Splunk APM

NodeJS Lambda Producer/Consumer SQS
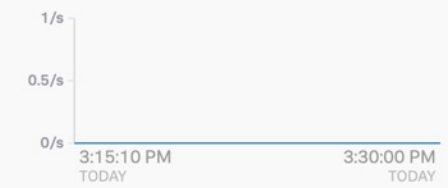
Tracing and Metrics Examples

≡

-15m ▾   All Environments ▾   All Workflows ▾   Services ▾   Tags ▾   Clear All
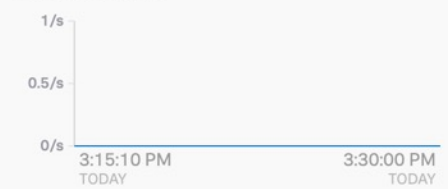
< Overview

SERVICE DEPENDENCY MAP -
The traces here are correlated by propagating context within the message placed on SQS queue.
We can see Producer calling SQS, and Producer + Consumer linked via the Message.

301ms → sqs

producer-lambda

223ms → consumer-lambda

ⓘ Show Legend

Services by Error Rate

1/s
0.5/s
0/s
3:15:10 PM   3:30:00 PM
TODAY   TODAY

0/s sqs
0/s producer-la...
0/s consumer-l...

Top Error Sources

1/s
0.5/s
0/s
3:15:10 PM   3:30:00 PM
TODAY   TODAY

0/s sqs
0/s producer-la...
0/s consumer-l...

Services By Latency (P90)

600ms
400ms
200ms
0ms
3:15:10 PM   3:30:00 PM
TODAY   TODAY

301ms sqs
223ms producer-la...
176ms consumer-l...

Traces

View Trace ID   Go
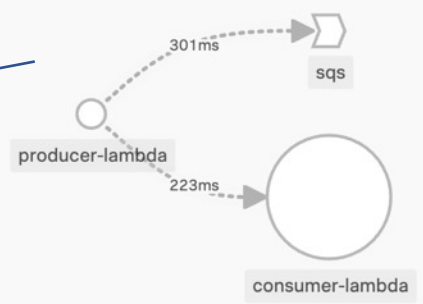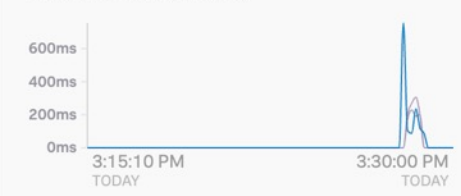
Tag Spotlight

| 2fa807edd450a1c8 | Apr 19 2021 15:28:00 | producer-lambda: lambda_node_producer-no dejs-function-1XDPE99S94779 | producer-lambda (3) consumer-lambda sqs | 10.19s |

