

Mecca's Journey to Complete Observability & Traceability

MECCA

MECCA

MECCA

MECCA

**Mecca is a multi-billion-dollar company and the largest beauty retailer in Australia, with over 100 stores.**



**Paul Beliauskis**

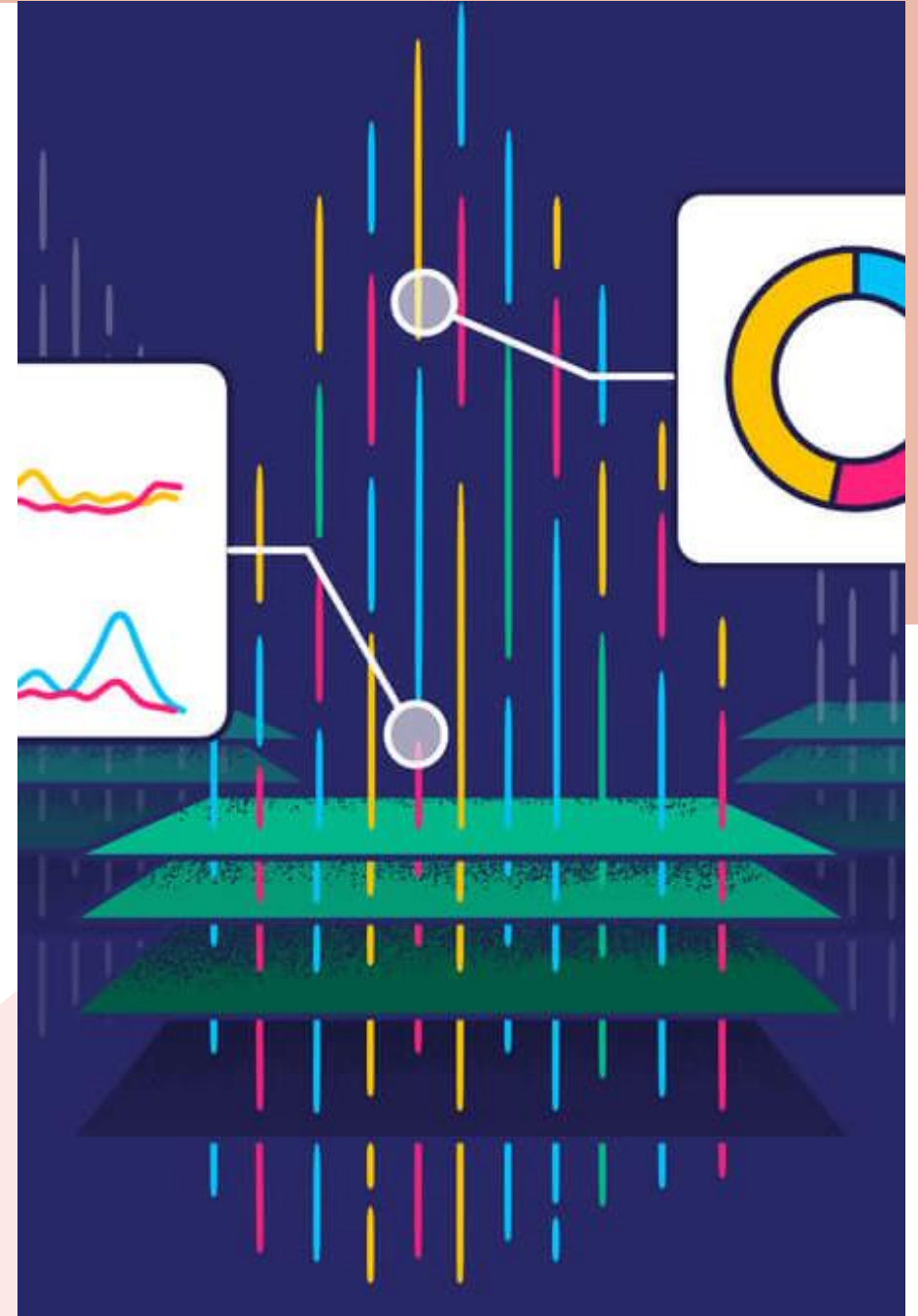
**Engineering Manager  
- BoardOutlook**

# Agenda

- 1 What is observability and traceability?
- 2 Mecca system architecture
- 3 Centralising our operational data
- 4 Examples of our incident response process



# Observability and Traceability



**Observability:** The extent to which you can understand the state of a system based on knowledge of its external outputs only.

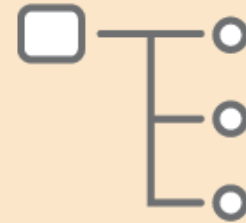
# The three pillars of observability



**Metrics**



**Logs**



**Traces**

**Traceability:** The extent to which a request can be followed through a system.



# Components of Traceability

- **End to End tracing**

Captures the flow of requests across services, showing the journey from the initial request to the response

- **Correlation IDs**

Unique identifiers attached to requests and propagated through different services to correlate logs and traces.

