

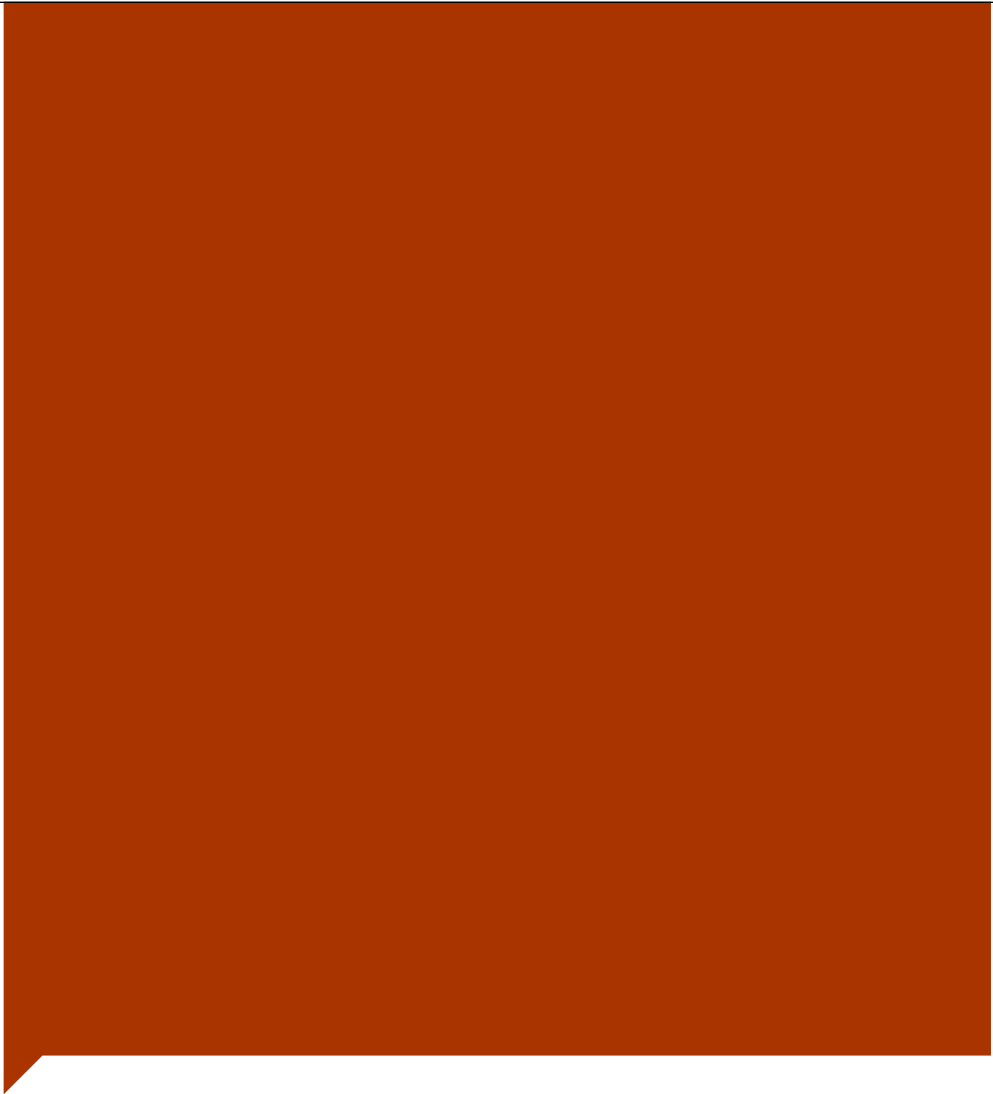
# Making High-Performance Caching Easy with ColdFusion

Brian Klaas

Johns Hopkins Bloomberg School of Public Health

[bklaas@jhsph.edu](mailto:bklaas@jhsph.edu)

[@brian\\_klaas](https://twitter.com/brian_klaas)



# Our Story



It's never fast enough.

# Google

Google Search

I'm Feeling Lucky



1 Second



10 Seconds

.5 / 7

Caching is but one  
of 100 solutions.





Caching is easy.  
Eviction is the challenge.

