



SymfonyCon
BRUSSELS 2023

I did it ! I broke production !

Sofía LESCANO CARROLL



@SofLesc





**Raise your hand if you have the rights to deploy /
make changes in production**



Keep it raised if you never broke production



Well, I did ;)



Twice.

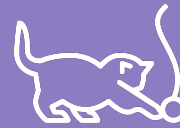


Within the same hour.

" Discover someone's true nature when you see how they react to an incident in production "

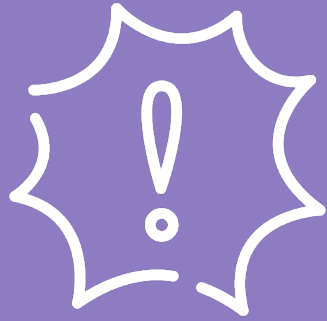
Sofia Lescano Carroll

Senior Software Developer



Madrid





Disclaimer



**An e-commerce story that brings
together retailers and brands**



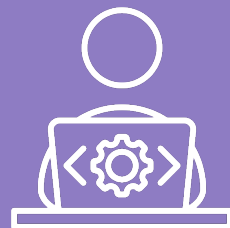
Our organisation

Our teams

Functional perimeter



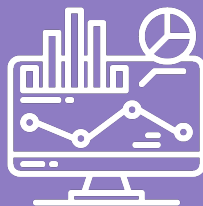
Engineering manager



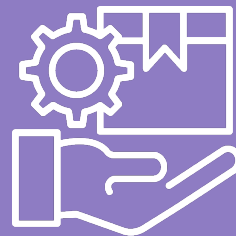
3-8 Software
Engineers (BE & FE)



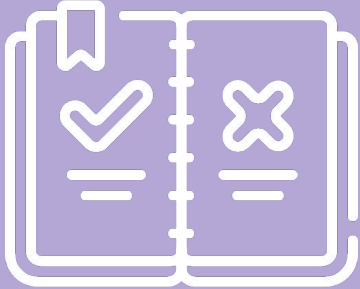
Product designer



Data analyst



Product manager



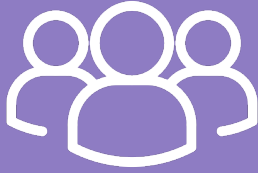
Our guidelines

Our guidelines

Engineering principles
&

Software architecture principles

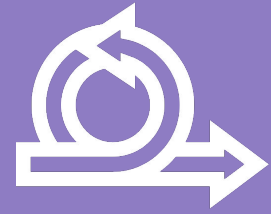
Engineering principles



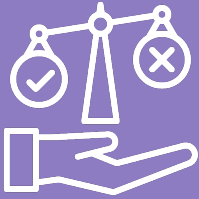
**Small long-lived
squad**



Self-organization



Iterative process



Autonomy



Collaboration



Transparency



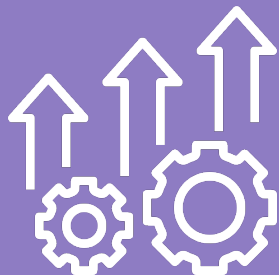
Safety

Engineering principles

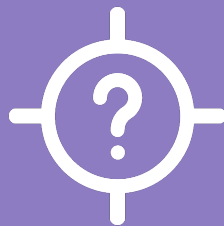
Software architecture principles



Data privacy



Always improve



**No deviant system
behaviour**



Localisation



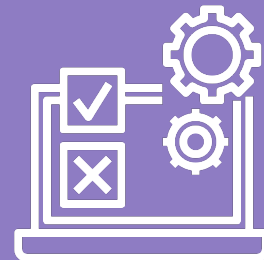
**Environment
parity**



Documentation



Disposability



Testing

Software architecture principles



The day I broke
production



**There are plenty ways of breaking
production ...**

Fortunately I didn't break it THAT
much ...

BLEND
WEB
MIX

24 & 25
OCTOBRE 2021

Tempête de boulettes
géantes (en prod)

Agnès Haasser
(TEA The Ebook Alternative)

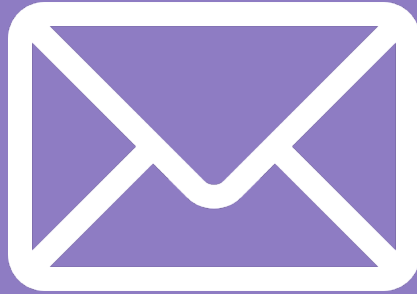
53:42

The screenshot shows a presentation slide with a dark blue background. At the top left is the 'BLEND WEB MIX' logo. At the top right is a red banner with the dates '24 & 25 OCTOBRE 2021'. The main text is centered and reads 'Tempête de boulettes géantes (en prod)'. Below that, the speaker's name 'Agnès Haasser' and affiliation '(TEA The Ebook Alternative)' are listed. In the bottom right corner, there is a small cartoon character icon and a timer showing '53:42'.

It was on valentine's day ...



I wasn't much worried about my deployments



I got a message from a colleague ...

3

2:58 PM

Sofia we've a problem I think you need to revert this PR asap <https://github.com/>

<https://ankorstore.slack.com/archives/C038XNK5V9Q/p1676382547856839>

1

Hi Team! 😊 Ive noticed that two Brands can not see any orders in their account at the moment, par exemple : <https://> /22798/show do you know if this is part of a bigger issue?