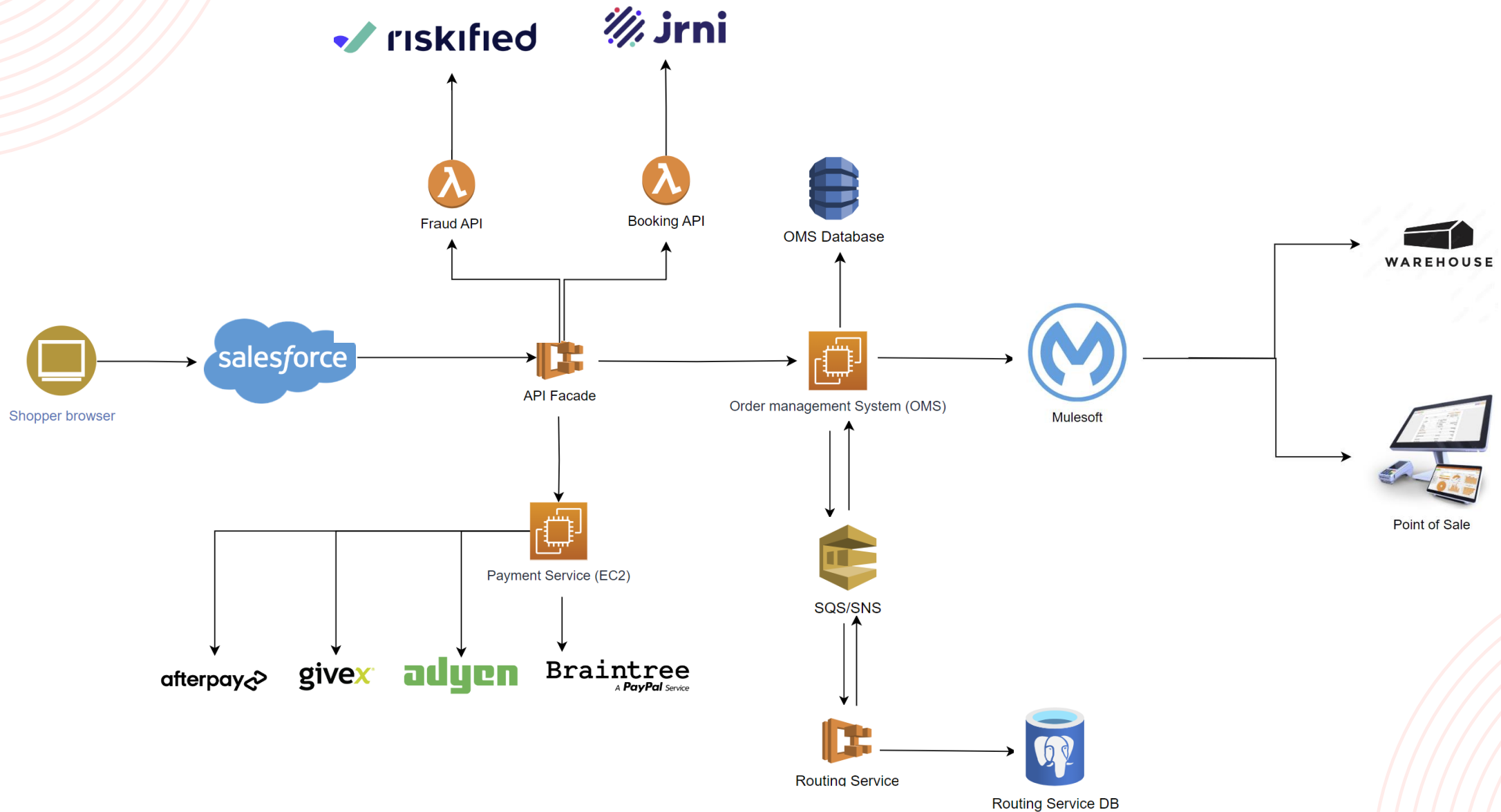
# The Mecca Architecture

Let's go behind the scenes

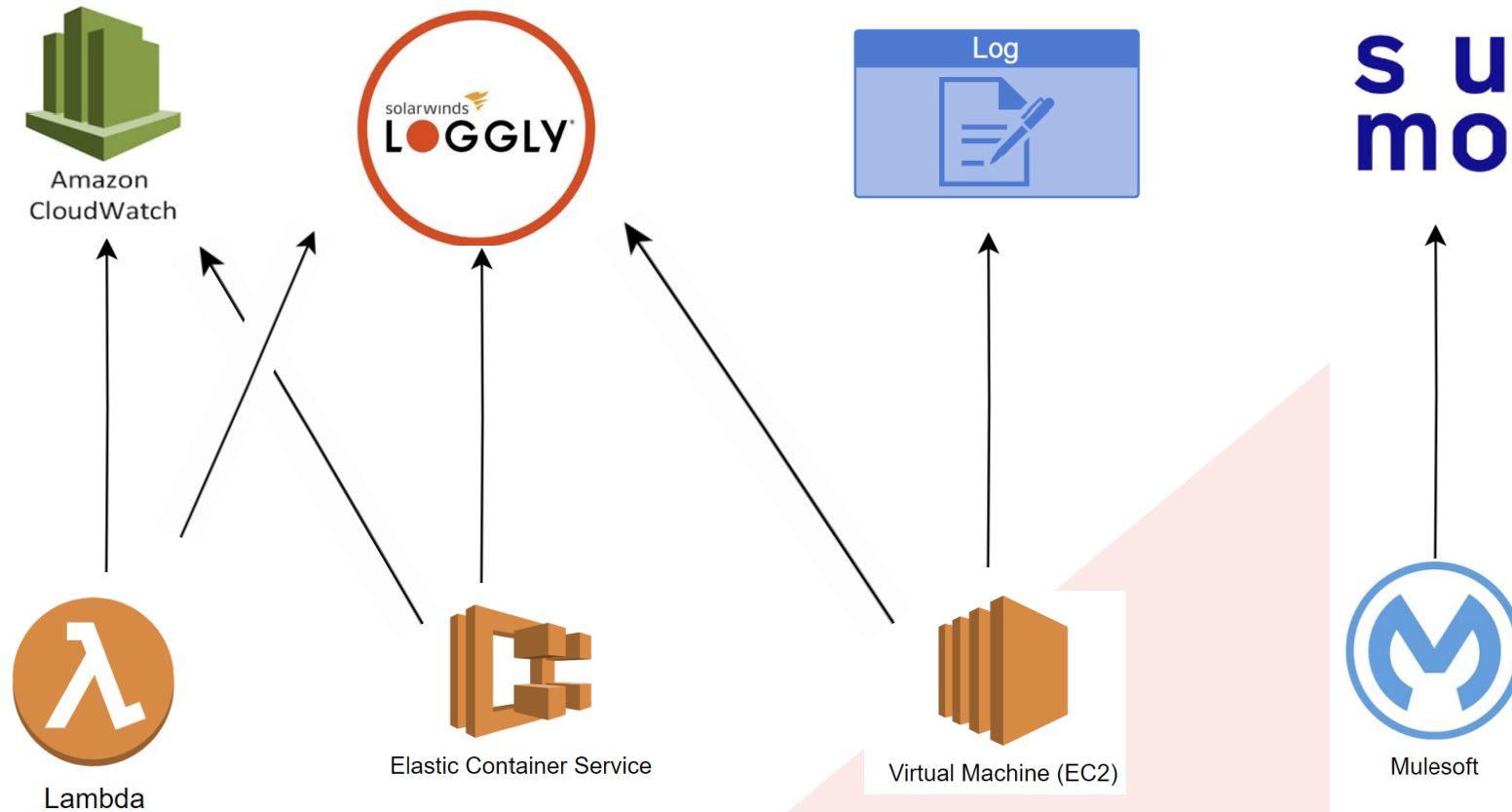


# Mecca E-Commerce Architecture

11



# Our APM and Log Data is Scattered



# What problems does this cause us?