Query caching

Page caching

Fragment caching

ORM caching



CF

Refer to the CF Docs



EHCACHE  
a product from  TERRACOTTA



Object Caching



Adobe CF 9+

Railo 3.2+



Ehcache

OpenBD  
(and Wikipedia, Flickr, Craigslist)



memcached

cachePut()  
cacheGet()  
cacheRemove()  
[isNull()]



## Core Functions

# Basic Code Flow

Create the name of the item in the cache

**cacheGet**(name of the item in the cache)

**isNull**(results of getting the item in the cache)?

Yes:

Do the hard work

**cachePut**(results of the hard work)

No:

Use the cached version

All cached queries go in Ehcache  
Use cacheID attribute in <cfquery>  
for reference



CF

## Query Caching in CF 10



# Basic Code Flow

Create the name of the item in the cache

**cacheGet**(name of the item in the cache)

**isNull**(results of getting the item in the cache)?

Yes:

Do the hard work

**cachePut**(results of the hard work)

No:

Use the cached version

# Basic Example

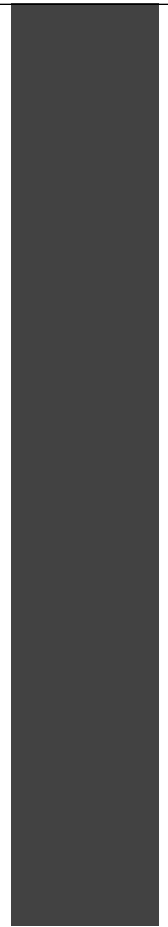
```
<cffunction name="getCourse" returntype="course">
  <cfargument name="courseID" type="numeric" required="yes" />
  <cfset var courseNameInCache = "course" & arguments.courseID />
  <cfset var cachedCourseInfo = cacheGet(courseNameInCache) />
  <cfset var course = 0 />
  <cfif isNull(cachedCourseInfo)>
    <cfset course =
variables.courseService.getCourse(arguments.courseID) />
    <cfset cachePut(courseNameInCache, course) />
  <cfelse>
    <cfset course = cachedCourseInfo />
  </cfif>
  <cfreturn course />
</cffunction>
```



# Basic Problems

Pick good cache IDs

cacheGetAllIds()



# EHCACHE Console

a product from  TERRACOTTA

rs | Statistics | Configuration | Contents | Charts | API

Local cache manager: All

Contents

Count: 0.9 Memory count: 0.9

Items

no match in string keys...

	Key ..
.82:61807:CacheManager@6854be84	LIVETALKPAGEINP
.82:61807:CacheManager@6854be84	MASTERCALENDAR
.82:61807:CacheManager@6854be84	MC4COURSEDAOR
.82:61807:CacheManager@6854be84	MC4GETCOURSESE
.82:61807:CacheManager@6854be84	MC4GETENROLLM
.82:61807:CacheManager@6854be84	MC4GETSTAFFINV
.82:61807:CacheManager@6854be84	MC4OFFERINGDA
.82:61807:CacheManager@6854be84	ROSTERUTILSGET
.82:61807:CacheManager@6854be84	_CF_DUMPCORE.N