Thread in # questions-product-tech | Feb 14th | [View message](#)

2

I've done it here <https://github.com/>

#29904 Revert "perf: reduce number of queries on account orders"

Reverts #29694

Labels

merge-queue/ready

 ankorstore/ankorstore | Feb 14th | Added by GitHub

1

Someone spotted an issue in production

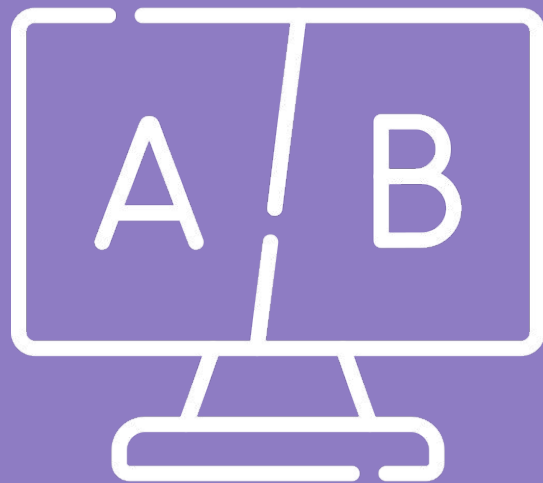
2

My colleague caught it up, triggered an incident and started a fix

3

Reached out to let me know so I could manage it

What happened ?



We forgot we had an A/B test ongoing

Consequences

Commandes à valider **1** Commandes à expédier **3** Problèmes de réception **0**

Exporter

⚠ Au moins une commande contient des boissons alcoolisées.
Toutes les expéditions contenant des boissons alcoolisées doivent répondre à des normes d'emballage spécifiques. Vous trouverez plus d'informations sur [ces normes dans notre FAQ](#)

Toutes **5** A accepter **1** A envoyer **3** Envoyées **1** Problèmes de réception **0** Annulées **0** Terminées **0**

Filtres: Priorité Type de commande Tout afficher

5 Produits

Client	Priorité	Statut	Référence	Date de création	Montant net	Suivi	Origine du stock	Type de commande
	En retard	Commande à valider	#2350906	12 juin 2023	106,01 €			>
	En retard	Commande à expédier	#2350901	31 mai 2023	106,01 €			>
	En retard	Commande à expédier	#2350896	31 mai 2023	106,01 €			>
		Expédiée et en commande d...	#2350891	31 mai 2023	115,85 €			>
	En retard	Commande à expédier	#2350881	26 mai 2023	106,01 €			>



PagerDuty EU APP

2:59 PM

Resolved: #569 Brands unable to access order list in brand BO

Assigned: Triggered by: Slack

↑ High Urgency

Priority: P2 Service: Global

✓ Resolved by [redacted] (@ [redacted]) | Feb 14th

More actions...

Acknowledged #569: Brands unable to access order list in brand BO by [redacted]

(@ [redacted]) | Jump

Status update

4:05

Message: http the culprit as

Resolved: #570 Operations involving invoice generation, uploads and file handling are experiencing errors

Assigned: Triggered by: Slack

↑ High Urgency

Priority: P2 Service: Global

✓ Resolved by [redacted] (@ [redacted]) | Feb 14th

More actions...



Sofia LESCANO CARROLL 4:04 PM

i hope its not me again the incident


I passed the sentry PR

What happened ?



Updated a library that had incorrect dependencies

Consequences

 APP 5:01 PM

Monitor **Opened**: [Order-Management] Orders stuck in received status
Timestamp: 2023-02-14T16:01:38Z
Records: 97

order_id	submitted_at	received_at	status	invoice_count	invoice_labels
	2023-01-19 13:42:08	2023-02-14 15:42:10	received	0	
	2023-02-09 15:34:16	2023-02-14 15:41:42	received	0	
	2023-01-27 17:38:19	2023-02-14 15:40:53	received	0	
	2023-01-25 16:31:10	2023-02-14 15:39:35	received	0	
	2023-02-07 08:45:31	2023-02-14 15:39:18	received	0	
	2023-02-08 09:59:41	2023-02-14 15:39:18	received	0	
	2022-12-02 20:52:15	2023-02-14 15:39:05	received	0	
	2023-02-09 15:33:07	2023-02-14 15:38:45	received	0	
	2022-12-19 09:47:13	2023-02-14 15:38:16	received	0	
	2022-11-29 10:12:47	2023-02-14 15:38:07	received	0	
	2022-11-29 14:52:13	2023-02-14 15:37:55	received	0	
	2023-02-08 10:57:09	2023-02-14 15:37:00	received	0	
	2022-11-29 10:12:47	2023-02-14 15:36:12	received	0	
	2023-02-08 11:44:03	2023-02-14 15:34:42	received	0	
	2022-11-30 14:46:12	2023-02-14 15:34:13	received	0	
	2023-02-07 08:45:00	2023-02-14 15:33:55	received	0	
	2023-01-10 09:32:32	2023-02-14 15:33:47	received	0	
	2023-01-25 17:11:41	2023-02-14 15:33:44	received	0	
	2023-02-10 15:57:26	2023-02-14 15:33:33	received	0	
	2023-01-30 23:30:56	2023-02-14 15:33:07	received	0	
	2023-02-08 12:17:38	2023-02-14 15:33:06	received	0	

We were doing so well till then...

1 incident in 9 months

**" Only people that do nothing break
nothing ;) Good luck ! "**

- William, senior developer

"We are not a team because we work together. We are a team because we respect, trust and care for each other"

If we fail, we fail as a team

Managing incidents is
good, preventing them
is better.

Incidents have a cost



Monetary



Company image
and trust



Employees
health



How do we deliver a
feature and prevent
incidents ?