Waterfall   Span Performance

| Service: Operation | | 0ms | 2.55s | 5.10s | 7.64s | 10.19s |

producer-lambda: lambda_node_producer-nodejs-function-1XDPE99S94779 — 152ms

producer-lambda: POST — 152ms

producer-lambda: GET — 120ms
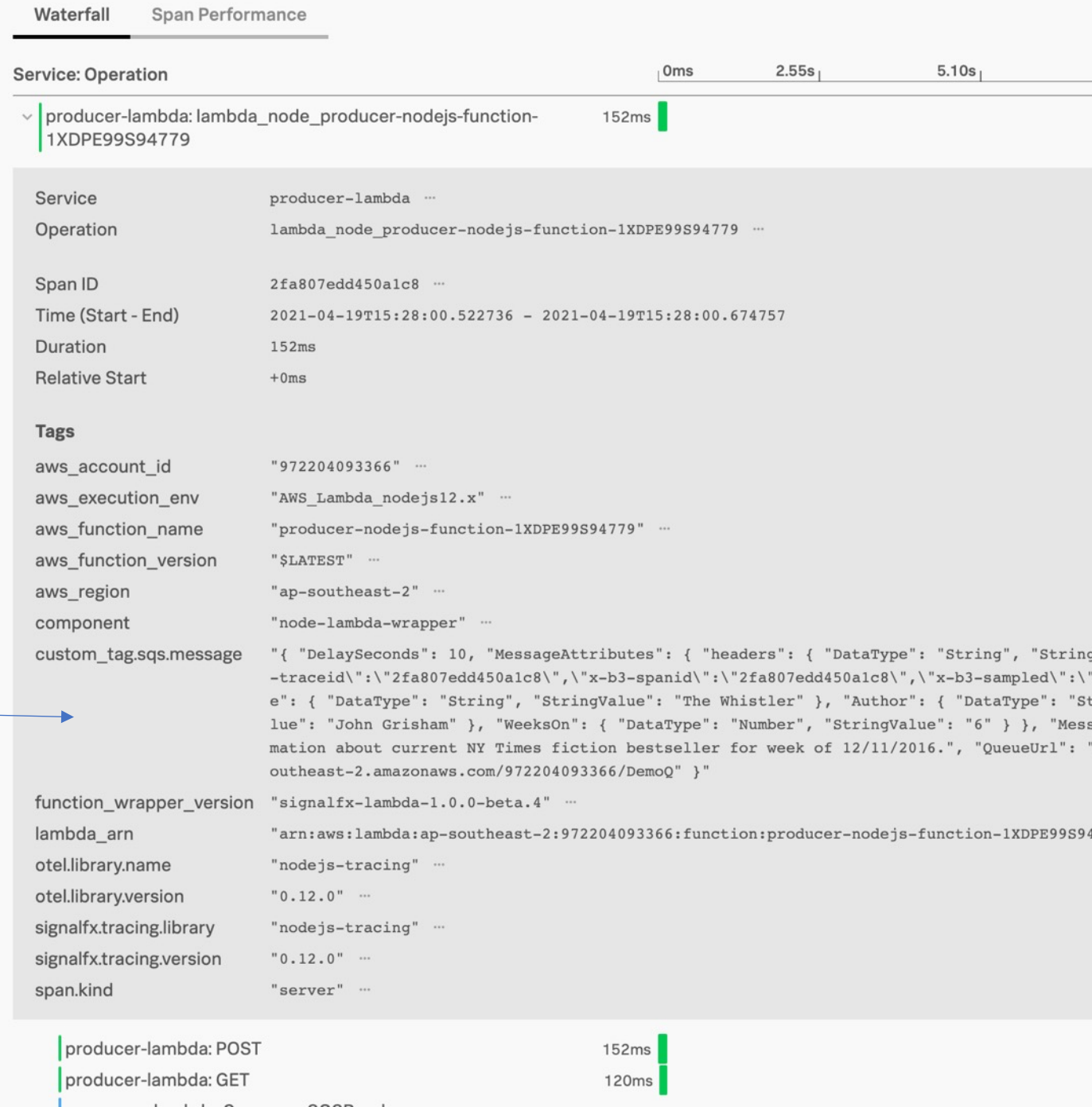
consumer-lambda: ConsumerSQSRead — 128μs

Looking at Individual Traces we can see the different calls being made by producer and consumer Lambda functions.

