Mecca's Journey to Complete Observability & Traceability
MECCA
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Mecca is a **multi-billion-dollar** company and the **largest** beauty retailer in Australia, with over **100** stores.

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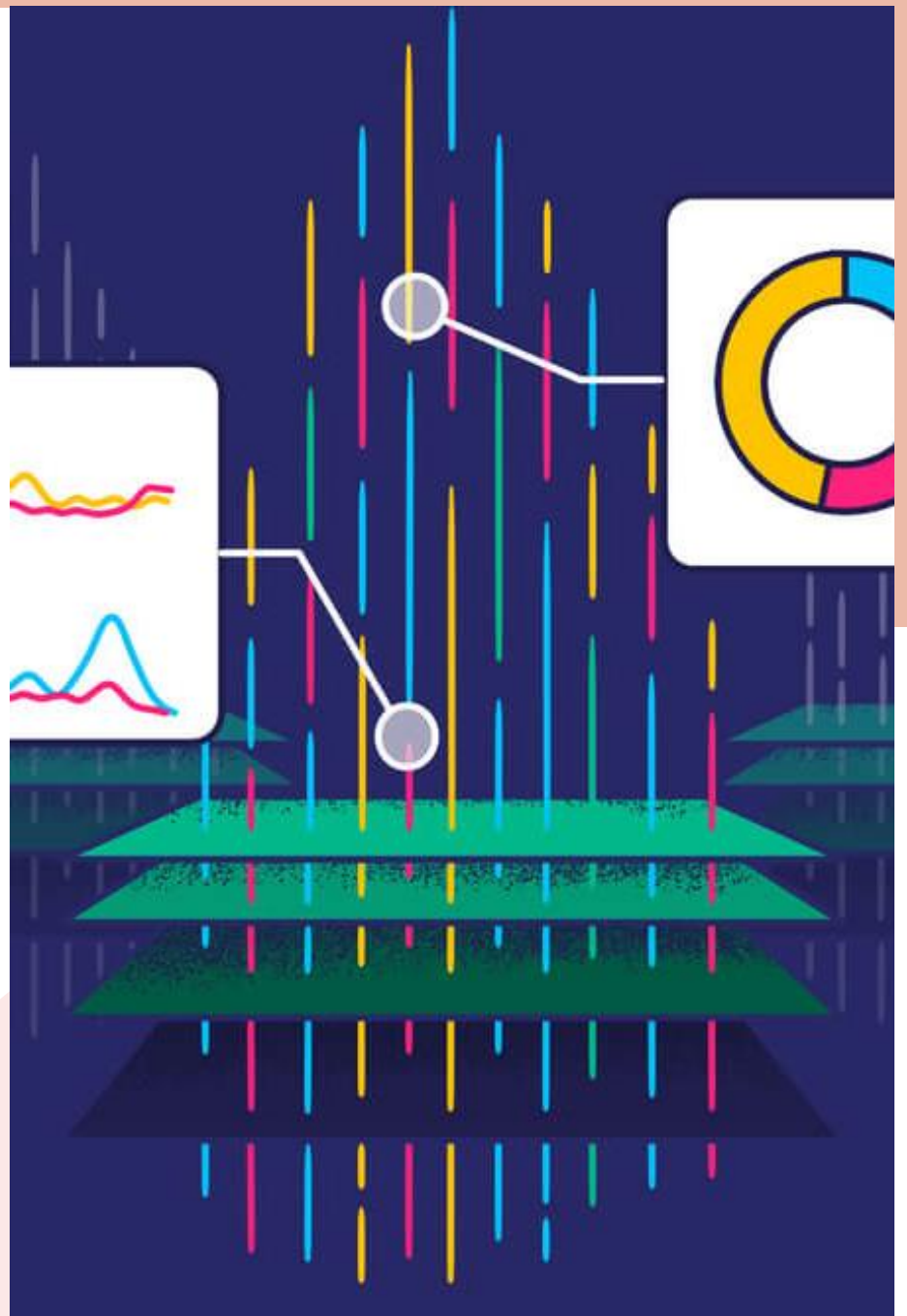
Engineering Manager
- BoardOutlook

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

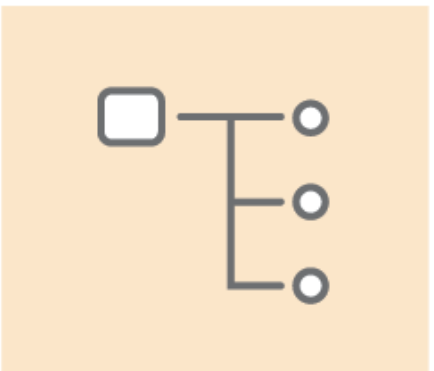


Observability: The extent to which you can understand the state of a system based on knowledge of its external outputs only.