Journey of a feature

Product need definition



Technical specifications



Automatic checks

Code writing



Functional review



Pull request review



Monitor

Deploy



Journey of a feature

Product need definition



Technical specifications



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Monitor

Deploy



Technical specification



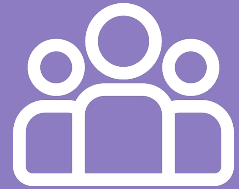
Context



Technical
investigation,
edge cases



Define
acceptance
criteria



Team review

Journey of a feature

Product need definition



Technical specifications



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Pull request review

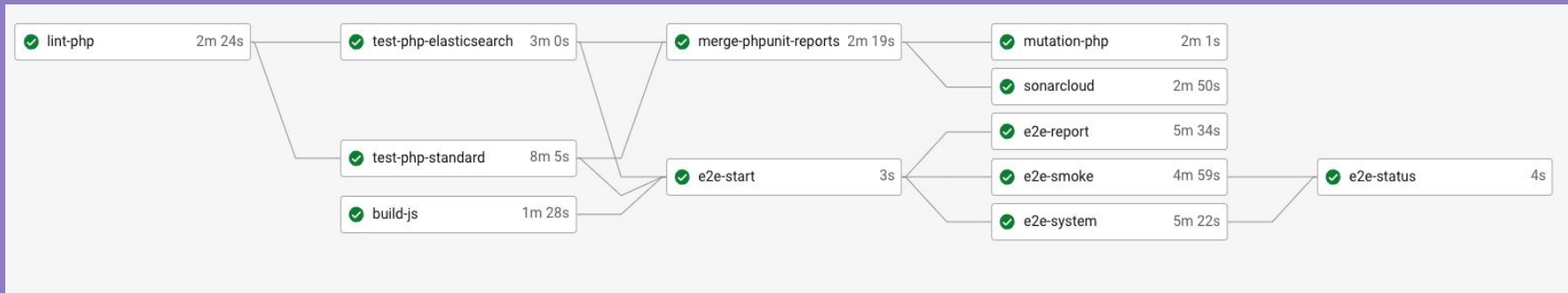


Deploy



Monitor

Automatic checks on PR



Automatic checks on PR

Linters:

- code-style
- phpstan : static analysis
- deptrac : dependency analysis

SonarCloud :

- test coverage
- code duplication
- code smells

Tests:

- unit
- functional

E2E:

- scenario simulation

Mutation testing:

- quality of tests

Automatic checks on PR



Pre-commit

```
→ ankorstore git:(feat/oxp-1087-update-nafo-on-fulfillment) * git commit --amend
Trim Trailing Whitespace..... Passed
Fix End of Files..... Passed
Check Yaml.....(no files to check) Skipped
Check JSON.....(no files to check) Skipped
Check Xml.....(no files to check) Skipped
Check for merge conflicts..... Passed
Check for added large files..... Passed
Forbid new submodules..... Passed
Detect Private Key..... Passed
Check that scripts with shebangs are executable..... Passed
Check for case conflicts..... Passed
ShellCheck v0.8.0.....(no files to check) Skipped
git-keep-removal..... Passed
php-cs-fixer..... Failed
- hook id: php-cs-fixer
- exit code: 1
- files were modified by this hook
deptraq-layers..... Passed
route-names-check.....(no files to check) Skipped
deptraq-domains..... Passed
phpstan-changes..... Failed
- hook id: phpstan-changes
- exit code: 1
```

Wow.

Where do I start ?

Automatic checks on PR

Linters:

- code-style
- phpstan : static analysis

~~— deptrac : dependency analysis —~~

SonarCloud :

- test coverage

~~— code duplication —~~

~~— code smells —~~

Tests:

- unit
- functional

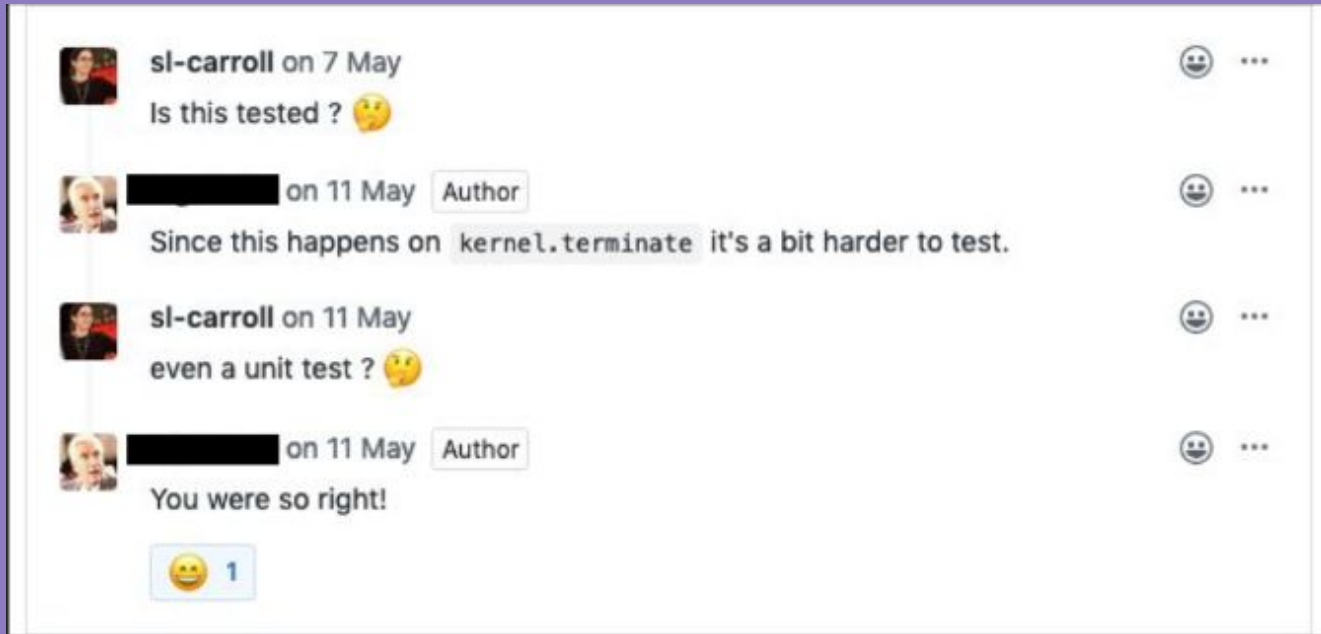
E2E:

~~— scenario simulation —~~

Mutation testing:

~~— quality of tests —~~

Test your code



The screenshot shows a GitHub discussion thread with four messages. The first message is from 'sl-carroll' on 7 May, asking 'Is this tested?' with a thinking face emoji. The second message is from an author on 11 May, stating 'Since this happens on `kernel.terminate` it's a bit harder to test.' The third message is from 'sl-carroll' on 11 May, asking 'even a unit test?' with a thinking face emoji. The fourth message is from the author on 11 May, replying 'You were so right!'. At the bottom, there is a reaction button with a thinking face emoji and the number '1'. Each message has a smiley face icon and a three-dot menu icon to its right.

sl-carroll on 7 May
Is this tested ? 🤔

██████████ on 11 May Author
Since this happens on `kernel.terminate` it's a bit harder to test.

sl-carroll on 11 May
even a unit test ? 🤔

██████████ on 11 May Author
You were so right!

🤔 1

Journey of a feature

Product need definition



Technical specifications



Code writing

Automatic checks



Functional review

Pull request review



Deploy

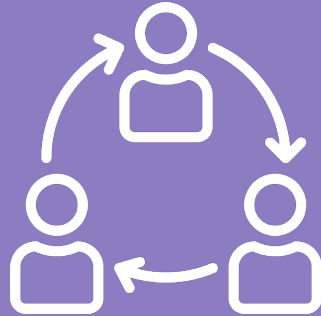
Monitor



Pull request review



At least one
reviewer



Knowledge
share



Coherence,
edge cases

...



Accept

afup

13 et 14 octobre 2022
HOTEL NEW YORK - THE ART OF MARVEL
DISNEYLAND PARIS

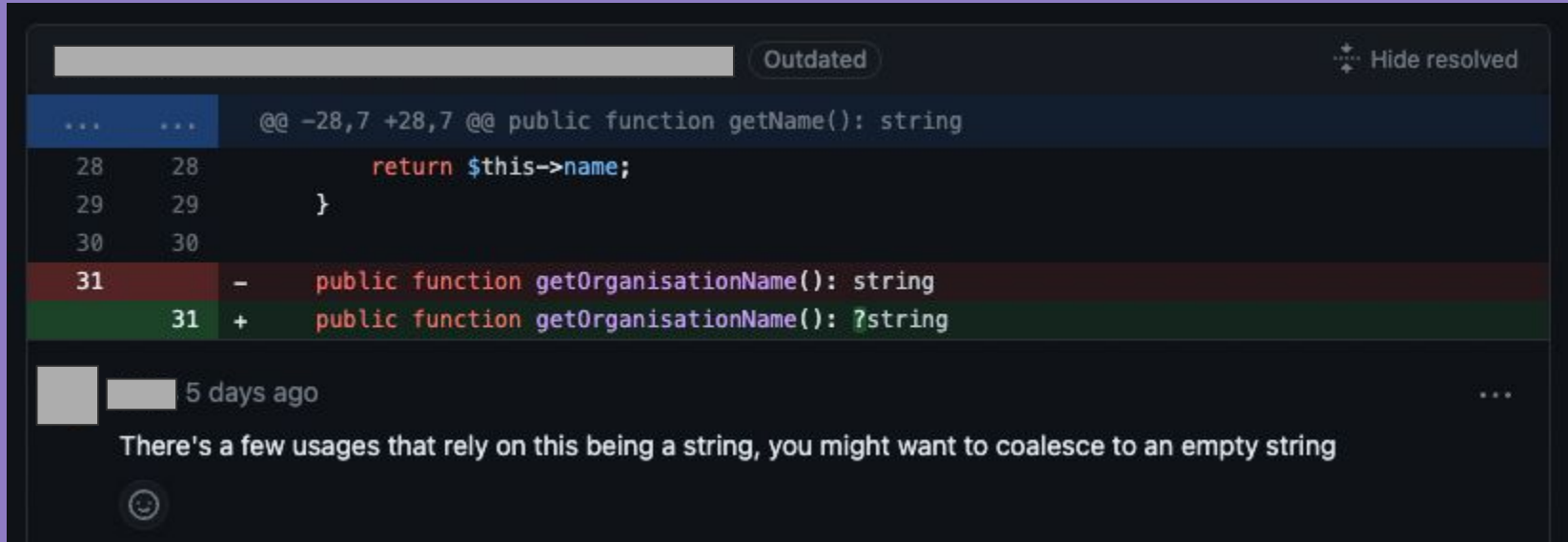
FORUMPHP
PARIS2022

event.afup.org

Anne-Laure DE BOISSIEU
Revue de code :
on n'est pas venu pour souffrir

22:11



Pull request review




The screenshot shows a code diff in a pull request review. The diff highlights a change in the signature of the `getOrganisationName()` method. The original code (line 31) has a return type of `string`, while the proposed change (line 31) has a return type of `?string`. A comment from a reviewer, posted 5 days ago, suggests coalescing to an empty string for some usages that rely on the return type being a string.

```
Outdated Hide resolved
```

```
... @@ -28,7 +28,7 @@ public function getName(): string
28     return $this->name;
29 }
30
31 - public function getOrganisationName(): string
31 + public function getOrganisationName(): ?string
```

  5 days ago ...