Lambda Tracing add rich tags to Spans, describing function execution details.
Note that an optional custom tag has been added capturing the message content. To capture this, an additional line was was added to the function shown bellow.

```
// To add any other data into Spans as Tags
const tracer = tracing.tracer();
tracer.scope().active().setTag("custom_tag.sqs.message", serialize(params));
```
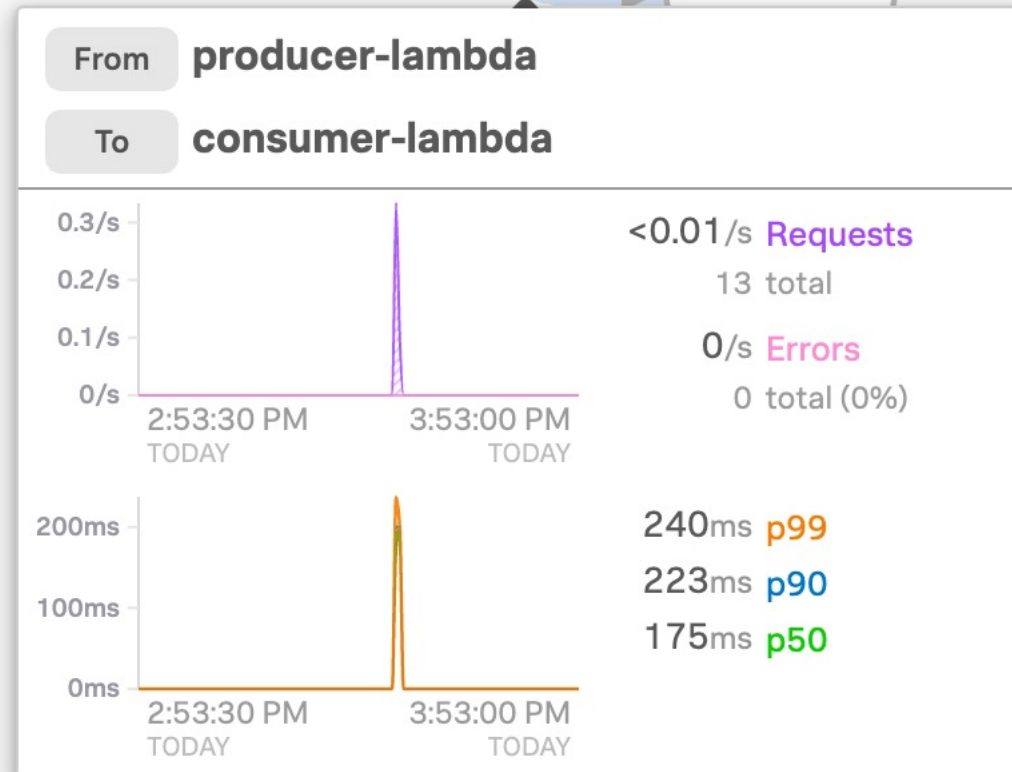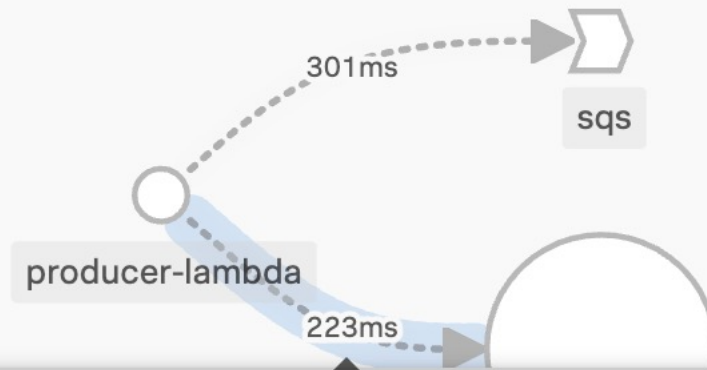
Waterfall   Span Performance

Service: Operation   0ms   2.55s   5.10s

∨ producer-lambda: lambda_node_producer-nodejs-function-   152ms
   1XDPE99S94779

Service   producer-lambda ⋯
Operation   lambda_node_producer-nodejs-function-1XDPE99S94779 ⋯

Span ID   2fa807edd450a1c8 ⋯
Time (Start - End)   2021-04-19T15:28:00.522736 - 2021-04-19T15:28:00.674757
Duration   152ms
Relative Start   +0ms

Tags

aws_account_id   "972204093366" ⋯
aws_execution_env   "AWS_Lambda_nodejs12.x" ⋯
aws_function_name   "producer-nodejs-function-1XDPE99S94779" ⋯
aws_function_version   "$LATEST" ⋯
aws_region   "ap-southeast-2" ⋯
component   "node-lambda-wrapper" ⋯
custom_tag.sqs.message   "{ "DelaySeconds": 10, "MessageAttributes": { "headers": { "DataType": "String", "String
                         -traceid\":\"2fa807edd450a1c8\",\"x-b3-spanid\":\"2fa807edd450a1c8\",\"x-b3-sampled\":\"
                         e": { "DataType": "String", "StringValue": "The Whistler" }, "Author": { "DataType": "St
                         lue": "John Grisham" }, "WeeksOn": { "DataType": "Number", "StringValue": "6" } }, "Mess
                         mation about current NY Times fiction bestseller for week of 12/11/2016.", "QueueUrl": "
                         outheast-2.amazonaws.com/972204093366/DemoQ" }"
function_wrapper_version "signalfx-lambda-1.0.0-beta.4" ⋯
lambda_arn   "arn:aws:lambda:ap-southeast-2:972204093366:function:producer-nodejs-function-1XDPE99S94
otel.library.name   "nodejs-tracing" ⋯
otel.library.version   "0.12.0" ⋯
signalfx.tracing.library "nodejs-tracing" ⋯
signalfx.tracing.version "0.12.0" ⋯
span.kind   "server" ⋯

producer-lambda: POST   152ms
producer-lambda: GET   120ms

Example of Span tags captured by Consumer.