The three pillars of observability

Metrics

Logs



Traces

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

Components of Traceability

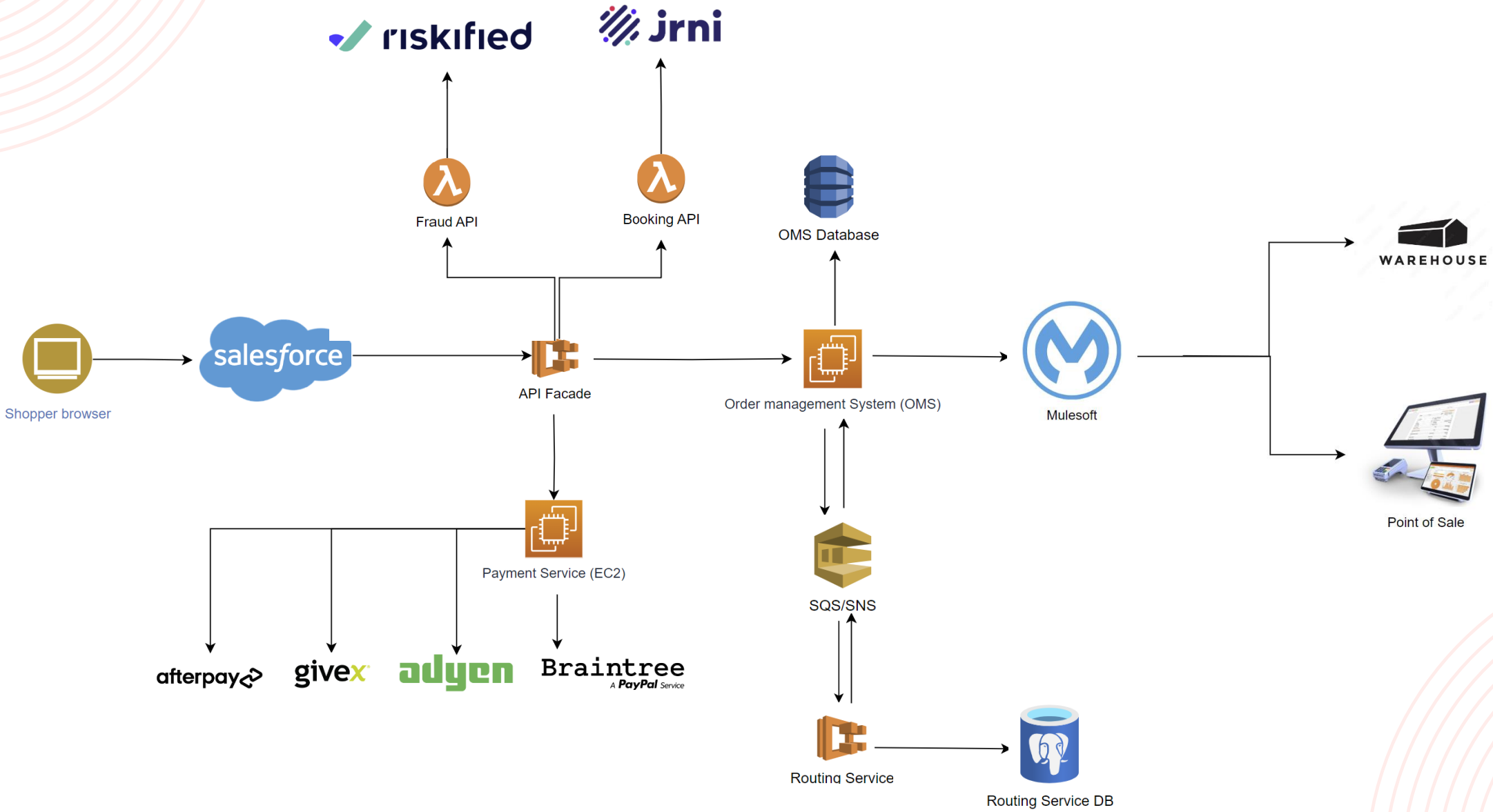
- **End to End tracing**
  Captures the flow of requests across services, showing the journey from the initial request to the response

- **Correlation IDs**
  Unique identifiers attached to requests and propagated through different services to correlate logs and traces.

