



goto;
conference
→ aarhus

CQRS AT DBA

Morten Jokumsen
eBay classifieds

INTERNATIONAL
SOFTWARE DEVELOPMENT
CONFERENCE



gotocon.com

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- Twitter: guidmaster

The company

- Part of eBay Classifieds
- Bilbasen
- DBA
- Bilinfo
- All leaders in their respective markets

BILBASEN
EN DEL AF
eBay

dba.

eBay™
classifieds
group

What is DBA

- Started as a printed paper



- By fare the largest classifieds site in DK

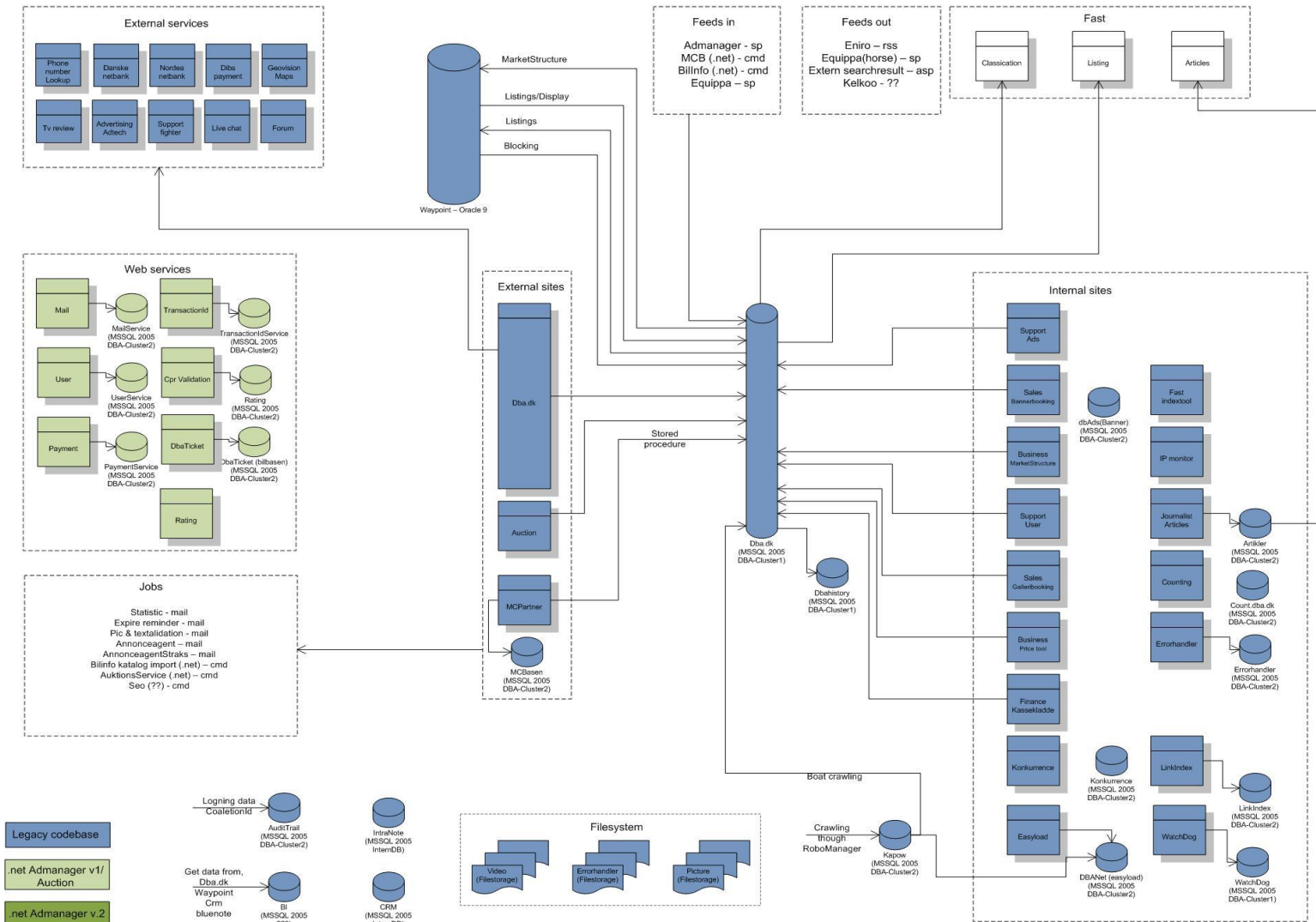
Nr.	Udgivelse	Brugere	Besøg	Sidevisninger
1	dba.dk	1.212.626	13.176.758	181.960.412
2	ekstrabladet.dk	1.495.760	40.358.829	162.870.932
3	bt.dk	1.037.803	20.265.423	110.611.167
4	bazoom.dk	566.989	4.550.528	109.001.589
5	dmi.dk	1.684.787	29.495.456	89.751.213
6	dr.dk	1.821.265	25.677.040	87.329.859
7	tv2.dk	1.469.047	24.897.421	86.318.448
8	gulloggratis.dk	583.568	5.389.807	65.949.999

