Don't Panic! How to Cope Now You're Responsible for Production

Euan Finlay @efinlay24



FINANCIAL TIMES





▲ 位 ☆ 년 ···



Ahmen Khawaja @AhmenKhawaja · 2 hrs False Alarm to Queen's death! She is being treated at King Edward 7th hospital. Statement due shortly

★ 151 ★ 연 …



Ahmen Khawaja @AhmenKhawaja - 2 hrs "Queen Elizabrth has died": @BBCWorld



Ahmen Khawaja @AhmenKhawaja 2 hrs BREAKING: Queen Elizabeth is being treated at King Edward 7th Hospital in London. Statement due shortly: @BBCWorld

ት 127 ★1 🖄 🚥



FINANCIAL



FT

https://www.businessinsider.com/ft-publishes-incorrect-ecb-announcement-early-2015-12/







ECB leaves rates unchanged in shock decision on.ft.com/1Nrekqz

RETWEETS	LIKES 6	🍓 🎬 🎆 💓 💓 🎆 🐙
7:38 AM - 3	B Dec 2015	





FΤ



https://twitter.com/Ludo_Dufour/status/672401158653218816/

FINANCIAL TIMES

FΊ

DECEMBER 3, 2015

On Thursday we published an incorrect story on FT.com that stated the European Central Bank had confounded expectations by deciding to hold interest rates rather than cut them. The story was published a few minutes before the decision to cut rates was announced.

The story was wrong and should not have been published. The article was one of two pre-written stories — covering different possible decisions — which had been prepared in advance of the announcement. Due to an editing error it was published when it should not have been. Automated feeds meant that the initial error was compounded by being simultaneously published on Twitter.

The FT deeply regrets this serious mistake and will immediately be reviewing its publication and workflow processes to ensure such an error cannot happen again. We apologise to all our readers.



FINANCIAL

TIMES

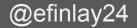
8



/usr/bin/whoami



FINANCIAL





/usr/bin/whodoiworkfor

No such file or directory.





TIMES

#LeadDevMeetup



https://www.ft.com/

FINANCIAL TIMES

HOME WORL	D US COMPANIES TECH MARKETS GRA	PHICS OPINION WORK & CAREERS LIFE & AF	RTS HOW TO SPEND IT	Portfolio Account Settings
fast FT	Honda set to close Swindon plant in fresh blow to UK manufacturing 10M AGO	Seven MPs resign from Labour party in challenge to Jeremy Corbyn 2H AGO	German regulator bans shorting of Wirecard shares 3H AGO	China leads Asia equities rally ahead of trade talks

EU threatens retaliation if US imposes punitive car tariffs

European Commission to 'react in a swift and adequate manner' to any levies 3 HOURS AGO

- Donald Trump likely to take his time regarding auto tariffs
- Donald Trump's ill-timed rift with Europe
- Trump administration delays decision on car tariffs



Facebook Inc

Facebook joins Amazon and Google in Al chip race

NEW 30 MINUTES AGO



Citigroup Inc Citi CEO says machines may cut thousands of call centre jobs



Labour Party UK Seven MPs resign from Labour in challenge to Corbyn

Split by pro-EU moderates comes



Federal Reserve Fed nears decisions on its asset portfolio

Some officials think balance sheet



Automobiles Honda set to close Swindon plant in blow to UK manufacturing



FINANCIAL TIMES

Your team is now on call.

And you're mildly terrified.





FINANCIAL

TIMES

#LeadDevMeetup

Obligatory audience interaction.



FINANCIAL





Everyone feels the same when they start out.

I still do today.



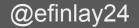


FT

How do you get comfortable with supporting production?



FINANCIAL







> Future



FINANCIAL TIMES

Future > Present



Future Present > Past



FINANCIAL TIMES

The Ghost of Incidents Future

Handling incidents is the same as any other skill.



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Get comfortable with your alerts.



FINANCIAL





Delete alerts you don't care about.



FINANCIAL





Have a plan for when things break.



FINANCIAL





Keep your documentation up to date.



FINANCIAL

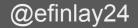




Practice regularly.



FINANCIAL





"The Gang Deletes Production"

NO PRODUCTION SERVERSP

NO PRODUCTION INCIDENTS

imgflip.com

Break things, and see what happens.

