

Shitlist-driven development

and other tricks for working on large codebases

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shopify





“Programmers at work maintaining a Ruby on Rails application”
(Classic Programmer Paintings)

The Shopify Monolith

- >400k shops (multi-tenant architecture).
- 20k-40k RPS (**80k** RPS peak).
- **~800 contributors** (developers, designers, ...)
- Everybody can merge to master and deploy to production.
- **40-50 deploys** (50-100 PRs) shipped to production *per day*.

MONOLITH AT SCALE

PRODUCTIVITY PROBLEM 1:

DEPLOYS BECOME A BOTTLENECK

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- **Observation:** If you want *small and often*, you need *fast*.

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- **Observation:** If you want *small and often*, you need *fast*.
- **Shopify:** 40-50 deploys/day, that's ~6 per (business) hour. If deploys become slower than ~10min, they become a *productivity problem* for us.

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- **Reduce application boot time.**

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- Deploy to many servers in parallel.
- **Reduce application boot time.**
- Reduce application shutdown time (e.g. Unicorn timeout, ...).

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- Asking developers to deploy **themselves** doesn't scale.
- Humans don't scale. Automate!

Undeployed Commits

[Enable emergency mode](#)

	Vlad Gorodetsky bai		Record employee name when enqueueing reindexing task #116675 (c1e8dcdf1e) +7 -1 about a minute ago		Pending CI
	Robin Brandt robinbrandt		Revert "Backfill retried gross and fees" #116706 (dd3e012795) 2 minutes ago		Pending CI
	Jake Pittis jpittis		expire idc because test is using sketchy fixtures #116690 (23fe2e7b09) 10 minutes ago		Locked
	Andreas Kotes berlincount		Fix cloud2 TLS tunnels for real now, honest #116700 (58dfcb8e29) +2 -2 20 minutes ago		Locked
	Caleb Simpson melari		Maintenance task to increase limit of skus to unlimited for uAfrica starter ... #116687 (e0908de2e0) 22 minutes ago		Locked
	Florian Weingarten fw42		Enable redis announcer in production, take 2 #116612 (d03d9b05be) +11 -33 22 minutes ago		Locked
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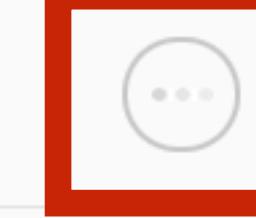
Previous Deploys

	Shipit shopify-shipit		StatsD request_time to have proper shard id deployed 0f0a8f9108...d180505d45 +17 -14 7 minutes ago in 5m57s	Redeploy
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**Automatic
deploy
when CI
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Automatic range lock for reverts

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☆ | 8 561 | 2 |

spy APP 13:24

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- 04386d51 @jasonwebster: Do not accidentally associate anomalies with the incorrect OT (#113324)

돛 (matthew.black) please don't merge while master is backlogged!

돛 (fang) please don't merge while master is backlogged!



izaak alpert 13:29

left #operations

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🚢 ✅ Deploy of shopify/production to revision 04386d51 succeeded in 4m48s (rollback)

13:34 ☆

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- 3ef9f43a @donohue: Add apostrophe separator (#115092)

- 6f51e7e6 @conor.landry: transform order count into a format grokkable by elasticsearch (#115809)

- 4dd00cf3 @owain: [Theme Editor] Non-Markup derived ContentForIndex (Take 2) (#115386)

- e070952d @lisa.ugray: shipping growth experiment for shipping calculator (#114952)

- aae3177c @berk: Refactor ping controller tests to reduce indentation (#115968)

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- 1ad9fdc2 @louis.vanier: Tie customer created from CC swipe to the checkout (#115303)

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Moe ☎ 13:35



spy APP 13:38

🚢 ✅ Deploy of shopify/production to revision 3ef9f43a succeeded in 4m50s (rollback)

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- ecb49f7a @fang: Wrap titlebar metadata (#115870)

- 9c9054d2 @matthew.black: Log invalid shipping address on order/import to test shipping address validation (#115826)

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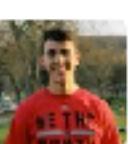
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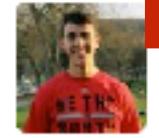
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- 6f51e7e6 @conor.landry: transform order count into a format grokkable by elasticsearch (#115809)

