-06-1735

OVERVIEW TASKS FILES Maximize

Close Move Delete Assign to me Create

Development phase 1 (January - August 2012) - Theme: Extensible type system		
<input type="checkbox"/>	Jónas Sigurðsson	Dynamic type system - Initial version <span style="float: right;">Closed</span>
<input type="checkbox"/>	Jónas Sigurðsson	Basic support for managing sandboxed custom code <span style="float: right;">Pending</span>
<input type="checkbox"/>	Hannes Pétursson	Localization support in dynamic type system <span style="float: right;">Closed</span>
<input type="checkbox"/>	Jónas Sigurðsson	Support for extensible status lists <span style="float: right;">Closed</span>
<input type="checkbox"/>	Hannes Pétursson	Support for extensible value lists <span style="float: right;">Closed</span>
<input type="checkbox"/>	Jónas Sigurðsson	Support for extensible types <span style="float: right;">Closed</span>
<input type="checkbox"/>	Jónas Sigurðsson	Extend DT forms and templates using custom python code <span style="float: right;">Pending</span>
Development phase 2 (September 2012 - May 2013) - Theme: Sandboxed Python API for custom code		
<input type="checkbox"/>	Jónas Sigurðsson	Solid model for sandbox versioning (API VERSION) <span style="float: right;">Pending</span>
<input type="checkbox"/>	Jónas Sigurðsson	Custom actions for documents (UI) <span style="float: right;">Pending</span>
<input type="checkbox"/>	Hannes Pétursson	Custom code and actions in status lists (workflow) <span style="float: right;">Pending</span>
Development phase 3 (June 2013 - December 2013) - Theme: UI extensibility and complete module system		
<input type="checkbox"/>	Jónas Sigurðsson	Custom file type extractors <span style="float: right;">Pending</span>
<input type="checkbox"/>		Custom lookup (auto-complete) providers <span style="float: right;">Pending</span>

### FILTERS

Search

**Status** 17  
Pending 12  
Closed 5

**Responsible** 17  
Jónas Sigurðsson 8  
Unassigned 6  
Hannes Pétursson 3

# CoreData fyrir flæðið

Hugarflæði hugbúnaðarsviðs á Stokkseyri.

Umræður og eftirfylgni geta fylgt verkefni og skjölum

## Development Group Stokkseyri Offsite 2013 2013-09-4367

OVERVIEW

TASKS

FILES

Restore

Edit

### Recent files

Title	Type	Date modified
 Næstu skref eftir offsite	File	13 Sept. 2013, 14:22
 2013 - Session 4 - Desktop Experience Quick Win	File	13 Sept. 2013, 14:18
 2013 - Session 3 - How to eat our own dogfood	File	13 Sept. 2013, 14:10
 2013 - Session 2 - User Interface Technology Design	File	13 Sept. 2013, 14:05
 2013 - Coredata Stokkseyri	File	13 Sept. 2013, 09:21

[View all files](#)

[Upload file](#)

### Recent tasks

Title	Status	Created	Due
Sprint board	Pending	12 Sept. 2013, 17:57	
Burndown chart	Pending	12 Sept. 2013, 17:56	
Number of hours on tasks	Pending	12 Sept. 2013, 17:56	
Ability to reference external or internal content by URL	Pending	12 Sept. 2013, 17:55	
Google Docs file edition support	Pending	12 Sept. 2013, 17:52	

[View all tasks](#)

[Create](#)

### Users

Name	Type	Email
Jónas Sigurðsson	Responsible	jonas@gagnavarslan.is
Hannes Pétursson	Associated	hannes@gagnavarslan.is

### PROJECT

Due date: **13 Sept. 2013**  
Tags: **stokkseyri**  
Status: **In progress**

### HISTORY


Created **12 Sept.** by **Jónas Sigurðsson**  
Current version is **0.2**  
Name this version  
Modified **18 Sept.** by **Hannes Pétursson**  
[View history](#)

### ACCESS

Development Group x


https://azazo.coredata.is/doc/9d060141-9247-450b-9424-231991fb83ad/


yesterday


 Hannes Pétursson changed project.  
Yesterday at 09:34PM [Comment](#)


---


6 days ago


 Jónas Sigurðsson made 2 changes to file [Næstu skref eftir offsite.docx](#).  
Friday at 02:22PM [Show all](#)


 Jónas Sigurðsson made 5 changes to file [2013 - Session 4 - Desktop Experience Quick Win.docx](#).  
Friday at 02:18PM [Show all](#)