Increased time to find root causes of issues and longer onboarding times for new staff



Alerting is not integrated nicely into our systems



Hard to understand the system



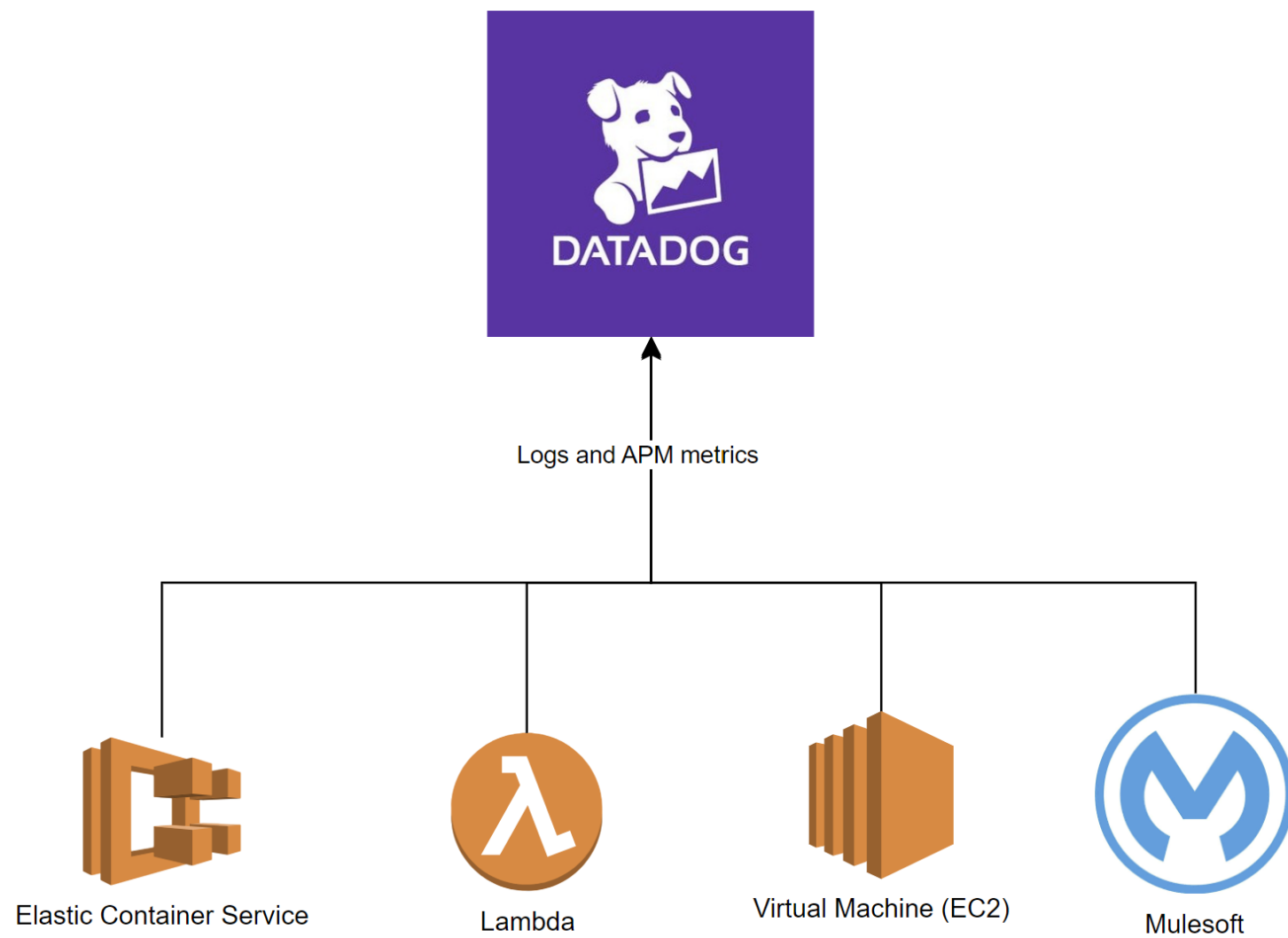
No easy way to create custom metric dashboards