How DBA looked like before

- An old legacy platform

On big monolithic platform

Logical application overview of dba v.1



Where we what to be?

- Domain Driven Development
- Build scalable solutions
- Be able to innovate our business

What is CQRS?

“CQRS is simply the creation of two objects where there was previously only one. The separation occurs based upon whether the methods are a command or a query (the same definition that is used by Meyer in Command and Query Separation: a command is any method that mutates state and a query is any method that returns a value).”

- Greg Young

... and when to use it

- Scalability matters
- Large team
- Difficult business logic

Why did we choose CQRS?

- We need to scale our application
- We need to integrate with other services
- We have limited developer resources
- We need to innovate
- We wanted small manageable solutions

How we started



Danmarks største handelsplads med **1.307.900** annoncer

01:05 Hestekasse med til... kr. 0

01:03 Tilbyd at låne pen... kr. 0

01:03 T-shirt, Ofela, s... kr. 35

01:02 Stiksav, Bosch PST... kr. 200

01:02 Mercedes

Sikker handel på DBA Hjælp Oversigt Log ind Min DBA

dba.

Hvad søger du efter?

Søg

Opret annonce

Opret annonce

Biler, MC og Camping

Bolig og Have

Hobby og Fritid

Elektronik

Dig og dine børn

Dyr og tilbehør

Job og erhverv

Diverse

Kan du li' os?

Forsideannoncer

Skal din annonce vises her?