Note in this example we used span.log() function to further enrich the span with corresponding log information.

| consumer-lambda: ConsumerSQSRead

| Service | consumer-lambda ⋯ |
| Operation | ConsumerSQSRead ⋯ |

Span ID	03dfe1fa06bab094 ⋯
Parent ID	2fa807edd450a1c8 ⋯
Time (Start - End)	2021-04-19T15:28:10.714286 - 2021-04-19T15:28:10.714414
Duration	128µs
Relative Start	+10.19s

Tags

aws_account_id	"972204093366" ⋯
aws_execution_env	"AWS_Lambda_nodejs12.x" ⋯
aws_function_name	"consumer-nodejs-function-HYQ47W505SUU" ⋯
aws_function_version	"$LATEST" ⋯
aws_region	"ap-southeast-2" ⋯
component	"node-lambda-wrapper" ⋯
lambda_arn	"arn:aws:lambda:ap-southeast-2:972204093366:function:consumer-nodejs-function-HY
otel.library.name	"nodejs-tracing" ⋯
otel.library.version	"0.12.0" ⋯
signalfx.tracing.library	"nodejs-tracing" ⋯
signalfx.tracing.version	"0.12.0" ⋯
span.kind	"server" ⋯

Logs

10.19s

| annotation | ""## EVENT: {\n \"Records\": [\n {\n \"messageId\": \"a43f4b13-7dbb-4aba-98f7-3b
dle\": \"AQEBi4HDb0Q+hyM/4nj+L4bNxa58BtiUpccRuv6/6klCMVKSuWPhI9cc0a7GEJgF3oaEnph
mcXpg9J7o8TUaRBW5WXDjJsBtXzAHHnrySonPqW8d6rN6Pj4PGNLwygEmvwyVc7GpgmotmcaLgsPv0fG
kdu0300JF9IWzNa8Piprnf0A/QN+B2lAEbG2+u5HPBUzjxGzkOPEzpMz6qLD30Nip+mDYD4Jr2eztg9y
50lDXPN6WgLdk9PPn7jy2zgQ3+3rlvF9GwhOTa21GShyau0eg5NG+ErMQJysXQpVzZMAh3ktrMxW2mBz
y\": \"Information about current NY Times fiction bestseller for week of 12/11/2
{\n \"ApproximateReceiveCount\": \"1\",\n \"SentTimestamp\": \"1618810080663\",\
63IQ7X6LZML:producer-nodejs-function-1XDPE99S94779\",\n \"ApproximateFirstReceiv
3\"\n },\n \"messageAttributes\": {\n \"headers\": {\n \"stringValue\": \"{\\\"x-
d450a1c8\\\",\\\"x-b3-spanid\\\":\\\"2fa807edd450a1c8\\\",\\\"x-b3-sampled\\\":\
alues\": [],\n \"binaryListValues\": [],\n \"dataType\": \"String\"\n },\n \"Wee |

Edge metrics provide Performance and Error breakdown across all the messages between producer and consumer.

301ms

sqs

producer-lambda

223ms

| From | producer-lambda |
| To | consumer-lambda |

<0.01/s Requests
13 total

0/s Errors
0 total (0%)