- 4dd00cf3 @owain: [Theme Editor] Non-Markup derived ContentForIndex (Take 2) (#115386)

- e070952d @lisa.ugray: shipping growth experiment for shipping calculator (#114952)

- aae3177c @berk: Refactor ping controller tests to reduce indentation (#115968)

- 0811961f @edward: Fed/use ui empty search results (#115891)

- 1ad9fdc2 @louis.vanier: Tie customer created from CC swipe to the checkout (#115303)

- 24477343 @tamcgoey: Revert "Set shipping_service_label_id if nil when cancelling labels" (#115790)

돛 (moe) please don't merge while master is backlogged!



Moe ☎ 13:35



spy APP 13:38

🚢 ✅ Deploy of shopify/production to revision 3ef9f43a succeeded in 4m50s (rollback)

🚢 (Shipit) is deploying shopify/production to revision ecb49f7a (logs|diff)

- ecb49f7a @fang: Wrap titlebar metadata (#115870)

- 9c9054d2 @matthew.black: Log invalid shipping address on order/import to test shipping address validation (#115826)

- 5d57534f @drew: Add skip to lifecycle (#115884)

- b0dc2432 @jpittis: assert ordering of job callbacks (#114537)

- c0337ee5 @mamak: Add Business and Invoice to Billing Transaction (#115931)

- 49199713 @drew: Add a processing column to themes (#115906)

Add more commits by pushing to the **billing/patch-a-test-on-master** branch on **Shopify/shopify**.

 **Review requested** [Show all reviewers](#)

Review has been requested on this pull request. It is not required to merge. [Learn more](#).

 **All checks have passed** [Show all checks](#)

2 successful checks

 **This branch has no conflicts with the base branch** [Update branch](#)

Merging can be performed automatically.

 **Please hold off merging! Add it to the merge queue instead.** [Add to merge queue](#)

[shopify/shopify/production](#) is locked because: "There is a problem with undigested assets!"

Merge pull request ▾ You can also [open this in GitHub Desktop](#) or view [command line instructions](#).

A screenshot of a GitHub pull request interface. At the top left is a user profile picture of a man. Next to it are two tabs: "Write" (selected) and "Preview". To the right of the tabs is a toolbar with icons for font size (AA), bold (B), italic (i), code blocks (``), horizontal lines (|), and other styling options. Further right are icons for back (left arrow), forward (right arrow), and other navigation. Below the toolbar is a large text input field with the placeholder "Leave a comment". A dashed line separates this from a message below. The message says "Attach files by dragging & dropping, [selecting them](#), or pasting from the clipboard." At the bottom left is a note about Markdown support. On the bottom right are two buttons: "Close pull request" (gray background) and "Comment" (green background).

Add more commits by pushing to the **billing/patch-a-test-on-master** branch on **Shopify/shopify**.

 **Review requested** [Show all reviewers](#)

Review has been requested on this pull request. It is not required to merge. [Learn more.](#)