Plade- og karosseridele
kr. 2.500



Blazer, str. 44, Day Bir...
kr. 550



Barnevogn, Odder, O...
kr. 2.100



Peugeot 206, 1,6 CC ...
kr. 38.000



Top, Patrizia Pepe, str...
kr. 300



Støvler, cowboystøvler...
kr. 300



Jakke, vinterjakke, str....
kr. 200



Cafebord og stol uden...
kr. 29.900



Maleri af Anja Franke ...
kr. 1.500



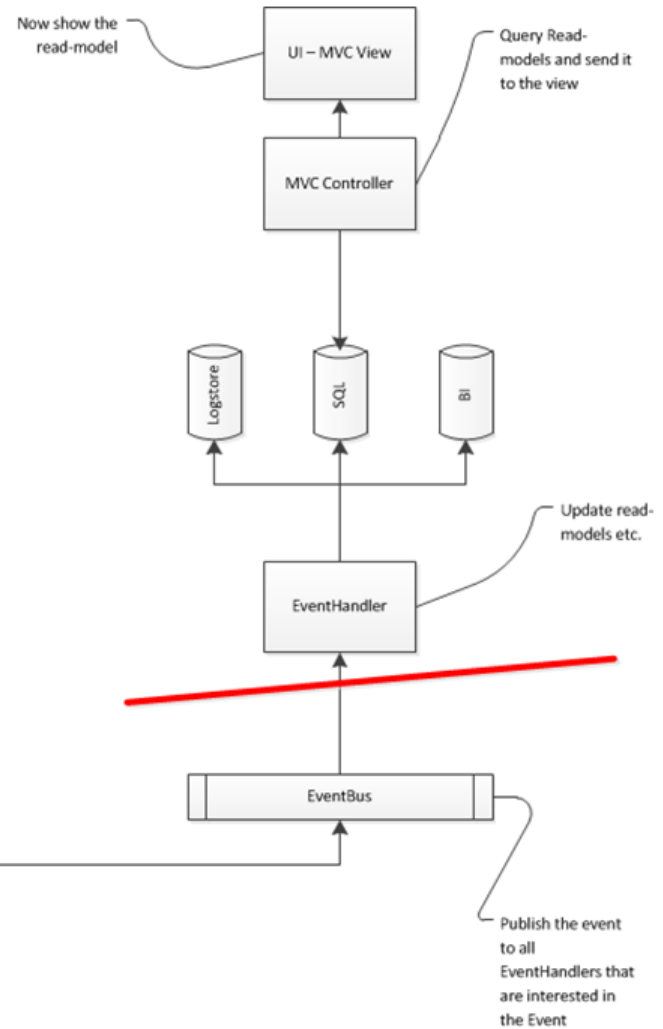
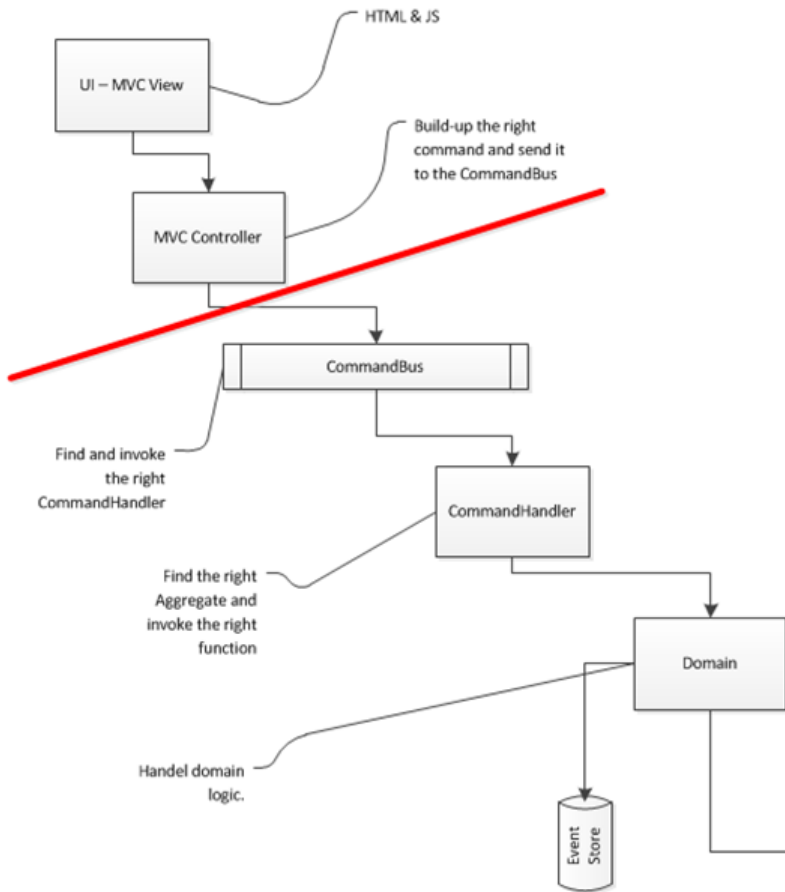
Heldragt, Ej sikke lej, str.
kr. 80

