Solace PubSub+ Distributed Tracing suing self-managed OTEL Collector with Jaeger, Dynatrace, New Relic and DataDog

solace.
PubSub+
Distributed
Tracing

Demo 101 for dummies, experts and everyone in between

Table of Contents

1 Purpose

Describe how to get OpenTelemetry (OTEL) traces from a simple application chain to Jaeger and/or other observability Cloud solutions using standard self-managed versions of OTEL collector and Jaeger.

1.1 Application chain

Solace SDKPerf ***publisher*** – Solace Broker ***topic*** – Solace Broker ***queue1*** and ***queue2*** – Solace SDKPerf ***consumer***

1.2 Reference

Solace PubSub+ Distributed Tracing is an additional option for Solace PubSub+ brokers. This demo is based on work from my colleague Daniel Brunold (https://github.com/dabgmx, also well-known for his work on the Solace Prometheus Exporter, see https://github.com/solacecommunity/solace-prometheus-exporter)
For this demo Daniel got some good inspiration from the Solace Codelabs 'Getting Started with Solace Distributed Tracing and Context Propagation' at https://codelabs.solace.dev/codelabs/dt-otel/

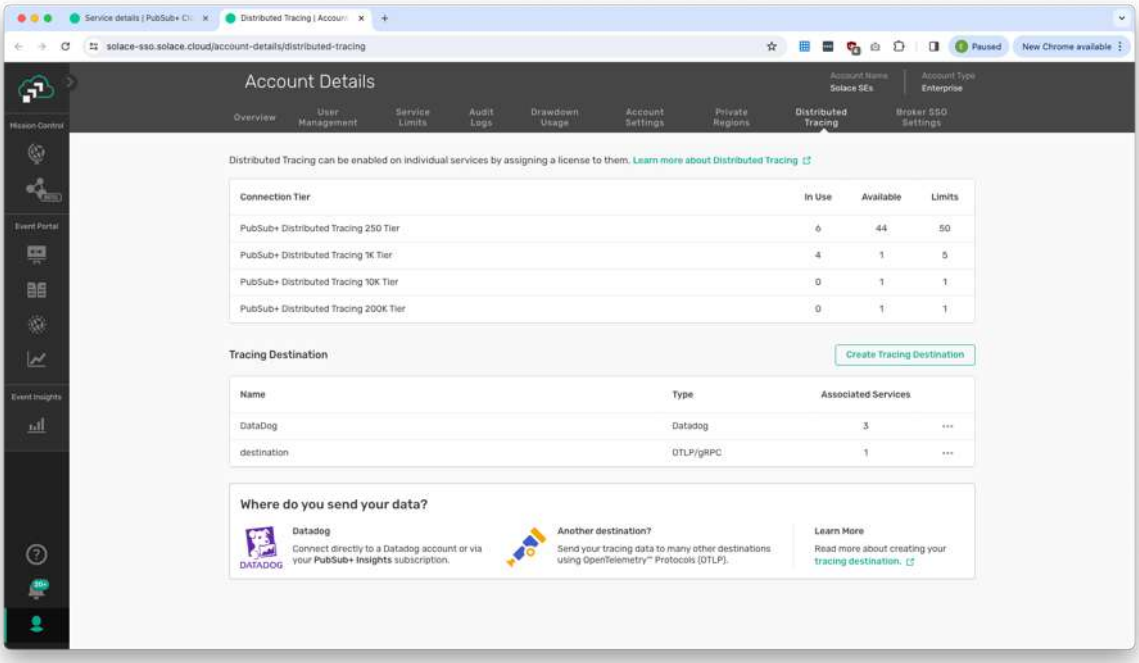
2 Setup

2.1 Prerequisites

A Solace broker running in the PubSub+ Cloud platform or self-managed.

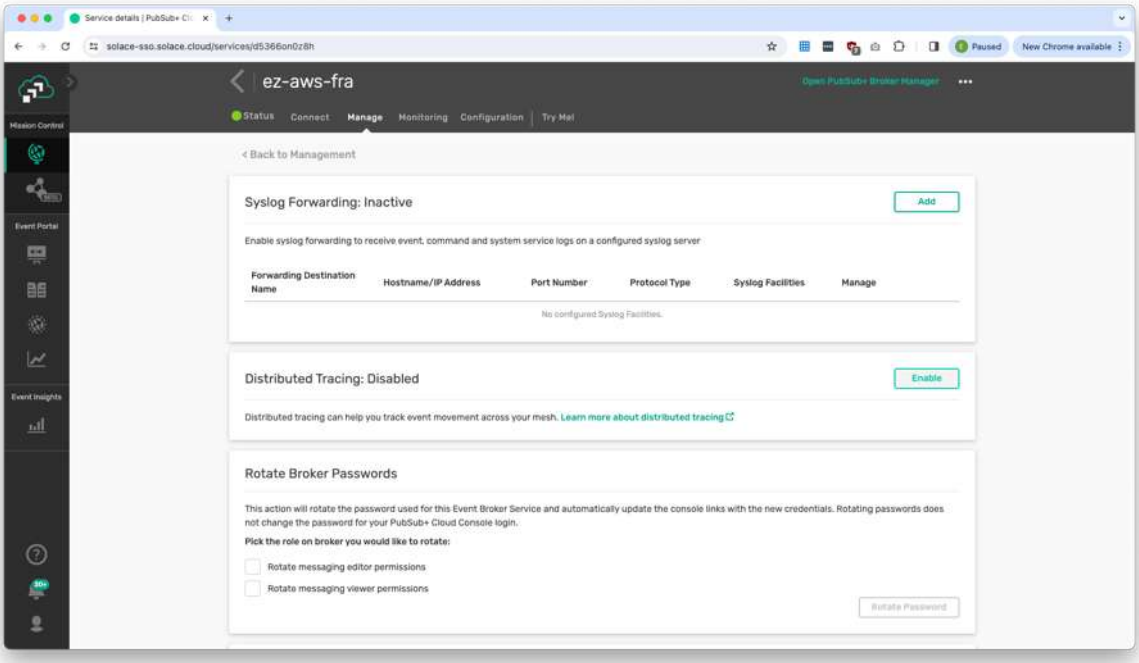
2.2 Configuration

For Solace PubSub+ Cloud brokers Distributed Tracing can be enabled on individual services by assigning a license to them. This license is available for multiple Connection Tiers.

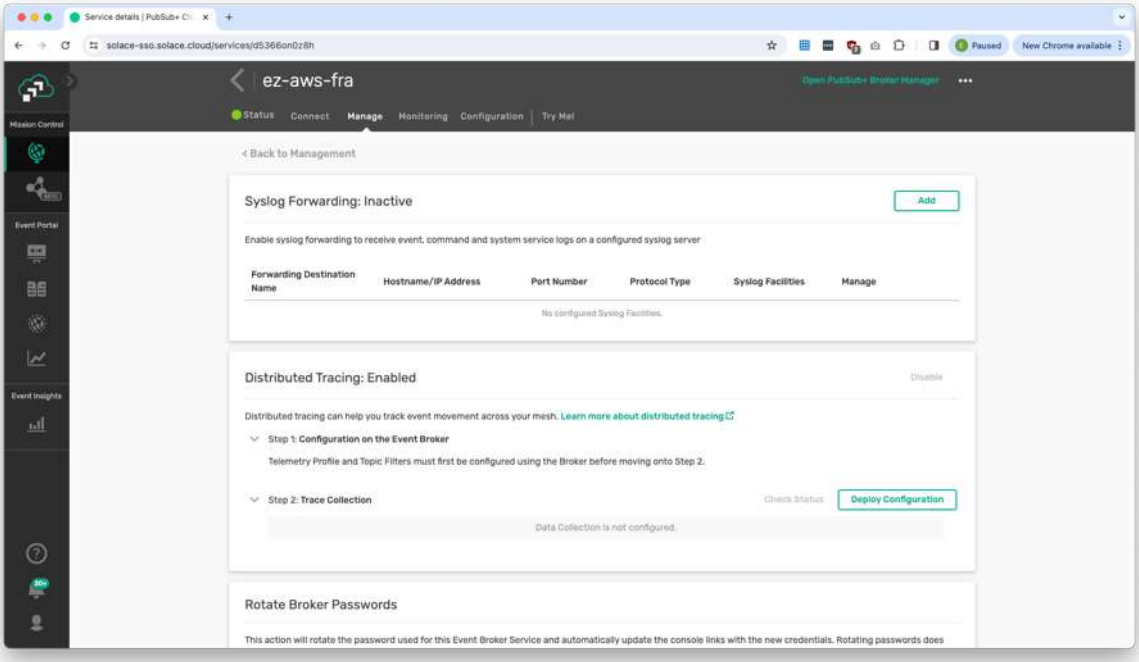


In this demo you will enable Distributed Tracing but you will not use the [Deploy Configuration] option to deploy a managed OTEL collector as you will use a self managed OTEL collector with local Jaeger and optional other destinations.

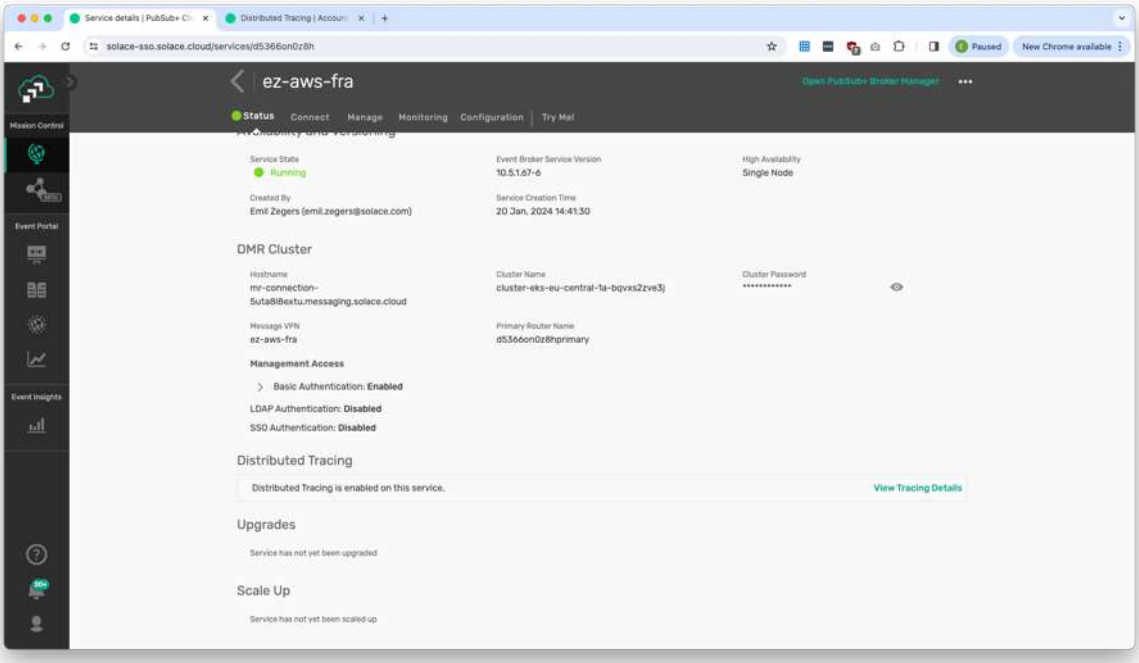
In Mission Control go to Cluster Manager and select the service where you want to use Distributed Tracing. In the service overview click Manage then Advanced Options. In the Distributed Tracing section click [Enable]



Do not click [Deploy Configuration] as you will setup your own OTEL collector in this demo.

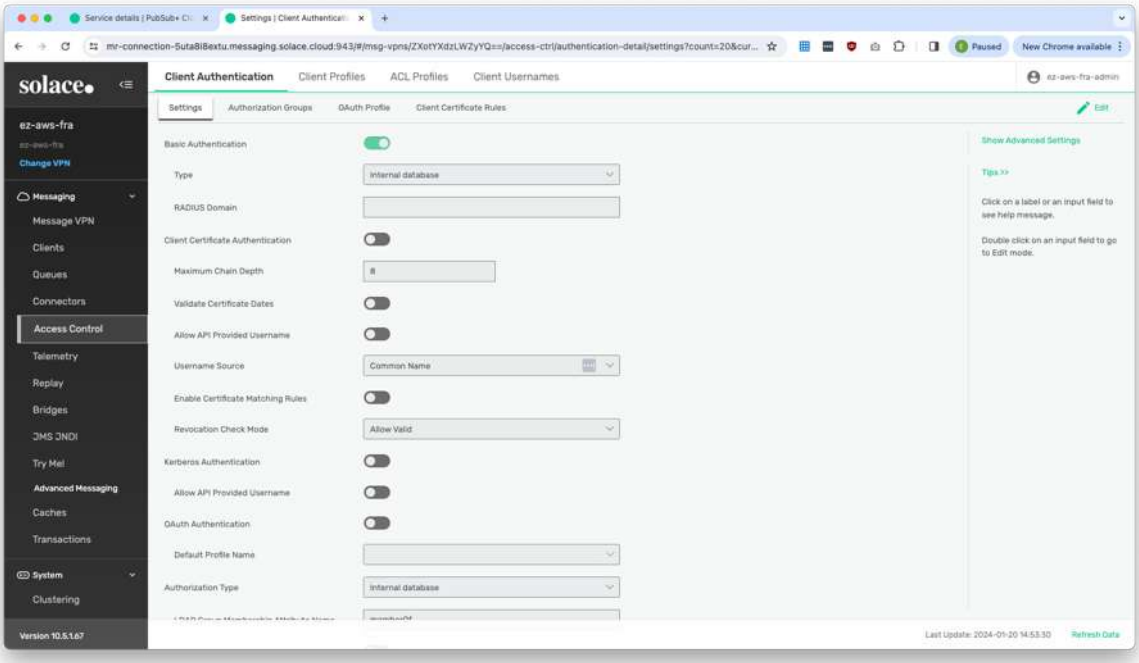


When enabled you'll find a section Distributed Tracing in the Status overview.