Did your systems do what you expected?



FINANCIAL



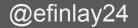


The Planned Datacenter Disconnect

We got complacent, and stopped running datacenter failure tests...



FINANCIAL



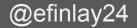


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Have a central place for reporting changes and problems.



FINANCIAL





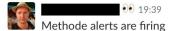


Seeing aws dx link issues again-checking

Pasted image at 2018-07-27, 5:28 PM 💌

19:25

All	Groups	
⊧ C	AWS DX	
▶ □	BT	
▶ D	FT DNS	
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- C	 FT Third Parties Nexxlinx VPN 	
▶ D	FT Voice	



intermittent



19:40

yep we have network issues again at PR (edited)

1

Looks like the MPLS Verizon cct is down

So far no impact reported...

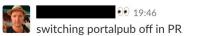
monitoring for now

19:44

We have reports of publishing not working, and problems with Methode portalpub connecting to UPP again



^^Verizon are saying PR site is affected by an issue affecting multiple locations



We're not perfect.

But we always try to improve.









FT

Future > Present Past



FINANCIAL TIMES

The Ghost of Incidents Present

Calm down, and take a deep breath.

It's probably ok.





TIMES

FINANCIAL

#LeadDevMeetup

Don't dive straight in.

Go back to first principles.





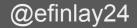
FINANCIAL TIMES

FT

What's the actual impact?



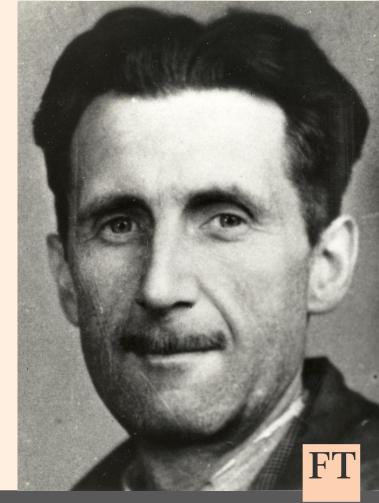
FINANCIAL

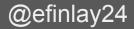




"All incidents are **equal**, but some incidents are **more equal** than others."

George Orwell, probably.





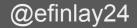
#LeadDevMeetup

FINANCIAL TIMES

What's already been tried?



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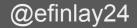




Is there definitely a problem?



FINANCIAL







What's the minimum viable solution?



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Get it running <u>before</u> you get it fixed.



FINANCIAL

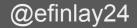




Go back to basics.



FINANCIAL





It's not DNS There's no way it's DNS It was DNS

-SSBroski

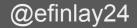




Don't be afraid to call for help.



FINANCIAL







The One Where a Director Falls Through the Ceiling



Communication is key.

Especially to our customers.





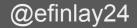
FT



Put someone in charge.



FINANCIAL







Pingdom APP 14:42

k8s - UPP Prod Delivery US: Annotations Read Aggregate Healthcheck is down (Incident #4073269)

upp-prod-delivery-us.ft.com • View details

k8s - UPP Prod Delivery UK: Annotations Read Aggregate Healthcheck is down (Incident #4073041)

upp-prod-delivery-eu.ft.com • View details

k8s - UPP Prod Delivery UK: Content Read Aggregate Healthcheck is down (Incident #4073077)

upp-prod-delivery-eu.ft.com • View details

k8s - UPP Prod Delivery US: Content Publish Aggregate Healthcheck is down (Incident #4073290)

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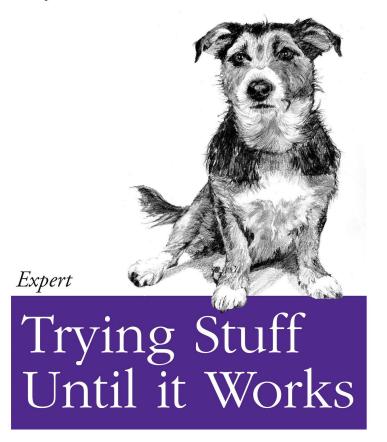
k8s - UPP Prod Delivery US: Annotations Read Aggregate Healthcheck is up (Incident #4073269)

upp-prod-delivery-us.ft.com • View details

k8s - UPP Prod Delivery US: Image Publish Aggregate Healthcheck is down (Incident #4073407)

upp-prod-delivery-us.ft.com • View details

k8s - UPP Prod Delivery UK: Image Publish Aggregate Healthcheck is down (Incident #4073095) upp-prod-delivery-eu.ft.com • View details Software can be chaotic, but we make it work



O RLY?