# Datadog + Mecca

How did Datadog solve our issues?

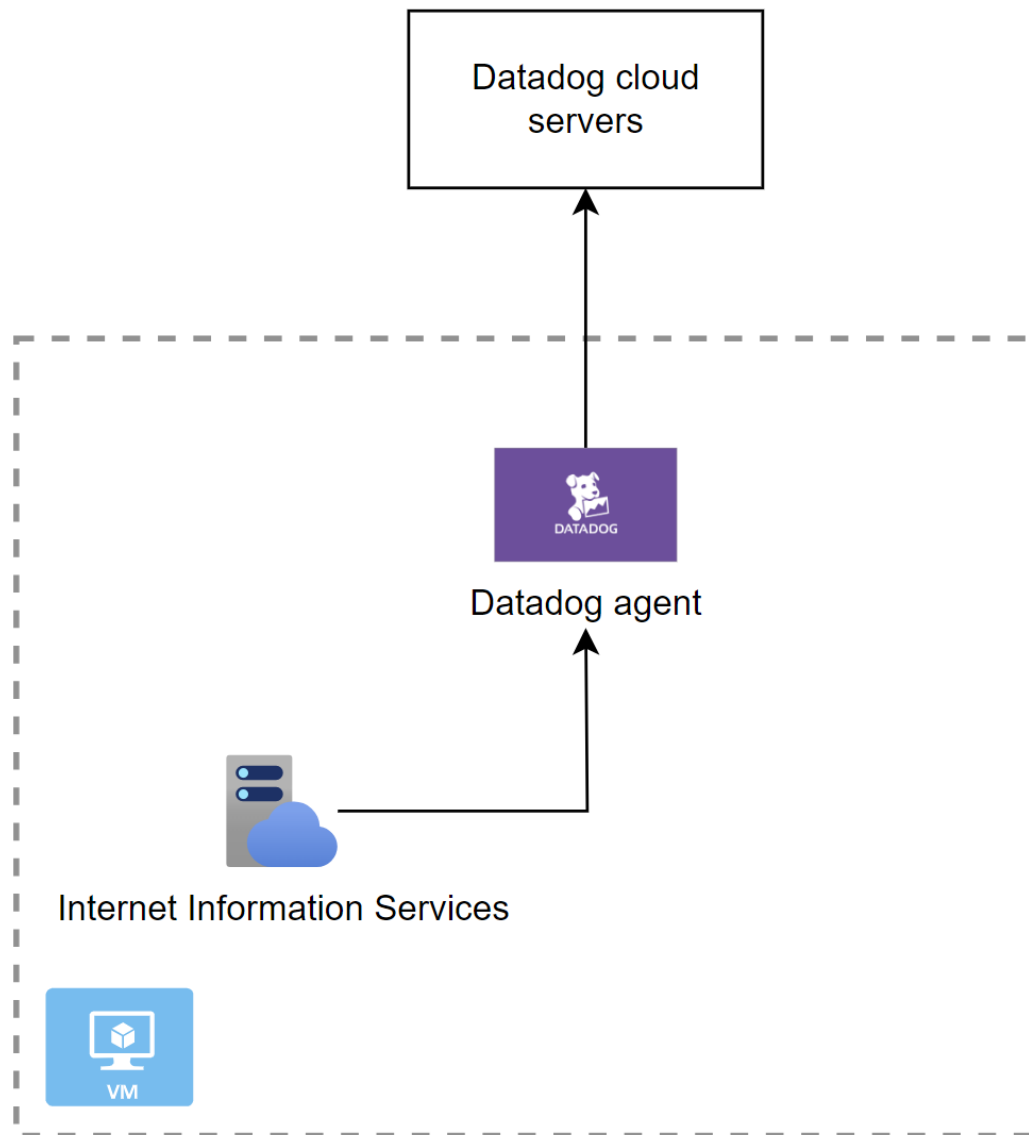






# How it works?

16



# Datadog in Action

Let's look at some examples



# Integrated Alerts



Datadog 8:15 pm

New

## [P3] [Triggered] 5XX Response Returned For Payment in Commerce API Production

@teams-Software Engineering Delivery Demons - Production Alerts

Please review that no orders or transactions were recorded as this may result in customers being charged for an order they didn't make.