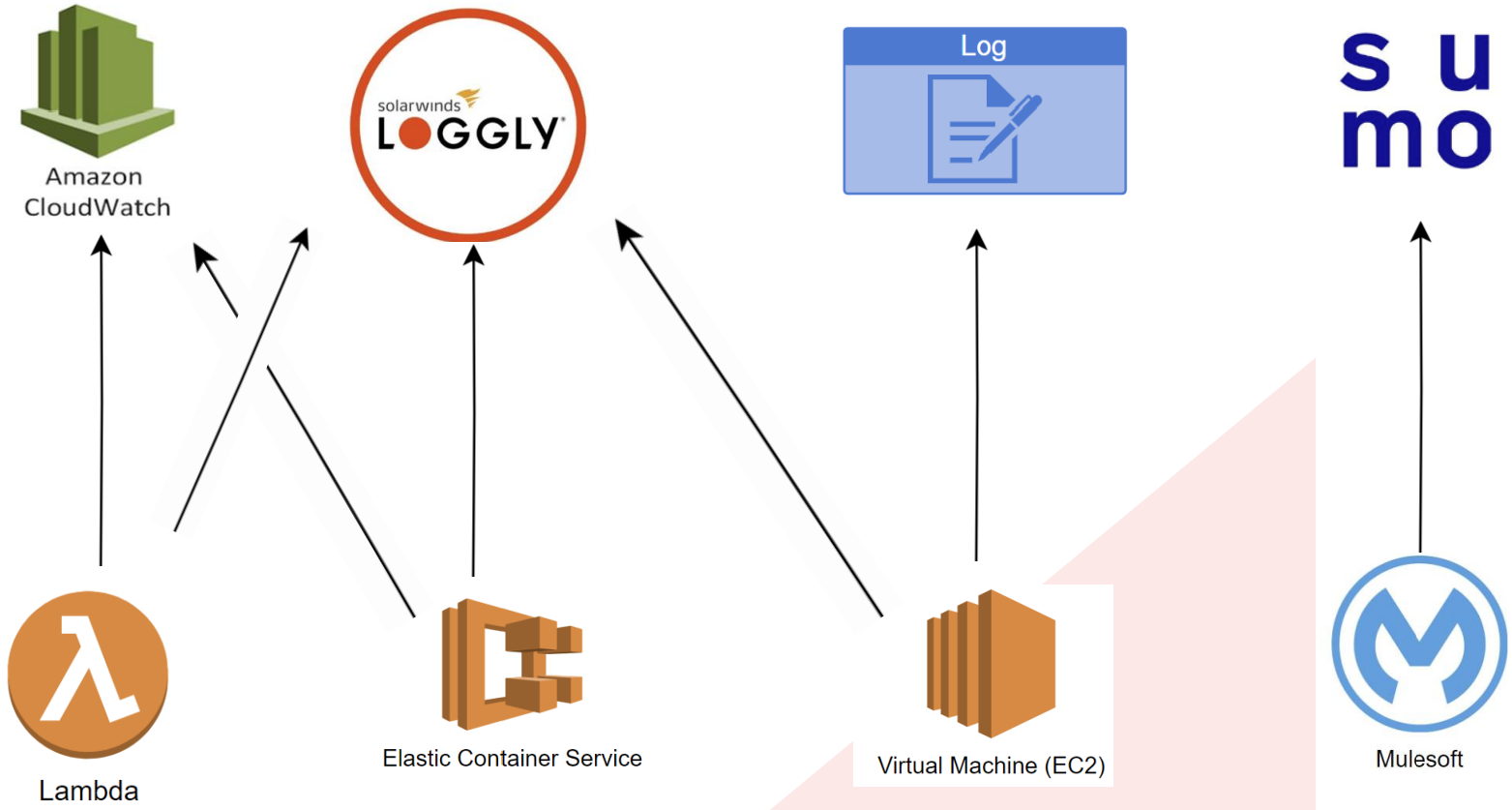
The Mecca Architecture

Let’s go behind the scenes

Mecca E-Commerce Architecture



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

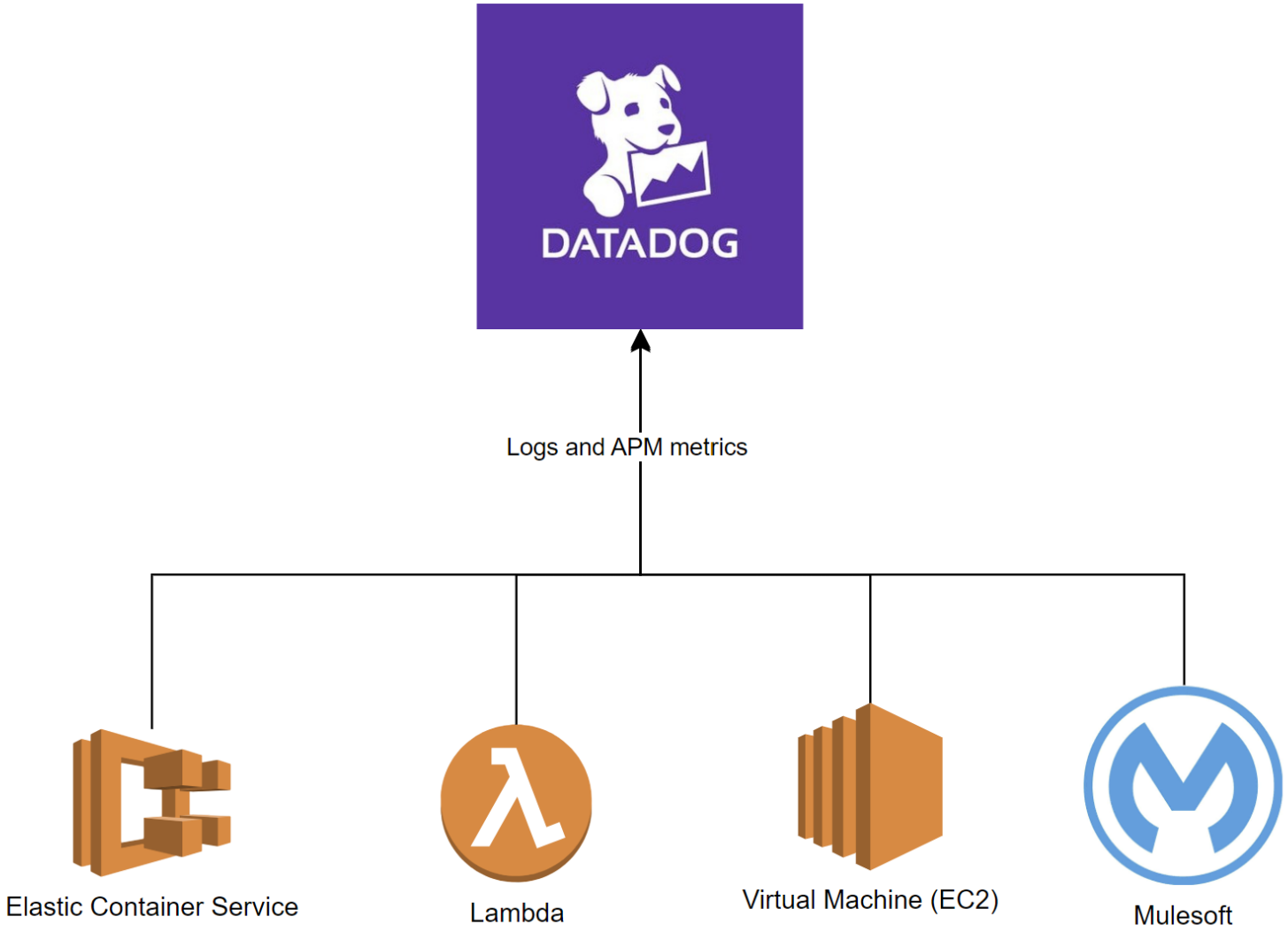
Alerting is not integrated nicely into our systems