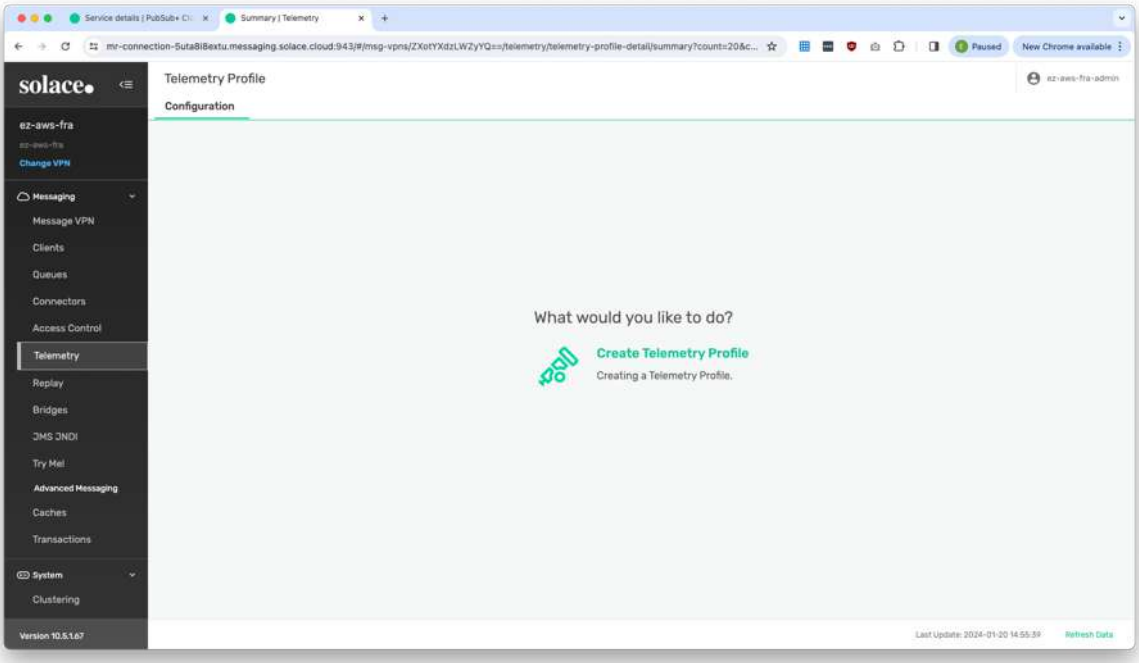


2.3 Configure Broker

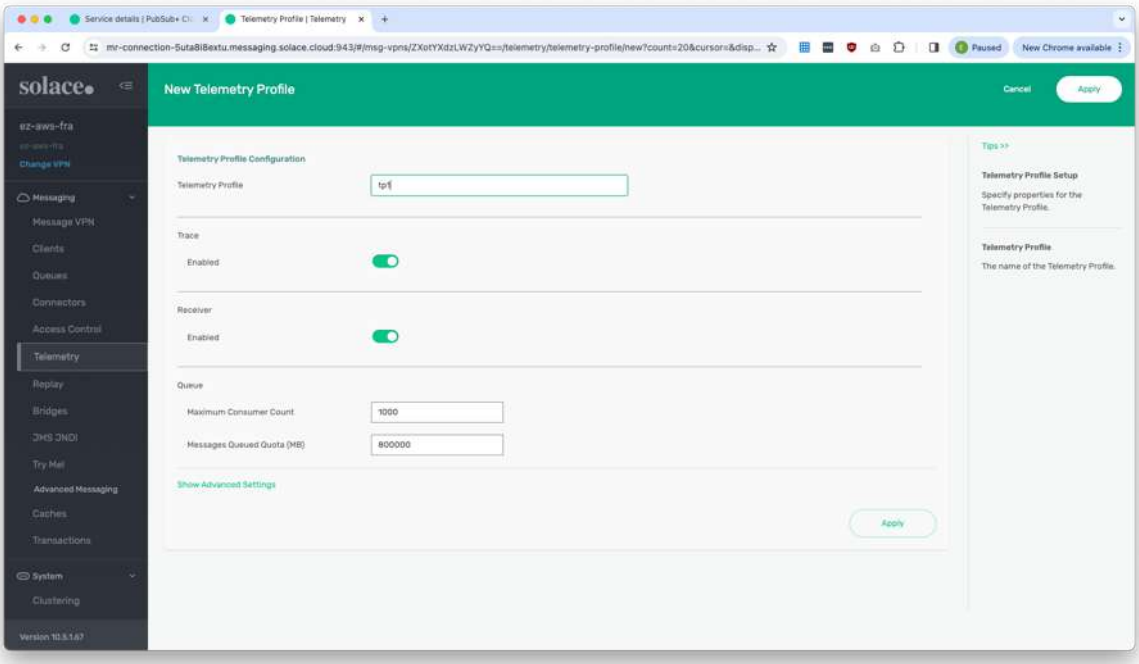
Open PubSub+ Broker Manager and verify under Access Control that Basic Authentication is enabled and set to Type Internal database.



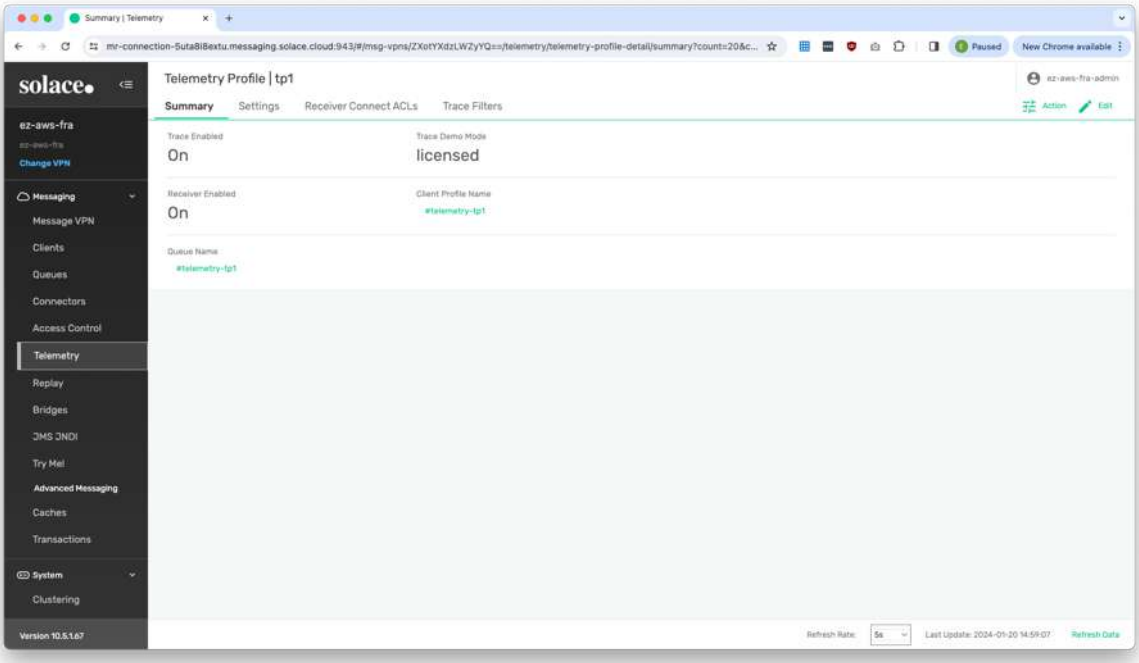
At Telemetry click Create a Telemetry Profile.



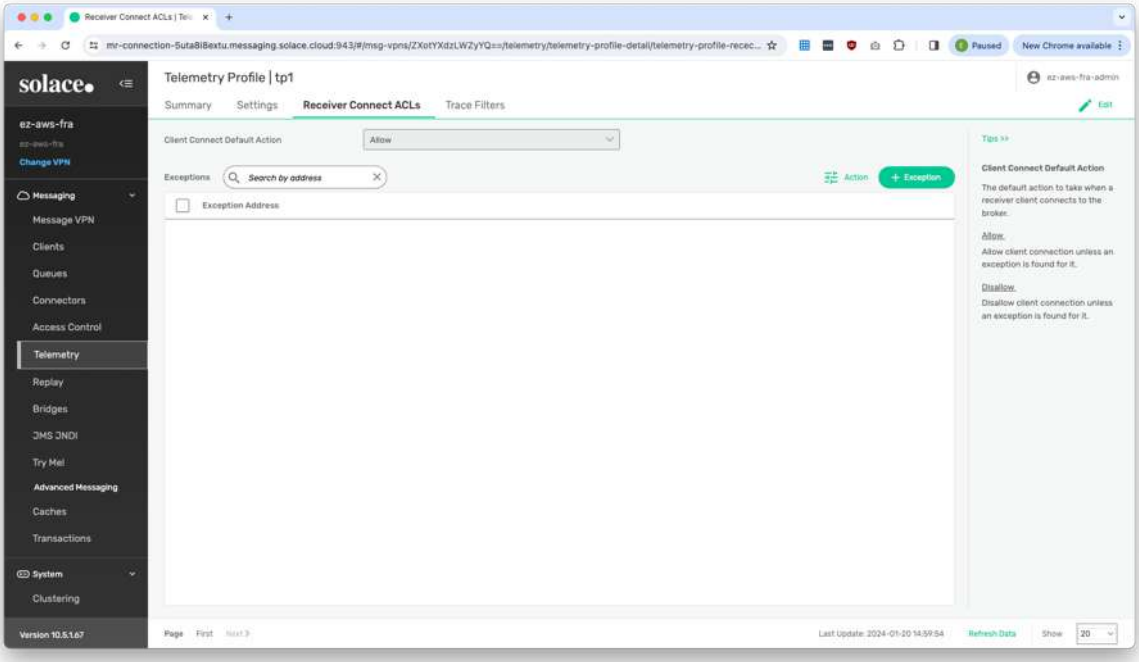
Use name "tp1" and check if Trace and Receiver are enabled then click [Apply]

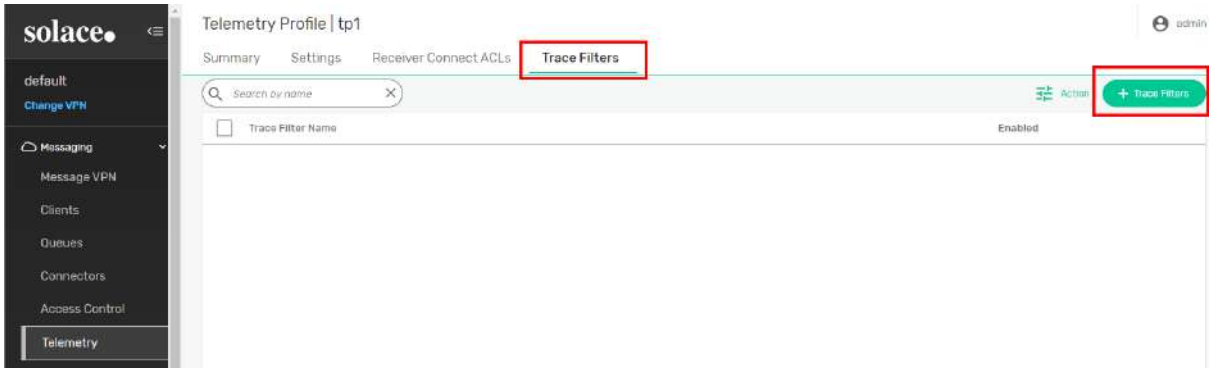


Telemetry Profile is displayed with Client Profile Name and Queue Name #telemetry-tp1

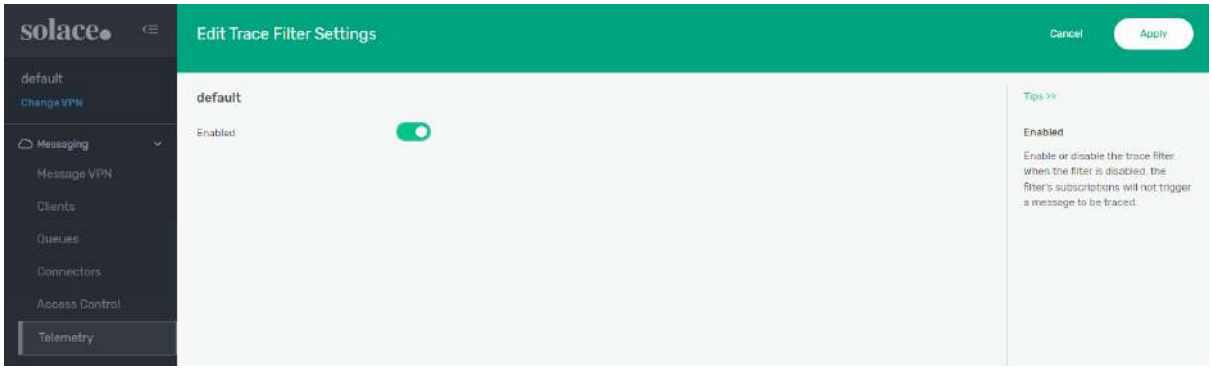


Click Edit at Receiver Connect ACLs to switch from Disallow to Allow and click [Apply]

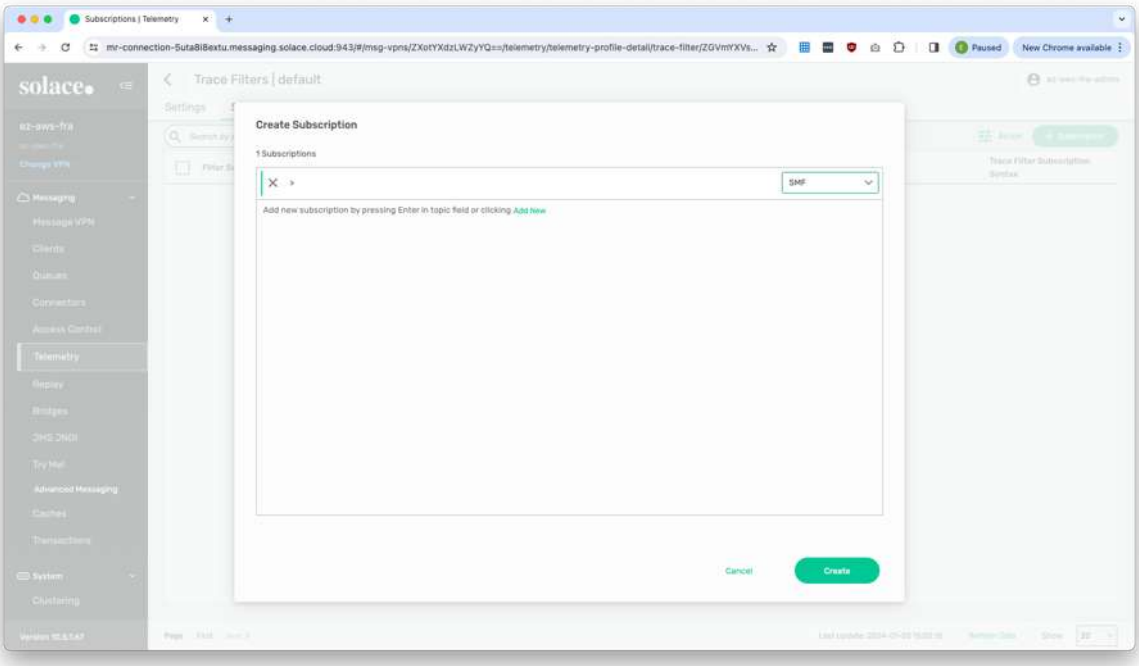


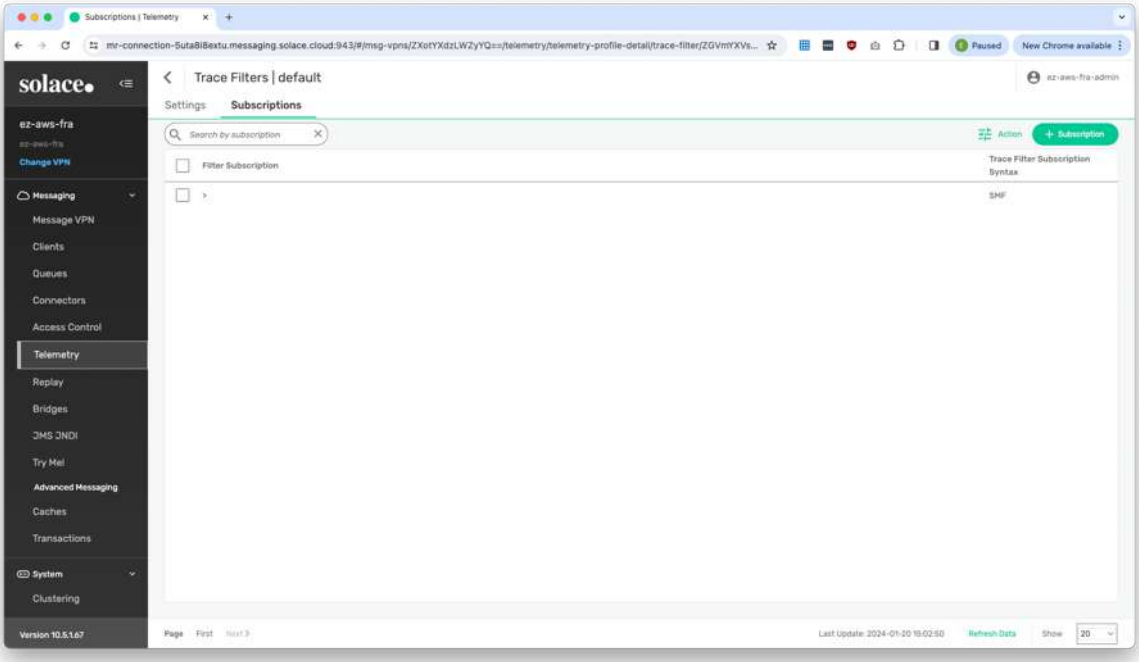


At Trace Filters click [+ Trace Filters] to add a filter with name "default" and set it to Enabled.