The count of APM events matching @\_top\_level:1 env:production service:commerce-api operation\_name:aspnet\_core.request resource\_name:"POST /api/v{version}/payments" status:error was > 0 during the last 5m.

Monitor tags: ["env:production", "team:delivery-demons"]

Monitor query: `trace-analytics("@_top_level:1 env:production service:commerce-api operation_name:aspnet_core.request resource_name:\"POST /api/v{version}/payments\" status:error").rollup("count").last("5m") > 0`

[View in Datadog](#)



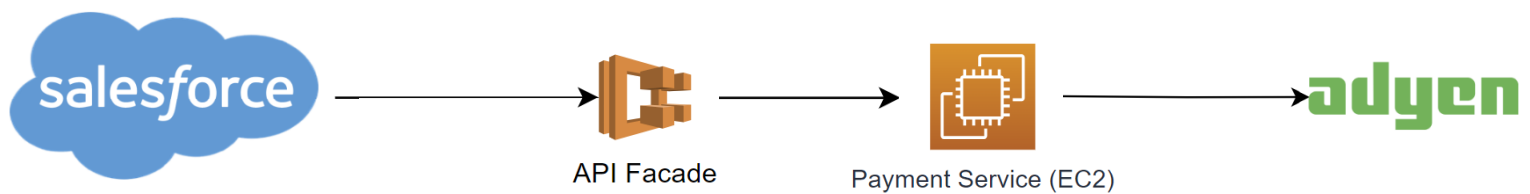
Reply

# Inspecting error logs

The screenshot displays a log management interface with the following components:

- Views and Actions:** 'Views', 'Logs', and a '+ Save' button.
- Search Bar:** Contains the query 'env:staging service:commerce-api'.
- Grouping and Visualization:** 'Group into' tabs for 'Fields', 'Patterns', and 'Transactions'. 'Visualize as' options include 'List' (selected), 'Timeseries', 'Top List', 'Table', 'Tree Map', 'Pie Chart', and 'Scatter Plot NEW'.
- Facets:** A 'Search facets' section on the left with filters for 'CORE', 'Index', 'Source', 'Host', 'Service' (set to 'commerce'), 'Status' (Error: 1, Warn: 0, Info: 4), and 'Environment'.
- Log Results:** A table with columns 'DATE', 'HOST', 'SERVICE', and 'CONTENT'. The first entry is: May 07 11:10:44.752, commerce-api, POST http://...
- Watchdog Insights:** A section showing '0 Watchdog Insights'.

# Payment trace





# Tracing Requests

Views

Logs

+ Save

1m May 7, 11:10 am – May 7, 11:11 am

Search for

Group into

Fields

Patterns

Transactions

Visualize as

List

Timeseries

Top List

Table

Tree Map

Pie Chart

Scatter Plot NEW

Search facets

Showing 142 of 142

+ Add

CORE

Index

Source

Host

Service

commerce

Add \*commerce\* to search

Exclude \*commerce\* from search

commerce-api 1

Status

Error 2

Warn 1

Info 0

Debug 9

Environment

AWS SECURITY HUB

Compliance Related Requirem...

Hide Controls

12 logs found

Download as CSV

More...