Hard to understand the system

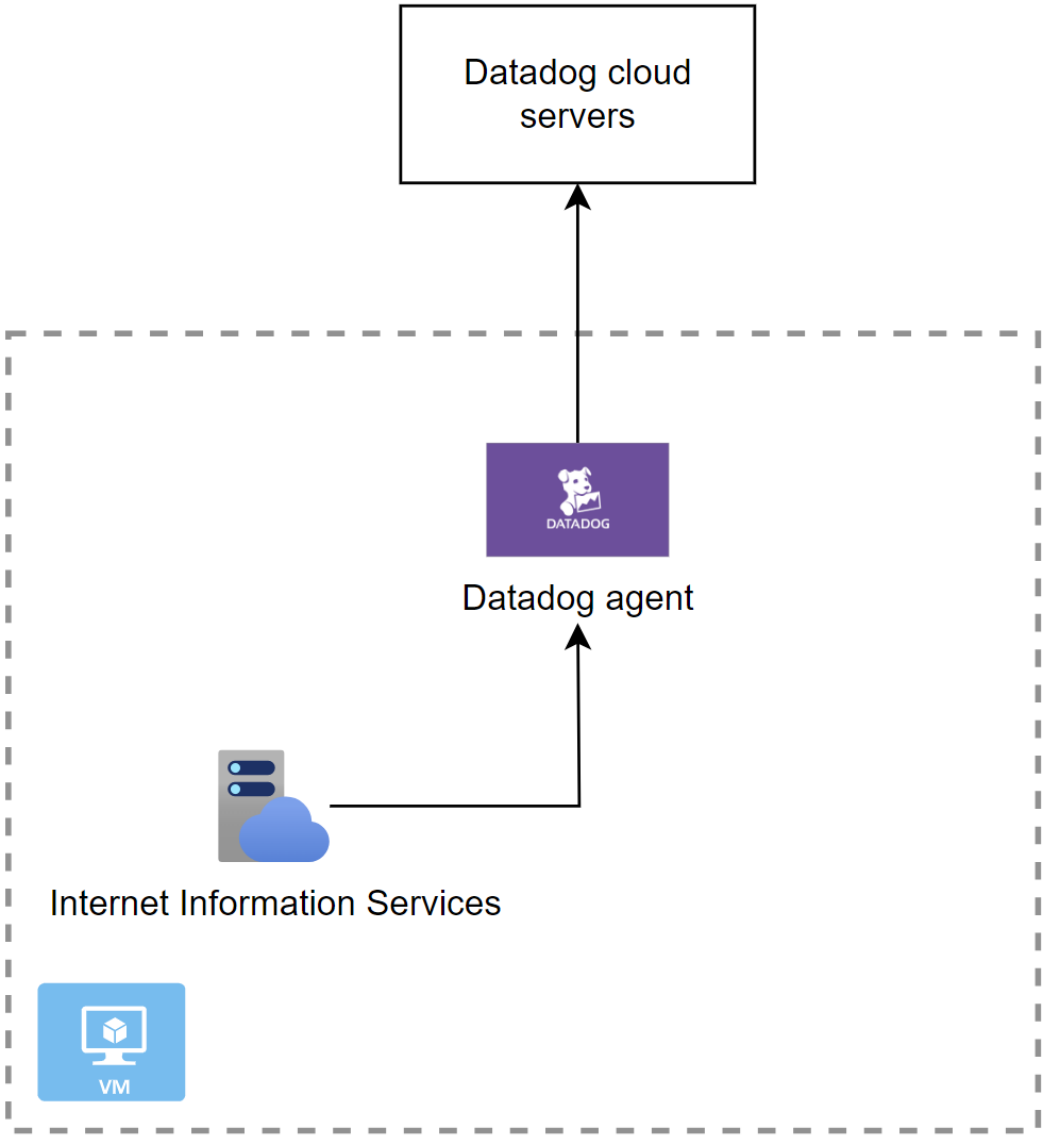
No easy way to create custom metric dashboards

Datadog + Mecca

How did Datadog solve our issues?


