

ALL DAY DEVOPS

NOVEMBER 6, 2019

**Creating A Scalable
Monitoring System That
Everyone Will Love**

By: Molly Struve



DEV

Creating A Scalable Monitoring System That Everyone Will

DEV

@ThePracticalDev | @molly_struve | dev.to/molly_struve

DEV

Creating A Scalable Monitoring System That Everyone Will

DEV

@ThePracticalDev | @molly_struve | dev.to/molly_struve



Monitoring Mistakes

Overhauling the
System

The Payoff



Monitoring Mistakes

Overhauling the
System

The Payoff



I want to look away but I can't!

@molly_struve



Monitoring Mistakes

Overhauling the
System

The Payoff



Monitoring Mistakes

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The Payoff



Monitoring Mistakes

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Monitoring Mistakes

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The Payoff



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



pagerduty

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

A large, solid green arrow pointing to the right, containing the word "pagerduty" in a large, green, lowercase, sans-serif font.

pagerduty

A blue arrow pointing to the right, containing the text "Monitoring Mistakes".

Monitoring Mistakes

A light blue arrow pointing to the right, containing the text "Overhauling the System".

Overhauling the System

A light blue arrow pointing to the right, containing the text "The Payoff".

The Payoff

@molly_struve



cron



pagerduty

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

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cron



pagerduty

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cron



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cron



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@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Waiting for your crush to text you back like



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

 slack cron Honeybadger pagerduty

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Incredibly Inconsistent

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Inconsistent Alerts



Reported data



Required no action



Monitoring Mistakes

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The Payoff

@molly_struve

Inconsistent Alerts



Reported data



Required no action



Immediate action required

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Manual Monitoring

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Manual Monitoring



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

359,615
Processed

260
Failed

10
Busy

2,267
Enqueued

0
Retries

0
Scheduled

0
Dead

Processes

[Quiet All](#) [Stop All](#)

Name	Started	Threads	Busy	
Youngs-MacBook-Pro.local:140735222771712 Queues: analytics	less than a minute ago	10	10	Quiet Stop

Jobs

Process	TID	JID	Queue	Job	Arguments	Started
Youngs-MacBook-Pro.local:140735222771712:XrkljcUcQIB8	wwRe3qsOK	e9434a825987d929c4ded8e7	analytics	Printer	"damn"	less than a minute ago
Youngs-MacBook-Pro.local:140735222771712:XrkljcUcQIB8	sivAZNh9S	a9243f80ff9202fcfd1b6525c	analytics	Printer	"damn"	less than a minute ago
Youngs-MacBook-Pro.local:140735222771712:XrkljcUcQIB8	CV33PB0YT	d0aa5777f8d24ada509abf57	analytics	Printer	"damn"	less than a minute ago
Youngs-MacBook-Pro.local:140735222771712:XrkljcUcQIB8	u3YO9amQw	3fb4f8c734dc7d9942284db5	analytics	Printer	"damn"	less than a minute ago
Youngs-MacBook-Pro.local:140735222771712:XrkljcUcQIB8	2tr0JCheE	538becf3319cac6ddf9ee08a	analytics	Printer	"damn"	less than a minute ago

Monitoring Mistakes

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@molly_struve

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Youngs-MacBook-Pro.local:140735222771712:XrkljcUcQIB8	sivAZNh9S	a9243f80ff9202fcfd1b6525c	analytics	Printer	"damn"	less than a minute ago
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Jobs