There's a few usages that rely on this being a string, you might want to coalesce to an empty string



Hotfix

Journey of a feature

Product need definition



Technical specifications



Code writing



Automatic checks

Functional review



Pull request review



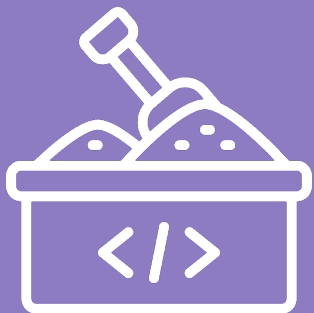
Deploy



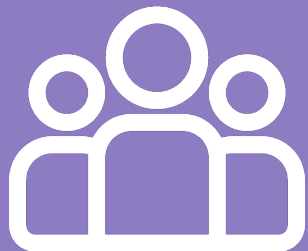
Monitor



Functional review



Code
deployed on
sandbox



Every team
member is
invited



Verify
acceptance
criteria



Can be done
asynchronously

Functional review

feat: add test for [REDACTED]

Merged

[REDACTED] merged 14 commits into `develop` from `OXP-301` on Sep 21, 2022

Conversation 13

Commits 14

Checks 5

Files changed 6



[REDACTED] commented on Sep 16, 2022 • edited

What problem does it solve?

- [REDACTED] /OXP-301

This PR adds Unit test for [REDACTED]

Was changed :

- Using Repositories + Factory within [REDACTED] -- Replaced static calls from Models



Journey of a feature

Product need definition



Technical specifications



Automatic checks

Code writing



Functional review

Pull request review



Monitor

Deploy



Deploy

Every developer is autonomous to deploy his/her code to production.

Autonomy goes hand in hand with accountability and ownership.

Deploy: Github merge queue

The screenshot displays the GitHub Merge Queue interface. At the top, a notification box states: "Queued to merge... There are 2 pull requests ahead of this one in the merge queue." with a "Cancel" button. Below this, the "Merge queue main" section shows 8 queued pull requests and 0 failing ones. The list includes:

- Introduce new checkout behavior for signed-out users** (#259) by georgebrock, 6 minutes ago, estimated merge in 52s.
- Update forms to have clear labels** (#51) by tylerjohnst, 5 minutes ago, estimated merge in 52s.
- Prepare launch of new marketing website** (#354) by wiseemily88, 2 minutes ago, estimated merge in 52s.
- Add frontend tests** (#13) by rufo, less than a minute ago, estimated merge in 52s.
- Upgrade dependencies** (#182) by tomatessoup, less than a minute ago, estimated merge in 52s.
- Integrate backend systems to connect with merchant service** (#262) by codeminator, 3 minutes ago, estimated merge in 52s.
- Upgrade sprite engine to 4.1** (#261) by MikeMcQuaid, 5 minutes ago, estimated merge in 52s.
- Integrate customizable keyboard shortcuts** (#263) by nickborromeo, 3 minutes ago, estimated merge in 52s.

On the right side, there is a "Beta Give feedback" link, an "Estimated time to merge" of 3m 20s, and a "30 day merge count" of 277 with a bar chart.

Deploy



A PR can be added
to the queue if CI
is ok



CI checks can be
bypassed with
authorisation of
L4+



Deploys only done on
working hours

Journey of a feature

Product need definition



Technical specifications



Automatic checks

Code writing



Functional review

Pull request review

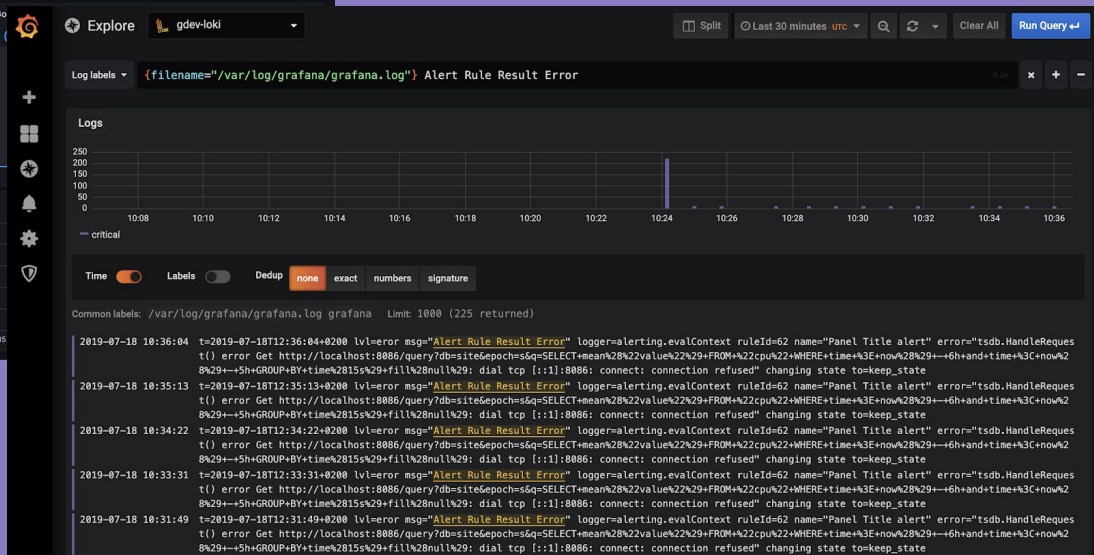


Monitor

Deploy








Monitor



Monitor

Order Management Squad

Manage folder dashboards and permissions



 Dashboards  Panels  Alert rules  Permissions  Settings

Starred

- External API Metrics**
 - Order Management Squad
- Public Integrations**
 - Order Management Squad
- Queue Logs**
 - Order Management Squad