DATADOG
Logs and APM metrics
Elastic Container Service
Lambda
Virtual Machine (EC2)
Mulesoft

How it works?


Datadog cloud servers
DATADOG
Datadog agent
Internet Information Services
VM

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"]

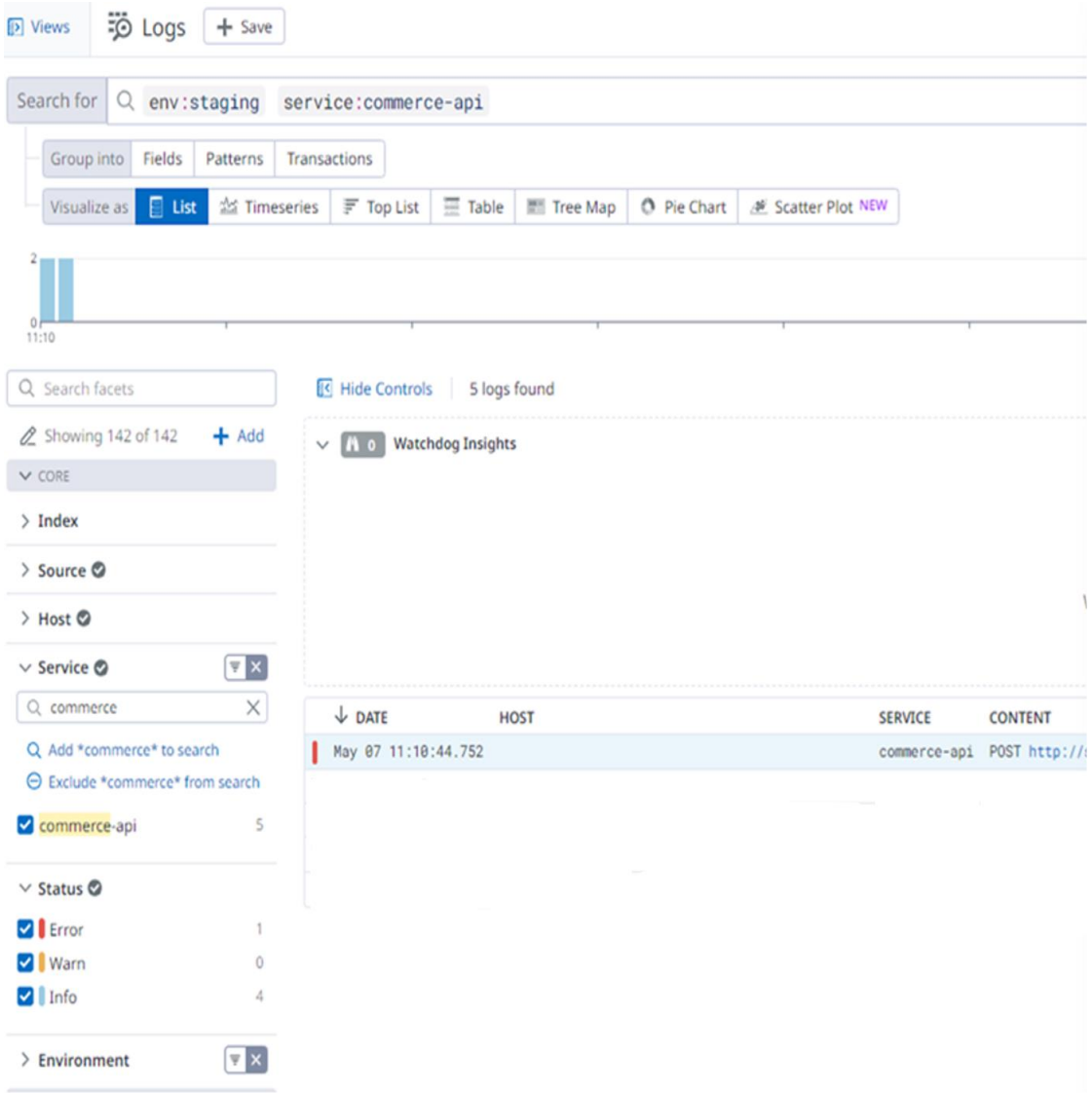
Monitor query:

```
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
```