0.3/s
0.2/s
0.1/s
0/s
2:53:30 PM 3:53:00 PM
TODAY TODAY

240ms p99
223ms p90
175ms p50

200ms
100ms
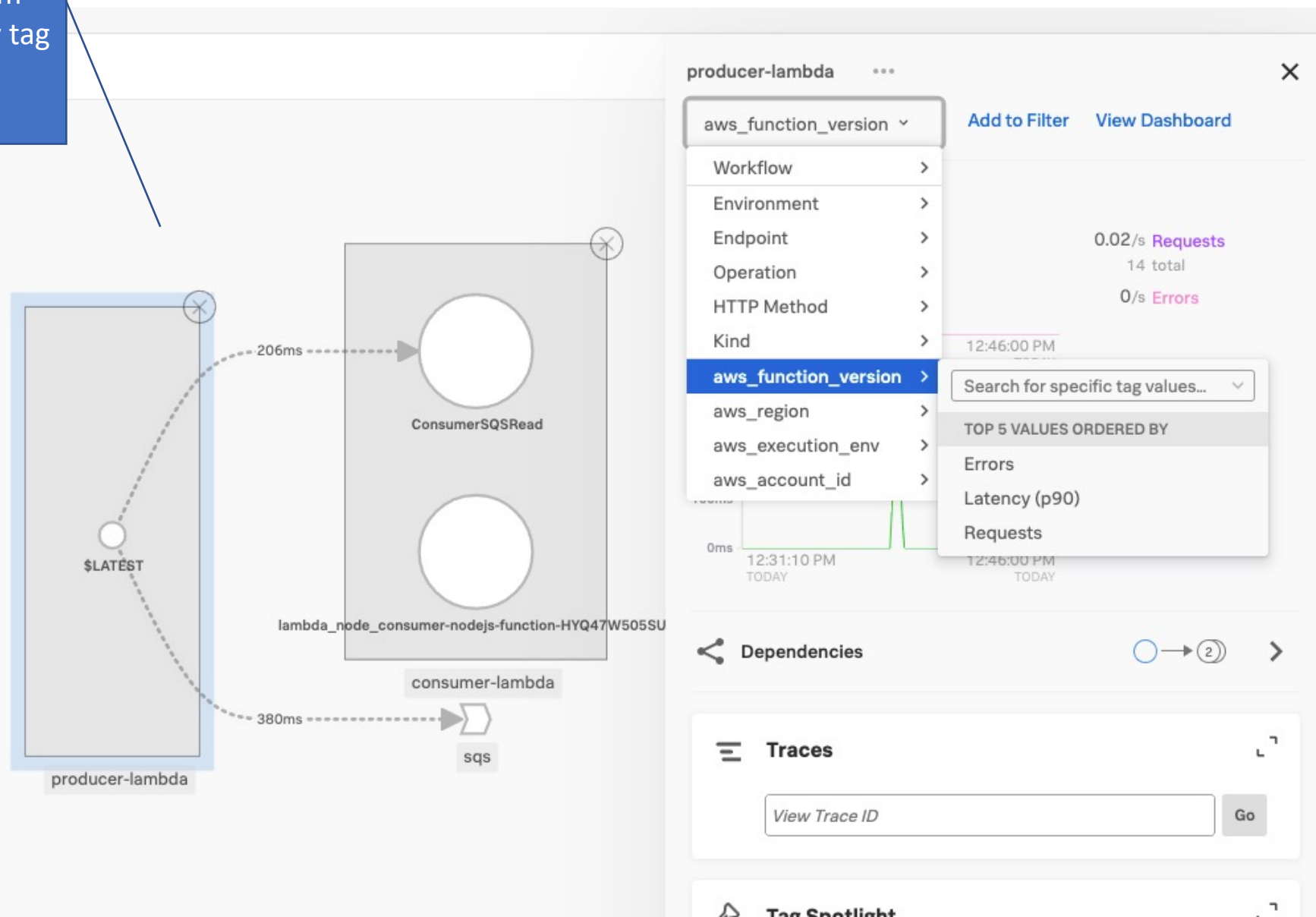0ms
2:53:30 PM 3:53:00 PM
TODAY TODAY