 **All checks have passed** [Show all checks](#)

2 successful checks

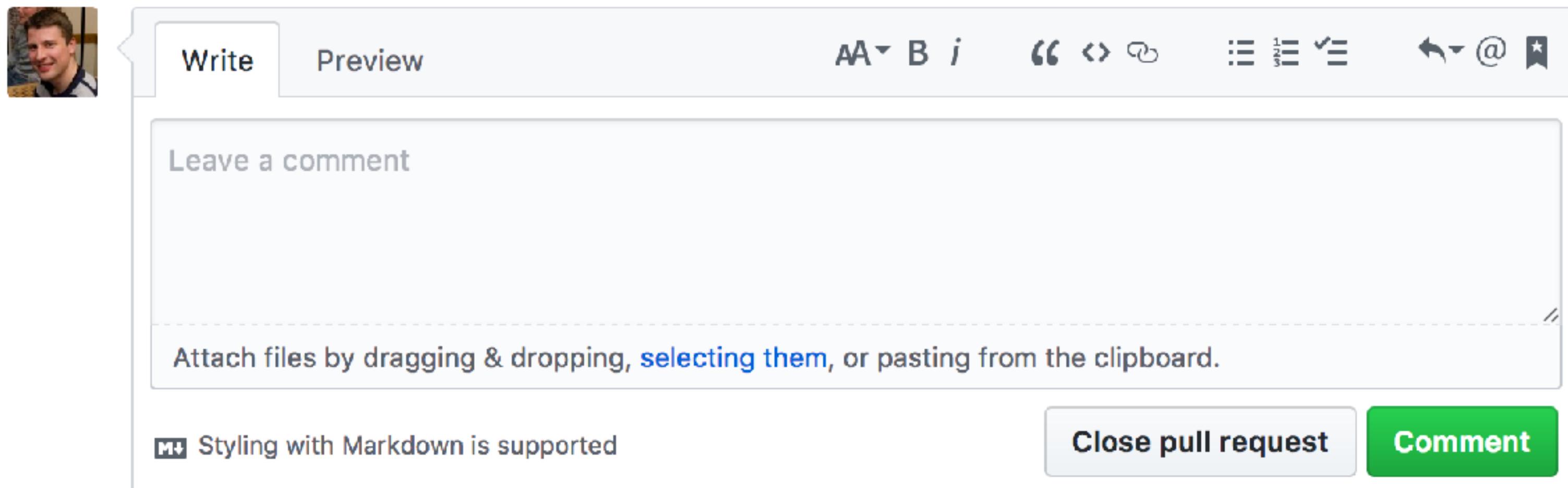
 **This branch has no conflicts with the base branch** [Update branch](#)

Merging can be performed automatically.

 **Please hold off merging! Add it to the merge queue instead.** [Add to merge queue](#)

[shopify/shopify/production](#) is locked because: "There is a problem with undigested assets!"

Merge pull request ▾ You can also [open this in GitHub Desktop](#) or view [command line instructions](#).



MONOLITH AT SCALE

PRODUCTIVITY PROBLEM 2:

TOO MANY COOKS IN THE KITCHEN

```
1 class A
2   def deprecated_method
3   end
4
5   def new_method
6   end
7 end
8
9 class B
10  def foo
11    a.deprecated_method # 💩😢
12  end
13 end
14
15 class C
16  def bla
17    a.deprecated_method # 💩😢
18  end
19 end
```

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```
1 class A
2   def deprecated_method
3     log "Please don't use this. It's deprecated."
4   end
5
6   def new_method
7   end
8 end
9
10 class B
11   def foo
12     a.deprecated_method # 💩 😢
13   end
14 end
15
16 class C
17   def bla
18     a.deprecated_method # 💩 😢
19   end
20 end
```

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```
1 class A
2   def deprecated_method
3     log "Please don't use this. It's deprecated."
4   end
5
6   def new_method
7   end
8 end
9
10 class B
11   def foo
12     a.new_method # 😍
13   end
14 end
15
16 class C
17   def bla
18     a.deprecated_method # 💩 😢
19   end
20 end
```

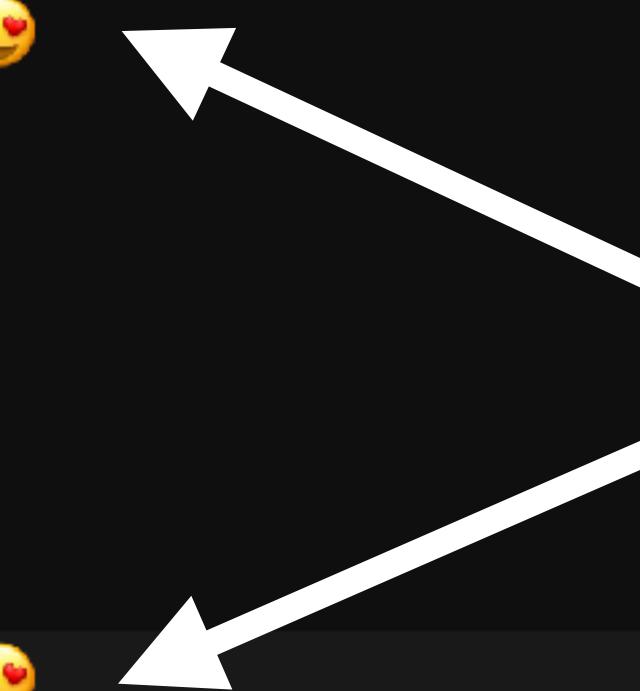
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```
1 class A
2   def deprecated_method
3     log "Please don't use this. It's deprecated."
4   end
5
6   def new_method
7   end
8 end
9
10 class B
11   def foo
12     a.new_method # 😍
13   end
14 end
15
16 class C
17   def bla
18     a.new_method # 😍
19   end
20 end
```

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```
1 class A
2   def deprecated_method
3     log "Please don't use this. It's deprecated."
4   end
5
6   def new_method
7   end
8 end
9
10 class B
11   def foo
12     a.new_method # 😢
13   end
14 end
15
16 class C
17   def bla
18     a.new_method # 😢
19   end
20 end
```