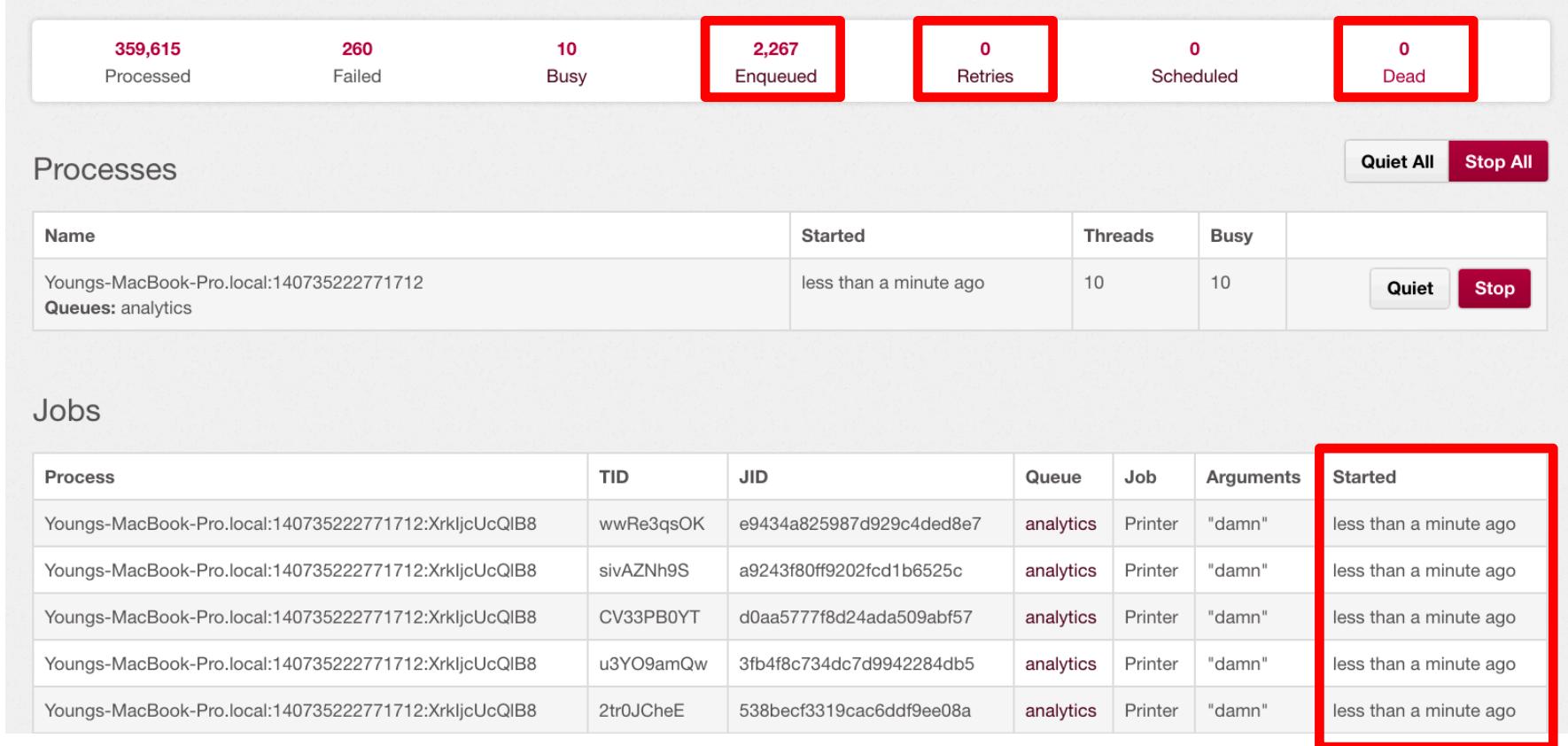
Process	TID	JID	Queue	Job	Arguments	Started
Youngs-MacBook-Pro.local:140735222771712:XrklijcUcQIB8	wwRe3qsOK	e9434a825987d929c4ded8e7	analytics	Printer	"damn"	less than a minute ago
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Monitoring Mistakes

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The Payoff

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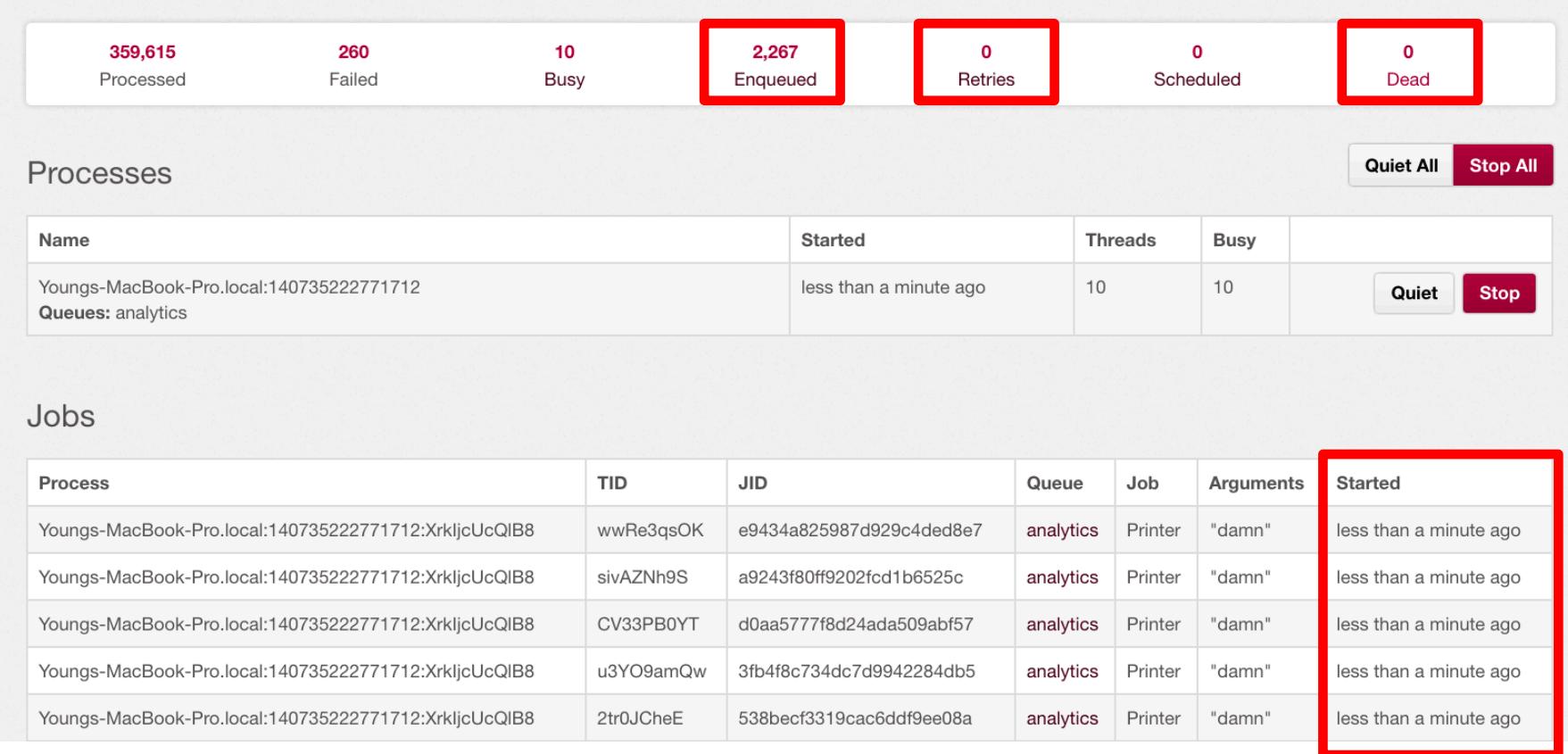


Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

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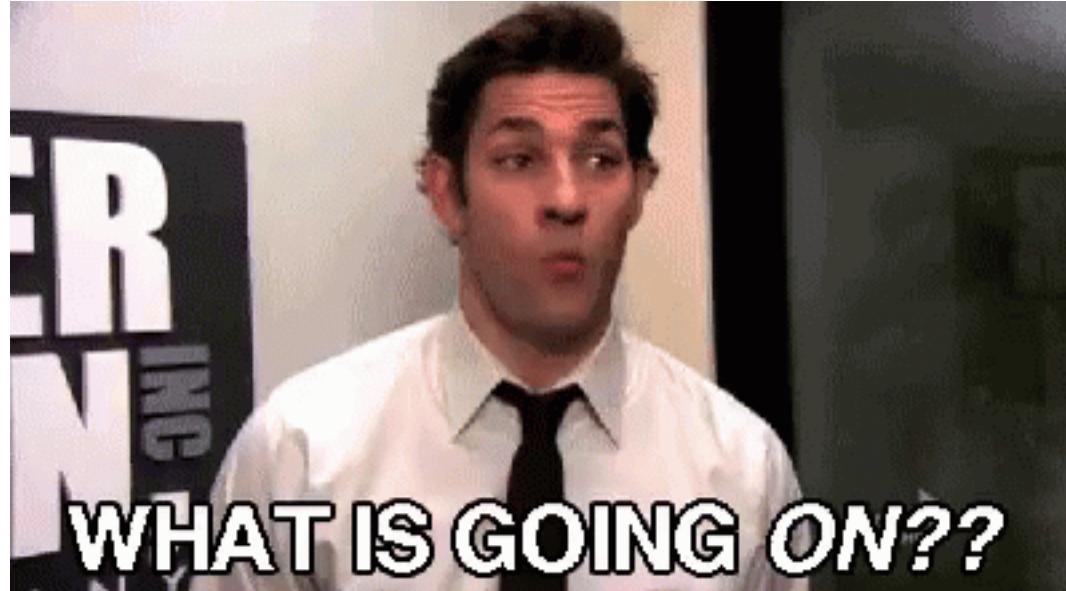
make on-call devs miserable

Monitoring Mistakes

Overhauling the System

The Payoff

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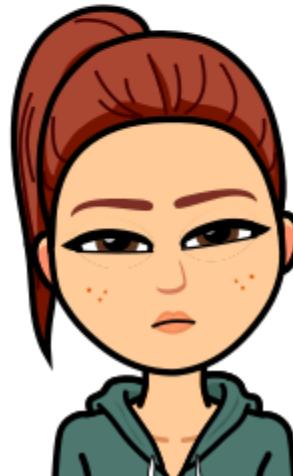
Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

DON'T



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



 slack



cron 

 Honeybadger



pagerduty

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Coverage doesn't matter if you have no idea what is going on!