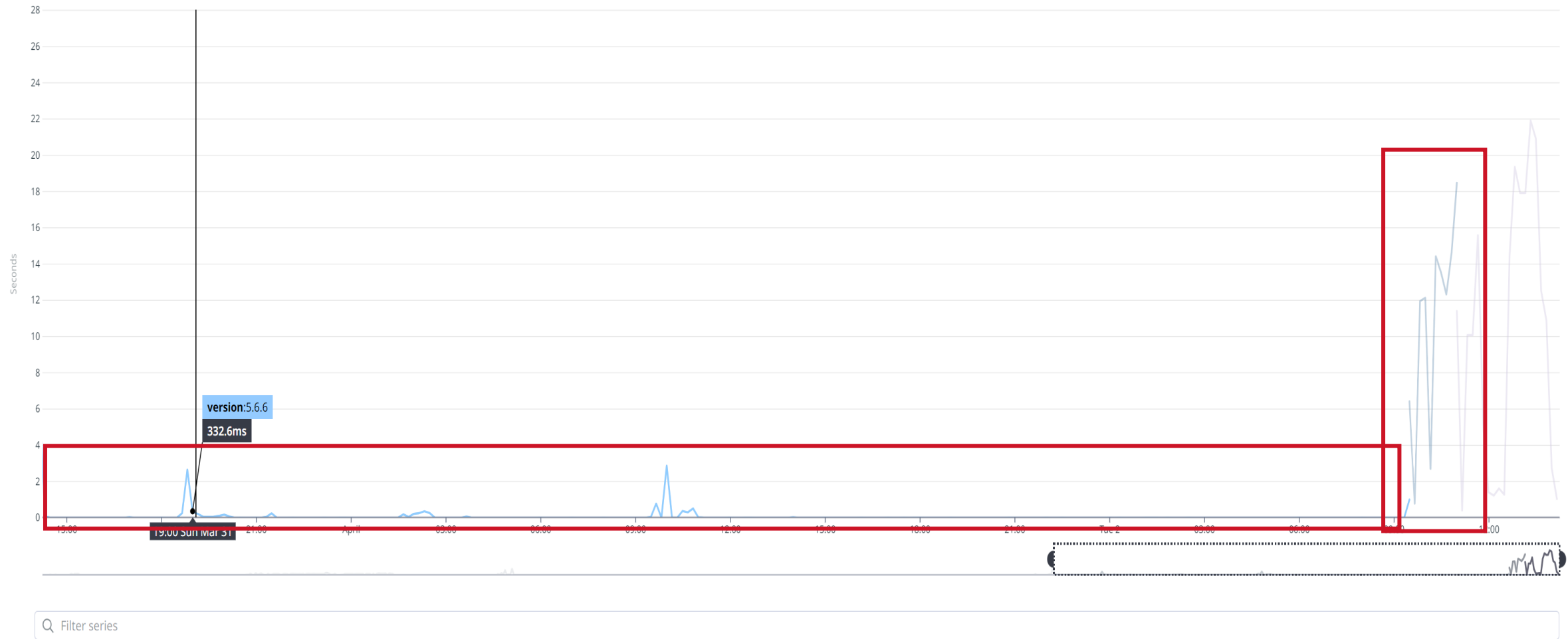
Options

Watchdog Insights

Watchdog did not detect any insights in this scope.

DATE	HOST	SERVICE	CONTENT
May 07 11:10:44.752		commerce-api	POST http://staging-commerce-api.mecca.com/api/v2/payments?site=MeccaNZ failed   Request: Exception Message: {"code":"AdyenError","source":"Adyen","desc...
May 07 11:10:44.749		payment-api.payment	POST http://stg-payment-service.mecca.com/api/v1/payments?site=MeccaNZ failed   Request: Exception Message: Problem encountered while processing the req...
May 07 11:10:44.746		payment-api.payment	Unable to process split payment request for order "UAT00387215". Error: "500: InternalServerError, ResponseBody: {"status":500,"errorCode":"","message":"","errorType":"","pspReference":"","amount":{"currency":"NZD","value":8500},"merchantAc...
May 07 11:10:44.746		payment-api.payment	Response Body: {"pspReference":"SJL3K98GRVLDXWT5","resultCode":"Received"}
May 07 11:10:44.402		payment-api.payment	Request Body: {"merchantAccount":"M110_1077", "order": {"orderData": "Ab02b4c0!BQABAgBmVprzYzBWNktq38sUJXpgLuqb+Fg5VZspHk5RkKKFce9a9/6fT4rjzKJVIA00e0..."}
May 07 11:10:44.400		payment-api.payment	POST https://checkout-test.adyen.com/v70/orders/cancel
May 07 11:10:44.397		payment-api.payment	Response Body: {"status":500,"errorCode":"","message":"Read timed out","errorType":"internal","pspReference":"PC5DXC2KBHN776V5"}
May 07 11:10:13.835		payment-api.payment	Request Body: {"recurringProcessingModel": "CardOnFile", "shopperInteraction": "Ecommerce", "amount": {"currency": "NZD", "value": 8500 }, "merchantAc...
May 07 11:10:13.835		payment-api.payment	POST https://checkout-test.adyen.com/v70/payments
May 07 11:10:13.835		payment-api.payment	Response Body: {"pspReference":"FBDGDJQ02WV9ST5","resultCode":"Success","amount":{"currency":"NZD","value":8500},"expiresAt":"2024-05-08T01:10:13Z","or...
May 07 11:10:12.797		payment-api.payment	Request Body: {"amount": {"currency": "NZD", "value": 8500 }, "merchantAccount": "M110_1077", "reference": "UAT00387215" }
May 07 11:10:12.797		payment-api.payment	POST https://checkout-test.adyen.com/v70/orders

# Latency by Version



version in top(p90:trace.aspNet\_core.request{env:staging.service:mecca.sonic.webapi}, 5, 'mean', 'desc')

	Avg	Min	Max	Sum	Value
5.6.6	46.98 ms	1.49 ms	2.9 s	0.20 min	0.33 s
5.7.0	10.73 s	780 ms	18.4 s	1.79 min	—
5.7.1	9.88 s	407 ms	21.9 s	3.29 min	—