Yay, everything is fixed!



```
1 class A
2   def deprecated_method
3     log "Please don't use this. It's deprecated."
4   end
5
6   def new_method
7   end
8 end
9
10 class B
11   def foo
12     a.deprecated_method # 💩😢😡💥
13   end
14 end
15
16 class C
17   def bla
18     a.new_method # 😍
19   end
20 end
21
22 class D
23   def foo
24     a.deprecated_method # 💩😢
25   end
26 end
```

In the meantime ...

Someone “unfixed” it

Someone added new shit

```
1 class A
2   def deprecated_method
3     log "Please don't use this. It's deprecated."
4   end
5
6   def new_method
7   end
8 end
9
10 class B
11   def foo
12     a.deprecated_method # 💩😢😡✍️💥
13   end
14 end
15
16 class C
17   def bla
18     a.new_method # 😍
19   end
20 end
21
22 class D
23   def foo
24     a.deprecated_method # 💩😢
25   end
26 end
```

In the meantime ...

Someone “unfixed” it

Too many cooks in the kitchen! 🍲

Someone added new shit

```
1 class A
2   def deprecated_method
3   end
4
5   def new_method
6   end
7 end
8
9 class B
10  def foo
11    a.deprecated_method # 💩😢
12  end
13 end
14
15 class C
16  def bla
17    a.deprecated_method # 💩😢
18  end
19 end
```

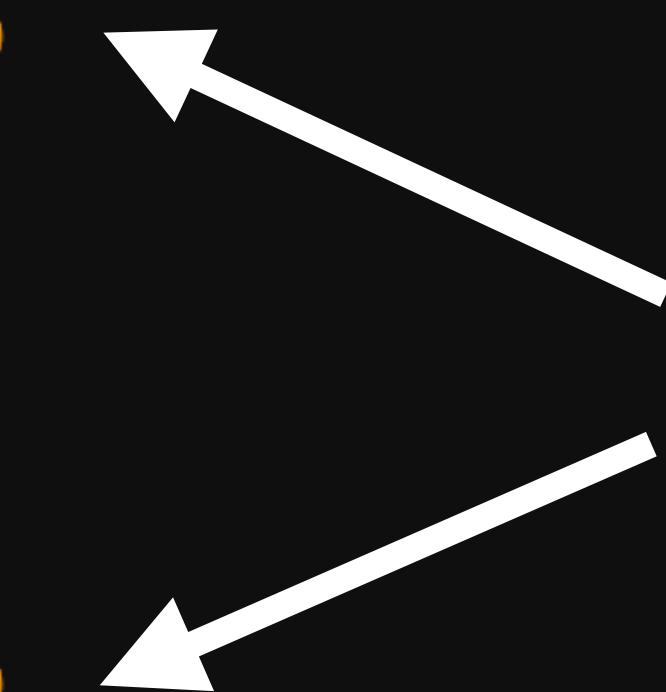
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~

```
1 class A
2   def deprecated_method
3     raise "Please don't use this. It's deprecated."
4   end
5
6   def new_method
7   end
8 end
9
10 class B
11   def foo
12     a.deprecated_method # 💩 😢
13   end
14 end
15
16 class C
17   def bla
18     a.deprecated_method # 💩 😢
19   end
20 end
```

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```
1 class A
2   def deprecated_method
3     raise "Please don't use this. It's deprecated."
4   end
5
6   def new_method
7   end
8 end
9
10 class B
11   def foo
12     a.deprecated_method # 💩😢
13   end
14 end
15
16 class C
17   def bla
18     a.deprecated_method # 💩😢
19   end
20 end
```

Have to fix everything at once now :-(
~~~~~



```
1 class A
2   def deprecated_method
3     raise "Please don't use this. It's deprecated."
4   end
5
6   def new_method
7   end
8 end
9
10 class B
11   def foo
12     a.deprecated_method # 💩😢
13   end
14 end
15
16 class C
17   def bla
18     a.deprecated_method # 💩😢
19   end
20 end
```

Idea: Can we raise only  
for B but not for C?