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the
System

The Payoff



Monitoring Mistakes

Overhauling the
System

The Payoff

Monitoring Must Haves

- 1 Consolidate Monitoring To a Single Place
- 2
- 3
- 4
- 5

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



DATADOG

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

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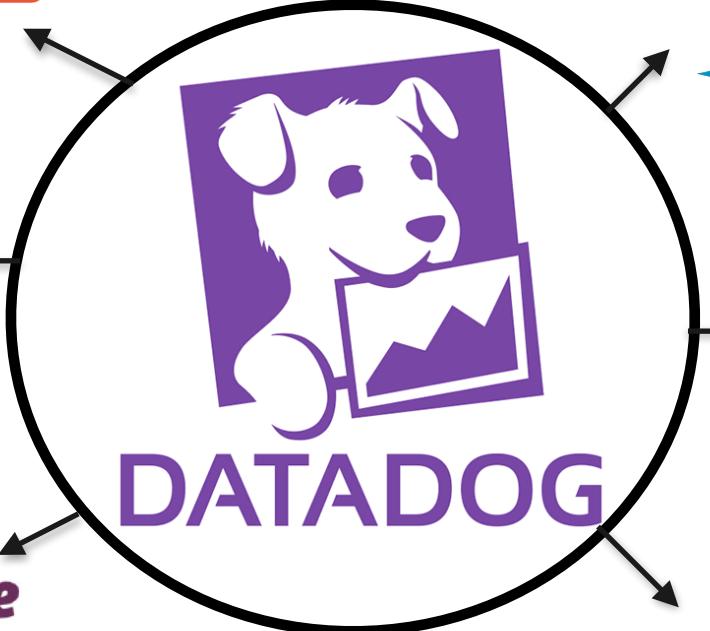


Monitoring Mistakes

Overhauling the System

The Payoff

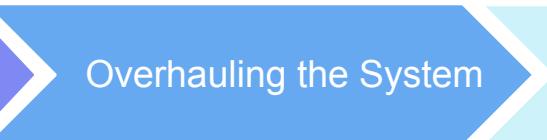
@molly_struve



DATADOG

The Datadog logo is centered within a large black circle. It features a white silhouette of a dog's head facing right, holding a small purple graph or chart in its front paws. Below the dog is the word "DATADOG" in a large, bold, purple, sans-serif font.

Monitoring Mistakes

A purple arrow pointing to the right, containing the text "Monitoring Mistakes".

Overhauling the System

A blue arrow pointing to the right, containing the text "Overhauling the System".

The Payoff

A light blue arrow pointing to the right, containing the text "The Payoff".

@molly_struve



DATADOG



Stackify

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Monitoring Must Haves

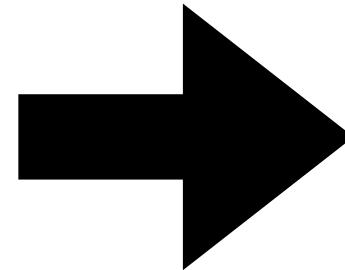
- 1 Consolidate Monitoring To a Single Place
- 2 Make ALL Alerts Actionable
- 3
- 4
- 5

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



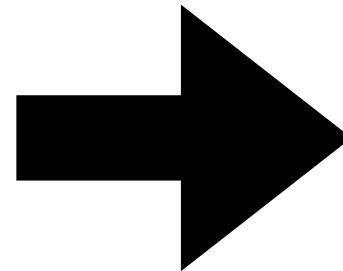
Action

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Action

A large red 'X' is drawn over the word 'Action', emphasizing that action is required.