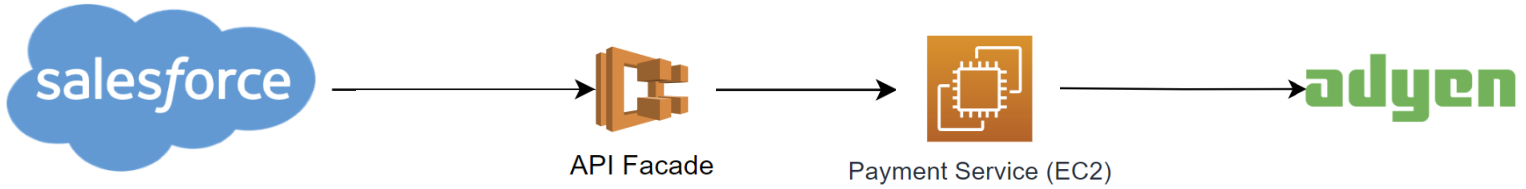
View in Datadog

Reply

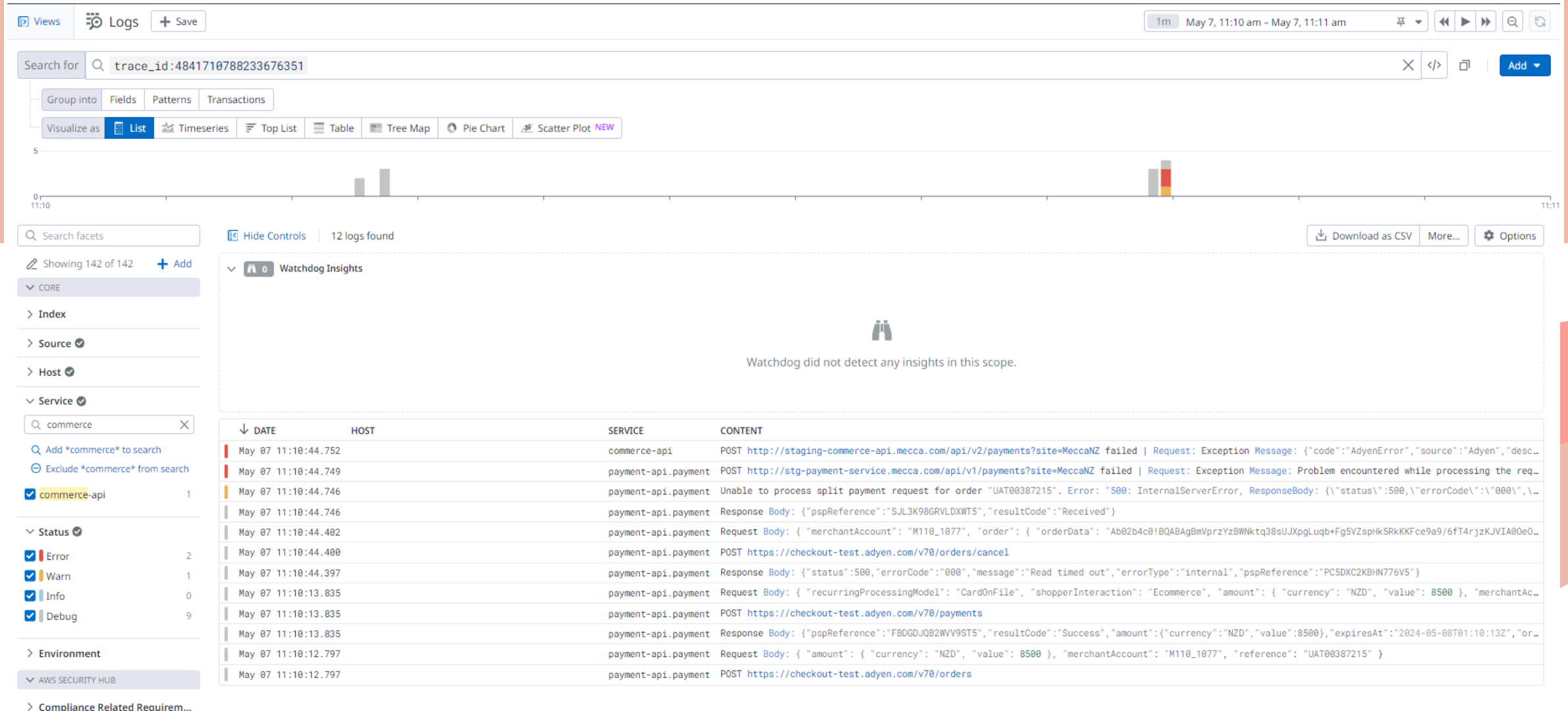
Inspecting error logs



Payment trace



Tracing Requests



Latency by Version

Search APM | env:shop.ist | Services | web-store

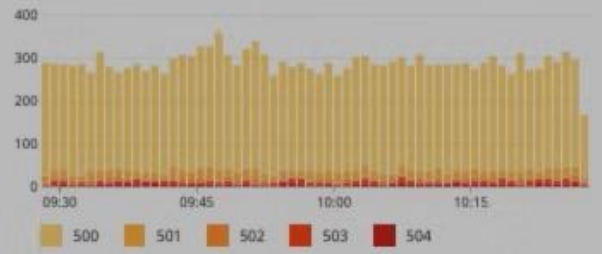
web-store

1h The Past Hour

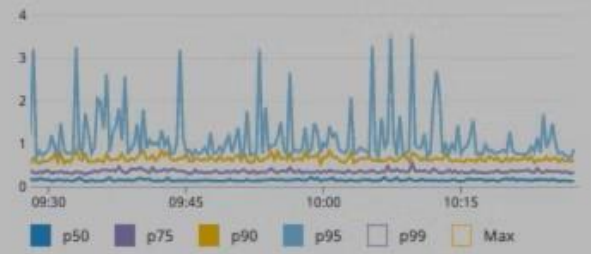
4 ALERT | 11 OK

Total Requests | 227k total (63.1 req/s)