 Jónas Sigurðsson changed file [2013 - Session 3 - How to eat our own dogfood.docx](#).  
Friday at 02:10PM [Comment](#)


 **Hannes Pétursson** Ég er alltaf að verða spenntari fyrir Google Docs integration, það myndi gera mjög mikið fyrir hugbúnaðarsviðið.  
Yesterday at 09:34PM

 **Jónas Sigurðsson** Já, sammála. Við náðum að forma mjög vel í þessari vinnu hvernig það yrði útfært og sú lausn finnst mér mjög spennandi. Sérstaklega þar sem við myndum halda í hópvinnaflásana í GoogleDocs og ekki missa stjórn á skjölunum.  
about an hour ago

 Jónas Sigurðsson made 2 changes to file [2013 - Session 2 - User Interface Technology Design.docx](#).  
Friday at 02:05PM [Show all](#)

 Jónas Sigurðsson uploaded a file [Næstu skref eftir offsite.docx](#).  
Friday at 01:57PM [Comment](#)

 **Hannes Pétursson** Steinar kom með góða hugmynd að laust sem væri "quick win" það er að setja autocomplete í leitarglugga. Ætli ekki að vera svo mikið mál en myndi gera mikið fyrir notendaupplifun.  
Yesterday at 09:24PM

 Jónas Sigurðsson made 13 changes to file [2013 - Session 5 - Desktop Experience Quick Win.docx](#)

# Google Docs

The screenshot shows a Google Docs interface in a browser window. The document title is "Coredata developer installation on OSX". The document content includes a title, a paragraph of introductory text, and a code block with shell commands for installing dependencies using Homebrew. A comment from Hlynur Sigurþórsson is visible on the right side of the document.

**Coredata developer installation on OSX.**

This document describe install instructions for Coredata developer environment. This instruction has been used with OS X Mountain Lion (10.8.4)

This document requires that developers have installed Homebrew (<http://brew.sh>).

The following are shell lines that you need to write into your shell.

```
brew tap homebrew/versions
brew install wget
brew install postgresql91
cd /usr/local
git checkout c2b8e87 Library/Formula/pgbouncer.rb
brew install pgbouncer

# icu installation
git checkout 12b9ed8 /usr/local/Library/Formula/icu4c.rb
brew install icu4c

brew install python --framework
sudo pip install virtualenv

brew install rabbitmq
brew install gettext
brew install swig

script/coredata_setup
```

**Hlynur Sigurþórsson**  
3:45 AM Sep 7  
Is this the correct location for this document?

2012 CoreData Repository 2 brainstorm ☆ 📁 jonas@gagnavarslan.is -

File Edit View Insert Format Tools Table Help Last edit was made on August 7, 2013 by Roman Konoval Comments Share

100% - Heading 1 - Arial - 24 - **B** *I* U A - ☰ ☰ ☰ ☰ More - ⤴

1 2 3 4 5 6 7

## Tables structure

**Alexander L:**  
I think we need to investigate if it is efficient (from performance point of view) to store big string fields (JSON) at the same table where search-able fields stores. It is possible that it could be more efficient to store them separately and join if required.

I do not think it make sense to define table structures before implementation started. Reasons: they will be changed significantly after implementation started. Example: "relationship" table was changed a lot comparing to DDL we thought initially during Vitalii work on relationships functionality.

**Jónas:**  
Agree. See my previous notes on why I included database details in this document.

## “Reading document and children is done with recursive query.”

**Alexander L:**  
In current API it is suitable only for getFileplanTree and getFolderishDocumentTree methods.

**Jónas:**  
Ok.



The decision: We are missing from Laika support for raising events. There are two main requirements for this:  
 1. Activity Feed - requires guaranteed distribution of all C\_UD events for DOCS+RELATIONSHIPS.  
 2. Cache invalidation - has to be without latency.