Monitoring Mistakes

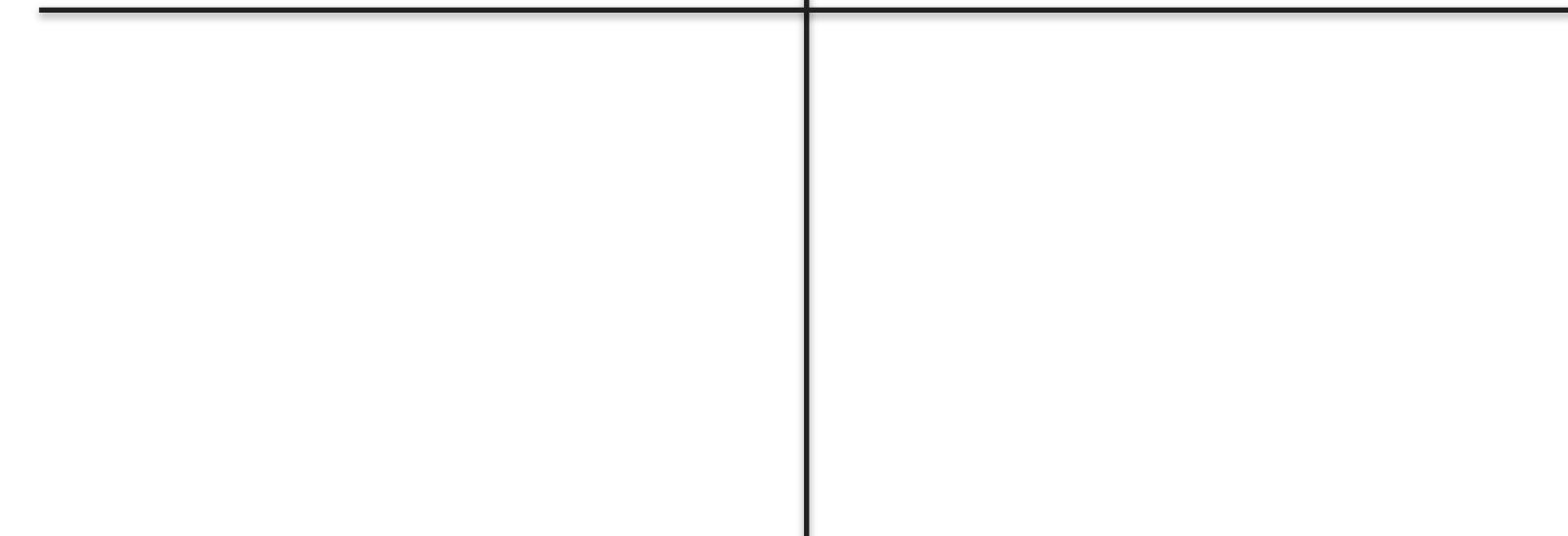
Overhauling the System

The Payoff

@molly_struve

Action Required

No action Needed



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Action Required

No action Needed

#ops_alerts

#dev_alerts

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Action Required

No action Needed

#ops_alerts

#dev_alerts

#ops_reporting

#dev_reporting

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Monitoring Must Haves

- 1 Consolidate Monitoring To a Single Place
- 2 Make ALL Alerts Actionable
- 3 Make Sure Alerts Are Mutable
- 4
- 5

Monitoring Mistakes

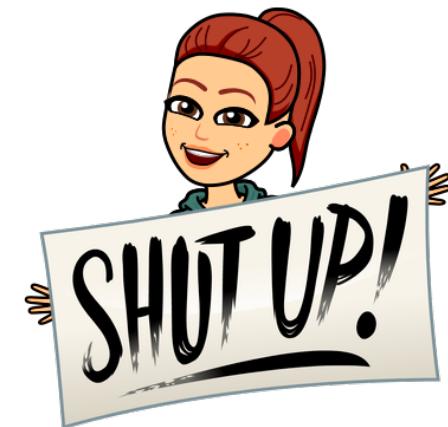
Overhauling the System

The Payoff

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Monitoring Must Haves

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- 4
- 5



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

30

60

90

minutes

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

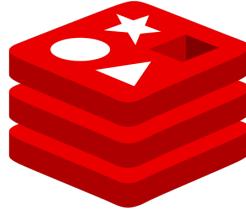
Miss new alerts

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



redis

```
Last login: Sun Aug 4 18:04:06 on ttys010
mollys-mbp-2:~ mollystruve$
```