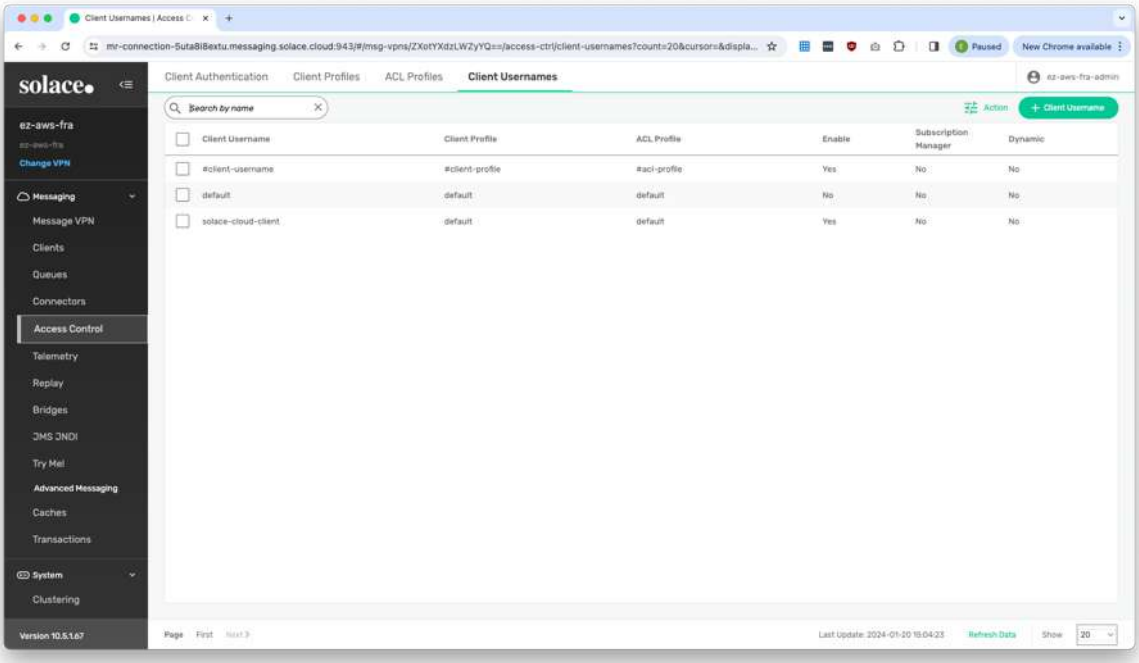


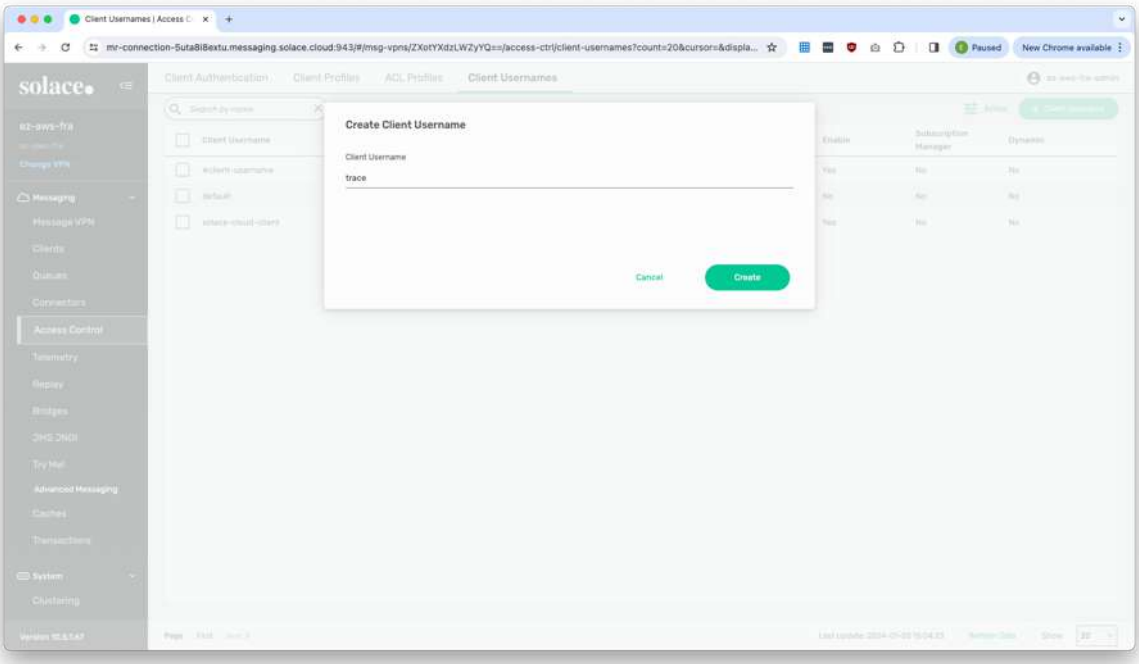
Open this filter and create a subscription using the *greater than wildcard sign* ">"

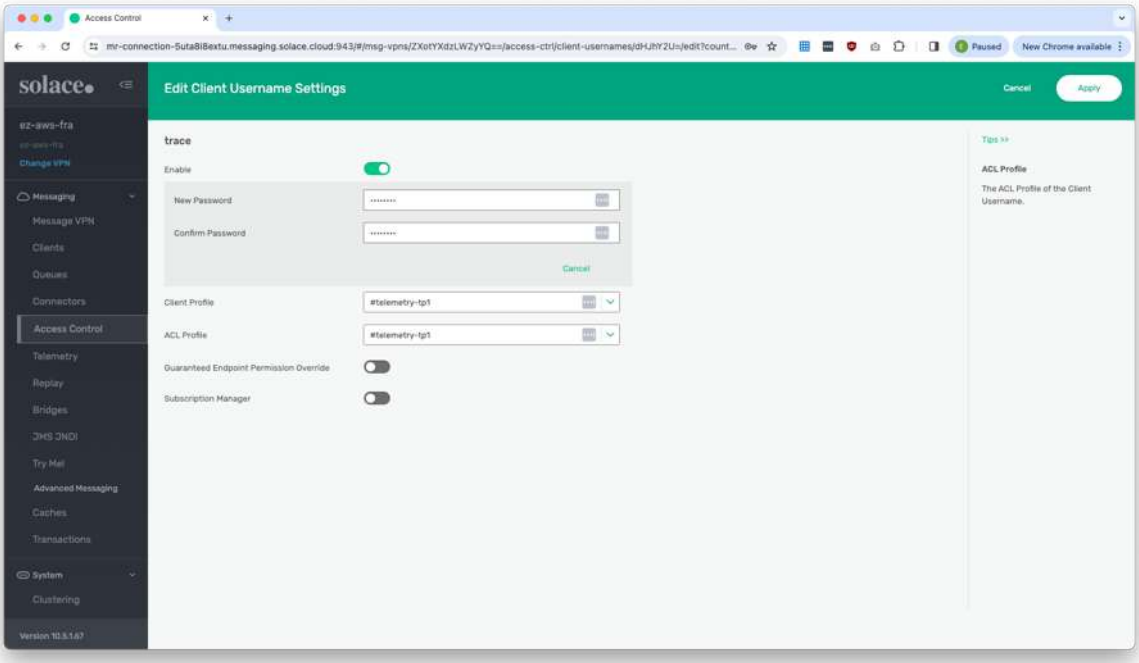




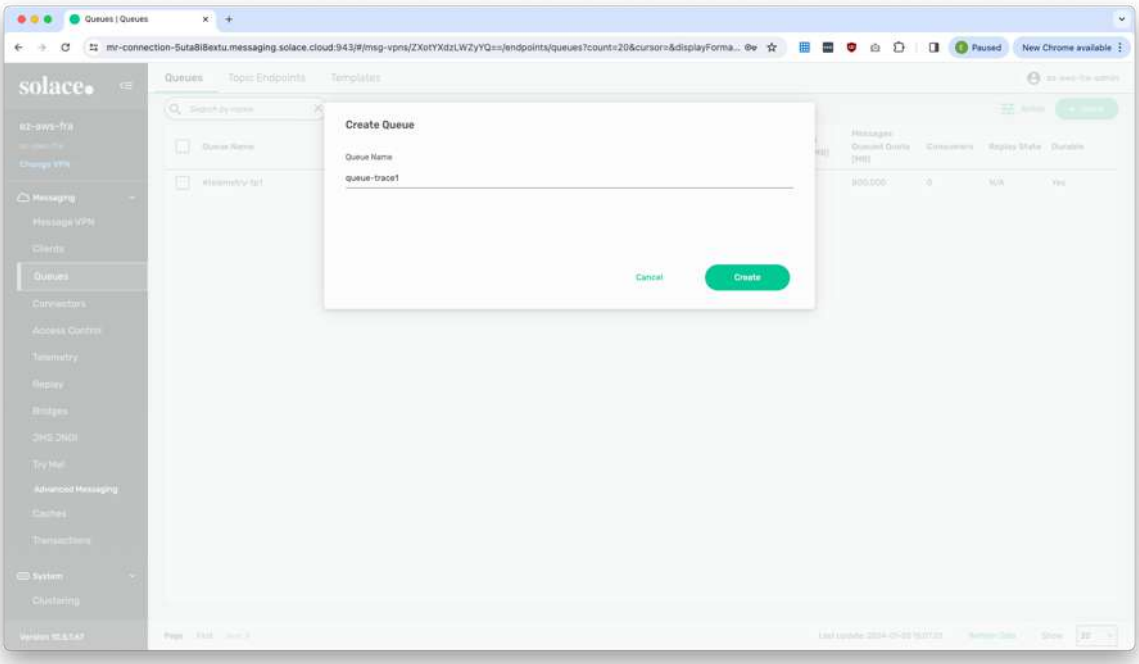
At Access Control go to Client Usernames and click [+ Client Username] to create a client username "trace" with password "trace123" and "#telemetry-tp1" profiles:

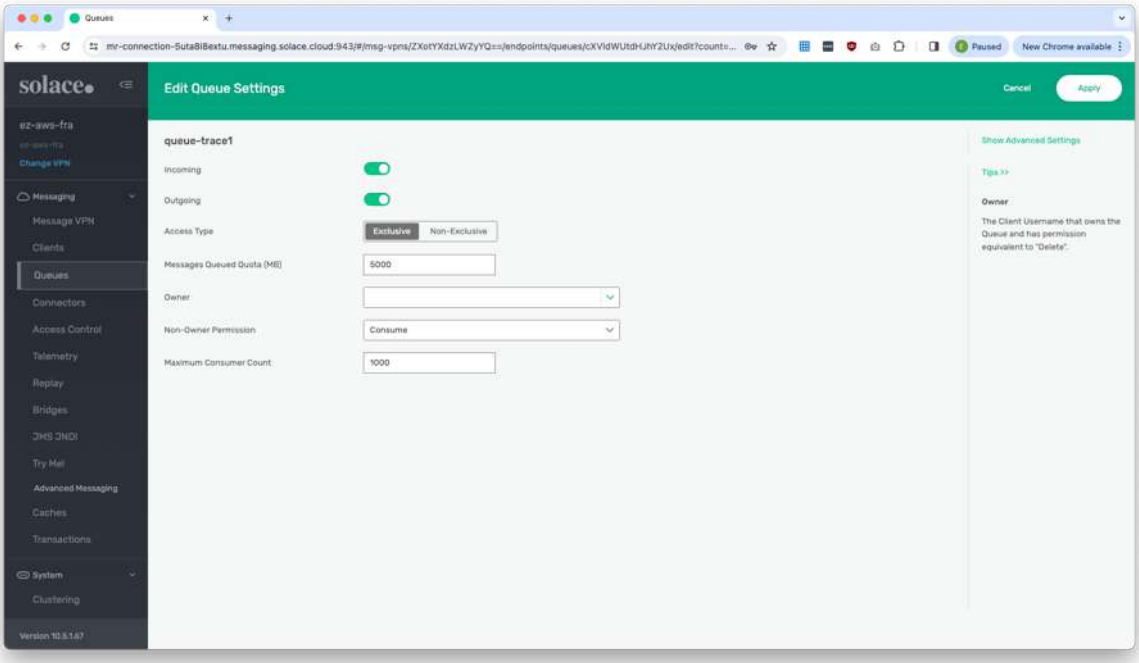


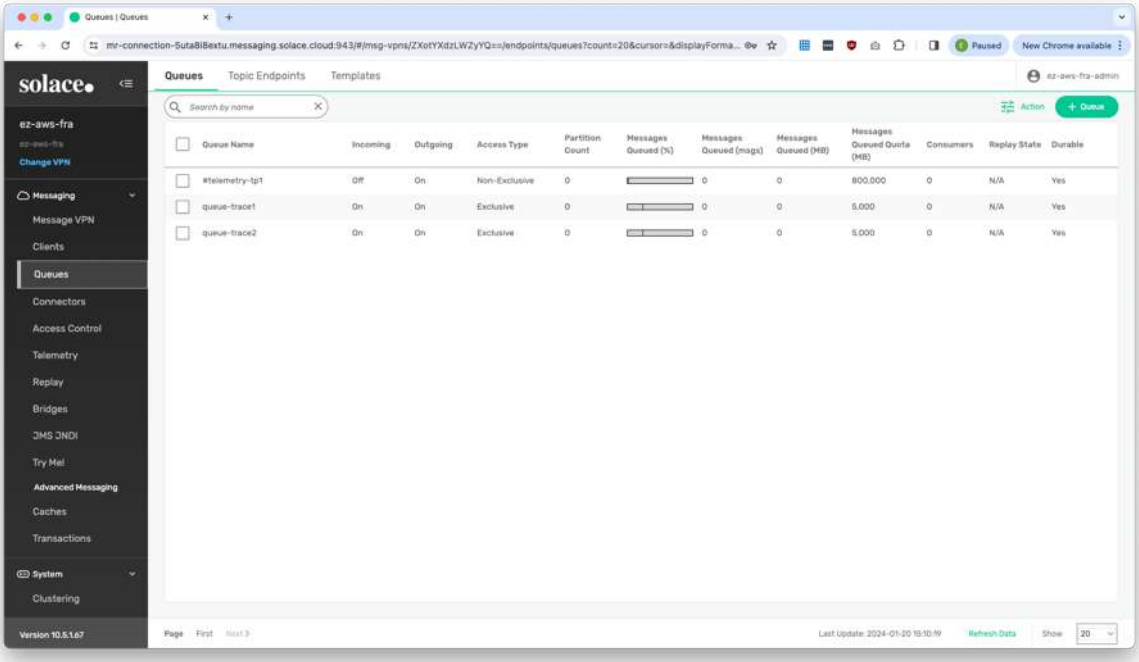

Client Usernames | Access C
mr-connection-5utaBiBextu.messaging.solace.cloud:943/#/msg-vpns/ZXotYXdzLWZyYQ==/access-ctrl/client-usernames?count=20&cursor=&displa...
Paused
New Chrome available
solace
Client Authentication
Client Profiles
ACL Profiles
Client Usernames
ez-aws-fra
Change VPN
Messaging
Message VPN
Clients
Queues
Connectors
Access Control
Telemetry
Replay
Bridges
JMS JNDI
Try Me!
Advanced Messaging
Caches
Transactions
System
Clustering
Create Client Username
Client Username
trace
Cancel
Create