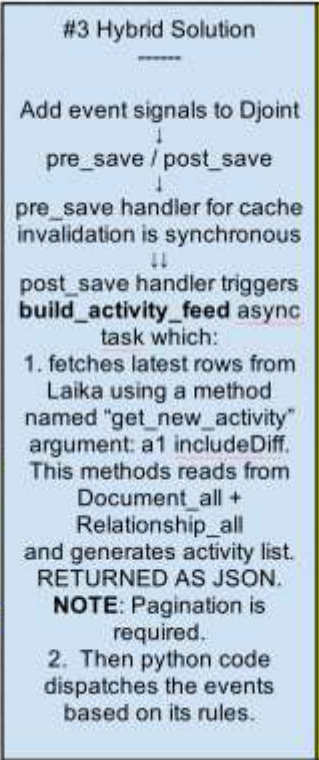


**Problems:**  
 1. If celery is not available event is lost  
 2. RabbitMQ stores events in memory they can be lost

**Possibility:**  
 - Introduce new storage system for storing events NoSQL DB.



**Problems:**  
 1. Complexity of implementation.  
 2. Operation overhead of the implementation (db load + operation complexity)



**THE WINNER!**

- Logic happens in memory on webserver.
- Code is clean.
- Cache invalidation is always guaranteed zero latency.
- Build-activity-feed can be made very efficient by having part of the logic implemented in Laika with few database reads.
- Build-activity-feed logic can be reused for incremental updating AS WELL AS regenerating waits.

**NOTES**  
 Assumption that Laika maintains activityfeed tables. Its only the dispatching process we delegate to Python. Laika knows the table structure and can work out "what has changed since last dispatch", etc.

Assumption that we'll post use snapshot IDs for activity reference. This ensures that activity feed walk can be regenerated without losing frame of reference.

**More Notes:**  
 Without maintaining some state, we may end up receiving events multiple times from laika

**NOTE:** Pagination is required.

# Github

The screenshot shows the GitHub interface for the repository 'github/Mantle'. The left sidebar contains navigation options: History, Commits, Pull requests, Branches, and Settings. The main content area is divided into two columns. The left column displays a list of recent commits, with the top one highlighted in blue. The right column shows the details of the selected commit, including the commit message, author information, and a diff view of the changed file 'README.md'.

Repositories › github/Mantle ›

554 commits in master

SHA: e106a6bf1af918572ea1cd80ed7fc611b593c1f8

History

Justin Spahr-Summers 2 months ago  
Clarify the situations in which MTLJSONAdapter...  
e106a6b

Commits

Robert Böhnke 2 months ago  
Merge pull request #135 from rastersize/...  
c800628

Branches

Aron Cedercreantz 2 months ago  
Enumerate instead of allocating an array.  
9ab0959

Settings

Aron Cedercreantz 2 months ago  
Assert that the dict for value mapping is...  
b70e988

Aron Cedercreantz 2 months ago  
Rename the value mapping transformer...  
c2b6bcb

Aron Cedercreantz 2 months ago  
Fix using NSUUID which required OS X 10.8.  
adfd3e

Aron Cedercreantz 2 months ago  
Remove \_\_block storage modifier.  
11f4ee

Showing 1 changed file with 1 addition and 1 deletion.

README.md

```
--- |---| 100 |---| +333,7 @@ model & superclass also implements -MTLJSONSerializing -to merge  
+from mappings  
323 323  
324 324 When deserializing JSON using  
325 325 +[MTLJSONAdapter modelOfClass:fromJSONDictionary:error:], JSON keys that don't  
326 326 -have a mapping are ignored:  
327 327 +correspond to a property name or have an explicit mapping are ignored:  
328 328 objc  
329 329 NSDictionary *JSONDictionary = @{
```

Open

yiminghe wants to merge 8 commits into jquery:master from yiminghe:bug\_13767

33

#1241

Discussion

Commits 8

Files Changed 3

Showing 3 changed files with 27 additions and 6 deletions.