Alerts

[REDACTED] APP 6:29 AM


 **JOB FAILURE** 

Error
503 Service Unavailable: upstream connect error or disconnect/reset before headers. retried and the latest reset reason: connection failure

name	tries
[REDACTED]	1

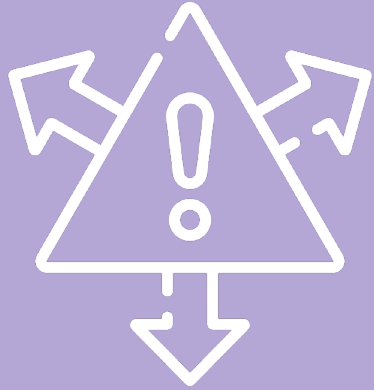
queue	id
[REDACTED]	7edb133e-354a-4316-9b51-e8c0fc16942f

uuid	link
[REDACTED]	[REDACTED]

 [REDACTED] APP 6:28 PM

Monitor Firing: [Order-Management] Checkouts with incoherent order statuses
Timestamp: 2023-06-05T16:28:51Z
Records: 1

checkout_id	submitted_at
[REDACTED]	2023-05-30 14:34:28



How do we manage
incidents ?

Incident management is the process of identifying, responding to, and resolving anomalous conditions that result in service degradation or outages.



These events require human intervention to restore service to operational status and are always given immediate attention.