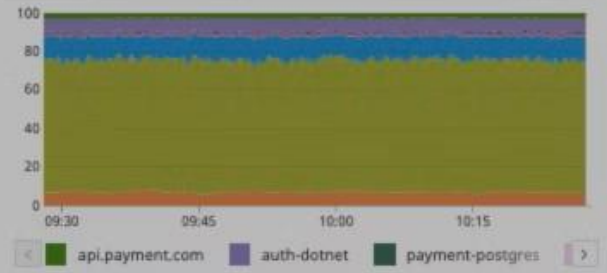
Total Errors | 17.1k total (4.7 req/s)



Latency

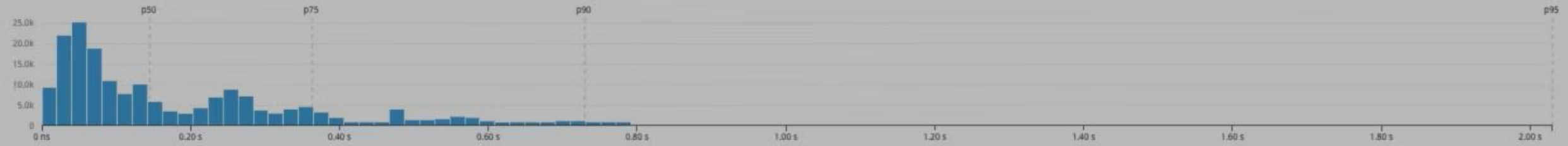


% of Time Spent | by | Service



Latency Distribution

p90 | p95 | p99 | All

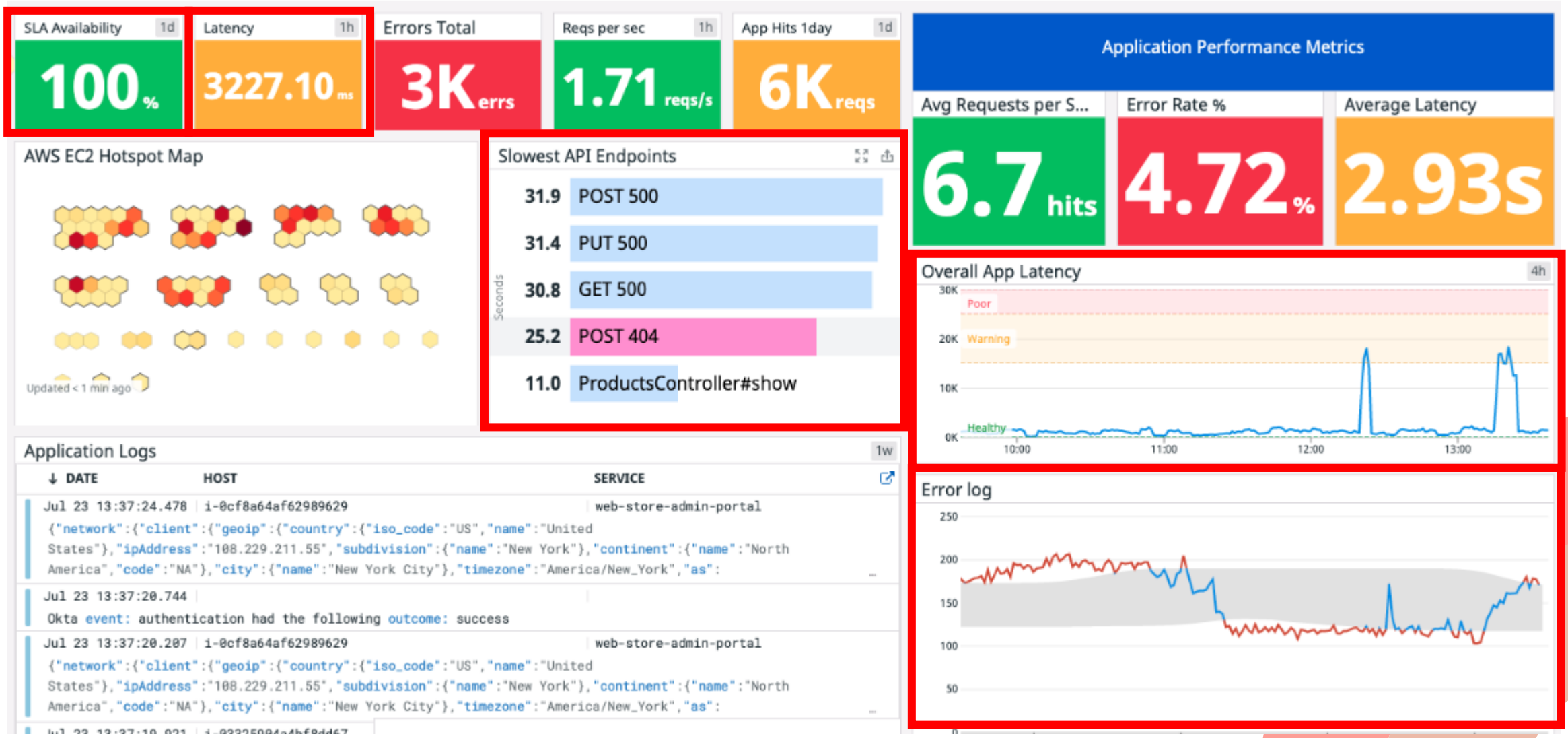


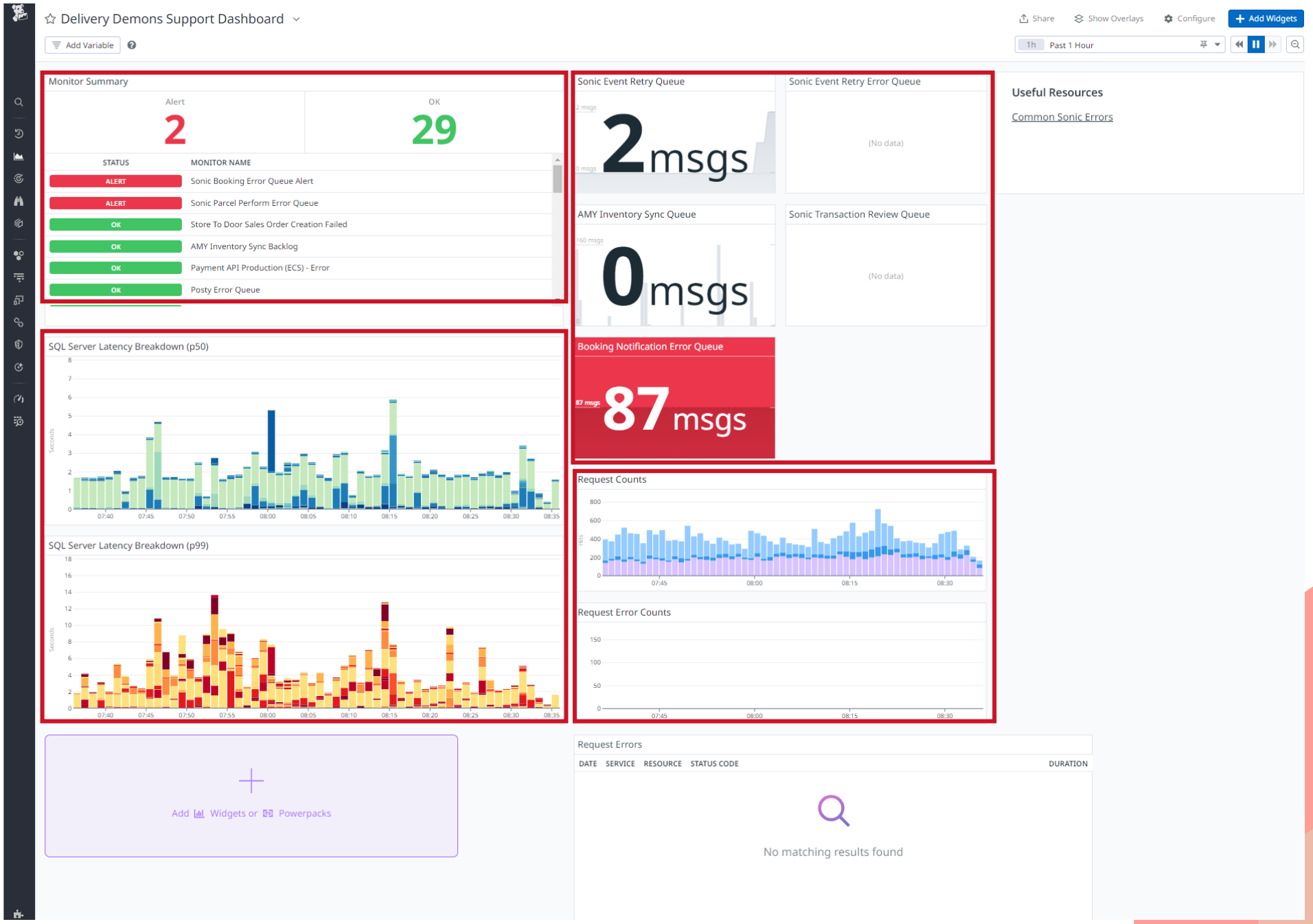
Resources

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




Delivery Demons Support Dashboard
Share
Show Overlays
Configure
Add Widgets
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
2msgs
0 msgs
Sonic Event Retry Error Queue
(No data)
Useful Resources
Common Sonic Errors
AMY Inventory Sync Queue
160 msgs
0msgs
Sonic Transaction Review Queue
(No data)
Booking Notification Error Queue
87 msgs
87 msgs
SQL Server Latency Breakdown (p50)
Seconds
07:40
07:45
07:50
07:55
08:00
08:05
08:10
08:15
08:20
08:25
08:30
08:35
SQL Server Latency Breakdown (p99)
Seconds
Request Counts
Hits
Request Error Counts
Add Widgets or Powerpacks
Request Errors
DATE
SERVICE
RESOURCE
STATUS CODE
DURATION
No matching results found

Thanks for Listening!

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