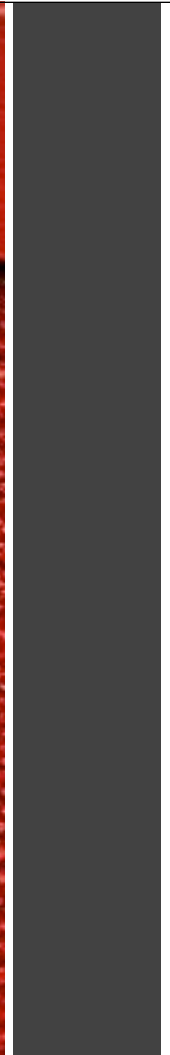
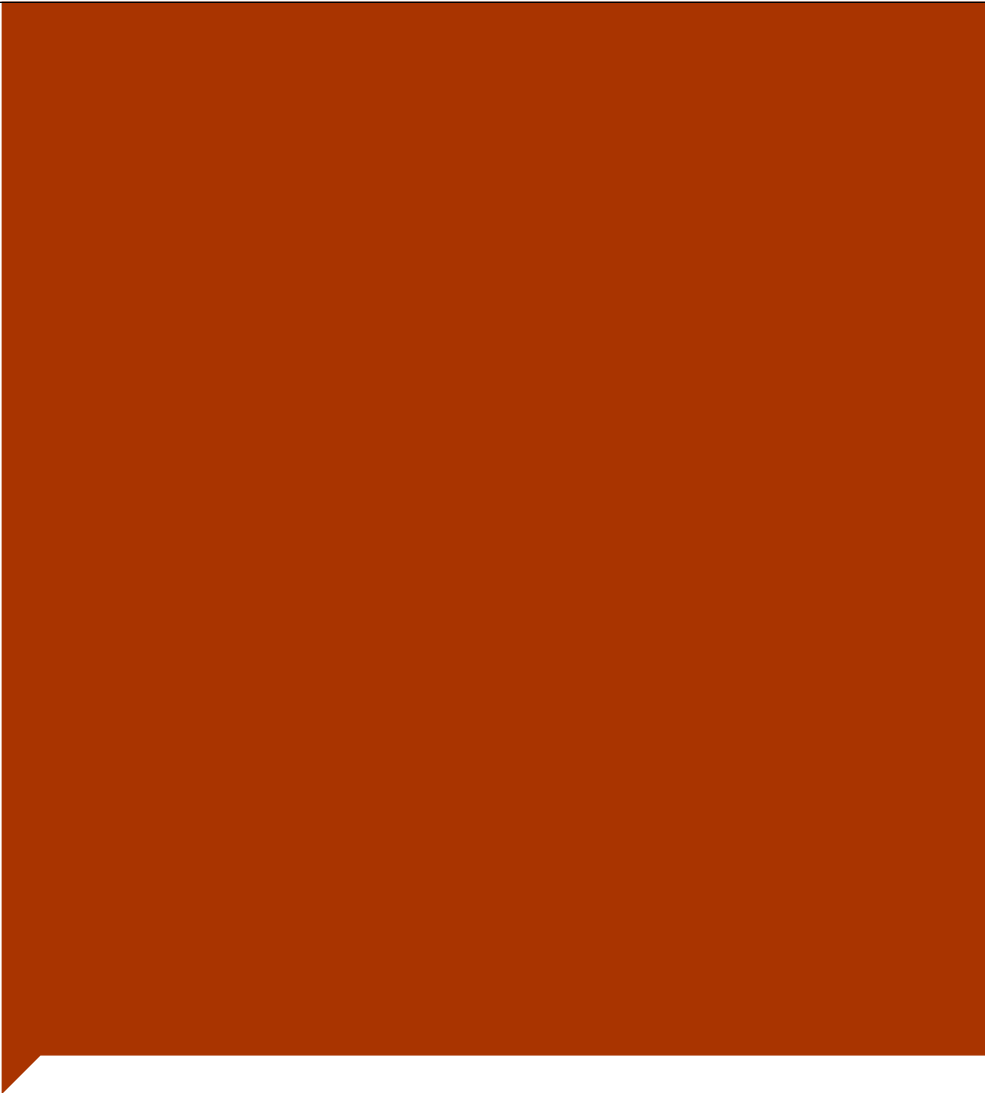
Items

Key: MC4COURSEDAORREAD200  
Name: coldfusion.runtime.TemplateProxy  
Created: 2011/08/30 09:58:01  
Last Modified: 2011/08/30 09:58:01  
Last Accessed:

## Ehcache Monitor



Avoiding the Dogpile



<cflock>

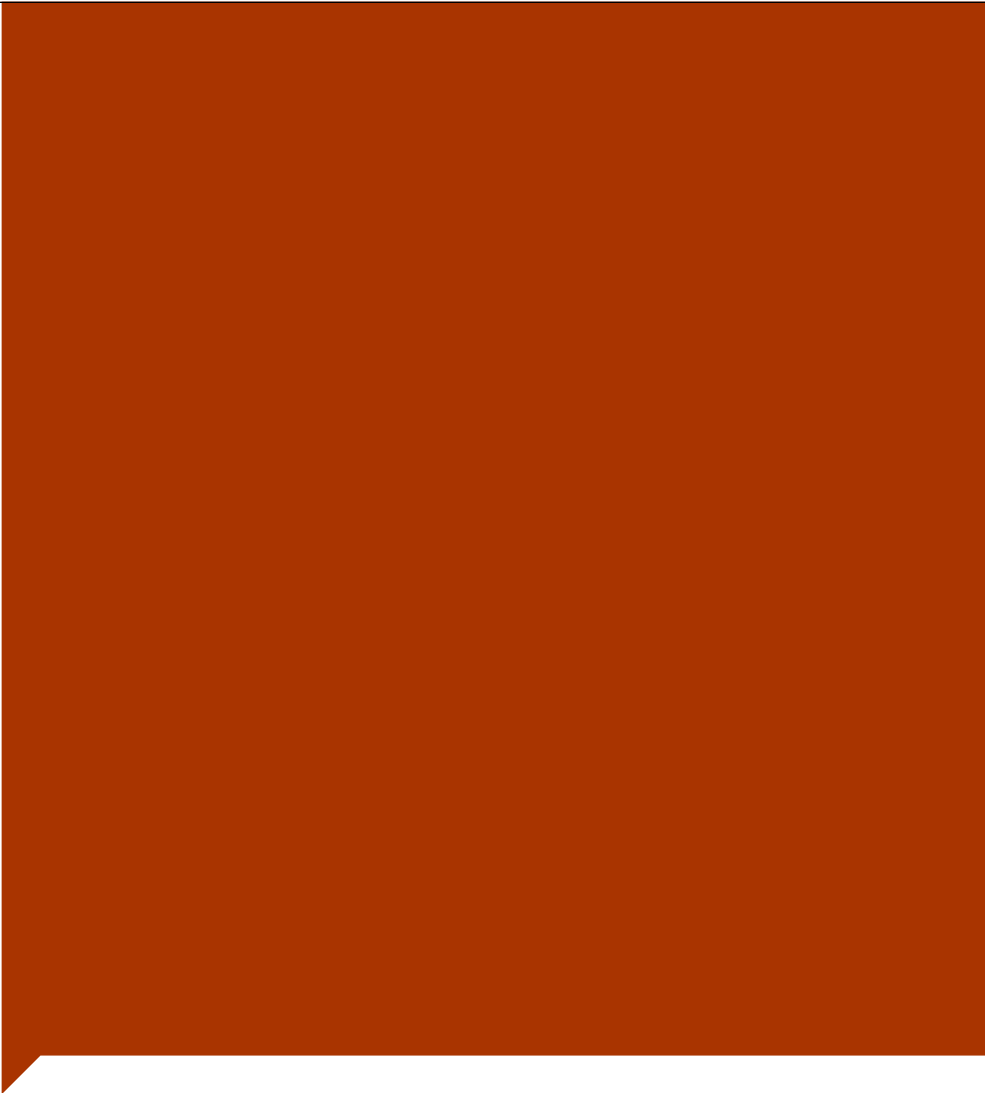


By default,  
Ehcache shares  
the same JVM  
as CF.