Indexed span tags allow for breakdown of troubleshooting metric sets.
Any of the span tags can be indexed and analyzed across all the requests for error and latency hotspots using Tag Spotlight view.
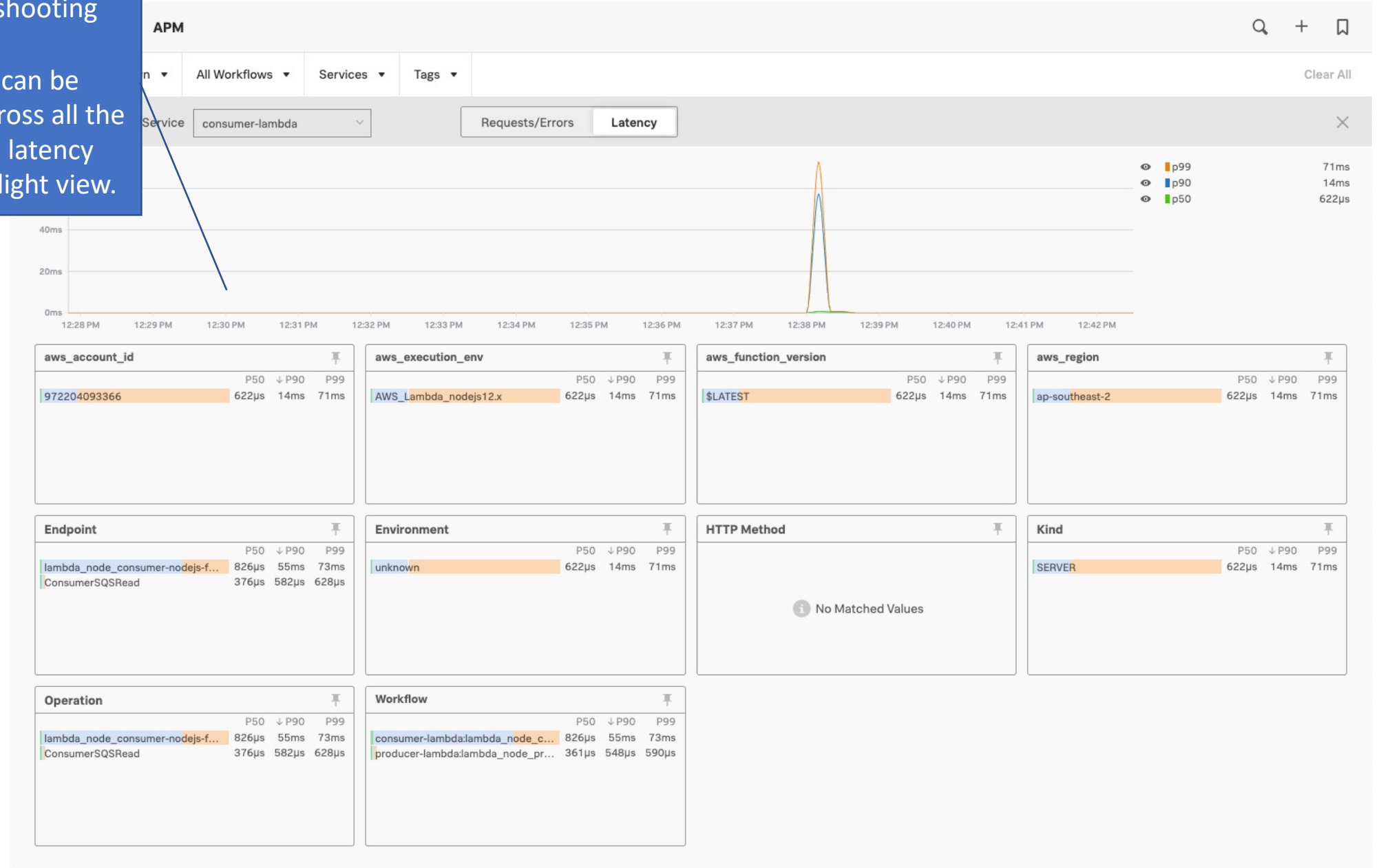
The service dependency map can also provide a useful visual of service behaviour and problem hotspots when broken down by tag values.

producer-lambda   •••   ✕

aws_function_version ⌄   Add to Filter   View Dashboard

Workflow	>
Environment	>
Endpoint	>
Operation	>
HTTP Method	>
Kind	>
aws_function_version	>
aws_region	>
aws_execution_env	>
aws_account_id	>

0.02/s Requests
14 total

0/s Errors

12:46:00 PM

Search for specific tag values... ⌄

TOP 5 VALUES ORDERED BY

Errors

Latency (p90)

Requests

206ms

ConsumerSQSRead

$LATEST

0ms
12:31:10 PM
TODAY

12:46:00 PM
TODAY

lambda_node_consumer-nodejs-function-HYQ47W505SU

consumer-lambda

380ms

sqs

producer-lambda

Dependencies   ○→②   >

Traces

View Trace ID   Go

Tag Spotlight

Service	consumer-lambda ...
Operation	ConsumerSQSRead ...
Span ID	38894191b1d5670c ...
Parent ID	648c4cab8bcee2c1 ...
Time (Start - End)	2021-04-20T12:18:1 :38:19.606200
Duration	139μs
Relative Start	+10.33s

AWS Lambda Function
KW Link
Splunk
Splunk
ToSplunk
Configure Data Links

Tags

aws_account_id	"972204093366" ...
aws_execution_env	"AWS_Lambda_nodejs
aws_function_name	"consumer-nodejs-function-HYQ47W505SUU" ...
aws_function_version	"$LATEST" ...
aws_region	"ap-southeast-2" ...
component	"node-lambda-wrapper" ...
lambda_arn	"arn:aws:lambda:ap-southeast-2:972204093366:function:consumer-nodejs-function-HYQ47W505SUU:$LATEST" ...
otel.library.name	"nodejs-tracing" ...
otel.library.version	"0.12.0" ...
signalfx.tracing.library	"nodejs-tracing" ...
signalfx.tracing.version	"0.12.0" ...
span.kind	"server" ...