To be effective, it is essential to have a
clear and agreed process

Roles and responsibilities

GEOC : Global
engineer on-call



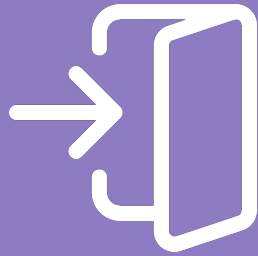
SEM : Squad
escalated member

IM : Incident
manager

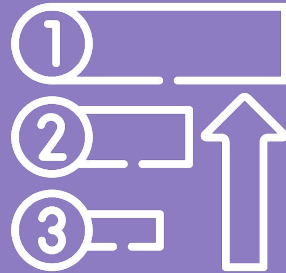
Roles: Global Engineer On-Call



Daily rotation



Entry point



Any incident is
priority



Ensure the issue is
resolved

Roles: Squad Escalated Member



Issue escalated by
GEOC



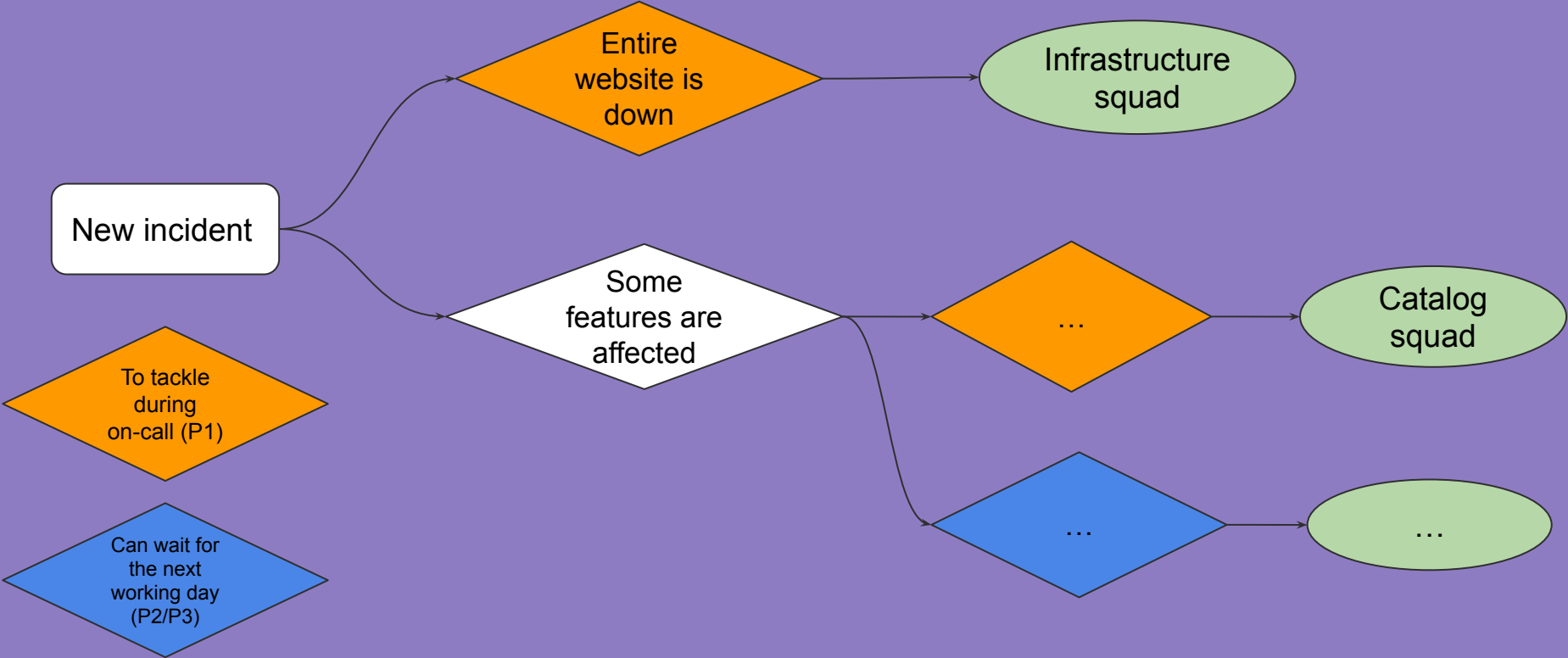
Provide expertise
and help resolve

Roles: Incident Manager



Oversee the incident and communicate with stakeholders

Decision diagram



Tooling : Pager Duty

Detect



Monitoring tools

Events



PagerDuty



Major Incident

Collaborate



Incident Management



Responder Actions



Incident Visibility



Real Time



Incident Mobilization



Incident Data



Streamline For Optimization

Incident Contributors



Stakeholders



Response Teams



Support

Resolve



Faster MTTA & MTTR



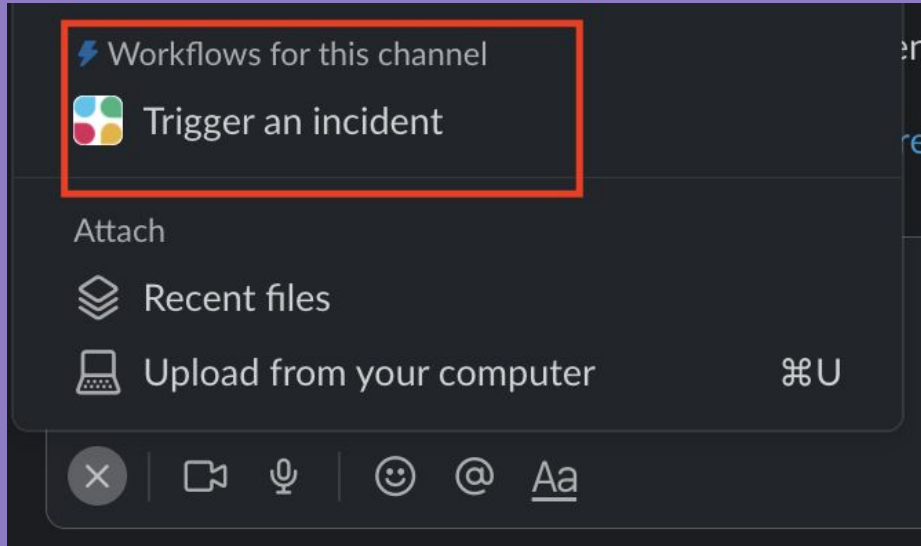
Cost Savings



Happy Response Teams

PagerDuty

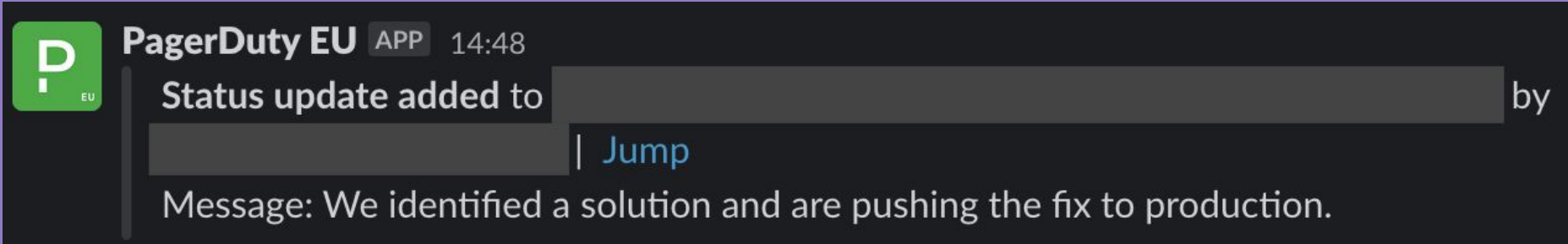
Tooling: Trigger an incident



1/ Brand or retailer reaches customer support

2/ employee identifies an issue while browsing the marketplace

Communication



- 1/ A global channel **#incidents** to communicate with stakeholders
- 2/ A more technical one **#tech-incidents** to discuss between engineers and resolve the incident

Everyone is welcome

tech-incident ▼ Tech channel for Incidents related talks



Situation Room



PagerDuty



How to raise an incident?



Hotfix process



Postmortems



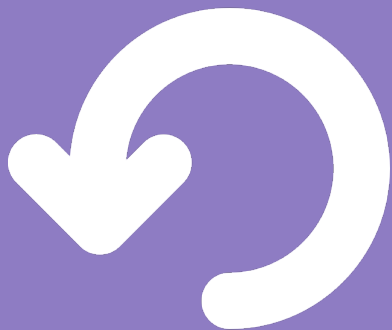
Incident Management - ...