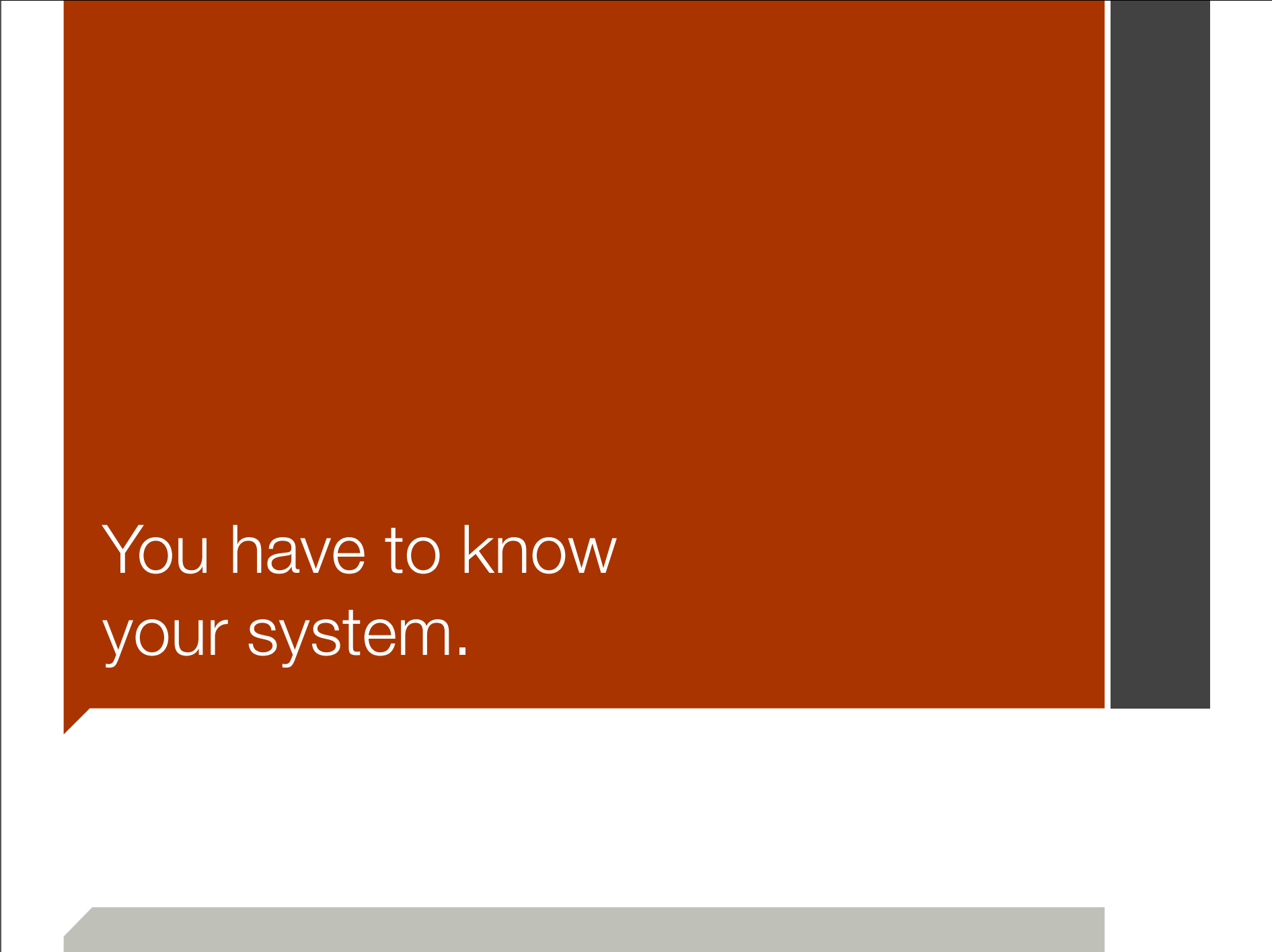


The 4GB Limit

4



# Where to Cache

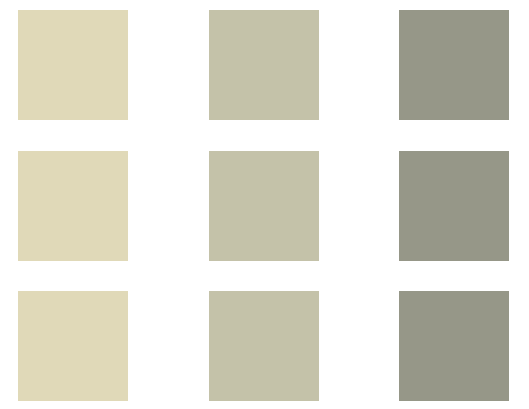
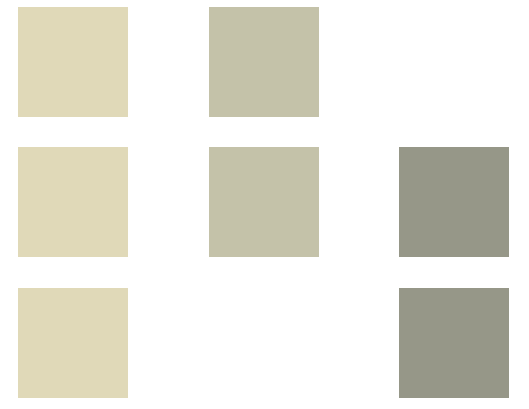
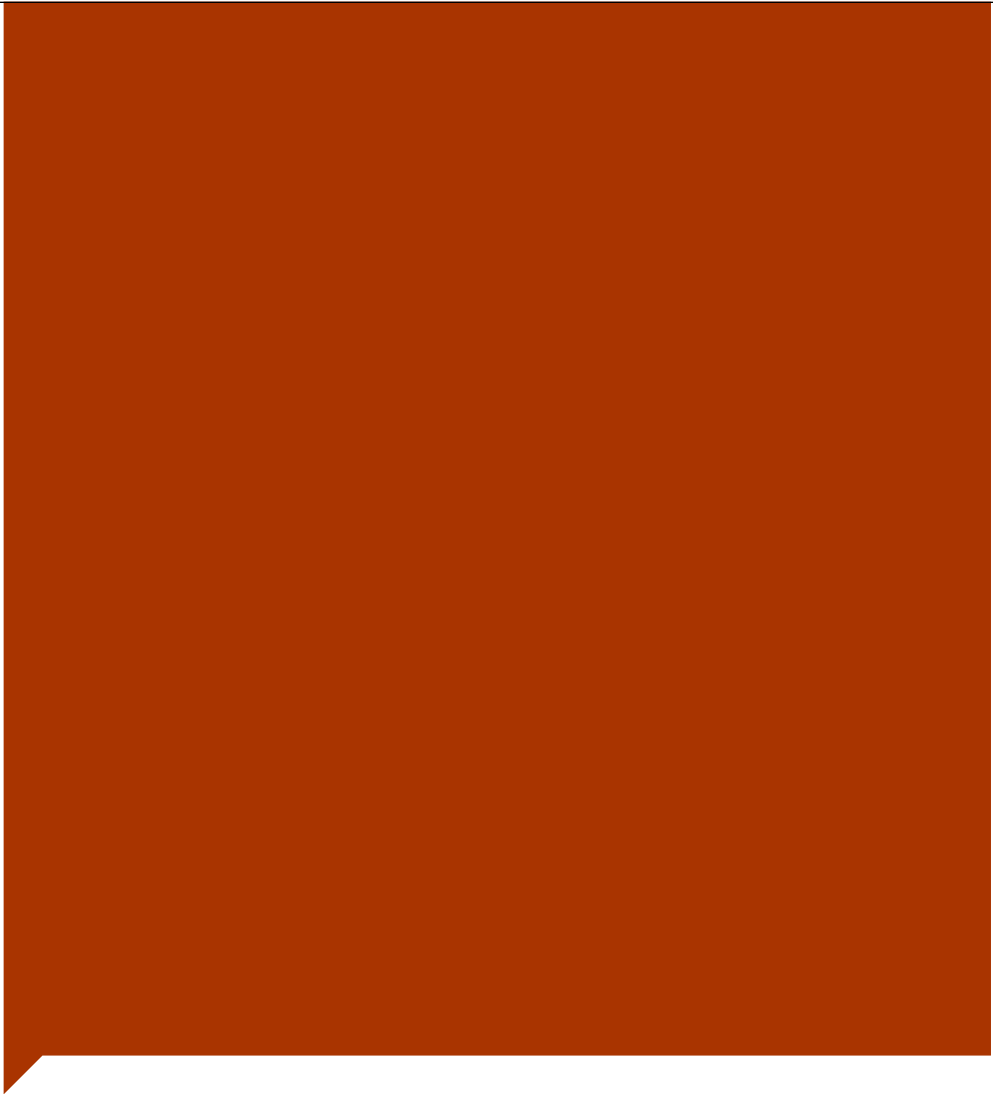


You have to know  
your system.

Example



## Customer Session Objects



Consistency



You know your data.  
You know when it changes.  
Plan for eviction appropriately.