The Practical Developer @ThePracticalDev

Create a temporary incident channel.



FINANCIAL







11:26

Same for EA460F68-495E-D18F-3130-C220FA23EF8E in prod-us at 04:01:57



says that in the last 24 hours, Next have got 20% more push event notifications in the US than in the EU...



So

Both request times line up exactly with the notification timestamps



🍔 11:27

11:26

uploaded and commented on this image: Push notifications received \checkmark

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66 green is US region



11:28

suggestions-rw-neo4j (that's v2 annotations as I understand it) wrote annotations at 04:01:36 (uk) and 04:01:51 (us)

So they would have been present before the notifications were sent out



5 11:29

and I have confirmed that no annotations will still allow the article to show in both enrichedcontent and internalcontent

- 1

Hmm, that's a big gap between 1 and 5

If you think you're over-communicating, it's probably just the right amount.



FINANCIAL

TIMES

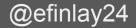


#LeadDevMeetup

Tired people don't think good.



FINANCIAL





🌀 - 📲 CoCo Health Timeline - 😭 🖻 🏟

✓ Zoom Out > ② Last 6 hours Refresh every 1m 2

environment: prod-uk + prod-us + pub-prod-uk - services: All -



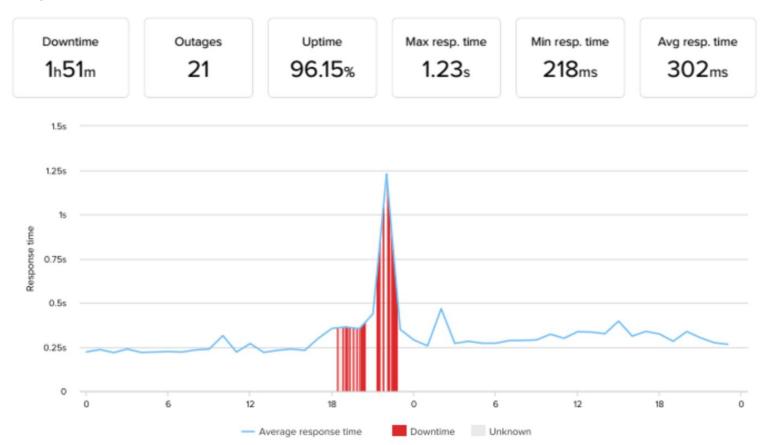
"The Gang Serves Traffic From Staging"



Report dates: 26/07/2016 to 27/07/2016 (Europe/Lor

Type: HTTP

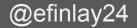
Response time



It wasn't great, but it wasn't the end of the world.



FINANCIAL





The Ghosts of Incidents...

Future Present > Past



FINANCIAL TIMES

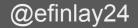
The Ghost of Incidents Past

Congratulations! You survived.

It probably wasn't **that** bad, was it?



FINANCIAL

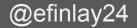




Run a learning review with everyone involved.



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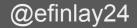




Incident reports are important.



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Feb 10, 2017 - GitLab 🎔

Postmortem of database outage of January 31

Postmortem on the database outage of January 31 2017 with the lessons we learned.

← Back to company

On January 31st 2017, we experienced a major service outage for one of our products, the online service GitLab.com. The outage was caused by an accidental removal of data from our primary database server.

This incident caused the GitLab.com service to be unavailable for many hours. We also lost some production data that we were eventually unable to recover. Specifically, we lost modifications to database data such as projects, comments, user accounts, issues and snippets, that took place between 17:20 and 00:00 UTC on January 31. Our best estimate is that it affected roughly 5,000 projects, 5,000 comments and 700 new user accounts. Code repositories or wikis hosted on GitLab.com were unavailable during the outage, but were not affected by the data loss. GitLab Enterprise customers, GitHost customers, and self-hosted GitLab CE users were not affected by the outage, or the data loss.



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https://about.gitlab.com/2017/02/10/postmortem-of-database-outage-of-january-31/

"Until a restore is attempted, a backup is both **successful** and **unsuccessful**."