Have to fix everything at once now :-(

```
1 class A
2   def deprecated_method(who)
3     raise "Please don't use this. It's deprecated." unless shitlisted?(who)
4   end
5
6   def new_method
7   end
8 end
9
10 class B
11   def foo
12     a.deprecated_method(self) # 💩 😢
13   end
14 end
15
16 class C
17   def bla
18     a.deprecated_method(self) # 💩 😢
19   end
20 end
```



```
1 class A
2   def deprecated_method(who)
3     raise "Please don't use this. It's deprecated." unless shitlisted?(who)
4   end
5
6   def new_method
7   end
8
9   def shitlisted?(who)
10  who.is_a?(B) || who.is_a?(C)
11 end
12 end
13
14 class B
15   def foo
16     a.deprecated_method(self) # 💩😭
17   end
18 end
19
20 class C
21   def bla
22     a.deprecated_method(self) # 💩😭
23   end
24 end
```

~  
~  
~

```
1 class A
2   def deprecated_method(who)
3     raise "Please don't use this. It's deprecated." unless shitlisted?(who)
4   end
5
6   def new_method
7   end
8
9   def shitlisted?(who)
10  who.is_a?(B) || who.is_a?(C)
11 end
12 end
13
14 class B
15   def foo
16     a.deprecated_method(self) # 💩😭
17   end
18 end
19
20 class C
21   def bla
22     a.deprecated_method(self) # 💩😭
23   end
24 end
```

~  
~  
~

```
1 class A
2   def deprecated_method(who)
3     raise "Please don't use this. It's deprecated." unless shitlisted?(who)
4   end
5
6   def new_method
7   end
8
9   def shitlisted?(who)
10    who.is_a?(B)
11  end
12 end
13
14 class B
15   def foo
16     a.deprecated_method(self) # 💩😭
17   end
18 end
19
20 class C
21   def bla
22     a.new_method # 😢
23   end
24 end
```

~  
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~

```
1 class A
2   def deprecated_method(who)
3     raise "Please don't use this. It's deprecated." unless shitlisted?(who)
4   end
5
6   def new_method
7   end
8
9   def shitlisted?(who)
10    who.is_a?(B)
11  end
12 end
13
14 class B
15   def foo
16     a.deprecated_method(self) # 💩😭 ← Still shitlisted.
17   end
18 end
19
20 class C
21   def bla
22     a.new_method # 😢
23   end
24 end
```

~  
~  
~

```
1 class A
2   def deprecated_method(who)
3     raise "Please don't use this. It's deprecated." unless shitlisted?(who)
4   end
5
6   def new_method
7   end
8
9   def shitlisted?(who)
10    who.is_a?(B)
11  end
12 end
13
14 class B
15   def foo
16     a.deprecated_method(self) # 💩😭 ← Still shitlisted.
17   end
18 end
19
20 class C
21   def bla
22     a.new_method # 😢 ← Fixed. Can't be accidentally "unfixed".
23   end
24 end
```

~  
~  
~

```
1 class A
2   def deprecated_method(who)
3     raise "Please don't use this. It's deprecated." unless shitlisted?(who)
4   end
5
6   def new_method
7   end
8
9   def shitlisted?(who)
10    who.is_a?(B)
11  end
12 end
13
14 class B
15   def foo
16     a.deprecated_method(self) # 💩😭
17   end
18 end
19
20 class C
21   def bla
22     a.new_method # 😢
23   end
24 end
```

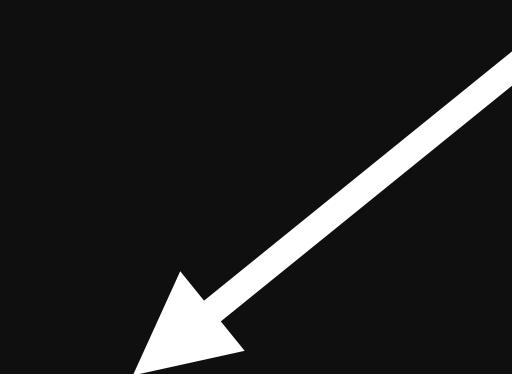
Only B is allowed to do it wrong.