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

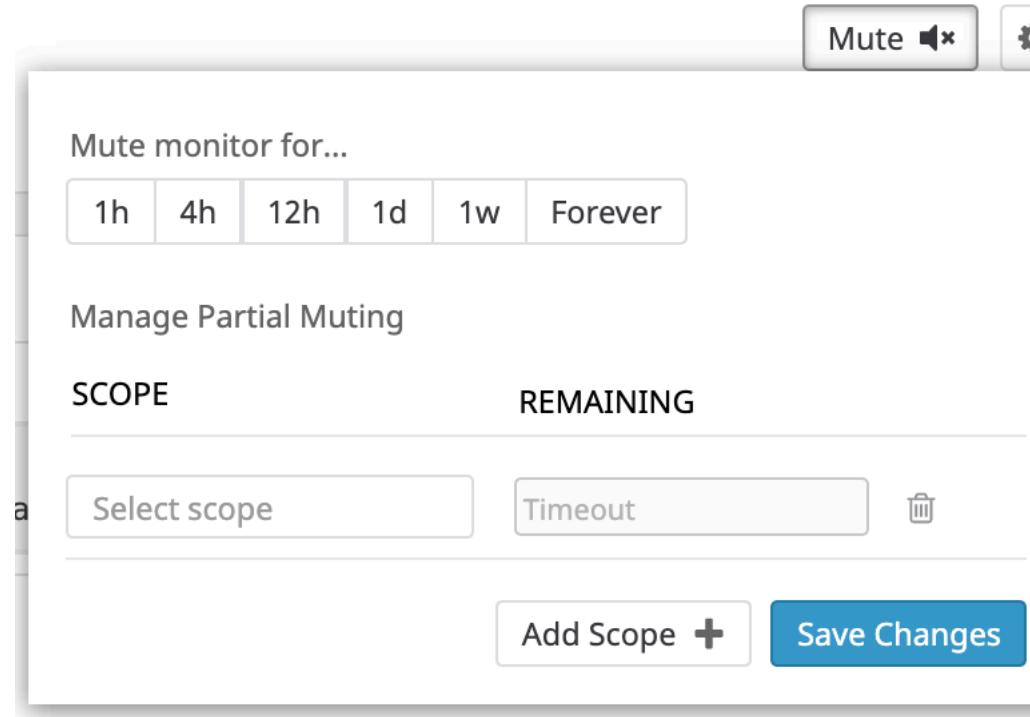


Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

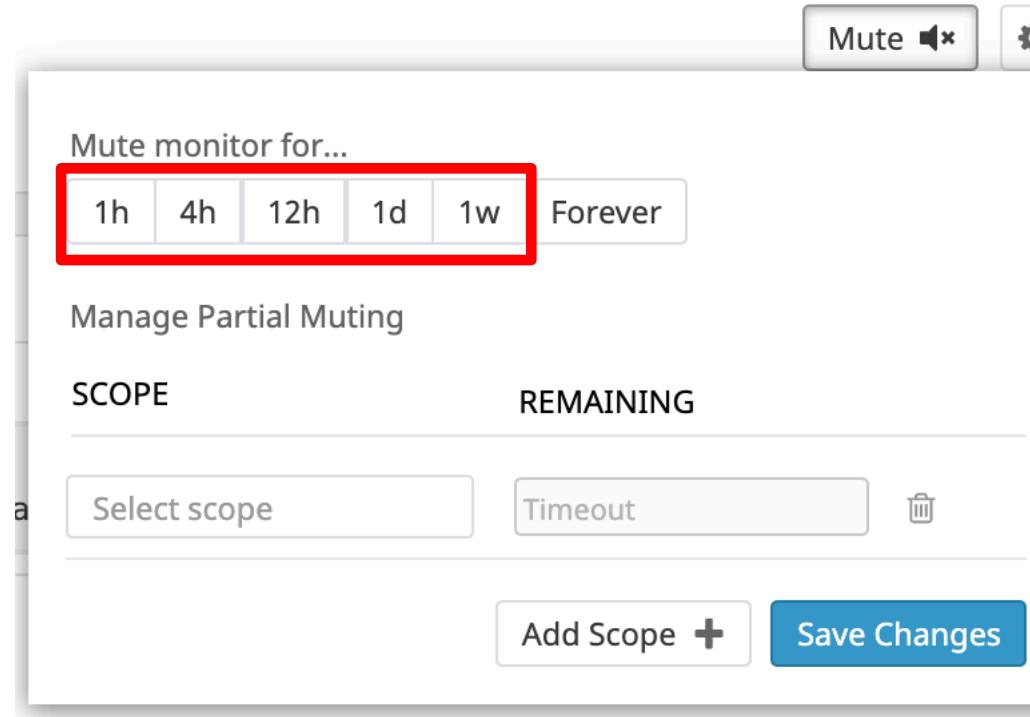


Monitoring Mistakes

Overhauling the System

The Payoff

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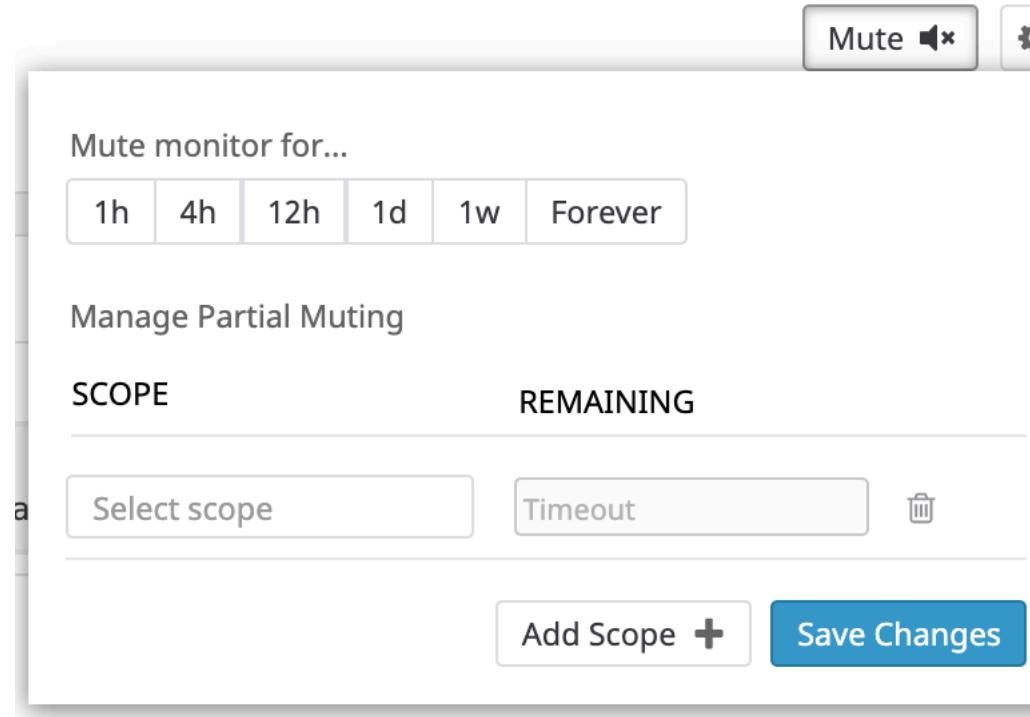


Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Monitoring Must Haves

- 1 Consolidate Monitoring To a Single Place
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- 3 Make Sure Alerts Are Mutable
- 4 Track Alert History
- 5