Logs

10.33s

annotation   ""## EVENT: {\n \"Records\": [\n {\n \"messageId\": \"406e9067-9405-4dba-a275-269a6a880080\",\n \"receiptHandle\":
\"AQEBGlaomyQYXRALikYirscIVe5Rx0Av+5WTjd8SoY/Igab6Y0GXlCltlsESXAePhPBKwkffKehQWwAqZJmGlMOmC/7RPUuxvJ6TIV6XhmVSjElx2
lhnp+zOTusY26YltqzIKh2fvx3Vxg3U08KX1HRBSzJmQC2ub5XoykPy0k9PnedItzzE4c7NAHihFu09FsmWs1gaQX+0jJ0zivp/EMP/SXUZK9J2qS+r
dFF7nIUPte0HbbBtqonQgA+xWq1RRv0ovko4hsYTy6Jz1VjYsNPg2/h2O6CsiGIhyilLyf01kIBqCwCKty1/q0D8f5leC3P51R95DalEfwSutHse4U+
Be4m22gQrqgmGi2Qa915qcdkD6KqDYaLNaPVL39/h0kCJ0Nip+KBhmEGsnxy8g591IA==\",\n \"body\": \"Information about current NY
Times fiction bestseller for week of 12/11/2016.\",\n \"attributes\": {\n \"ApproximateReceiveCount\": \"1\",\n \"S

Tags can also be linked to Corresponding Dashboards and Log searches
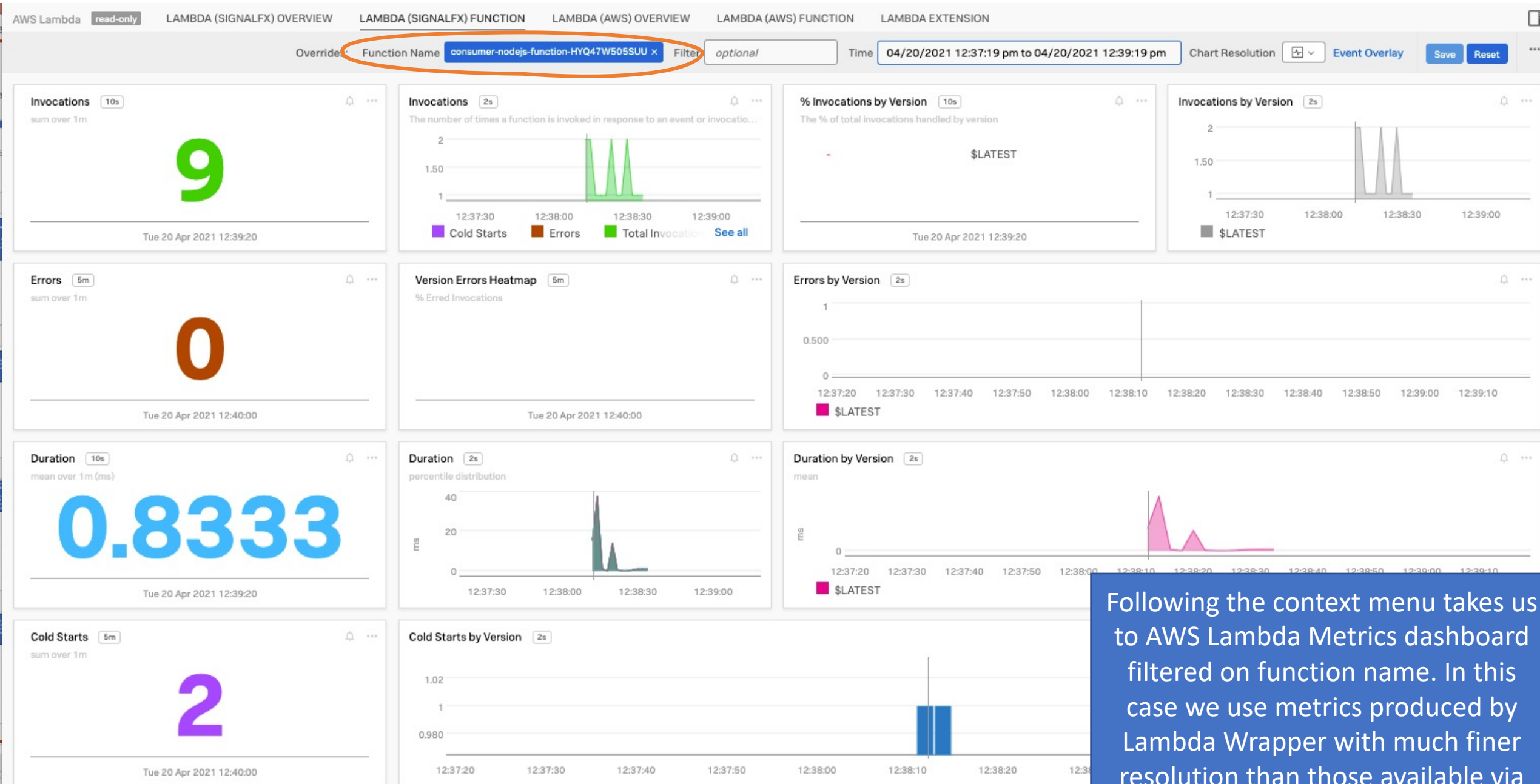
Following the context menu takes us to AWS Lambda Metrics dashboard filtered on function name. In this case we use metrics produced by Lambda Wrapper with much finer resolution than those available via CloudWatch sync