No new shit can be introduced.

Still shitlisted.

Fixed. Can't be accidentally "unfixed".

```
1 class A
2   def deprecated_method(who)
3     raise "Please don't use this. It's deprecated." unless shitlisted?(who)
4   end
5
6   def new_method
7   end
8 end
9
10 class B
11   def foo
12     a.deprecated_method(self) # 💩😭
13   end
14 end
15
16 class C
17   def bla
18     a.deprecated_method(self) # 💩😭
19   end
20 end
```



## Problems:

- Not always possible to change the API.
- Sometimes you want different “granularity”.

```
1 class A
2   def deprecated_method
3     ShitlistForA.raise_unless_shitlisted
4   end
5 end
6
7 class ShitlistForA
8   ALLOWED = [ "ShittyController#foo", "ShittyController#bar", "ShittyJob" ]
9
10 def self.raise_unless_shitlisted
11   raise unless ALLOWED.include?(@who)
12 end
13
14 def self.with_context(who)
15   @who = who
16   yield
17 ensure
18   @who = nil
19 end
20 end
21
22 class ApplicationController
23   around_action do
24     with_context(controller_name + "#" + action_name) do
25       yield
26     end
27   end
28 end
29
30 class BackgroundJob
31   around_perform do
32     with_context(job_name) do
33       yield
34     end
35   end
36 end
```

```
1 class A
2   def deprecated_method
3     ShitlistForA.raise_unless_shitlisted
4   end
5 end
6
7 class ShitlistForA
8   ALLOWED = [ "ShittyController#foo", "ShittyController#bar", "ShittyJob" ]
9
10 def self.raise_unless_shitlisted
11   raise unless ALLOWED.include?(@who)
12 end
13
14 def self.with_context(who)
15   @who = who
16   yield
17 ensure
18   @who = nil
19 end
20 end
21
22 class ApplicationController
23   around_action do
24     with_context(controller_name + "#" + action_name) do
25       yield
26     end
27   end
28 end
29
30 class BackgroundJob
31   around_perform do
32     with_context(job_name) do
33       yield
34     end
35   end
36 end
```



Granularity is now at the  
web request and job level

```
1 class A
2   def deprecated_method
3     ShitlistForA.raise_unless_shitlisted
4   end
5 end
6
7 class ShitlistForA
8   ALLOWED = [ "ShittyController#foo", "ShittyController#bar", "ShittyJob" ]
9
10 def self.raise_unless_shitlisted
11   raise unless ALLOWED.include?(@who)
12 end
13
14 def self.with_context(who)
15   @who = who
16   yield
17 ensure
18   @who = nil
19 end
20 end
21
22 class ApplicationController
23   around_action do
24     with_context(controller_name + "#" + action_name) do
25       yield
26     end
27   end
28 end
29
30 class BackgroundJob
31   around_perform do
32     with_context(job_name) do
33       yield
34     end
35   end
36 end
```

Granularity is now at the web request and job level

All jobs and all requests are now “registering” themselves so the shitlist can verify which codepaths are allowed to call the deprecated code.

# Shitlists

- Great for changing very “broad” behaviour.
- Great for breaking down a huge task into many small chunks.
- Great for generating “To-Do lists”.
- Great for “educating” a large team about how you want them to write code and enforcing the new behaviour.

# Shitlist error messages

- **Bad error message:** “Someone decided that the thing that worked yesterday is now wrong. Good luck fixing it yourself.”
- **Good error message:**  
“Your code tried to make an HTTP request within a MySQL database transaction. This has been deprecated since it can negatively impact database performance. Using `after_commit` instead of `after_save` is often a good fix. If you need more help, please come see us in Slack in the `#database-team` channel.”