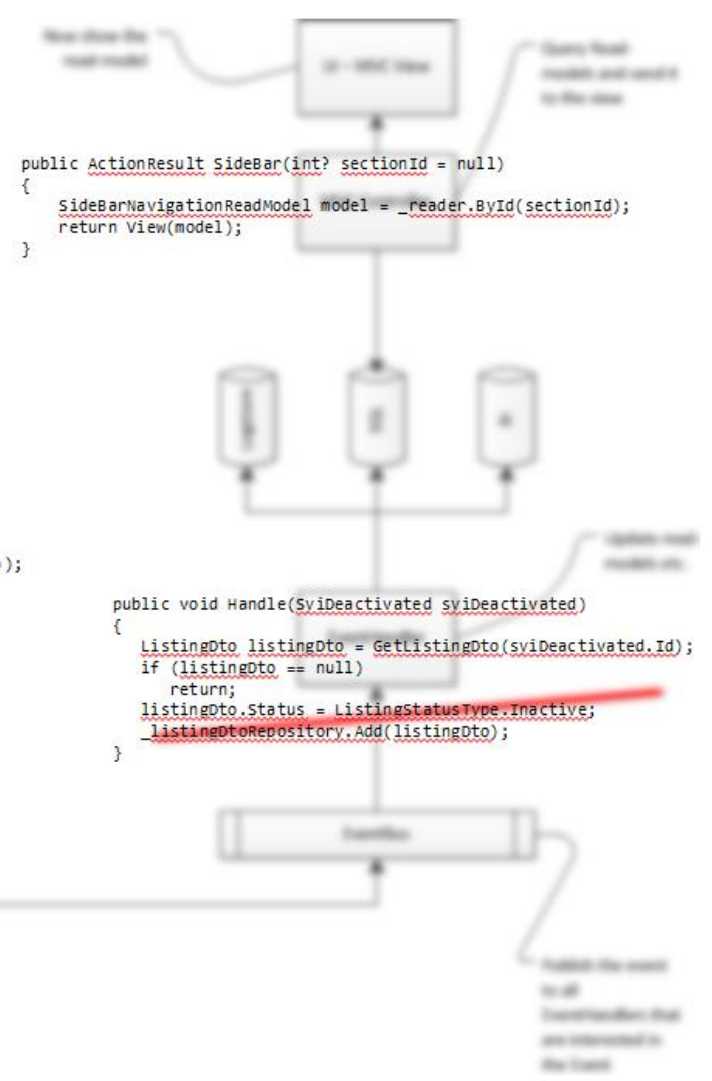
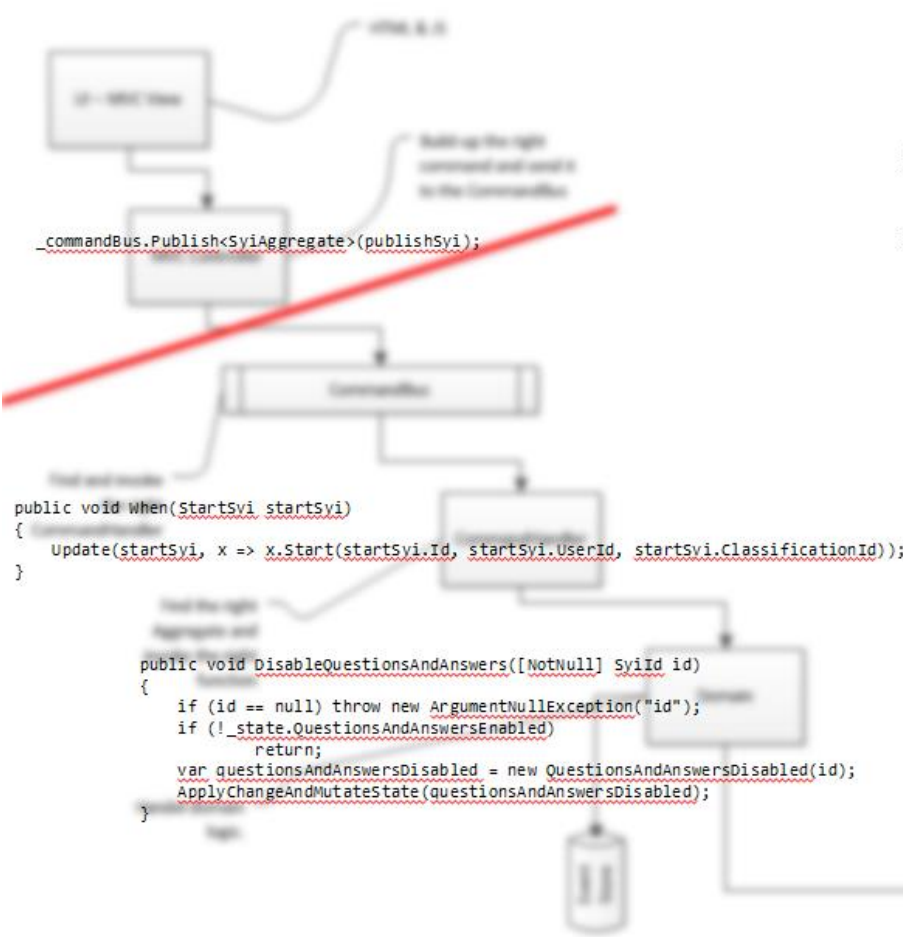