Show Diff Stats

13 src/css.js

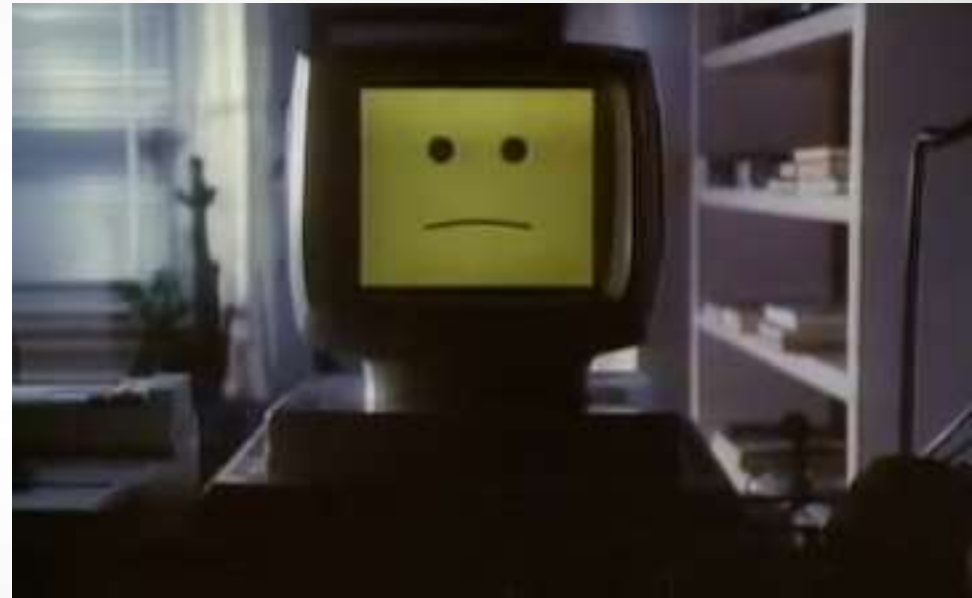
Open Edit View

```
@@ -506,9 +506,16 @@ jQuery(function() {
506 | 506 |     jQuery.cssHooks[ prop ] = {
507 | 507 |         get: function( elem, computed ) {
508 | 508 |             if ( computed ) {
509 | -         computed = curCSS( elem, prop );
510 | -         // if curCSS returns percentage, fallback to offset
511 | -         return rnumnonpx.test( computed ) ?
+         var isAutoPosition,
+         elStyles = getStyles( elem ),
+         position = curCSS( elem, "position", elStyles );
512 | +         computed = curCSS( elem, prop, elStyles );
513 | +         isAutoPosition = computed === "auto";
514 | +         if ( isAutoPosition && position === "relative" ) {
515 | +             return "0px";
516 | +         }
517 | +         // if curCSS returns percentage or auto, fallback to offset
518 | +         return isAutoPosition && position !== "static" || rnumnonpx.test( computed ) ?
512 | 519 |             jQuery( elem ).position()[ prop ] + "px" :
513 | 520 |             computed;
514 | 521 |         }
}
```

# Hipchat

Spjallherbergi

Hver man ekki eftir IRC?



HipChat - Gagnavarslan

Lobby | Gagnavarslan | Alexander Li... | Coredata | Expimp | Hubot Robots... | Github

Skemmistaður fræga fólksins! Room actions

**Monday September 2, 2013**

Krystian Sikora @all Ég er að fara að endurræsa web á [memo.coredata.is](#) eftir 5 min ef engin mótmælir Sep-02 2:08 PM

**Wednesday September 4, 2013**

Kristján Oddsson @all Ég og @HelgiMöller erum að fara að taka deploy á staging-memo eftir 3mín nema það komi mótbáur Sep-04 11:26 AM

Kristján Oddsson @all Time's up! Sep-04 11:27 AM

Helgi Möller Woohoo Sep-04 11:27 AM

**Thursday September 5, 2013**

Krystian Sikora @holmar þeir svara ekki pingi Sep-05 9:35 AM  
@Valdi eru þeir niðri?

**Friday September 6, 2013**

Helgi Möller veit einhver hérna eitthvað um þráðlaust net fyrir gesti hérna í hafnarfirðinum? Sep-06 10:15 AM

Skuli Arnlaugsson öö ö nei Sep-06 10:21 AM

Helgi Möller það er smá vesen. En ok, Sep-06 10:31 AM

Andri Jan @all Hverjir ætla að mæta í körfuboltann? Sep-06 10:35 AM

Helgi Möller ég kemst ekki. þarf víst að vinna (og er ekki sá duglegasti) Sep-06 10:35 AM

Jökull Úlfarsson ég var að spá Sep-06 10:35 AM

**Thursday September 12, 2013**

Arnthor Ingi Hinri... @ViðarHelgason @JökullÚlfarsson poffice er komin upp aftur Sep-12 11:47 AM

Viðar Helgason Snild Sep-12 11:48 AM

**Thursday September 19, 2013**

Welcome! You joined the room 1:56 AM

Send Guest access is off (?)