# MONOLITH AT SCALE

PRODUCTIVITY PROBLEM 3:  
UNRELIABLE TESTS

# Unlikely problems become likely at scale

- Unreliable test: On the same version of the code, the test sometimes passes and sometimes fails.
- **Shopify:** About 750 CI runs per day, ~10 min and ~70k tests each.
- If only **a single one** of those 70k tests is unreliable and **fails 1%** of the time, we **lose over 1 hour** of productivity per day.

# Types of unreliable tests

**Flaky test:** time-dependent, load-dependent, ...

**Leaky test:** order-dependent (test B fails if test A ran first)

Secure [https://app.bugsnag.com/shopify/shopify-tests/errors?filters\[event.since\]\[0\]=7d&filters\[error.status\]\[0\]=open&filters\[metaData.build.branch\]\[0\]\[value\]=master&filters\[metaData...](https://app.bugsnag.com/shopify/shopify-tests/errors?filters[event.since][0]=7d&filters[error.status][0]=open&filters[metaData.build.branch][0][value]=master&filters[metaData...)

Inbox Timeline Settings DOCS SUPPORT SHORTCUTS FW

STATUS: OPEN × BRANCH: MASTER × Filter dashboard by... 1h 3h 1d 7d 30d all May 21st, 16:13 – May 28th, 16:13 EDT UTC

## 172 Errors

Introduced Today Open In progress Assigned to me Assigned to anyone Issue created Fixed Snoozed Ignored

| ERROR                                                                                                                                                      | EVENTS | USERS | LAST TWO WEEKS | STAGE | SEVERITY                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|----------------|-------|---------------------------------------|
| <b>Minitest::Assertion</b> - ShopifyLoggingTest#test_a_request_with_the_X-Pollster-Request...                                                              | 16     | -     |                | M     | <span style="color: red;">●</span>    |
| Expected /rev=[a-f0-9]+/ to match "Completed 200 OK in 303ms (response_time_ms=303   view_time_ms=303)" about 1 day ago – 4 days ago                       |        |       |                |       |                                       |
| <b>Minitest::Assertion</b> - ShopifyLoggingTest#test_a_request_with_a_benchmark_shop_log..                                                                 | 15     | -     |                | M     | <span style="color: red;">●</span>    |
| Expected /rev=[a-f0-9]+/ to match "Completed 200 OK in 147ms (response_time_ms=147   view_time_ms=147)" about 1 day ago – 4 days ago                       |        |       |                |       |                                       |
| <b>Minitest::Assertion</b> - CheckoutExternalsTest#test_checkout_external_with_shopify_pa...                                                               | 15     | -     |                | M     | <span style="color: red;">●</span>    |
| [31m <span style="color: red;">✖</span> Unexpected external call (memcached):[0m  ———— [34m[:memcached, /get pod0:50::shop... about 1 day ago – 4 days ago |        |       |                |       |                                       |
| <b>Minitest::Assertion</b> - ShopifyLoggingTest#test_a_request_with_a_referer_header_has_t...                                                              | 14     | -     |                | M     | <span style="color: orange;">●</span> |
| Expected /rev=[a-f0-9]+/ to match "Completed 200 OK in 126ms (response_time_ms=126   view_time_ms=126)" about 1 day ago – 4 days ago                       |        |       |                |       |                                       |
| <b>Minitest::Assertion</b> - ShopI18nTest#test_version_key_returns_sane_default_when_i18...                                                                | 14     | -     |                | M     | <span style="color: red;">●</span>    |
| Expected /[:xdigit:]{32}-0/ to match "HEAD-0". about 1 day ago – 4 days ago                                                                                |        |       |                |       |                                       |
| <b>Minitest::Assertion</b> - ShopifyLoggingTest#test_a_request_with_the_X-Trypod-Request...                                                                | 13     | -     |                | M     | <span style="color: orange;">●</span> |
| Expected /rev=[a-f0-9]+/ to match "Completed 200 OK in 281ms (response_time_ms=281   view_time_ms=281)" about 1 day ago – 4 days ago                       |        |       |                |       |                                       |
| <b>Minitest::Assertion</b> - ShopifyLoggingTest#test_a_request_with_JavaScript_SDK_header...                                                               | 13     | -     |                | M     | <span style="color: red;">●</span>    |
| Expected /rev=[a-f0-9]+/ to match "Completed 200 OK in 148ms (response_time_ms=148   view_time_ms=148)" about 1 day ago – 4 days ago                       |        |       |                |       |                                       |
| <b>Minitest::Assertion</b> - ShopifyLoggingTest#test_a_request_with_a_logged_in_user_logs...                                                               | 13     | -     |                | M     | <span style="color: orange;">●</span> |
| Expected /rev=[a-f0-9]+/ to match "Completed 200 OK in 1159ms (response_time_ms=1159   view_time_ms=1159)" about 1 day ago – 4 days ago                    |        |       |                |       |                                       |
| <b>Minitest::Assertion</b> - CheckoutExternalsTest#test_Checkout_external_for_price_rules ...                                                              | 13     | -     |                | M     | <span style="color: red;">●</span>    |
| [31m <span style="color: red;">✖</span> Unexpected external call (memcached):[0m  ———— [34m[:memcached, /get pod0:50::shop... about 1 day ago – 4 days ago |        |       |                |       |                                       |

