RavenPack In The Time Of COVID-19

Introduction

- Many of you will know as, having seen us here, presenting or just attending most years
- We're a data and analytics company based in Marbella, Spain
- We provide news analytics to large financial institutions; banks, hedge funds, insurance companies etc
- The majority of our data processing is done in Common Lisp

Remote Work

- Almost all of our development happens in our Marbella office
- With the exception of a couple of remote workers
- We've always preferred to have staff in our Marbella office as it's simply easier to communicate with people when you can talk to them face-to-face.
- Lispers tend to work on multiple projects, meaning multiple people to keep up with an, unfortunately, multiple meetings
- Many meetings can be avoided simply by taking a short walk, which by pure office geography, will usually always be in the direction of the coffee machine
- And our biggest internal app's users sit 10m from the Lisp team, which makes support very convenient

Remote Infrastructure

- We have a VPN, and sshuttle for those that prefer such things
- Internal web apps have external endpoints, JIRA, GitLab etc
- Much of our infrastructure is in AWS, so no issue where the developer is
- So it seems that we would be prepared for a sudden everybody-remote event
- But of course the challenges were greater than that, and many specific to our team

Data Volume (1)

- Several of our apps require large amounts of data in memory
- 2 gigs is common, one app can hit 10+ while running
- Startup in the office where our dev DBs are can take 20 to 30 minutes. Time that with a meeting or a chat elsewhere and it's reasonable
- Most of that is simply database queries and data transfer, locally
- And if you're trying to run stuff at home, via VPN, things slow down significantly. Over an hour in some cases
- Years ago I made an experimental addition to our 'with-db-query macro, part of our Oracle library. I never took it to full functionality. It was simply the ability to cache the results of any query on local disk
- Our normally-remote colleagues had recently improved and filled in the missing functionality. You can even cache with readable Lisp, FASLs or Rucksack.
- A remote worker with cached data can now restart faster than someone in the office using the DBs

Data Volume (2)

- Usually stored in S3, so nowhere near the office or most developers
- People have started to cache those too
- Bulk test runs etc are also much faster \bullet
- age
- This data is changing daily. So care is required
- and with care

Most of our input data are news stories or other similar content from various providers

Of course when you start caching data you have to start worrying about cache size and

• There's a pattern here. Make yourself independent of distant resources where possible,

Pre-building Images (1)

- We have no functional need to pre-build images. Our applications are not distributed to customers
- But despite caching etc, home workers still want fast restarts when things go wrong
- Having access to an image containing the latest code and data built that same morning and ready to start can make a huge difference
- We're now building images daily, sometimes more often. Some are for internal application use.
 Others only for development
- And with builds comes the opportunity to improve our testing infrastructure as things are now faster and repeatable
- Its important to note that these images are for dev use, and so must have access to all resources and have removed nothing. No tree-shaking here. They are also very large.

Prebuilding Images (2)

- Our images are saved for dev and we also use them for our internal production applications \bullet
- \bullet and still have effect. So no config trapped in closures. Everything is set up to refresh config at run time
- So they may be built and load data from one DB, but continue from another
- We have a data loading abstraction that stops accidental reload of the same resources \bullet
- often with different configuration.
- Everything must be zeroed out
- \bullet build machine
- the office, from AWS of from a developer's home

We have to make sure that all of the configuration option's we'd normally have can be changed on a pre-built image

• This means that things like DB resource pools are shut down but not destroyed and that they can be reactivated,

Source file location is standardised and configurable so that systems can be loaded as if we were on the original

• Our dev DBs and others are available from practically anywhere within our network, so dev work can be done from

Image Management

- We used to run everything from source under Emacs
- So it made sense that auto-restarting dev apps would be done by an Emacs script. Nowadays more like an overgrown library of app-specific restart instructions.
- containers, have a container management app do our deployment
- more technology that we don't control. Ups and downs you might say
- can access source via appropriate mounts
- And you can connect to these lisps via Slime or Sly

• The next step was to take our now prebuilt images and, embedding them in Docker

• On paper this is a lot more flexible and easily programmed, but we're now slaves to yet

• Of course our Lisp-containing Docker containers are also set up so that the image inside