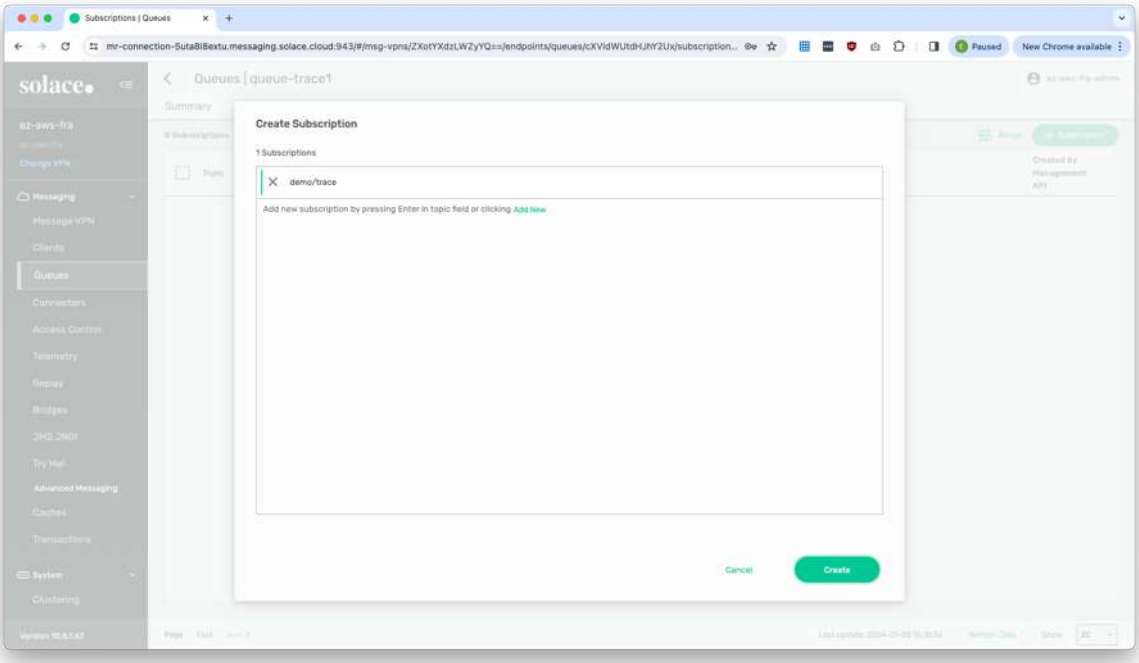

Access Control
mr-connection-5utaBiBextu.messaging.solace.cloud:943/#/msg-vpns/ZXotYXdzLWZyYQ==/access-ctrl/client-usernames/dHJhY2U=/edit?count...
Paused
New Chrome available
solace
Edit Client Username Settings
Cancel
Apply
ez-aws-fra
Change VPN
Messaging
Message VPN
Clients
Queues
Connectors
Access Control
Telemetry
Replay
Bridges
JMS JNDI
Try Me!
Advanced Messaging
Caches
Transactions
System
Clustering
trace
Enable
New Password
Confirm Password
Cancel
Client Profile
#telemetry-tp1
ACL Profile
#telemetry-tp1
Guaranteed Endpoint Permission Override
Subscription Manager
Tips >>
ACL Profile
The ACL Profile of the Client Username.

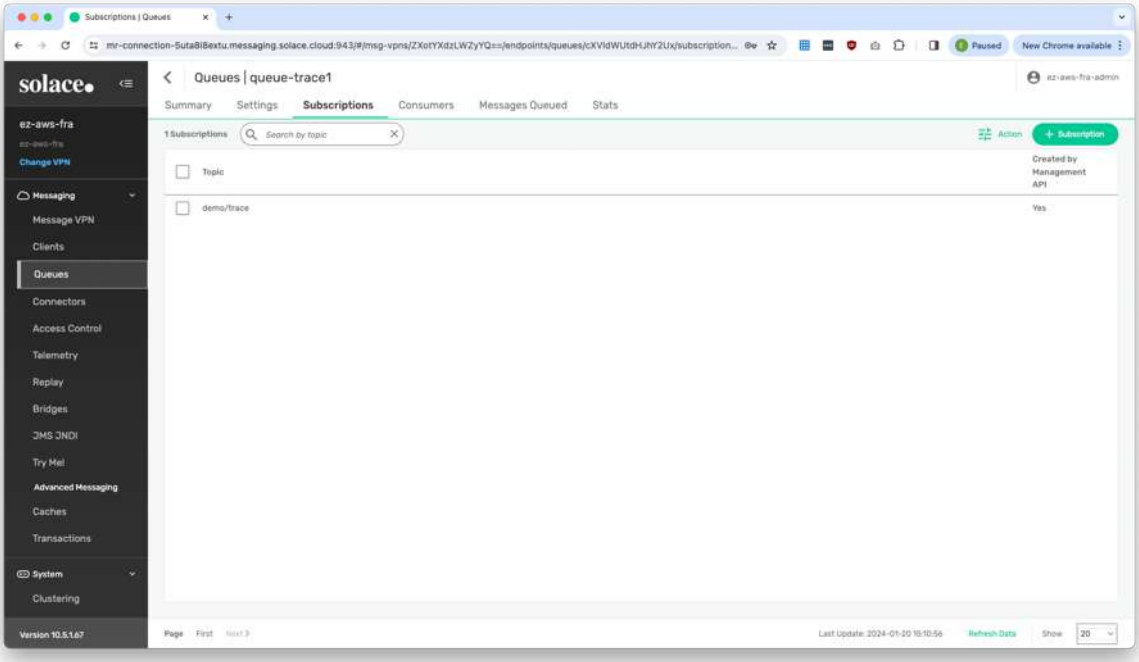
Create two or more queues (queue-trace1, queue-trace2, ...) with subscription "demo/trace". These are the messaging queues.






Queues | Queues
mr-connection-5uta8i8extu.messaging.solace.cloud:943/#/msg-vpns/ZXotYXdzLWZyYQ==/endpoints/queues?count=20&cursor=&displayForma...
Paused
New Chrome available
solace
ez-aws-fra
Change VPN
Messaging
Message VPN
Clients
Queues
Connectors
Access Control
Telemetry
Replay
Bridges
JMS JNDI
Try Me!
Advanced Messaging
Caches
Transactions
System
Clustering
Version 10.5.1.67
Queues
Topic Endpoints
Templates
ez-aws-fra-admin
Search by name
Action
+ Queue
Queue Name
Incoming
Outgoing
Access Type
Partition Count
Messages Queued (%)
Messages Queued (msgs)
Messages Queued (MB)
Messages Queued Quota (MB)
Consumers
Replay State
Durable
#telemetry-tp1
Off
On
Non-Exclusive
0
0
0
800,000
0
N/A
Yes
queue-trace1
On
On
Exclusive
0
0
0
5,000
0
N/A
Yes
queue-trace2
On
On
Exclusive
0
0
0
5,000
0
N/A
Yes
Page
First
Last Update: 2024-01-20 15:10:19
Refresh Data
Show
20


Subscriptions | Queues
mr-connection-5uta8i8extu.messaging.solace.cloud:943/#/msg-vpns/ZXotYXdzLWZyYQ==/endpoints/queues/cXVldWUtdHJhY2Ux/subscription...
Paused
New Chrome available
solace
Queues | queue-trace1
Summary
Create Subscription
1 Subscriptions
demo/trace
Add new subscription by pressing Enter in topic field or clicking Add New
Cancel
Create



Configuration of the broker is now done.

2.4 Jaeger

Download Jaeger from here: https://www.jaegertracing.io/download/
Examplefor for MacOS: jaeger-1.53.0-darwin-amd64.tar.gz

Installation

```
mkdir -p ~/jaeger
cd ~/jaeger
tar xzvf <your download directory>/jaeger-1.53.0-darwin-amd64.tar.gz
```

Gives output like:

```
x jaeger-1.53.0-darwin-amd64/
x jaeger-1.53.0-darwin-amd64/example-hotrod
…
x jaeger-1.53.0-darwin-amd64/jaeger-ingester
x jaeger-1.53.0-darwin-amd64/jaeger-query
```

Remove extended attributes from extracted files to avoid MacOS popup warnings on downloaded (executable) files, assuming you are allowed to administer the Mac you are working on:

```
xattr -rc '~/jaeger'
```

If necessary, add sudo.

Start

```
cd ~/jaeger/jaeger-1.53.0-darwin-amd64/
./jaeger-all-in-one
# Or detached:
#nohup ./jaeger-all-in-one > /dev/null 2>&1 &
```

To stop kill the process with Control-C.

2.5 OTEL collector

Download from here:
https://github.com/open-telemetry/opentelemetry-collector-releases/releases/
Example for MacOS ARM: otelcol-contrib_0.92.0_darwin_arm64.tar.gz

Installation

```
mkdir -p ~/otelcol/otelcol-contrib_0.92.0
cd ~/otelcol/otelcol-contrib_0.92.0
tar xzvf <your download directory>/otelcol-contrib_0.92.0_darwin_arm64.tar.gz
```

Gives output like:

```
x LICENSE
x README.md
x otelcol-contrib
```

Prepare config files here:

```
cd ~/otelcol
```

Ping for IP address (what is preferred method to obtain -static- IP address?):

```
ping mr-connection-5uta8l8extu.messaging.solace.cloud
```

Added a custom hostname ez-dt.messaging.solace.cloud

Example for one broker: otel-collector-config-single.yaml:
<TODO: add yaml>

When working with multiple brokers define additional receivers and include in service/receivers:

```
receivers:
  solace/broker1:
    broker: [1.2.3.4:5671]
    max_unacknowledged: 500
    auth:
      sasl_plain:
        username: trace
        password: trace123
    queue: queue://#telemetry-tp1
    tls:
      insecure: false
      insecure_skip_verify: true

  solace/broker2:
    broker: [4.3.2.1:5671]
    max_unacknowledged: 500
    auth:
      sasl_plain:
        username: trace
        password: trace123
    queue: queue://#telemetry-tp1
    tls:
      insecure: false
      insecure_skip_verify: true

service:
  telemetry:
    logs:
      level: "debug"
  pipelines:
    traces:
      receivers: [solace/broker1, solace/broker2]
      processors: [batch]
      exporters: [logging, otlp/jaeger]
```

To get rid of other Apple messages like "can't be opened because Apple cannot check it for malicious software." , assuming you are allowed to administer the Mac you are working on:

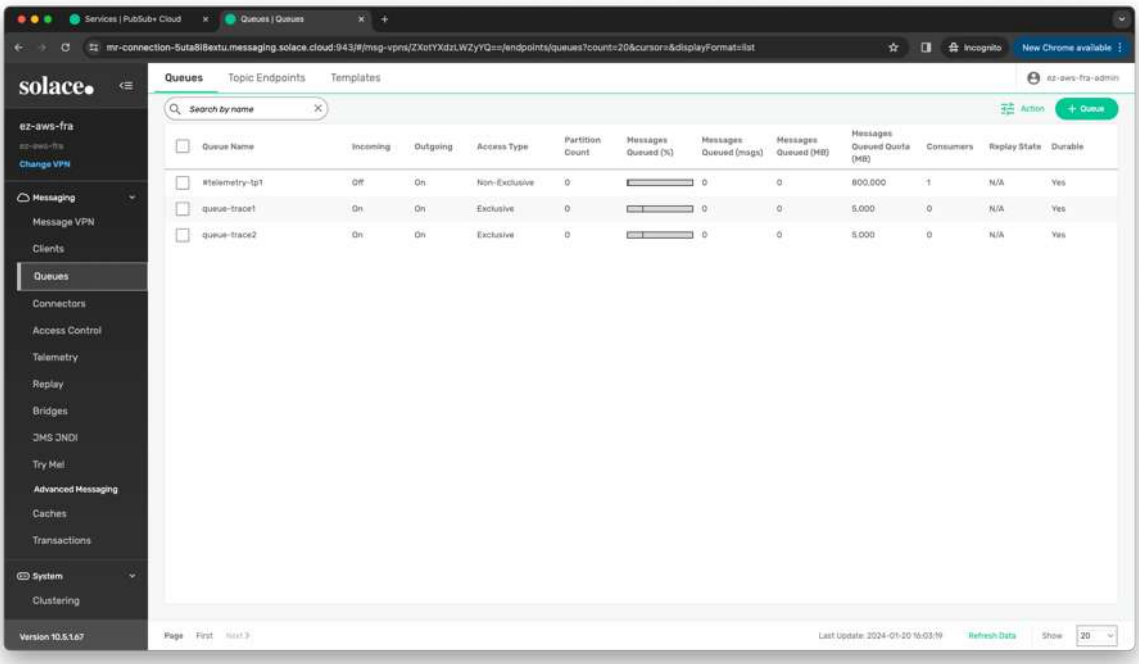
```
sudo spctl --master-disable
```

Start

```
cd ~/otelcol/otelcol-contrib_0.92.0
./otelcol-contrib --config=../otel-collector-config-single.yaml
# Or detached:
#nohup ./otelcol-contrib --config=../otel-collector-config-single.yaml > /dev/null 2>&1 &
```

To stop kill the process with Control-C.