# Automatic test grind

Shopify NEW Pipelines Agents 528 My Builds Documentation Support Florian Weingarten

shopify-grind git@github.com:Shopify/shopify.git 301 Builds 0 Running 0 Scheduled New Build Pipeline Settings

Grind ResourceFeedbacks::DismissOnAppUninstallJobTest#test\_perform\_dismisses\_all\_feedback\_created\_via\_the\_destroyed\_ApiPermissionOneCreatedBeforeWasDestroyed\_ Build #244 | master | 6452880

Configure Build container > Grind #0 Grind #1 Grind #2 Grind #3 Grind #4 Grind #5 Grind #6 Grind #7 Grind #8 Grind #9  
Grind #10 Grind #11 Grind #12 Grind #13 Grind #14 Grind #15 Grind #16 Grind #17 Grind #18 Grind #19 Grind #20 Grind #21  
Grind #22 Grind #23 Grind #24 Grind #25 Grind #26 Grind #27 Grind #28 Grind #29 Grind #30 Grind #31 Grind #32 Grind #33  
Grind #34 Grind #35 Grind #36 Grind #37 Grind #38 Grind #39 Grind #40 Grind #41 Grind #42 Grind #43 Grind #44 Grind #45  
Grind #46 Grind #47 Grind #48 Grind #49 Grind #50 Grind #51 Grind #52 Grind #53 Grind #54 Grind #55 Grind #56 Grind #57  
Grind #58 Grind #59 Grind #60 Grind #61 Grind #62 Grind #63

Florian Weingarten Created Mon 9th Jan at 3:30 PM Triggered from Web Rebuild

✓ Configure configure 2 seconds l.bk98.ec2.shopify.com

✓ Build container build-container 1 second l.bk179.ec2.shopify.com

# Automatic leaky test "bisect"

- Take list of all tests that ran before the failing test.
- Binary search through list of candidates.

```
(called from decomposed_match at /app/eager1/billing/routing/annotations.rb:75)
326 ▶ Testing 93/187
422 ▶ Testing 46/187
514 ▶ Testing 23/187
548 ▶ Testing 11/187
580 ▶ Testing 5/187
608 ▶ Testing 2/187
692 ▶ Testing 1/187
803 ▾ The following command should reproduce the leak on your machine:
804
805     bin/test-ordered
CheckoutExternalsTest#test_checkout_external_using_the_discount_where_applies_once_per_customer\=true
CheckoutExternalsTest#test_checkout_external_using_the_discount_where_applies_once_per_customer\=false
806
807 ▶ Shutting down container...
814 ▶ Collecting container artifacts...
```



# TL;DR

## SUMMARY AND KEY TAKEAWAYS

# Summary: Monolith productivity at scale

- **Productivity problem 1:** Deploys.
  - Solution: Often and small. Make them *fast* and *automate everything*.
- **Productivity problem 2:** Too many cooks in the kitchen.
  - Solution: Shitlist-driven development.
- **Productivity problem 3:** Unreliable tests.
  - Solution: Tracking and alerting. Bisect and grind. Automation.

# Thanks! Questions?

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