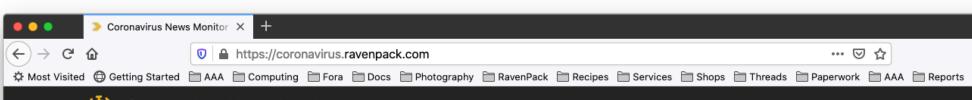
Non-Lisp concerns

- Zoom has been the most reliable video chat app for meetings
- People are starting to get creative with the green screen effects
- We tried others but there was always a problem, be-it poor quality of poor interface.
- Code reviews are done via screen, tmux, or where there are multiple reviewers, TMate.
- For myself at least, video calls have now become the norm. I'm not feeling the slight discomfort that I used to now that it's a way of life for everyone

What Are We Up To?

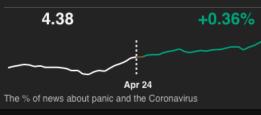
- Actual work has continued as normal
- creating a little free COVID-19 news tracking app
- <u>https://coronavirus.ravenpack.com</u>

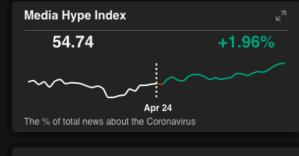
• But given the circumstances and the data at our disposal we've ended up



🍈 Coronavirus News Monitor

Selected Region		
Worldwide		~
COVID-19 Cases		
Total Cases	2,863,788	+1.8%
Total Recovered	814,758	+2.6%
	199,553	+1.2%
Changes since midnight UTC		
Panic Index		

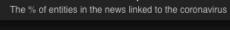


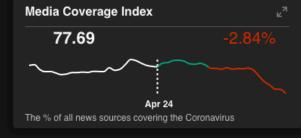




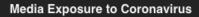












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	Country	Politicians	Tre
1	United States	-3	.6
2	UK	0.6	67
3	Canada	-3.8	38
4	India	-66.5	56
5	China	-2	26
6	France	-27.0	06
7	Germany	-40.9	96
8	Italy	-25.6	62
9	Japan	-39.3	38
10	Australia	-1	16
11	Spain	-35.4	1 1
12	S. Korea	-49.7	78
13	Switzerland	-7.9	91
14	Netherlands	2.3	33
15	Russia	-26.3	33
16	South Africa	-40	.2
17	Belgium	-18.2	21
18	Georgia	-6.3	36
19	Brazil	-31	.3
20	Mexico	-16.4	19
21	Pakistan	-35.2	22
The ta	able shows the media e	exposure of COVID)-19

Last Updated: Apr 25th, 17:03:12 CEST | RavenPack ©2020 Sources: RavenPack, Johns Hopkins University (CSSE), Worldometer

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+4.28%	74.76	+0.09%		ELATED TOPIC	🗸 RATIO (%)
+14.25%	18.52		1 So	ocial Distancing	17.57
+8.5%	15.63	-0.67%	2 Fe	ear	11.81
-2.87%	13.98	+0.94%	3 St	ay at Home	10.54
+22.81%	12.79	-1.87%	4 Co	onfirmed Cases	9.04
	8.37	+0.13%	5 Te	est Positive	8.98
+6.25%	7.16		6 Pa	anic	8
+0.71%	6.08	+0.52%	7 La	ayoffs	7.06
+5.61%	6.05	-2.53%	8 Va	accine	6.17
	5.57		9 W	ar	5.7
+8.03%	5.46	+0.69%	10 Fa	ace Mask	5.38
+5.4%	3.47		11 M	ental Health	4.37
-4.11%	3.41	-0.09%	12 Fi	nes	3.88
+6.09%	3.23	+0.02%	13 Ar	nger	3.42
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+1.42%	2.42	+0.65%	17 Re	ecession	3.05
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+1.12%	1.97	+0.34%		uns & Ammo	2.53
	1.07	10.0470			
ities			The top t	hemes related to COVID-19	

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Yes, Not Lisp

- Uses JS and React
- Data is pre-prepared by the backend
- Is mostly RavenPack data with the addition of some official stats
- For a change I can show my mum what I do

And So?

- Working remotely isn't so bad
- But I'd prefer to be in the office
- Our infrastructure has been reliable
- And recent work has made things acceptably fast
- So things are more or less normal
- Ask my dogs if you want a second opinion about being stuck in the house

We are not hiring

Until things are back to normal

Hopefully sooner than later

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