Using Splunk's Lambda Wrapper you can also send custom metrics in addition to out of the box metrics captured in the previous dashboard.

```
// send custom metrics
signalFxLambda.helper.sendGauge('books.weeksOn', 6);
```

Connect Your Data

Connect to your systems and data sources.

AWS SERVICES

Amazon Web Services	AWS ALB	Amazon API Gateway	AWS Auto Scaling	Amazon CloudFront	Amazon CloudWatch Events	Amazon Dynamo DB	Amazon EBS
Amazon EC2	Amazon ECS	Amazon EKS	Amazon ElastiCache	AWS ELB	Amazon Kinesis Analytics	Amazon Kinesis Streams	AWS Lambda
AWS OpsWorks	Amazon RDS	Amazon Redshift	Amazon Route 53	Amazon SNS	Amazon SQS	AWS Optimizer	
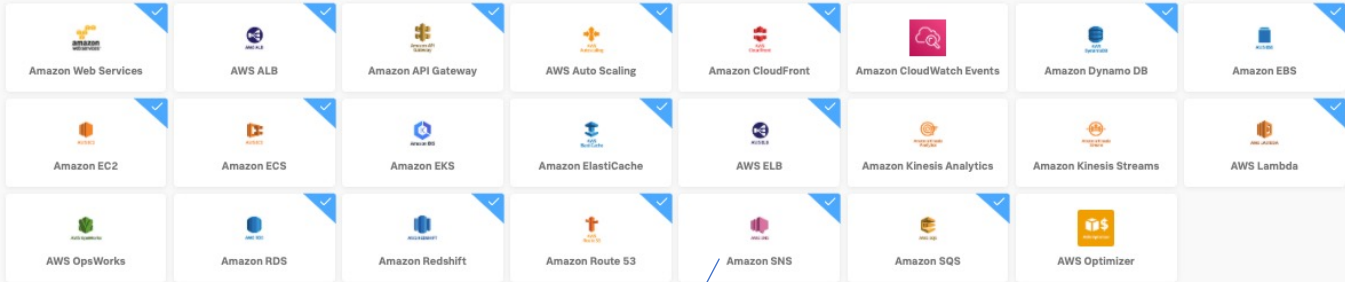
Additionally, Splunk supports integration to AWS CloudWatch, including SQS metrics provided by CW

DemoQ (ap-southeast-2)
Name   DemoQ
Region   ap-southeast-2
Queue Size   0

Clear All

Dashboard: SQS Queues

 # Active Queues [5m]

1

Tue 20 Apr 2021 13:10:00

Total #Msg / Min [3m]

Tue 20 Apr 2021

Total Sent Bytes / Min [3m]

Top Queues #Msg Sent / Min [5m]

0   ap-southeast-2 | DemoQ | NumberOfMessagesSent - Scale:60 - Sum by QueueName,aws_region - Top 5

Tue 20 Apr 2021 13:05:00

Top Queues #Msg Recv / Min [5m]

0   ap-southeast-2 | DemoQ | NumberOfMessagesReceived - Scale:60 - Sum by QueueName,aws_region - Top 5

Tue 20 Apr 2021 13:10:00

Age of oldest message (secs) [1m]

0   DemoQ | ap-southeast-2 | ApproximateAgeOfOldestMessage - Sum by QueueName,aws_region

Tue 20 Apr 2021 13:16:00

Appx #Msg Visible [3m]

Appx #Msg Not Visible [3m]

Appx #Msg Delayed [3m]

Total #Msg Deleted / Min [3m]