Example



# Heavy Composition



Example



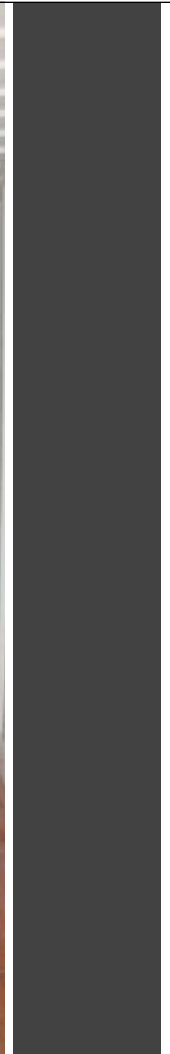
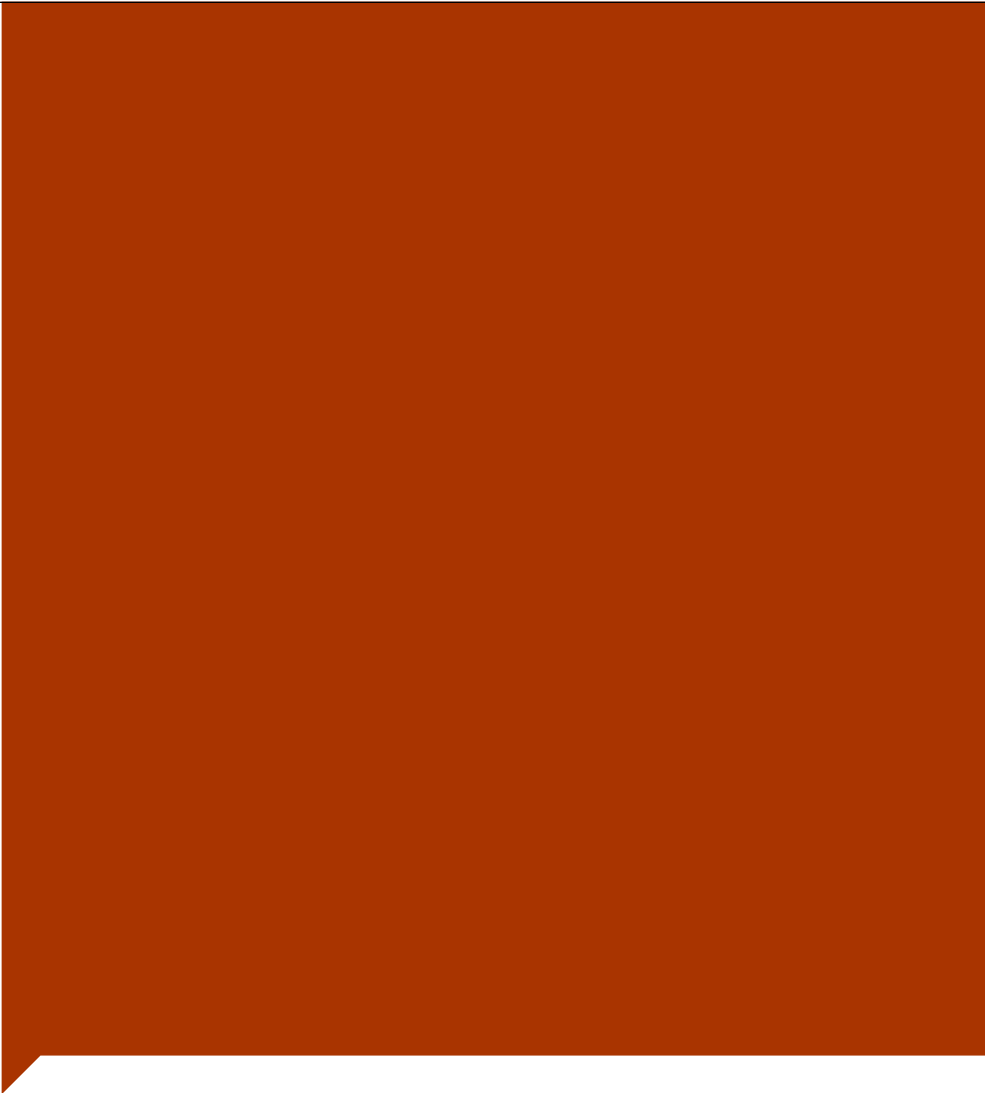
# External Data