selskabskjole
kr. 1.500



Skindkjole, Provider, s...
kr. 500





The results

- Initial benefits
- Scaling developer productivity
- Scaling our read-side

- and the first problems

But we saw the potential





SYI

- This is where we make revenue
- This is where we can innovate
- This is where our real business is

Du vil Sælge Købe Bytte

Overskrift Kr. 19,-

Model

Kapacitet

Farve

Supplerende tekst
2000 tegn tilbage

Pris ,00 kr.

PayPal Tilbyd køber at betale via **PayPal**

Dine billeder
8 billeder tilbage

Sælg din vare Forøg dine muligheder for et hurtigt salg

Pakke

	BUDGET	MEST POPULÆRE ANBEFALET	SUPERSÆLGER
<input checked="" type="checkbox"/> Fremhævet annonce	<input checked="" type="checkbox"/> Fremhævet annonce	<input checked="" type="checkbox"/> Fremhævet annonce	<input checked="" type="checkbox"/> Fremhævet annonce
<input checked="" type="checkbox"/> Topgalleri	<input checked="" type="checkbox"/> Topgalleri	<input checked="" type="checkbox"/> Topgalleri	<input checked="" type="checkbox"/> Topgalleri
<input checked="" type="checkbox"/> Galleri på forsiden	<input checked="" type="checkbox"/> Galleri på forsiden	<input checked="" type="checkbox"/> Galleri på forsiden	<input checked="" type="checkbox"/> Galleri på forsiden
<input checked="" type="checkbox"/> Topannonce	<input checked="" type="checkbox"/> Topannonce	<input checked="" type="checkbox"/> Topannonce	<input checked="" type="checkbox"/> Topannonce
	19 kr.	29 kr.	39 kr.
	<input checked="" type="radio"/> Vælg Budget	<input checked="" type="radio"/> Vælg Anbefalet	<input checked="" type="radio"/> Vælg Supersælger

Nej tak, jeg vælger en gratis basisannonce kr. 0,-

Varighed **8 uger** Automatisk fornyelse

Kom i avisen Kom i den trykte avis "Den Blå Avis" Kr. 59,- (uge 40)

Kontaktoplysninger Log venligst ind på DBA

Bruger på DBA? Eksisterende bruger
 Ny bruger

E-mail

Heste Skift kategori?

Du vil Sælge Købe Bytte Udleje Leje Andet

Overskrift Kr. 39,-

Registrerings nr. (hestepas)

Hestens navn

Race

Køn

Alder

Stangmål (cm)
(for uudvoksede heste angives forventet stangmål)

Supplerende tekst
2000 tegn tilføje

Pris ,00 kr.

Dine billeder
8 billeder tilføje

Sælg din vare Forøg dine muligheder for et hurtigt salg

Pakke

BUDGET	ANBEFALET	SUPERSÆLGER
<ul style="list-style-type: none">✓ Fremhævet annonce✗ Topgalleri✗ Galleri på forsiden✗ Topannonce	<small>MEGET POPULÆRE</small> <ul style="list-style-type: none">✓ Fremhævet annonce✓ Topgalleri✗ Galleri på forsiden✗ Topannonce	<ul style="list-style-type: none">✓ Fremhævet annonce✓ Topgalleri✓ Galleri på forsiden✓ Topannonce
39 kr.	69 kr.	99 kr.
<input type="radio"/> Vælg Budget	<input type="radio"/> Vælg Anbefalet	<input type="radio"/> Vælg Supersælger

Nej tak, jeg vælger en gratis basisannonce kr. 0,-

Varighed 4 uger og 2 dage Automatisk fornyelse

Kom i avisen Kom i den trykte avis "Den Blå Avis" Kr. 99,- (uge 40)