In the Broker verify that the Telemetry queue #telemetry-tp1 has a (1) consumer at Consumers:



3 Testing the application chain

3.1 Solace SDKPerf

In this demo you will use Solace SDKPerf, a general purpose testing tool with support for OpenTelemetry. You can find information about SDKPerf at https://docs.solace.com/API/SDKPerf/SDKPerf.htm and downloads at https://solace.com/downloads/?fwp_downloads_types=other
On MacOS you can for example use the Java version: sdkperf-jcsmp-8.4.14.10.zip or sdkperf-mqtt-8.4.15.5.zip

3.2 Installation

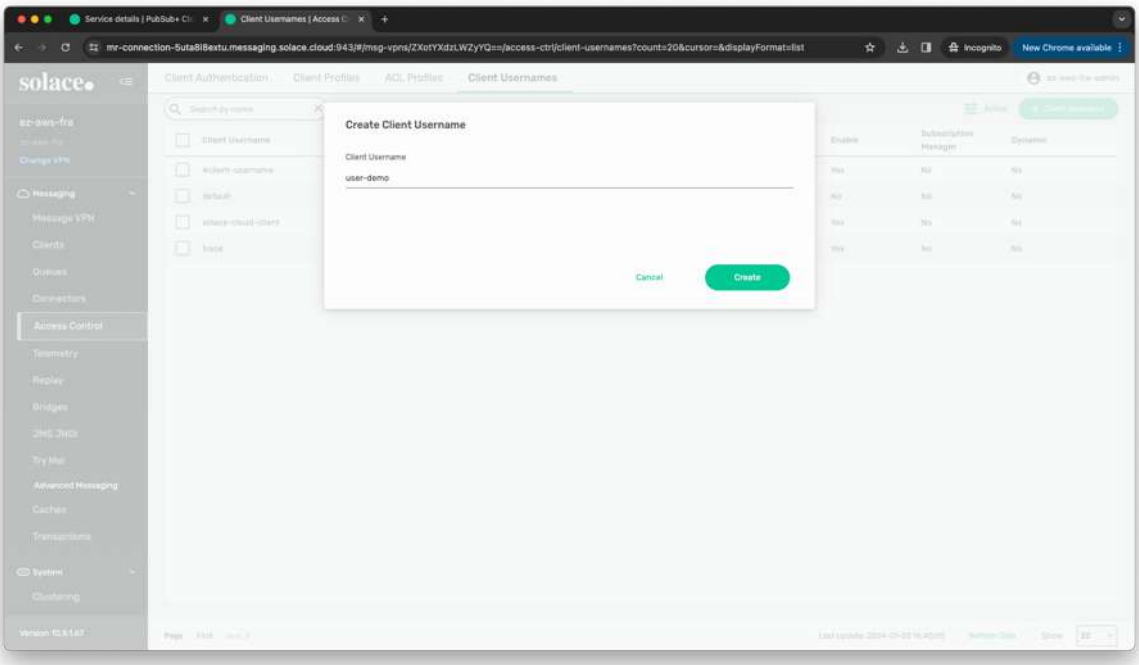
```
mkdir -p ~/sdkperf
cd ~/sdkperf
tar xzvf <your download directory>/sdkperf-jcsmp-8.4.14.10.zip
tar xzvf <your download directory>/sdkperf-mqtt-8.4.15.5.zip
```

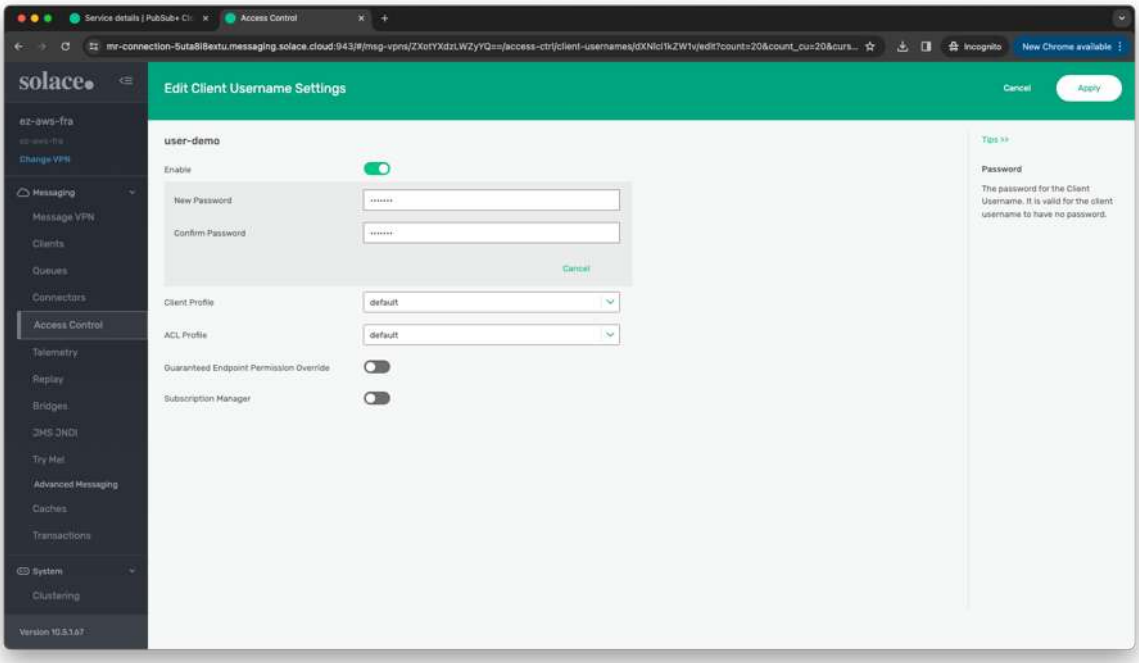
Gives output like:

```
x sdkperf-jcsmp-8.4.14.10/
x sdkperf-jcsmp-8.4.14.10/lib/
…
x sdkperf-jcsmp-8.4.14.10/sdkperf_java.bat
x sdkperf-jcsmp-8.4.14.10/sdkperf_java.sh
```

And similar for the MQTT version

In Broker Manager > Messaging > Acces Control > Client Usernames create user user-demo with password default.





Publish a message and receive it from 2 queues:

cd ~/sdkperf/sdkperf-jcsmp-8.4.14.10

Using Distributed Tracing from/to SDKPerf
https://solace.community/discussion/1633/distributed-tracing-context-propagation
With default user solace-cloud-client and initial auto-generated hostname

Can add -md flag to dump message, or -tmd to dump trace message (sort of works does drop an error)

./sdkperf_java.sh -cip=tcps://mr-connection-5uta8l8extu.messaging.solace.cloud:55443 -cu=solace-cloud-client@ez-aws-fra -cp=deun1l905ashrflooldf1qhrfg -ptl='demo/trace' -sql='queue-trace1,queue-trace2' -mt=persistent -mn=1 -mr=1 -msa=32768 -q -tcc -tcrc -tecip="http://localhost:4317"

Run repeatedly every 10 seconds

while true; do ./sdkperf_java.sh -cip=tcps://mr-connection-5uta8l8extu.messaging.solace.cloud:55443 -cu=solace-cloud-client@ez-aws-fra -cp=deun1l905ashrflooldf1qhrfg -ptl='demo/trace' -sql='queue-trace1,queue-trace2' -mt=persistent -mn=1 -mr=1 -msa=32768 -q -tcc -tcrc -tecip="http://localhost:4317"; sleep 10; done

With default user solace-cloud-client and initial auto-generated hostname

./sdkperf_java.sh -cip=tcps://mr-connection-5uta8l8extu.messaging.solace.cloud:55443 -cu=solace-cloud-client@ez-aws-fra -cp=deun1l905ashrflooldf1qhrfg -ptl='demo/trace' -sql='queue-trace1,queue-trace2' -mt=persistent -mn=1 -mr=1 -msa=32768 -q

With default user solace-cloud-client and additional created hostname

./sdkperf_java.sh -cip=tcps://ez-dt.messaging.solace.cloud:55443 -cu=solace-cloud-client@ez-aws-fra -cp=deun1l905ashrflooldf1qhrfg -ptl='demo/trace' -sql='queue-trace1,queue-trace2' -mt=persistent -mn=1 -mr=1 -msa=32768 -q

With default user solace-cloud-client and IP address (Dynamic? Going round between 18.159.178.64, 18.153.239.155, … How to find these, and/or create static?)

./sdkperf_java.sh -cip=tcps://18.159.178.64:55443 -cu=solace-cloud-client@ez-aws-fra -cp=deun1l905ashrflooldf1qhrfg -ptl='demo/trace' -sql='queue-trace1,queue-trace2' -mt=persistent -mn=1 -mr=1 -msa=32768 -q

With created user user-demo

./sdkperf_java.sh -cip=tcps://mr-connection-5uta8l8extu.messaging.solace.cloud:55443 -cu=user-demo@ez-aws-fra -cp=default -ptl='demo/trace' -sql='queue-trace1,queue-trace2' -mt=persistent -mn=1 -mr=1 -msa=32768 -q

For MQTT

./sdkperf_mqtt.sh -cip=ssl://ez-dt.messaging.solace.cloud:8883 -cu=solace-cloud-client@ez-aws-fra -cp=deun1l905ashrflooldf1qhrfg -ptl='demo/trace' -sql='queue-trace1,queue-trace2' -mpq=1 -msq=1 -mn=1 -mr=1 -msa=32768 -q -tcc -tcrc -tecip="http://localhost:4317"

MQTT5

./sdkperf_mqtt5.sh -cip=ssl://ez-dt.messaging.solace.cloud:8883 -cu=solace-cloud-client@ez-aws-fra -cp=deun1l905ashrflooldf1qhrfg -ptl='demo/trace' -sql='queue-trace3' -mpq=1 -msq=1 -mn=1 -mr=1 -msa=32768 -q -tcc -tcrc -tecip="http://localhost:4317"

https://docs.solace.com/API/SDKPerf/Command-Line-Options.htm
https://docs.solace.com/API/SDKPerf/Example-Commands.htm

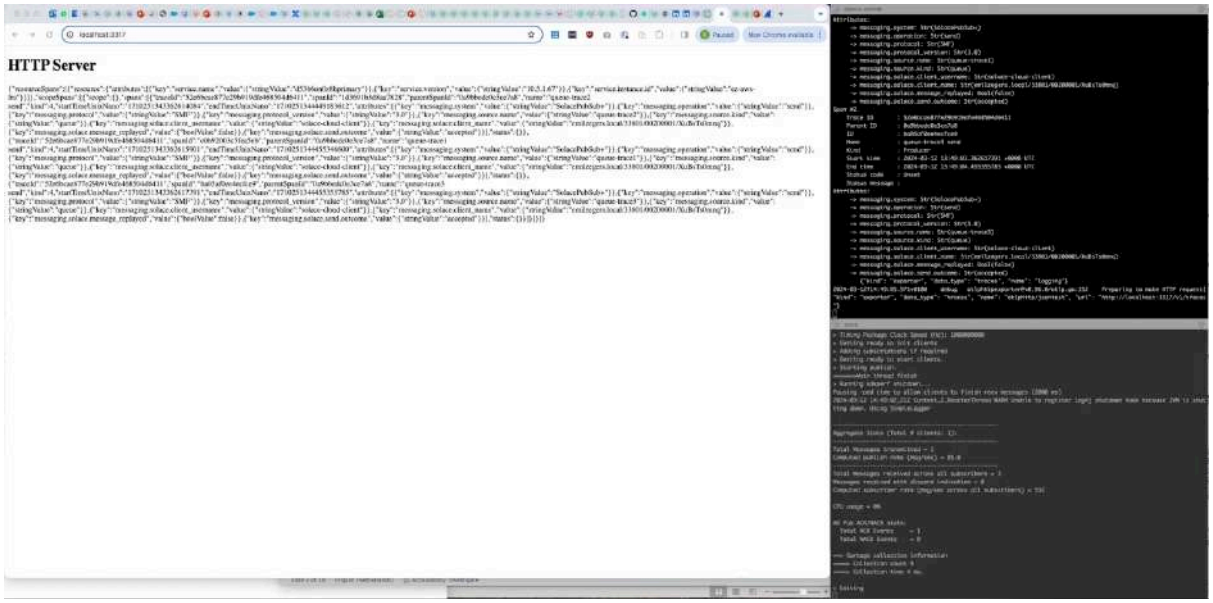
4 Results

4.1 PMOTEL

Poor Man's OTEL endpoint, a Python script that processes POST requests from otel collector exporter with metrics in protobuf, (gzipped) JSON or something else and just displays the data received. See myhttpserver.py script, and relevant configuration in otel collector yaml file.

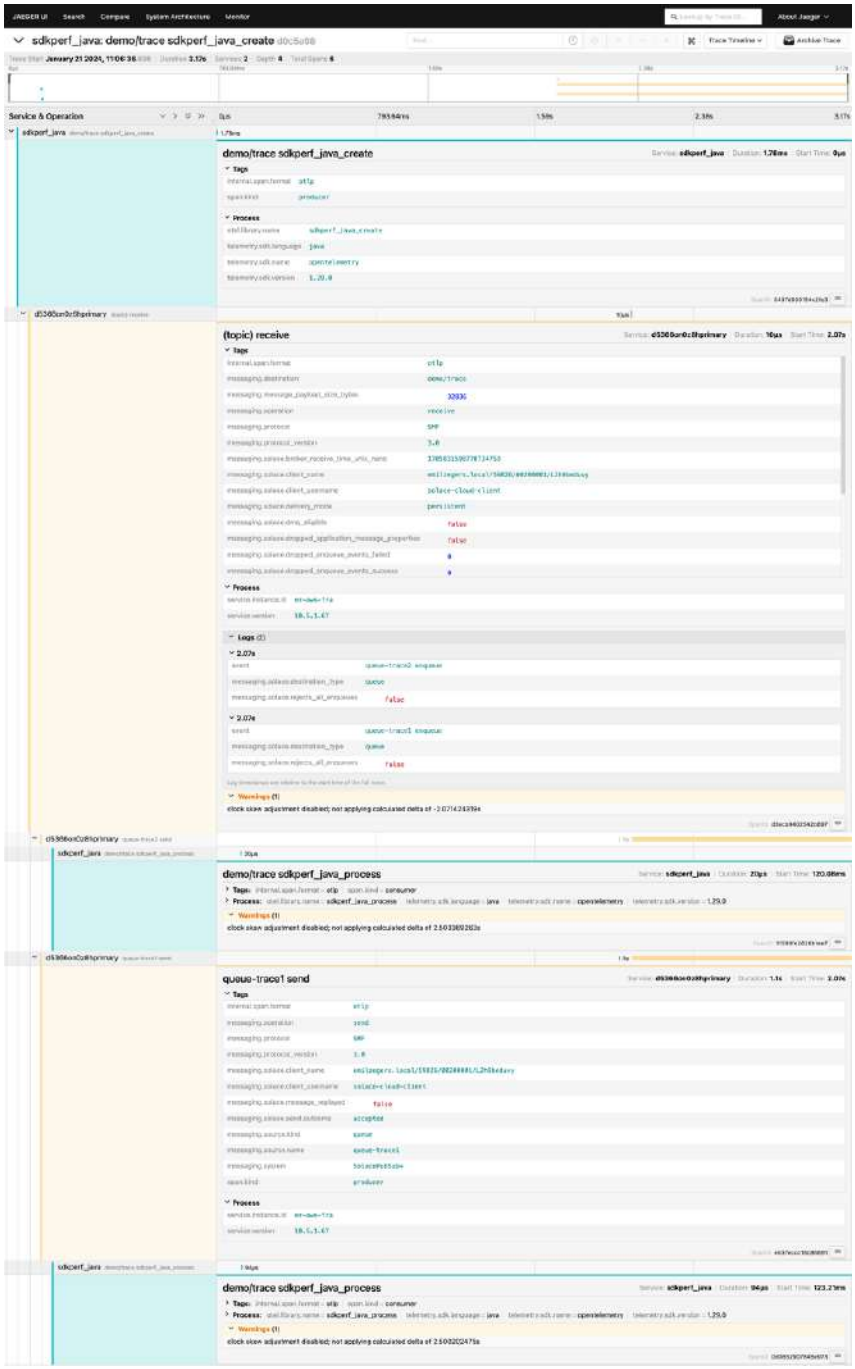
Example configuration for JSON:

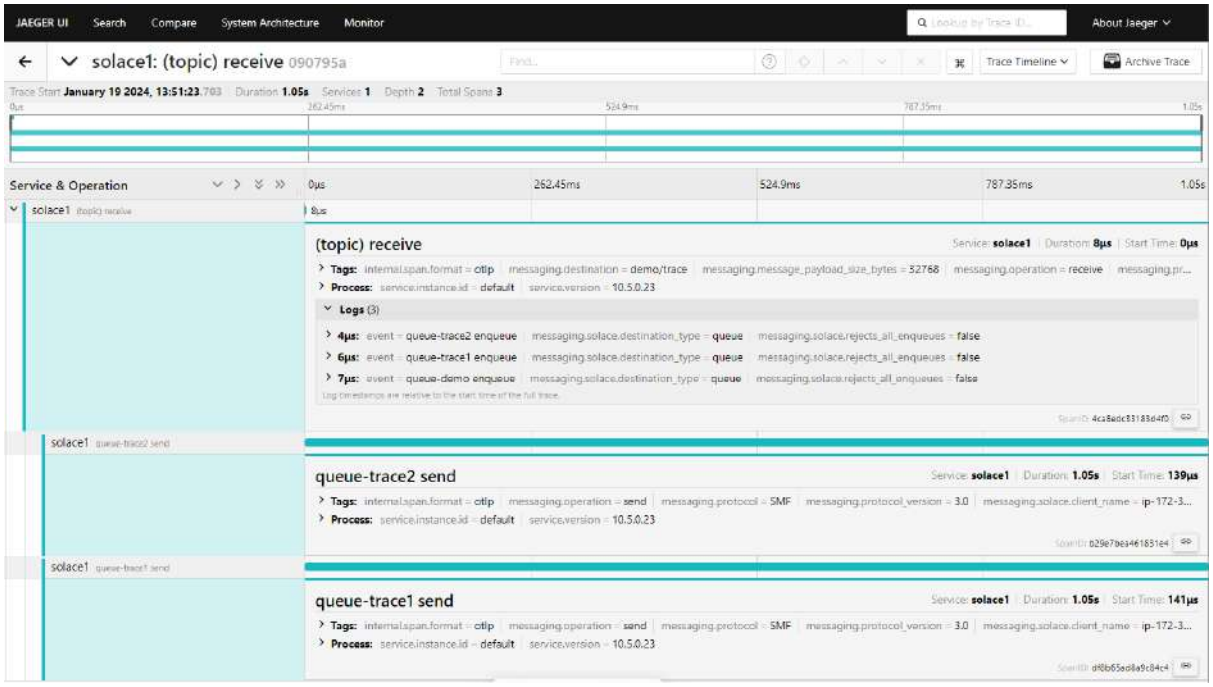
```
otlphttp/jsontest:
  endpoint: "http://localhost:3317/"
  compression: "none"
  encoding: "json"
  tls:
    insecure: true
  headers:
    Content-Type: "application/json"
```



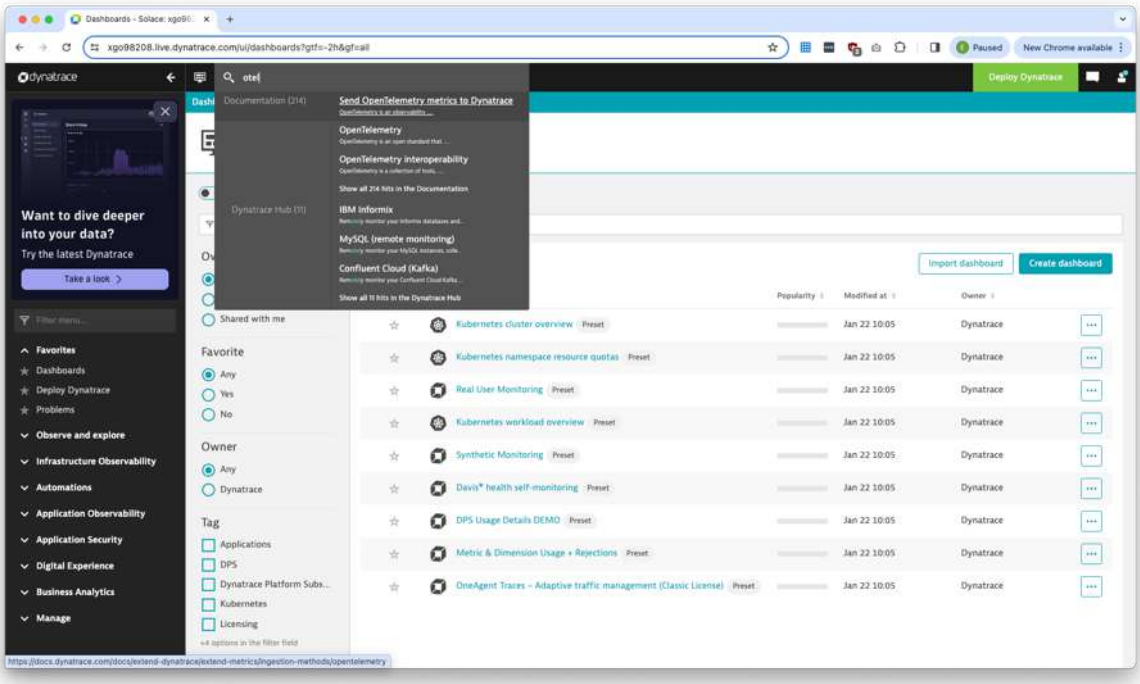
4.2 Jaeger

Navigate to http://localhost:16686 to access the Jaeger UI (server status info at http://0.0.0.0:14269/, see https://www.jaegertracing.io/docs/1.53/deployment/ for more info).

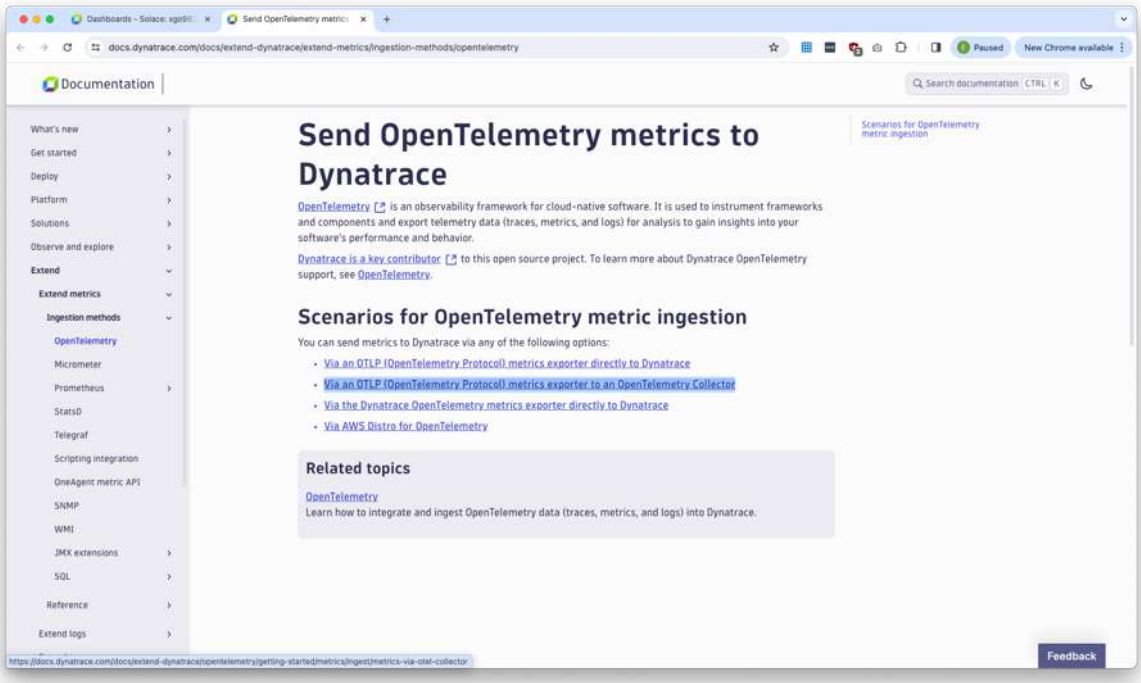

JAEGER UI
Search
Compare
System Architecture
Monitor
About Jaeger
sdkperf_java: demo/trace sdkperf_java_create d0c5a08
Trace Timeline
Archive Trace
Service & Operation
0µs
783.84ms
1.56s
2.35s
3.17s
sdkperf_java
1.78ms
demo/trace sdkperf_java_create
Service: sdkperf_java
Duration: 1.78ms
Start Time: 0µs
Tags
otel.library.name
sdkperf_java_create
telemetry.sdk.language
java
telemetry.sdk.name
opentelemetry
telemetry.sdk.version
1.20.0
(topic) receive
Service: d5360ur0c0lprimary
Duration: 16µs
Start Time: 2.07s
internal.span.format
otlp
messaging.destination
demo/trace
messaging.message_payload_size_bytes
2030
messaging.operation
receive
messaging.protocol
SMF
messaging.protocol_version
3.0
messaging.solace.client_name
solace-cloud-client
messaging.solace.delivery_mode
persistent
messaging.solace.dmq_eligible
false
messaging.solace.dropped_application_message_properties
false
messaging.solace.dropped_tropicve_events_failed
0
messaging.solace.dropped_tropicve_events_success
0
Process
service.instance.id
mr-mwh-lrs
service.version
10.5.1.47
Logs (2)
2.07s
event
queue-trace2 enqueue
messaging.solace.destination_type
queue
messaging.solace.rejects_all_consumers
false
2.07s
event
queue-trace1 enqueue
messaging.solace.destination_type
queue
messaging.solace.rejects_all_consumers
false
Warnings (1)
clock skew adjustment disabled; not applying calculated delta of -2.07142439s
sdkperf_java
30µs
demo/trace sdkperf_java_process
Service: sdkperf_java
Duration: 21µs
Start Time: 120.08ms
Tags: internal.span.format = otlp span.kind = consumer
Process: otel.library.name = sdkperf_java_process telemetry.sdk.language = java telemetry.sdk.name = opentelemetry telemetry.sdk.version = 1.29.0
Warnings (1)
clock skew adjustment disabled; not applying calculated delta of 2.503369203s
queue-trace1 send
Service: d5360ur02l0primary
Duration: 1.1s
Start Time: 2.07s
internal.span.format
otlp
messaging.operation
send
messaging.protocol
SMF
messaging.protocol_version
3.0
messaging.solace.client_name
solace-lead-client
messaging.solace.message_replayed
false
messaging.solace.send.outcome
accepted
messaging.source.kind
queue
messaging.source.name
queue-trace1
messaging.system
SolacePubSub+
span.kind
producer
Process
service.instance.id
mr-mwh-lrs
service.version
10.5.1.47
sdkperf_java
1.92µs
demo/trace sdkperf_java_process
Service: sdkperf_java
Duration: 94µs
Start Time: 123.21ms
Tags: internal.span.format = otlp span.kind = consumer
Process: otel.library.name = sdkperf_java_process telemetry.sdk.language = java telemetry.sdk.name = opentelemetry telemetry.sdk.version = 1.29.0
Warnings (1)
clock skew adjustment disabled; not applying calculated delta of 2.503202475s



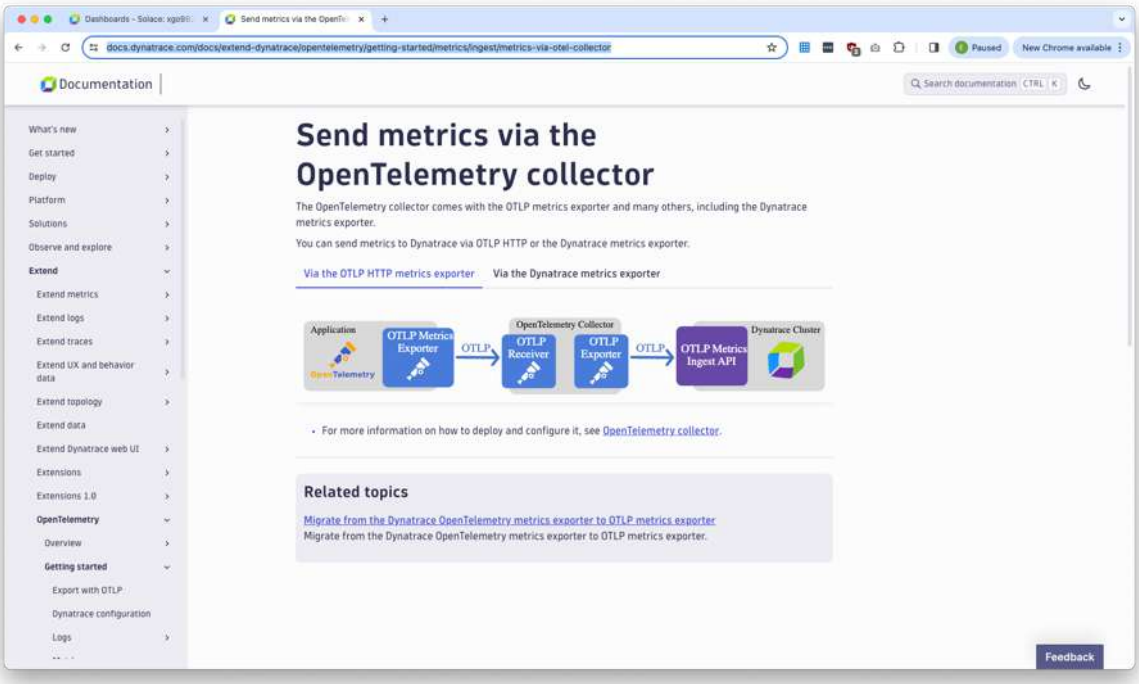
4.3 Dynatrace



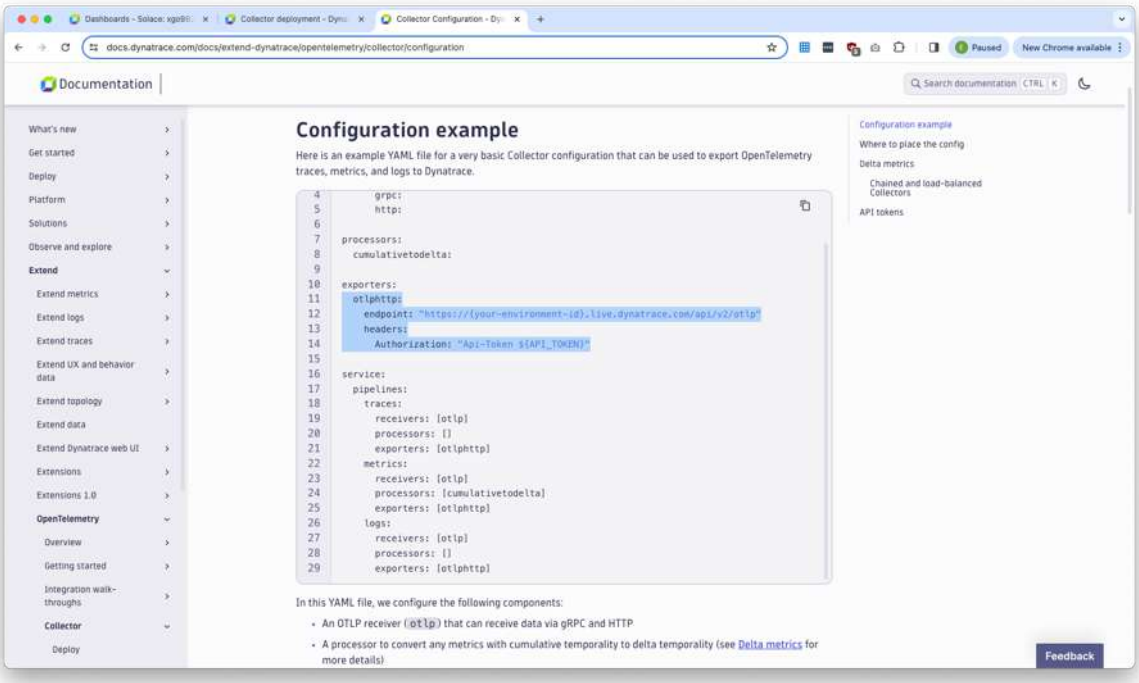
https://docs.dynatrace.com/docs/extend-dynatrace/extend-metrics/ingestion-methods/opentelemetry