Example

Match: CHN 4-2 GER  
Duration: 2:11  
Table: 1  
TAN Chee Kheng (SIN) vs MA Lin (CHN)  
ALAMFI Hassan (GER)

Game Statistics	MA Lin (CHN)				
	1	2	3	4	5
Points won	11	11	9	11	8
Service %	2	0	3	2	0
Third Ball %	18%	0%	33%	18%	0%

# Reports



# One More Problem



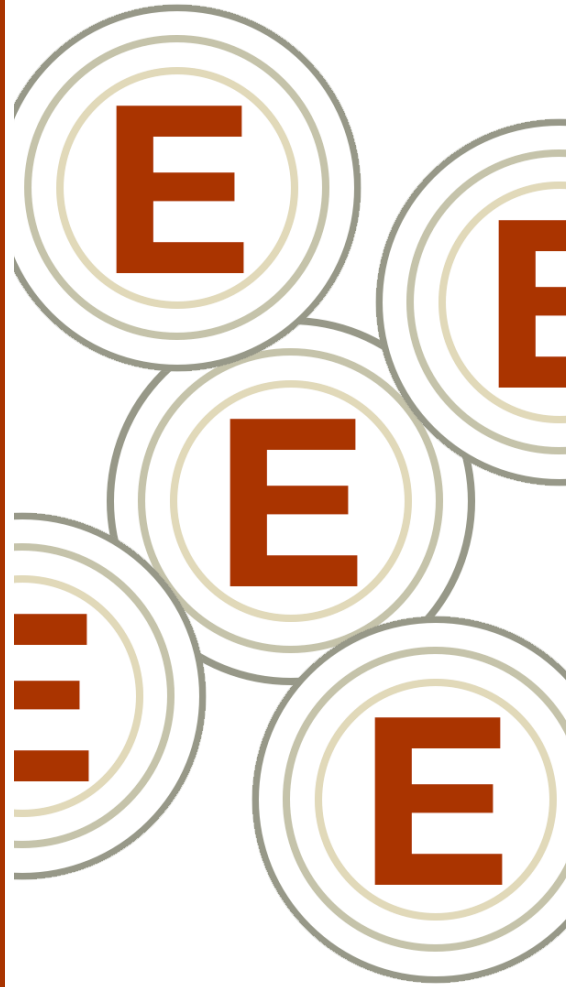
On Server/App Start

Schedule New Task

### Scheduled Tasks

Actions	Task Name
   	AMM: Notify Faculty of Acces
   	Daily Course Email
   	Empty Forum Trash
   	Get HopkinsID For Students
   	Syllabus Builder Daily Email
   	Update Student Names Per IS
Actions	Task Name
   	Clean FuseTalk Subscriptions
Actions	Task Name
   	Breeze Server Heartbeat
   	Clean Up Schedule ZIP Files
   	clear WhosEditing
   	Delete Unrelated Lectures Su

# Scheduled Tasks



# Ehcache Autodiscovery

# Configuring Ehcache autodiscovery

[CF root]/lib/ehcache.xml, add:

```
<cacheManagerPeerListenerFactory  
class="org.terracotta.ehcachedx.monitor.probe.Probe  
PeerListenerFactory" properties="monitorAddress=[IP  
address of server], monitorPort=9889,  
memoryMeasurement=true" />
```

Just before <defaultCache>. Restart CF.



And One More Problem



Simple admin tool  
to clear caches.

Clear Cache Elements

Select a cache: Enrollment: Self-enrollment offerings query

Select a course offering:

Methods in Quantitative Risk Assessment (891) -- Starts 8/25/11

Clear Cache



End Result

Rob Brooks-Bilson's Blog

<http://rob.brooks-bilson.com/>

# Session Evaluation

[www.cfobjective.com/sessions/](http://www.cfobjective.com/sessions/)

Thank you!

Brian Klaas

Johns Hopkins Bloomberg School of Public Health

[bklaas@jhsph.edu](mailto:bklaas@jhsph.edu)

[@brian\\_klaas](#)

[www.iterateme.com](http://www.iterateme.com)