The good

- Introducing Event Sourcing
- Introducing Sagas or Process Managers
- Async events
- Debugging live problems

Announce ID 100
SYI ID 61c01bba-8c7f-4c96-adcc-00000a8bd086

Source	Event	Time stamp
<p>Syi</p> <p>Bruger: ... IP: ... Service: 218 - www.dba.dk</p> <p>Data:</p> <pre>} "Deactivated": "30-09-2013 10:36:17"</pre>	<p>Syi deactivated</p> <p>SyiAggregate Event: SyiDeactivated Event id: 2b5c0fa7-d7bf-49d1-be3b-a0aa3d6d97e0 Commit id: 8c393d17-7ef1-4cd6-9720-df61b6bbf418</p>	<p>30-09-2013 10:36:17</p>
<p>Syi</p>	<p>Syi published</p>	<p>29-09-2013 09:08:14</p>

The bad

- Introducing Event Sourcing
- Async events

Notes from a developer

- **The good**
- SRP
- Addition instead of modification

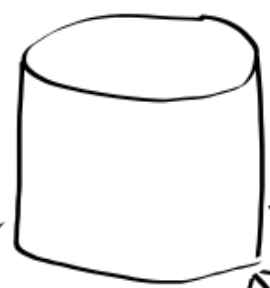
- **The bad**
- Mental shift
- Easy to fall back to just doing crud

And the problems we faced

- Upgrading events
- Inconsistency between read-models and ES
- Operations
 - Date retention

what's
next?

Read Store



Event store



Data from the read-model

Reload process manager state

Persist aggregate state

Re-hydrate aggregate instances

Persist process manager state and push to read-model

Read model generators

Domain model

Handlers

Send commands

Send commands and publish events

Receive commands and events

BI SQL Database

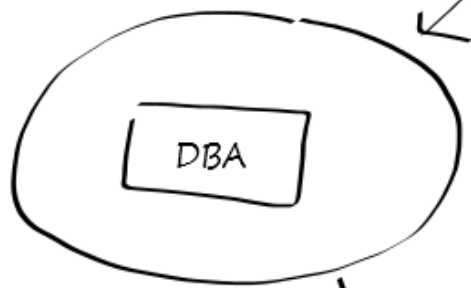
Sync and Async



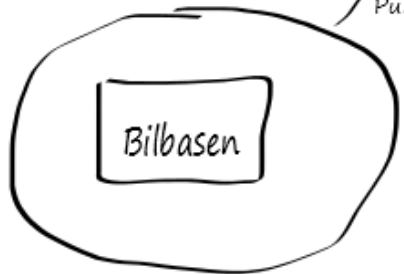
Publish integration events

Publish integration events

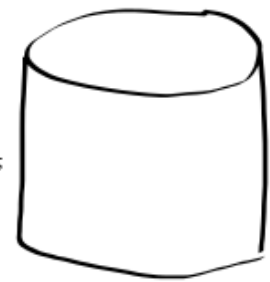
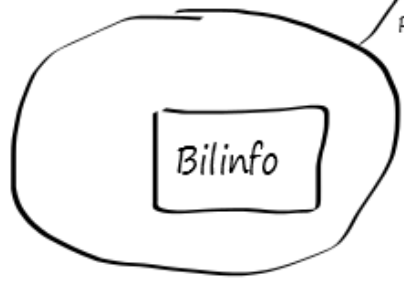
DBA



Bilbasen



Bilinfo



Key points

- CQRS is not complicated
- Smaller is better
- Take the principals and apply elsewhere
- Remember the mental changes

Backup

Integration with Events

```
{
  "notificationId": "4ed6a911-44ad-4f07-9c2b-d6e9a3b6168b",
  "typeName": "mobile.tracking.visit",
  "version": 1,
  "occuredOn": "2013-09-23T15:21:57.2824491+02:00",
  "event": {
    "occuredOn": "2013-09-23T15:21:57.2824491+02:00",
    "externalListingId": 1280788793,
    "user": {
      "id": 1490831351
    },
    "privateListing": false,
    "owner": {
      "id": 752859562
    },
    "platform": {
      "value": "dba-ipad"
    }
  }
}
```

Method Chaining