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Tracking Alert History

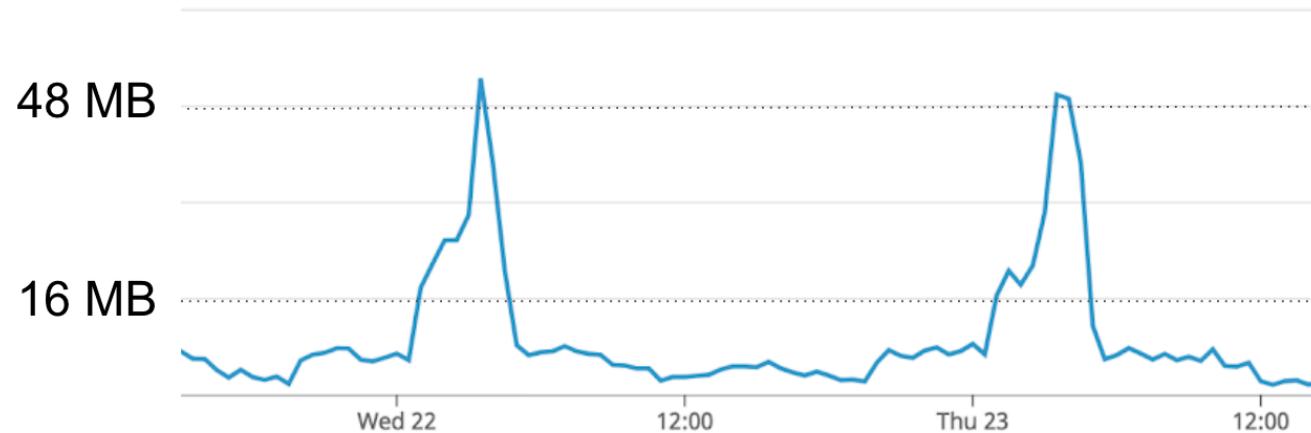
Monitoring Mistakes

Overhauling the System

The Payoff

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Tracking Alert History



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Monitoring Must Haves

- 1 Consolidate Monitoring To a Single Place
- 2 Make ALL Alerts Actionable
- 3 Make Sure Alerts Are Mutable
- 4 Track Alert History
- 5 Remove ALL Manual Monitoring

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Manual Monitoring



Scale

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

359,615
Processed

260
Failed

10
Busy

2,267
Enqueued

0
Retries

0
Scheduled

0
Dead

Processes

Quiet All **Stop All**

Name	Started	Threads	Busy	
Youngs-MacBook-Pro.local:140735222771712 Queues: analytics	less than a minute ago	10	10	Quiet Stop

Jobs

Process	TID	JID	Queue	Job	Arguments	Started
Youngs-MacBook-Pro.local:140735222771712:XrklijcUcQIB8	wwRe3qsOK	e9434a825987d929c4ded8e7	analytics	Printer	"damn"	less than a minute ago
Youngs-MacBook-Pro.local:140735222771712:XrklijcUcQIB8	sivAZNh9S	a9243f80ff9202fcfd1b6525c	analytics	Printer	"damn"	less than a minute ago
Youngs-MacBook-Pro.local:140735222771712:XrklijcUcQIB8	CV33PB0YT	d0aa5777f8d24ada509abf57	analytics	Printer	"damn"	less than a minute ago
Youngs-MacBook-Pro.local:140735222771712:XrklijcUcQIB8	u3YO9amQw	3fb4f8c734dc7d9942284db5	analytics	Printer	"damn"	less than a minute ago
Youngs-MacBook-Pro.local:140735222771712:XrklijcUcQIB8	2tr0JCheE	538becf3319cac6ddf9ee08a	analytics	Printer	"damn"	less than a minute ago

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Automatic Alerts

- OK Sidekiq Processes NOT running {{environment.name}}
- OK Sidekiq Queue {{sidekiq_queue.name}} Latency is greater than 6 hours in {{envir}}
- OK Sidekiq job duration is high
- OK Sidekiq periodic queue is backed up or not running on {{environment.name}}

Monitoring Must Haves

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- 4 Track Alert History
- 5 Remove ALL Manual Monitoring

Monitoring Mistakes

Overhauling the System

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Monitoring Mistakes

Overhauling the
System

The Payoff

```
graph LR; A[Monitoring Mistakes] --> B[Overhauling the System]; B --> C[The Payoff]
```

Monitoring Mistakes

Overhauling the
System

The Payoff

On boarding is a breeze

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

3 On-boarding steps:

- 1
- 2
- 3

Monitoring Mistakes

Overhauling the System

The Payoff

3 On-boarding steps:

- 1
- 2
- 3

Show them the monitoring setup

Monitoring Mistakes

Overhauling the System

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3 On-boarding steps:

- 1 Show them the monitoring setup
- 2 If an alert goes off you have to address it
- 3

Monitoring Mistakes

Overhauling the System

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3 On-boarding steps:

- 1 Show them the monitoring setup
- 2 If an alert goes off you have to address it
- 3 How to mute a triggered alert

Monitoring Mistakes

Overhauling the System

The Payoff

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On boarding is a breeze

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Happier on-call developers

Monitoring Mistakes

Overhauling the System

The Payoff

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All alerts must be actionable