**People** **Files & Links**

- Andri Jan 9h 10m
- Björn Ingólfsson 3h 35m
- Elísabet Birgisd... 2h 14m
- Henning Freyr He... 8h 24m
- Holmar Sigmundsson
- Hubot Robotson
- Jónas Sigurðsson
- Jökull Úlfarsson 1h 52m
- Kristján Oddsson 2h 39m
- Krystian Siko... 1d 1h 22m
- Laufey Ása Bjarn... 9h 37m

HipChat - Github

Lobby | Gagnarvarslan | Alexander Li... | Coredata | Expimp | Hubot Robots... | Github

Github

From	Message	Time
GitHub	<a href="#">romank0</a> deleted branch fix-2117-path-recalculation of <a href="#">Gagnarvarslan/coredata</a>	Sep-18 4:39 PM
GitHub	<a href="#">romank0</a> deleted branch issue-2171-sequences of <a href="#">Gagnarvarslan/coredata</a>	Sep-18 4:39 PM
GitHub	<a href="#">romank0</a> deleted branch issue-1862-wide-security-laika of <a href="#">Gagnarvarslan/coredata</a>	Sep-18 4:39 PM
GitHub	<a href="#">romank0</a> deleted branch feature-tenant-jobs-1938 of <a href="#">Gagnarvarslan/coredata</a>	Sep-18 4:39 PM
GitHub	<a href="#">romank0</a> deleted branch develop-merge117 of <a href="#">Gagnarvarslan/coredata</a>	Sep-18 4:39 PM
GitHub	<a href="#">romank0</a> deleted branch fix-2382-sensitivity-security of <a href="#">Gagnarvarslan/coredata</a>	Sep-18 4:40 PM
GitHub	<a href="#">romank0</a> deleted branch bugfix-issue-2291 of <a href="#">Gagnarvarslan/coredata</a>	Sep-18 4:41 PM
GitHub	<a href="#">romank0</a> deleted branch laika-solr-security-804 of <a href="#">Gagnarvarslan/coredata</a>	Sep-18 4:42 PM
GitHub	<a href="#">romank0</a> deleted branch improved-logging-issue-880 of <a href="#">Gagnarvarslan/coredata</a>	Sep-18 4:43 PM
GitHub	<a href="#">romank0</a> deleted branch extensive-nx-event-logging of <a href="#">Gagnarvarslan/coredata</a>	Sep-18 4:43 PM
GitHub	<a href="#">romank0</a> deleted branch feature-security-cache-concurrency-916 of <a href="#">Gagnarvarslan/coredata</a>	Sep-18 4:43 PM
GitHub	<a href="#">romank0</a> deleted branch feature-security-cache-by-groups-1741 of <a href="#">Gagnarvarslan/coredata</a>	Sep-18 4:43 PM
GitHub	<a href="#">steinar</a> closed <a href="#">issue 2618</a> of <a href="#">Gagnarvarslan/coredata</a> : Cache error when trying to concatenate 'str' and 'NoneType'	Sep-18 5:26 PM
GitHub	<a href="#">steinar</a> commented on <a href="#">issue 2618</a> of <a href="#">Gagnarvarslan/coredata</a> : This was fixed in 59a91a359e0ddb6bcfe2465f3bed59...	Sep-18 5:26 PM
GitHub	<a href="#">sigqifv</a> opened <a href="#">issue 246</a> of <a href="#">Gagnarvarslan/coredata-desktop</a> : Save word file as PDF on disk with no extension produces corrupted PDF file.	Sep-18 7:22 PM
GitHub	<a href="#">sigqifv</a> opened <a href="#">issue 2619</a> of <a href="#">Gagnarvarslan/coredata</a> : Encoded names displayed in the access view dialog.	Sep-18 7:33 PM

Thursday September 19, 2013

Welcome! You joined the room 2:01 AM

Send

Guest access is off (?)

Room actions

People

- Alex Kamyanskiy
- Holmar Sigmundsson
- Hubot Robotson
- Jónas Sigurðsson
- Kristján Oddsson 2h 36m
- Krystian Siko... 1d 1h 19m

Files & Links

# Sambættingar og flæði

Með því að tengja kerfin saman myndast púls

CoreData feed inn í HipChat spjallrás

Sambætting CoreData við Google Docs

Sambætting CoreData við Github

Github inn í HipChat

Villur / frávik við eftirlit hjá viðskiptavinum inn í HipChat og CoreData

Veljum bara tól sem hafa sveikjanleika þannig að við getum tengt saman með API

# Lærdómur

Aukin krafa að vera ekki bundinn við sömu skrifstofuna á sama tíma.  
Fólk vill frelsi til að vinna eins og því hentar best.  
Ný kynslóð hugbúnaðarlausna gerir þetta kleift.

## Meira **ASYNC** minna **CONTEXT SWITCHING**

Góðar hugmyndir úr hugbúnaðargerð hafa bein áhrif  
á komandi lausnir og verkferla á öllum sviðum upplýsingatækni.





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tt+ .Yt
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