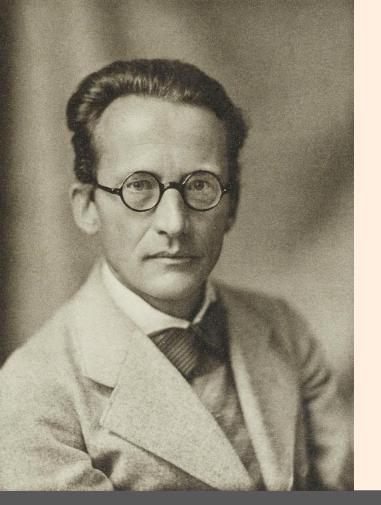
Erwin Schrödinger



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Timeline

On January 31st an engineer started setting up multiple PostgreSQL servers in our staging environment. The plan was to try out pgpool-II to see if it would reduce the load on our database by load balancing queries between the available hosts. Here is the issue for that plan: infrastructure#259.

± 17:20 UTC: prior to starting this work, our engineer took an LVM snapshot of the production database and loaded this into the staging environment. This was necessary to ensure the staging database was up to date, allowing for more accurate load testing. This procedure normally happens automatically once every 24 hours (at 01:00 UTC), but they wanted a more up to date copy of the database.

± 19:00 UTC: GitLab.com starts experiencing an increase in database load due to what we suspect was spam. In the week leading up to this event GitLab.com had been experiencing similar problems, but not this severe. One of the problems this load caused was that many users were not able to post comments on issues and merge requests. Getting the load under control took several hours.

We would later find out that part of the load was caused by a background job trying to remove a GitLab employee and their associated data. This was the result of their account being flagged for abuse and accidentally scheduled for removal. More information regarding this particular problem can be found in the issue "Removal of users by spam should not hard delete".



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Publication of the outage

In the spirit of transparency we kept track of progress and notes in a publicly visible Google document. We also streamed the recovery procedure on YouTube, with a peak viewer count of around 5000 (resulting in the stream being the #2 live stream on YouTube for several hours). The stream was used to give our users live updates about the recovery procedure. Finally we used Twitter (https://twitter.com/gitlabstatus) to inform those that might not be watching the stream.

The document in question was initially private to GitLab employees and contained name of the engineer who accidentally removed the data. While the name was added by the engineer themselves (and they had no problem with this being public), we will redact names in future cases as other engineers may not be comfortable with their name being published.

Data loss impact

Database data such as projects, issues, snippets, etc. created between January 31st 17:20 UTC and 23:30 UTC has been lost. Git repositories and Wikis were not removed as they are stored separately.

It's hard to estimate how much data has been lost exactly, but we estimate we have lost at least 5000 projects, 5000 comments, and roughly 700 users. This only affected users of GitLab.com, self-hosted instances or GitHost instances were not affected.



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https://about.gitlab.com/2017/02/10/postmortem-of-database-outage-of-january-31/

Identify what can be improved for next time.



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Improving recovery procedures

We are currently working on fixing and improving our various recovery procedures. Work is split across the following issues:

- 1. Overview of status of all issues listed in this blog post (#1684)
- 2. Update PS1 across all hosts to more clearly differentiate between hosts and environments (#1094)
- 3. Prometheus monitoring for backups (#1095)
- 4. Set PostgreSQL's max_connections to a sane value (#1096)
- 5. Investigate Point in time recovery & continuous archiving for PostgreSQL (#1097)
- 6. Hourly LVM snapshots of the production databases (#1098)
- 7. Azure disk snapshots of production databases (#1099)
- 8. Move staging to the ARM environment (#1100)
- 9. Recover production replica(s) (#1101)
- 10. Automated testing of recovering PostgreSQL database backups (#1102)
- 11. Improve PostgreSQL replication documentation/runbooks (#1103)
- 12. Investigate pgbarman for creating PostgreSQL backups (#1105)
- 13. Investigate using WAL-E as a means of Database Backup and Realtime Replication (#494)
- 14. Build Streaming Database Restore
- 15. Assign an owner for data durability





Nearly the end.

Don't clap yet.





FT

Failure is inevitable.

And that's ok.





#LeadDevMeetup

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The end.

"Please clap." Jeb Bush, 2016







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We're hiring! https://ft.com/dev/null/



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