4 ALERT

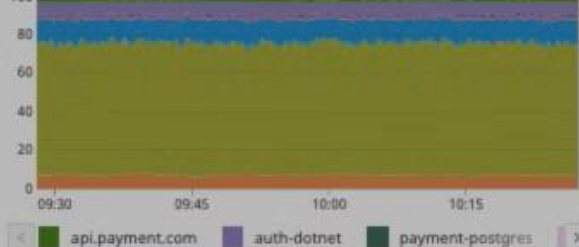
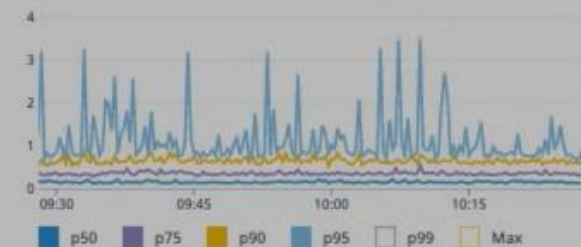
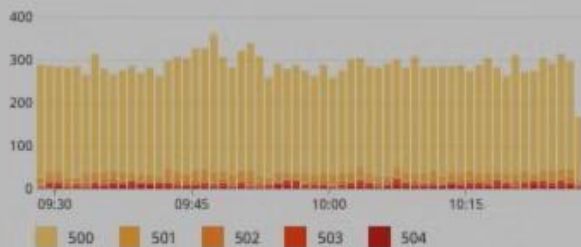
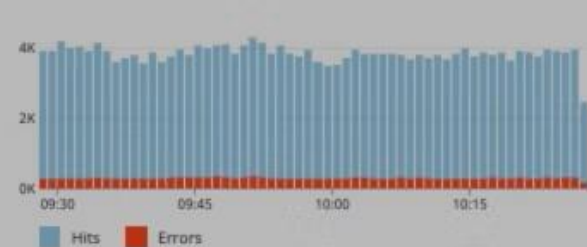
11 OK

Total Requests 227k total (63.1 req/s)

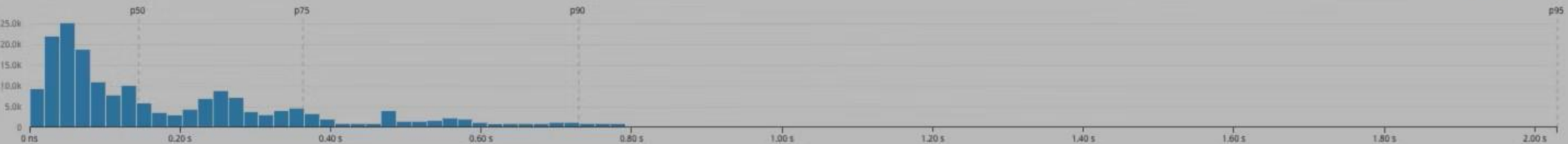
Total Errors 17.1k total (4.7 req/s)