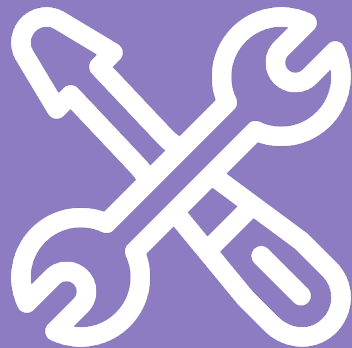
Runbooks & Procedures

A situation room is always available for anyone that would like to help and in order to meet and solve the incident

Fixing strategy



Revert



Hotfix

Hotfix

```
+> [redacted] git:(develop) * make hotfix-init
make DATE=20230621-160902 UPSTREAM_BRANCH=master RELEASE_NAME=hotfix-20230621-160902 create-release-branch-hotfix
Enter passphrase for key '/Users/sofia.lescano-carroll/.ssh/id_ed25519':
Enter passphrase for key '/Users/sofia.lescano-carroll/.ssh/id_ed25519':

- [deleted]          (none)    -> origin/fix/TSD-3955 --no_vat_rate_check_if_business_is_exempt
- [deleted]          (none)    -> origin/release/hotfix-20230621-152327
- [deleted]          (none)    -> origin/tsd-3967-maltese-tax-number-validator
git checkout -q origin/master
git checkout -b release/hotfix-20230621-160902
Switched to a new branch 'release/hotfix-20230621-160902'
Hotfix/patch branch checked out. Please do you changes here / cherry pick commits and run 'make hotfix-release' i
+> [redacted] git:(release/hotfix-20230621-160902) * git add -A
+> [redacted] git:(release/hotfix-20230621-160902) * git commit -m "fix: make address dto organisation name nullab
[release/hotfix-20230621-160902 59fb8fdc9e] fix: make address dto organisation name nullable
 2 files changed, 16 insertions(+), 2 deletions(-)
+> [redacted] git:(release/hotfix-20230621-160902) * make hotfix-release
make DATE=20230621-160948 create-release-pr-hotfix
git push --set-upstream origin release/hotfix-20230621-160902
Enter passphrase for key '/Users/sofia.lescano-carroll/.ssh/id_ed25519':
Enumerating objects: 28, done.
Counting objects: 100% (28/28), done.
Delta compression using up to 10 threads
Compressing objects: 100% (14/14), done.
Writing objects: 100% (16/16), 1.35 KiB | 231.00 KiB/s, done.
Total 16 (delta 10), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (10/10), completed with 10 local objects.
remote:
remote: Create a pull request for 'release/hotfix-20230621-160902' on GitHub by visiting:
remote:   https://github.com/[redacted]
remote:
remote: GitHub found 17 vulnerabilities on ankorstore/ankorstore's default branch (4 critical, 8 high, 5 moderate)
remote:   https://github.com/[redacted]
remote:
remote:
To github.com:[redacted]
 * [new branch]      release/hotfix-20230621-160902 -> release/hotfix-20230621-160902
branch 'release/hotfix-20230621-160902' set up to track 'origin/release/hotfix-20230621-160902'.
gh pr create -B master -f

Creating pull request for release/hotfix-20230621-160902 into master in [redacted]
https://github.com/[redacted]/pull/33422
```

1/ make hotfix-init

2/ git cherry-pick

3/ make hotfix-release

Postmortem

Summary of the Incident



Quick recap.

eg: "Production was down because of a Database connection env var issue."

Context



Give some context prior to the incident.

eg: "We wanted to release feature X, things broke deployment because of a global missing configuration."

Timeline



Detailed timeline of events.

Embed Slack conversations, stack traces, photos of graphs, anything that can help to understand the timeline of events. Feel free to add mention to coworkers to give context (especially who was in charge, who did what).

Postmortem

How to Improve



Explain what was the main issues you encounter during outage remediation, things that could be improved in order to reduce the reaction time next time.

Preventative Actions



What needs doing to prevent this happening again?

List actions (with [Jira](#) tickets) to be taken to avoid reproducing the same incident and above listed pain points in the future.



Some numbers

Some numbers

3 incidents in one year in our team
(2 caused by me)

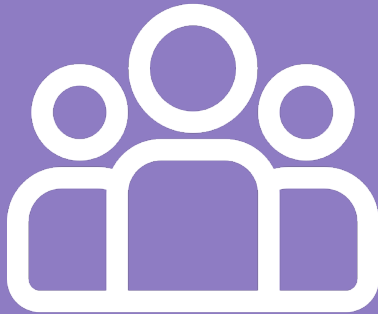
33 engineers on-call - 1 on-call per
month on average

45 min to recover from an incident on
average



Challenges and limitations

Challenges and limitations



Incidents are triggered
by people



A large monolith

Challenges and limitations



On-call was not in our
contracts



Training is different
than real life



“Looks nice, but it’s not possible !”

Incidents have a cost



Monetary



Company image
and trust

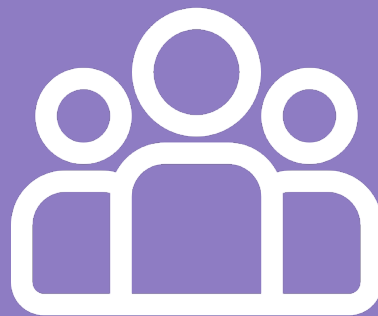


Employees
health

Context



Product company



A lot of developers

How to?



Find your own recipe



Iterate

What says most about you
is not the fact that you
broke prod, but how you
act and learn from it.

juicy_fish

Handicon

Berkahicon

Freepik

Upnow Graphic

Iutfix

Parzival' 1997

Rukanicon

Pixel
perfect

Iconixar

Thank you !



Wahyu Adam

Afian Rochmah Afif

Geotatah

nangicon

srip

Monkik

Smashicons

M Karruly

mynamepong

Icons made by the artists mentioned, from www.flaticon.com



Thank you !



SymfonyCon
BRUSSELS 2023

I did it ! I broke production !

Sofía LESCANO CARROLL



@SofLesc



#fullRemote #lifeInSpain #wannaDoGood #speaker #mentoring