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



I have several questions

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

No more noise

Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve



Monitoring Mistakes

Overhauling the System

The Payoff

@molly_struve

Diagnosing alerts is faster and easier

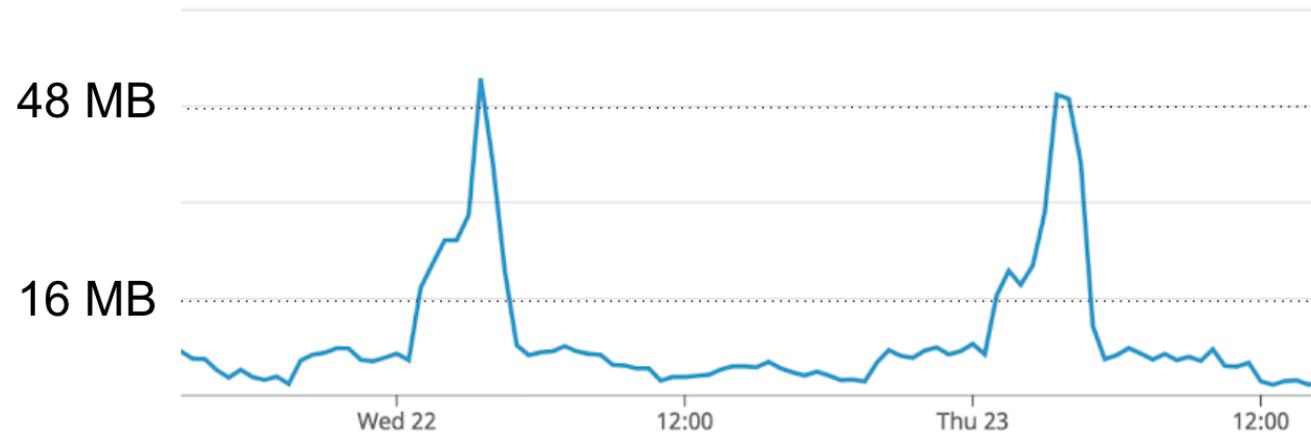
Monitoring Mistakes

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Tracking Alert History



Monitoring Mistakes

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@molly_struve



PagerDuty BOT 11:08 PM

Triggered #3727: High Priority Job Queue Backed Up

Monitoring Mistakes

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PagerDuty BOT 11:08 PM

| Triggered #3727: High Priority Job Queue Backed Up

Today?

Monitoring Mistakes

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PagerDuty BOT 11:08 PM

| Triggered #3727: High Priority Job Queue Backed Up

Today?

Going on longer?

Monitoring Mistakes

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PagerDuty BOT 11:08 PM

| Triggered #3727: High Priority Job Queue Backed Up

Today?

Going on
longer?

Monitoring Mistakes

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PagerDuty BOT 11:08 PM

| Triggered #3727: High Priority Job Queue Backed Up

Alert History

Monitoring Mistakes

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Monitoring Mistakes

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The Payoff

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Developers began helping to improve our monitoring system

Monitoring Mistakes

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The Payoff

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Monitoring Mistakes

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All alerts must be actionable

Monitoring Mistakes

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30-40 Alerts

Monitoring Mistakes

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>90 Alerts

Monitoring Mistakes

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Basic Alerts

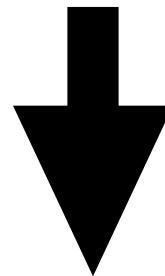
Monitoring Mistakes

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Basic Alerts



More Granular Alerts

Monitoring Mistakes

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VS



High MySQL load

High MySQL load on db 1 for client 5

Monitoring Mistakes

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Developers ❤ monitoring system

Monitoring Mistakes

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Monitoring Must Have Benefits

- 1
- 2
- 3
- 4

Monitoring Mistakes

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Monitoring Must Have Benefits

- 1 On boarding is a breeze.
- 2
- 3
- 4

Monitoring Mistakes

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Monitoring Must Have Benefits

- 1 On boarding is a breeze.
- 2 On-call developers are a lot happier
- 3
- 4

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Monitoring Must Have Benefits

- 1 On boarding is a breeze.
- 2 On-call developers are a lot happier
- 3 Diagnosing alerts is faster and easier
- 4

Monitoring Mistakes

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Monitoring Must Have Benefits

- 1 On boarding is a breeze.
- 2 On-call developers are a lot happier
- 3 Diagnosing alerts is faster and easier
- 4 Developers helping to improve your monitoring systems

Monitoring Mistakes

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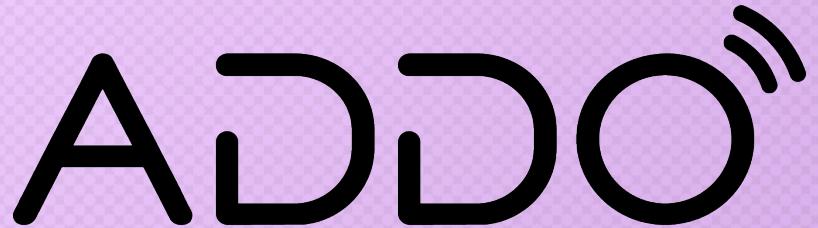
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@ThePracticalDev | @molly_struve | dev.to/molly_struve



ALL DAY DEVOPS

NOVEMBER 6, 2019

Thank
You!