Latency

% of Time Spent by Service



Latency Distribution



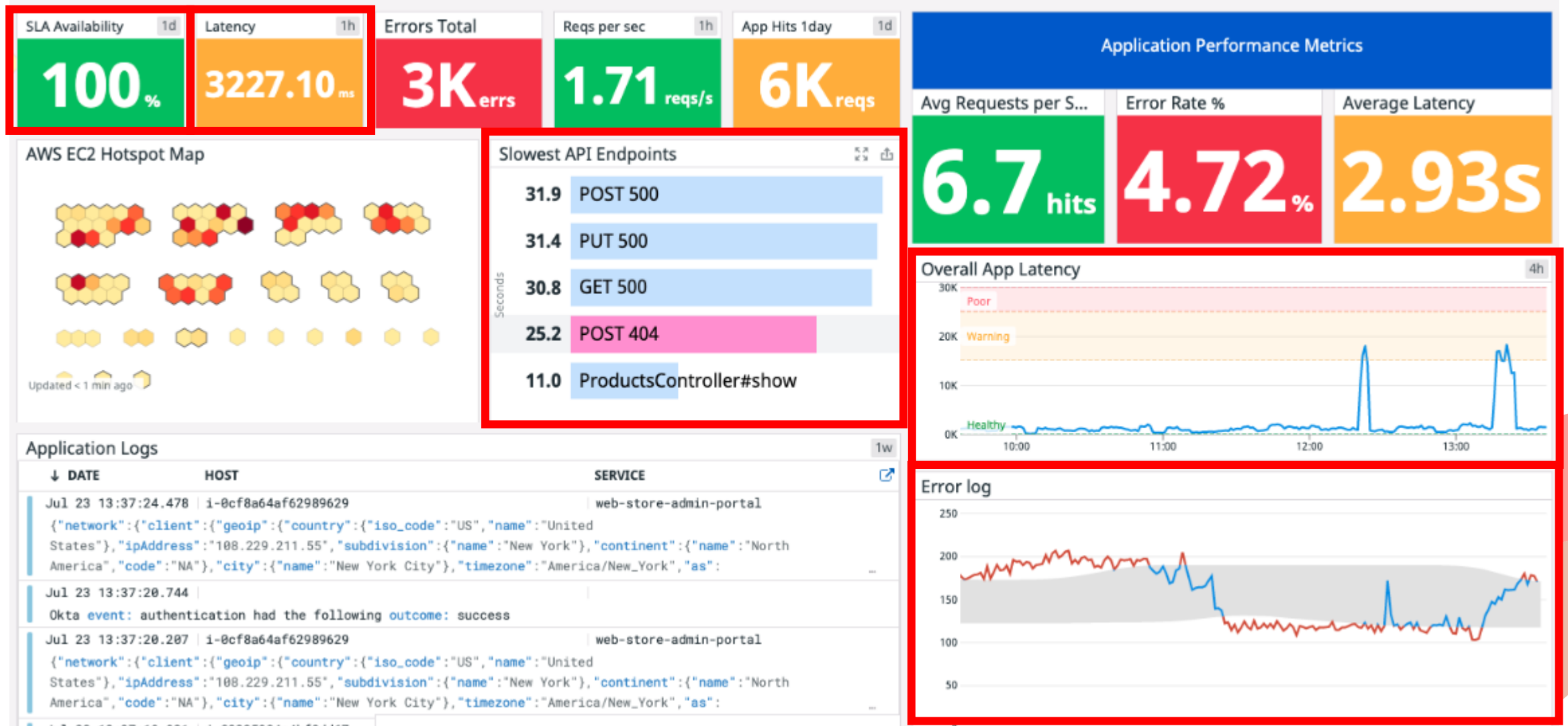
## Resources

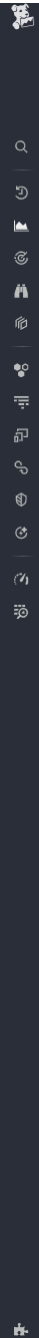
Search resource



NAME	REQUESTS	AVG LATENCY	P99 LATENCY ↓	TOTAL TIME	ERRORS	ERROR RATE
☆ ProductsController#show	5.25k	819 ms	12.7 s	1 h 11 min	1.12k	21.3%
☆ ProductsController#index	5.37k	798 ms	11.9 s	1 h 11 min	270	5.0%
☆ ApplicationController#refresh_cookie	5.96k	185 ms	6375 ms	18 min 23 s	0	0%
☆ CartItemsController#show	42.9k	120 ms	6149 ms	1 h 25 min	1.34k	3.1%
☆ ShoppingCartController#apply_coupon	32.1k	844 ms	5654 ms	7 h 31 min	1	< 0.1%
☆ Admin::AdminController#delete_team	5.96k	273 ms	4639 ms	27 min 8 s	2	< 0.1%
☆ Admin::ProductsController#update	3.59k	175 ms	4589 ms	10 min 27 s	217	6.0%

# Custom Dashboards





🔊 Add Variable ⓘ

1h Past 1 Hour ⌵ ⏮ ⏭ 🔍

Monitor Summary

Alert

2

OK

29

STATUS	MONITOR NAME
ALERT	Sonic Booking Error Queue Alert
ALERT	Sonic Parcel Perform Error Queue
OK	Store To Door Sales Order Creation Failed
OK	AMY Inventory Sync Backlog
OK	Payment API Production (ECS) - Error
OK	Posty Error Queue

Sonic Event Retry Queue

2 msgs

2

msgs

Sonic Event Retry Error Queue

(No data)

AMY Inventory Sync Queue

0 msgs

0

msgs

Sonic Transaction Review Queue

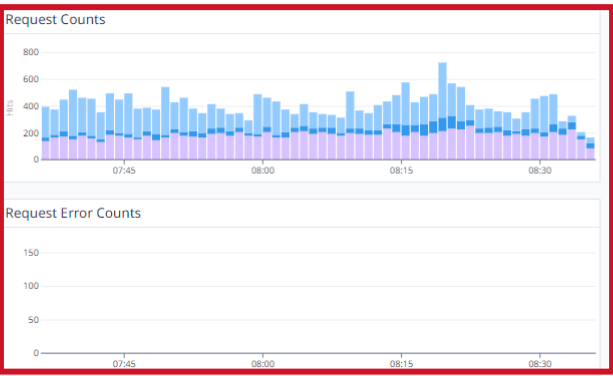
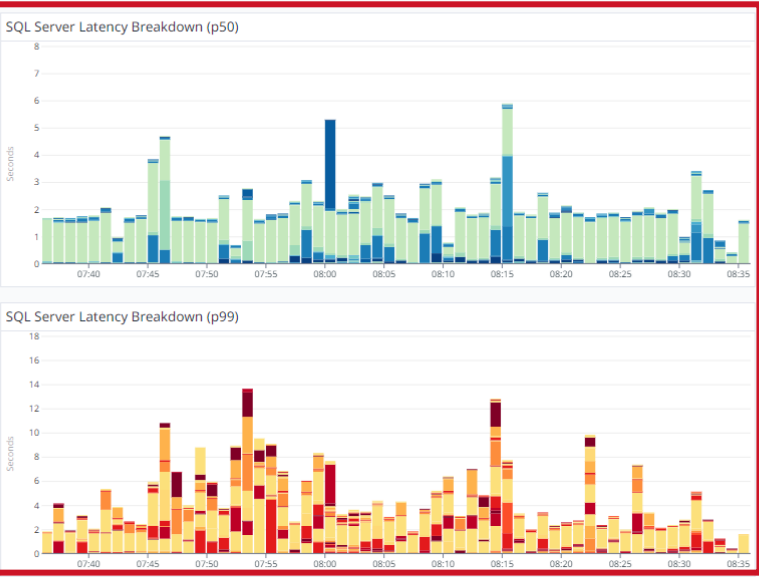
(No data)

Booking Notification Error Queue

87 msgs

87

msgs



+

Add Widgets or Powerpacks

Request Errors

DATE	SERVICE	RESOURCE	STATUS CODE	DURATION
🔍				
No matching results found				

Useful Resources

[Common Sonic Errors](#)

# Thanks for Listening!

Paul Belavskis

 [pbelavskis@gmail.com](mailto:pbelavskis@gmail.com)

 [linkedin.com/in/paul-belavskis](https://linkedin.com/in/paul-belavskis)