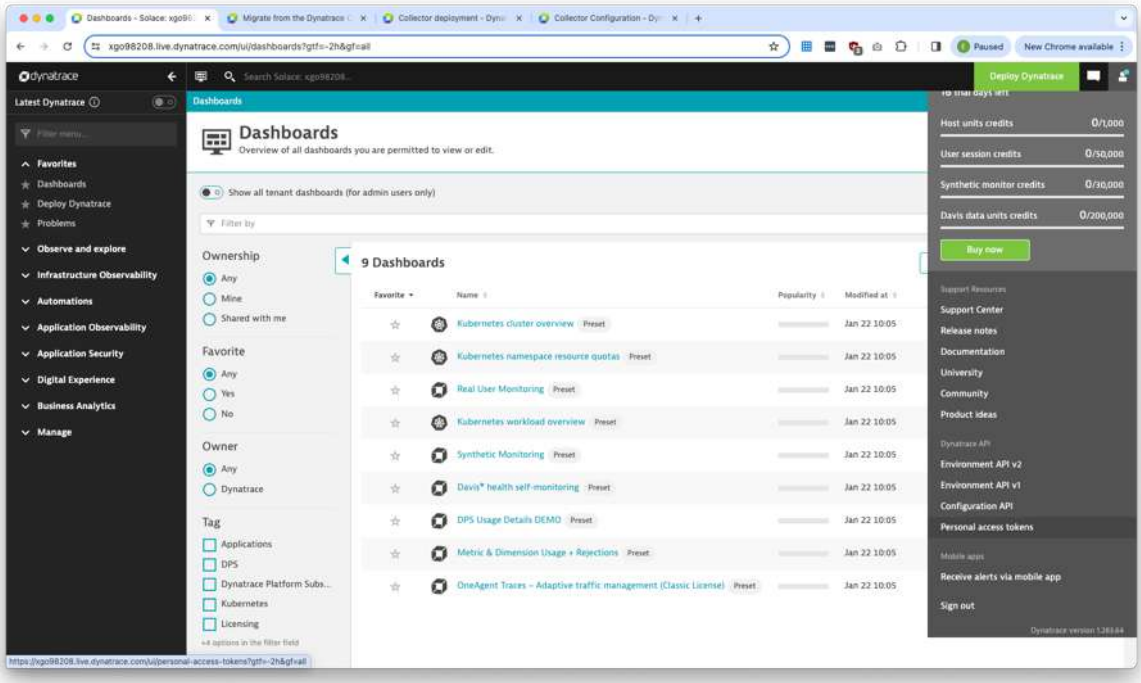


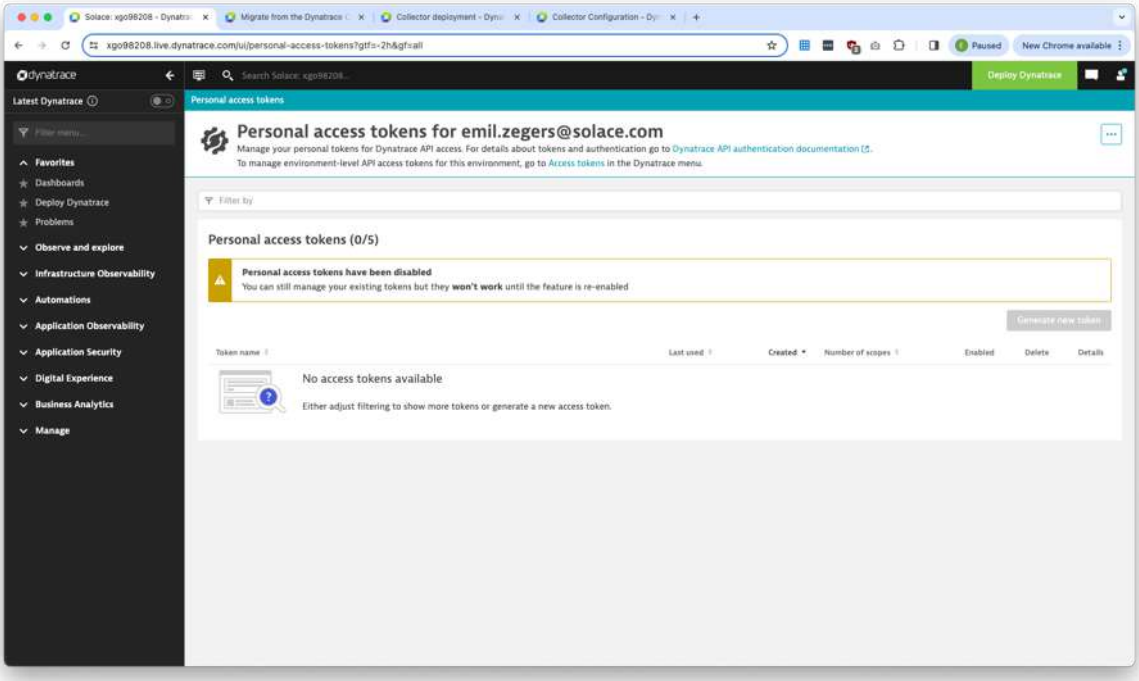
https://docs.dynatrace.com/docs/extend-dynatrace/opentelemetry/getting-started/metrics/ingest/metrics-via-otel-collector

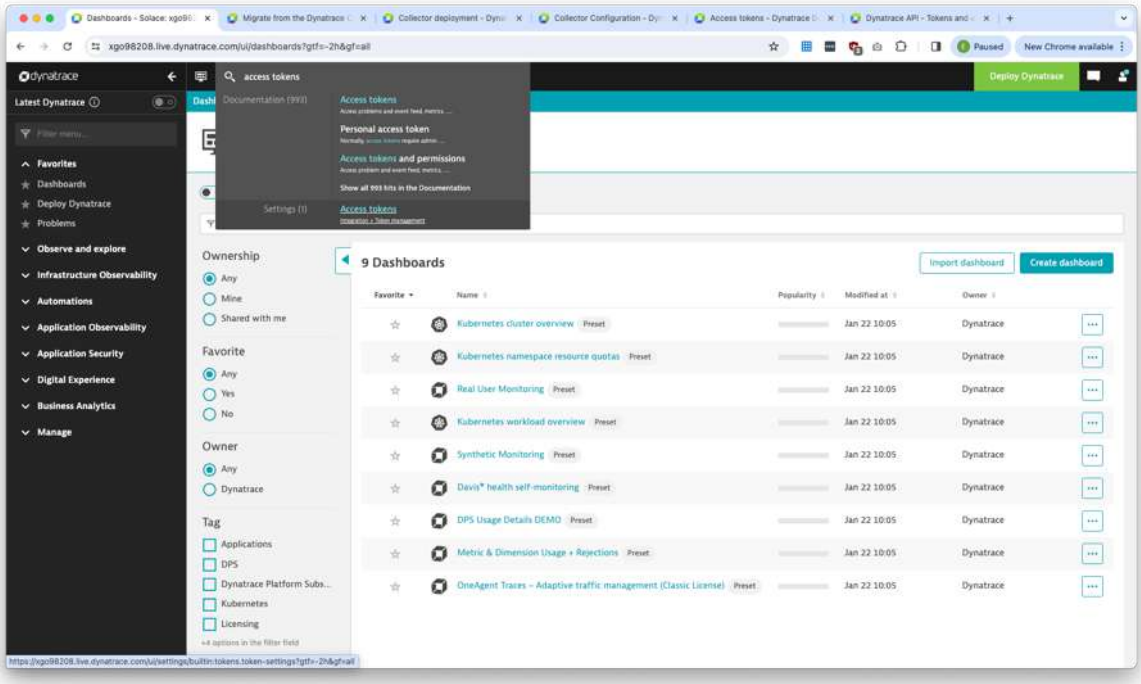


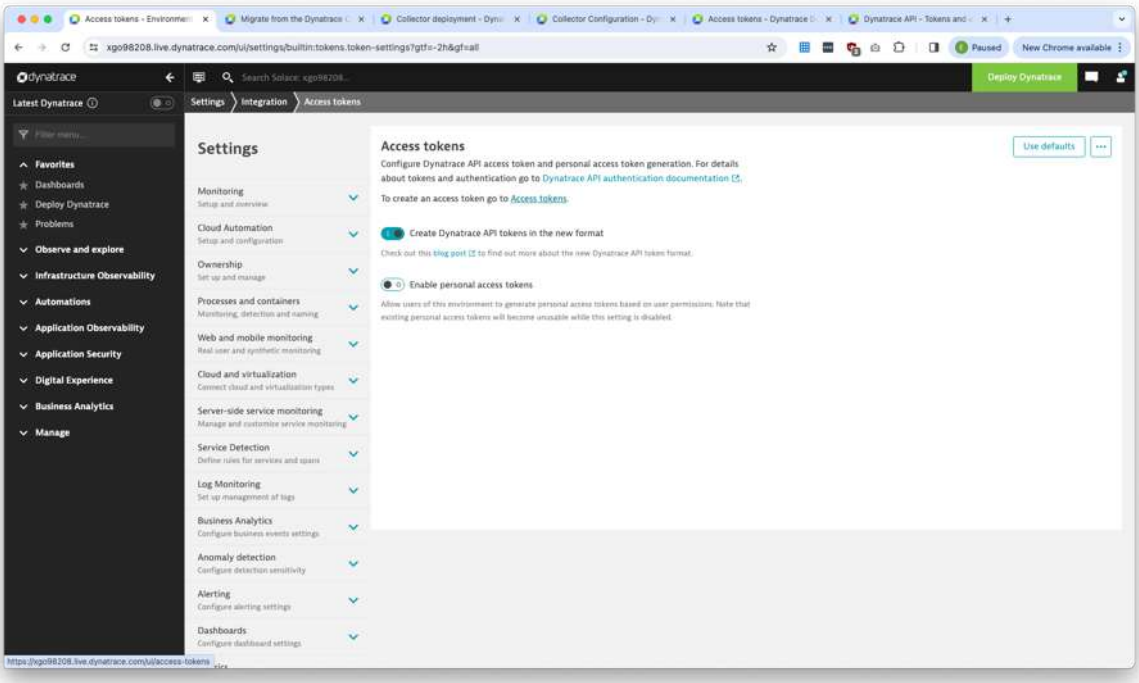
https://docs.dynatrace.com/docs/extend-dynatrace/opentelemetry/collector#example-configuration

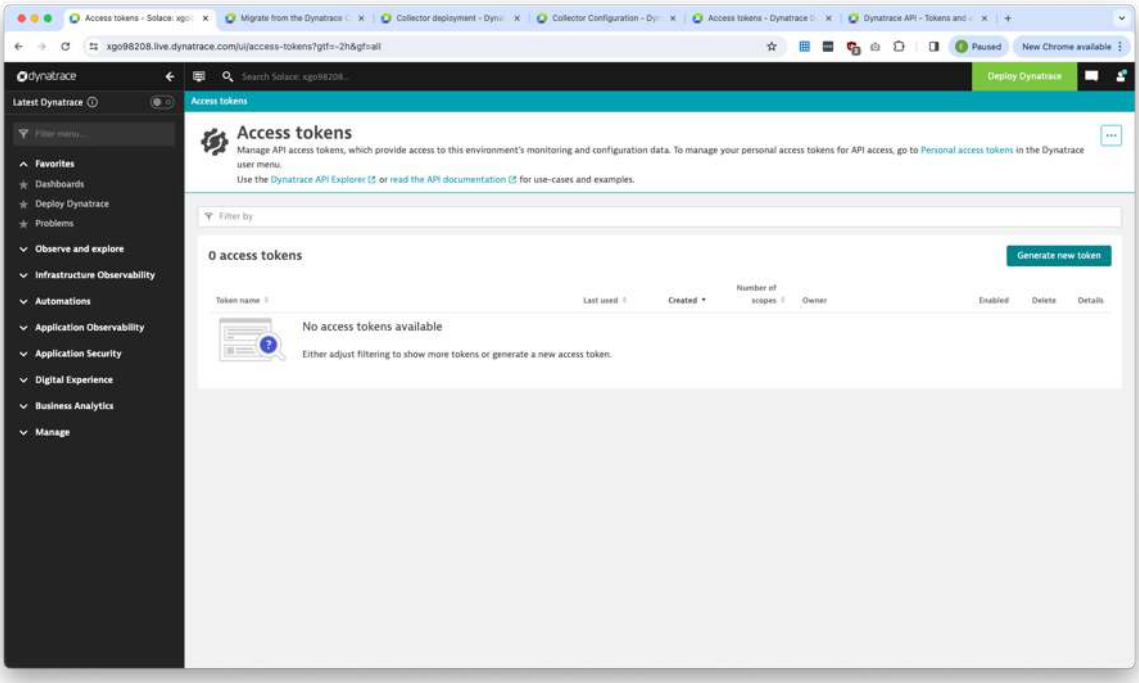

docs.dynatrace.com/docs/extend-dynatrace/opentelemetry/collector/configuration
Documentation
Search documentation CTRL K
What's new
Get started
Deploy
Platform
Solutions
Observe and explore
Extend
Extend metrics
Extend logs
Extend traces
Extend UX and behavior data
Extend topology
Extend data
Extend Dynatrace web UI
Extensions
Extensions 1.0
OpenTelemetry
Overview
Getting started
Integration walk-throughs
Collector
Deploy
Configuration example
Here is an example YAML file for a very basic Collector configuration that can be used to export OpenTelemetry traces, metrics, and logs to Dynatrace.
grpc:
http:
processors:
cumulativetodelta:
exporters:
otlphttp:
endpoint: "https://{your-environment-id}.live.dynatrace.com/api/v2/otlp"
headers:
Authorization: "Api-Token ${API_TOKEN}"
service:
pipelines:
traces:
receivers: [otlp]
processors: []
exporters: [otlphttp]
metrics:
receivers: [otlp]
processors: [cumulativetodelta]
exporters: [otlphttp]
logs:
receivers: [otlp]
processors: []
exporters: [otlphttp]
In this YAML file, we configure the following components:
An OTLP receiver (otlp) that can receive data via gRPC and HTTP
A processor to convert any metrics with cumulative temporality to delta temporality (see Delta metrics for more details)
Configuration example
Where to place the config
Delta metrics
Chained and load-balanced Collectors
API tokens
Feedback


xgo98208.live.dynatrace.com/ui/dashboards?gtf=-2h&gf=all
dynatrace
Latest Dynatrace
Favorites
Dashboards
Deploy Dynatrace
Problems
Observe and explore
Infrastructure Observability
Automations
Application Observability
Application Security
Digital Experience
Business Analytics
Manage
Deploy Dynatrace
Dashboards
Dashboards
Overview of all dashboards you are permitted to view or edit.
Show all tenant dashboards (for admin users only)
Filter by
Ownership
Any
Mine
Shared with me
Favorite
Any
Yes
No
Owner
Any
Dynatrace
Tag
Applications
DPS
Dynatrace Platform Subs...
Kubernetes
Licensing
9 Dashboards
Favorite
Name
Popularity
Modified at
Kubernetes cluster overview Preset Jan 22 10:05
Kubernetes namespace resource quotas Preset Jan 22 10:05
Real User Monitoring Preset Jan 22 10:05
Kubernetes workload overview Preset Jan 22 10:05
Synthetic Monitoring Preset Jan 22 10:05
Davis® health self-monitoring Preset Jan 22 10:05
DPS Usage Details DEMO Preset Jan 22 10:05
Metric & Dimension Usage + Rejections Preset Jan 22 10:05
OneAgent Traces – Adaptive traffic management (Classic License) Preset Jan 22 10:05
Host units credits 0/1,000
User session credits 0/50,000
Synthetic monitor credits 0/30,000
Davis data units credits 0/200,000
Buy now
Support Center
Release notes
Documentation
University
Community
Product ideas
Environment API v2
Environment API v1
Configuration API
Personal access tokens
Receive alerts via mobile app
Sign out


xgo98208.live.dynatrace.com/ui/personal-access-tokens?gtf=-2h&gf=all
Deploy Dynatrace
Personal access tokens
Personal access tokens for emil.zegers@solace.com
Manage your personal tokens for Dynatrace API access. For details about tokens and authentication go to Dynatrace API authentication documentation.
To manage environment-level API access tokens for this environment, go to Access tokens in the Dynatrace menu.
Personal access tokens (0/5)
Personal access tokens have been disabled
You can still manage your existing tokens but they won't work until the feature is re-enabled
Generate new token
Token name
Last used
Created
Number of scopes
Enabled
Delete
Details
No access tokens available
Either adjust filtering to show more tokens or generate a new access token.
Favorites
Dashboards
Deploy Dynatrace
Problems
Observe and explore
Infrastructure Observability
Automations
Application Observability
Application Security
Digital Experience
Business Analytics
Manage

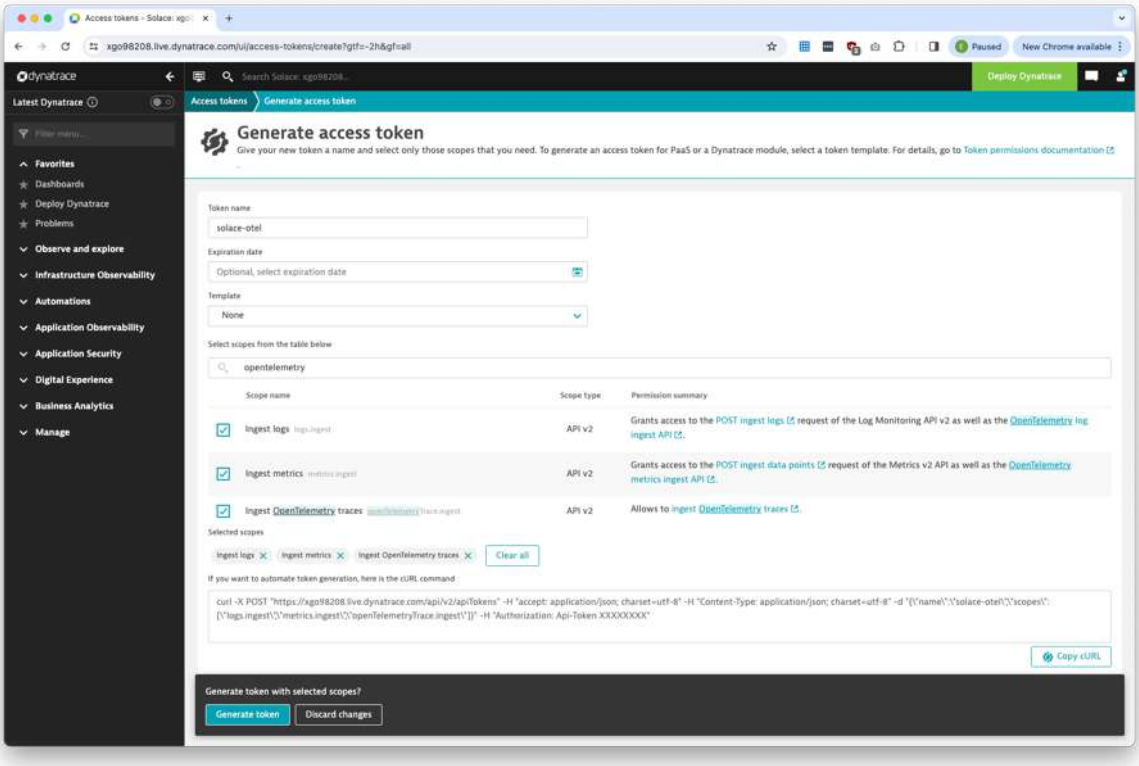

xgo98208.live.dynatrace.com/ui/dashboards?gtf=-2h&gf=all
access tokens
Documentation (993)
Access tokens
Personal access token
Access tokens and permissions
Show all 993 hits in the Documentation
Settings (1)
Access tokens
Deploy Dynatrace
9 Dashboards
Import dashboard
Create dashboard
Favorite
Name
Popularity
Modified at
Owner
Kubernetes cluster overview Preset
Kubernetes namespace resource quotas Preset
Real User Monitoring Preset
Kubernetes workload overview Preset
Synthetic Monitoring Preset
Davis® health self-monitoring Preset
DPS Usage Details DEMO Preset
Metric & Dimension Usage + Rejections Preset
OneAgent Traces – Adaptive traffic management (Classic License) Preset
Jan 22 10:05
Dynatrace
Ownership
Any
Mine
Shared with me
Favorite
Any
Yes
No
Owner
Any
Dynatrace
Tag
Applications
DPS
Dynatrace Platform Subs...
Kubernetes
Licensing
Favorites
Dashboards
Deploy Dynatrace
Problems
Observe and explore
Infrastructure Observability
Automations
Application Observability
Application Security
Digital Experience
Business Analytics
Manage



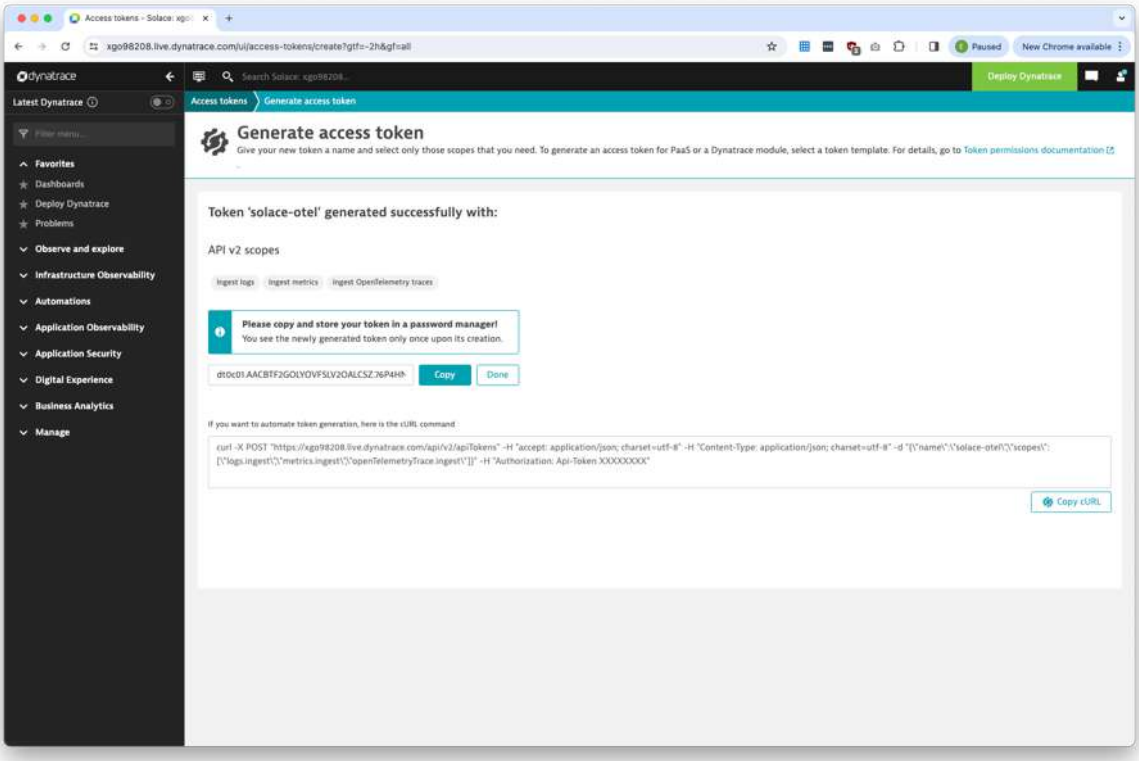


Token name: solace-otel

Search for OpenTelemetry and add Scopes

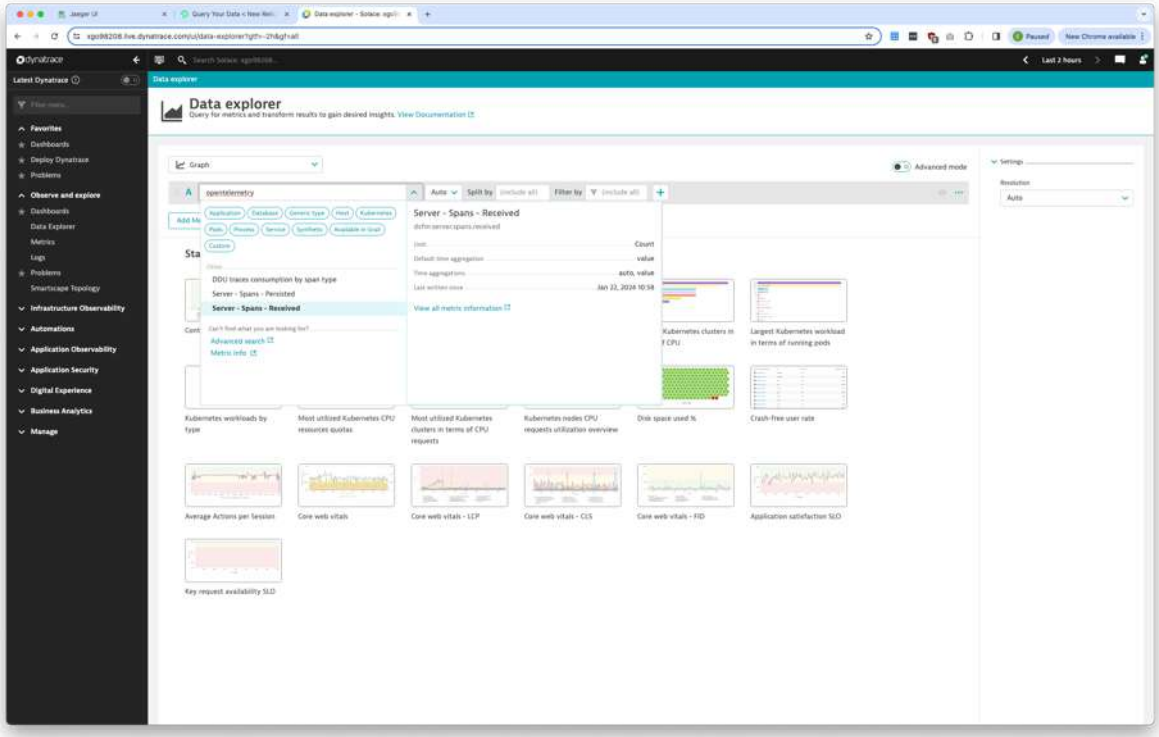


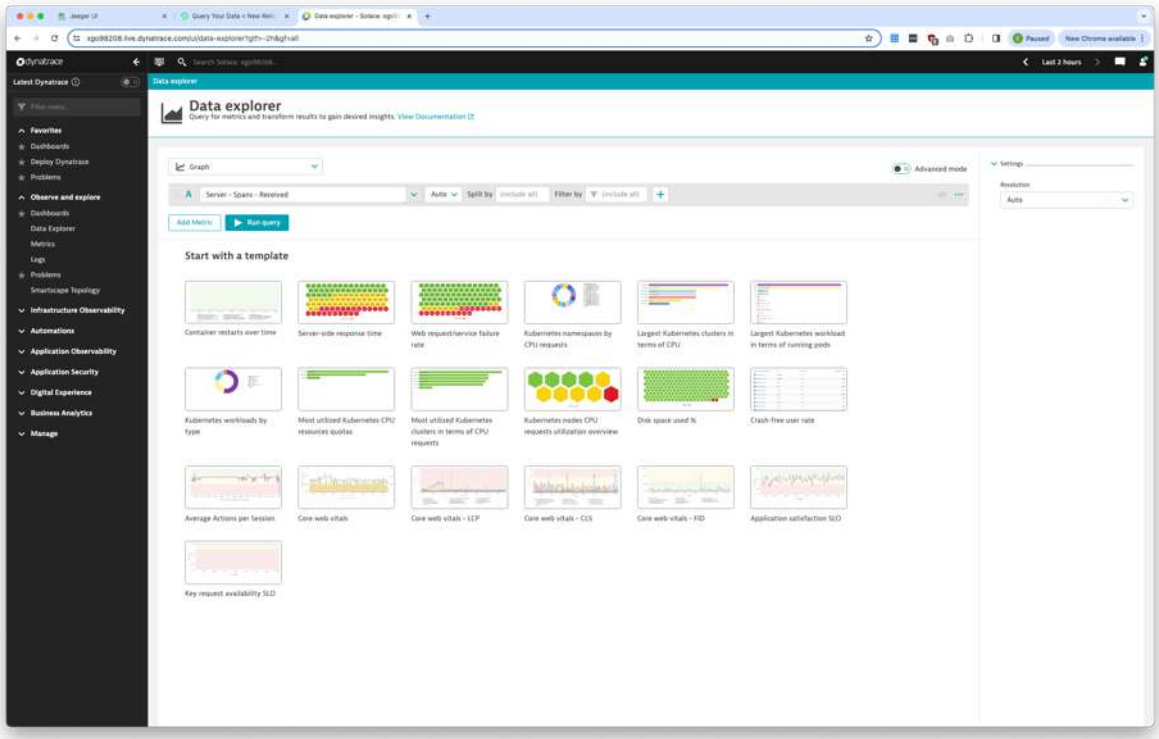
Click [Generate token]



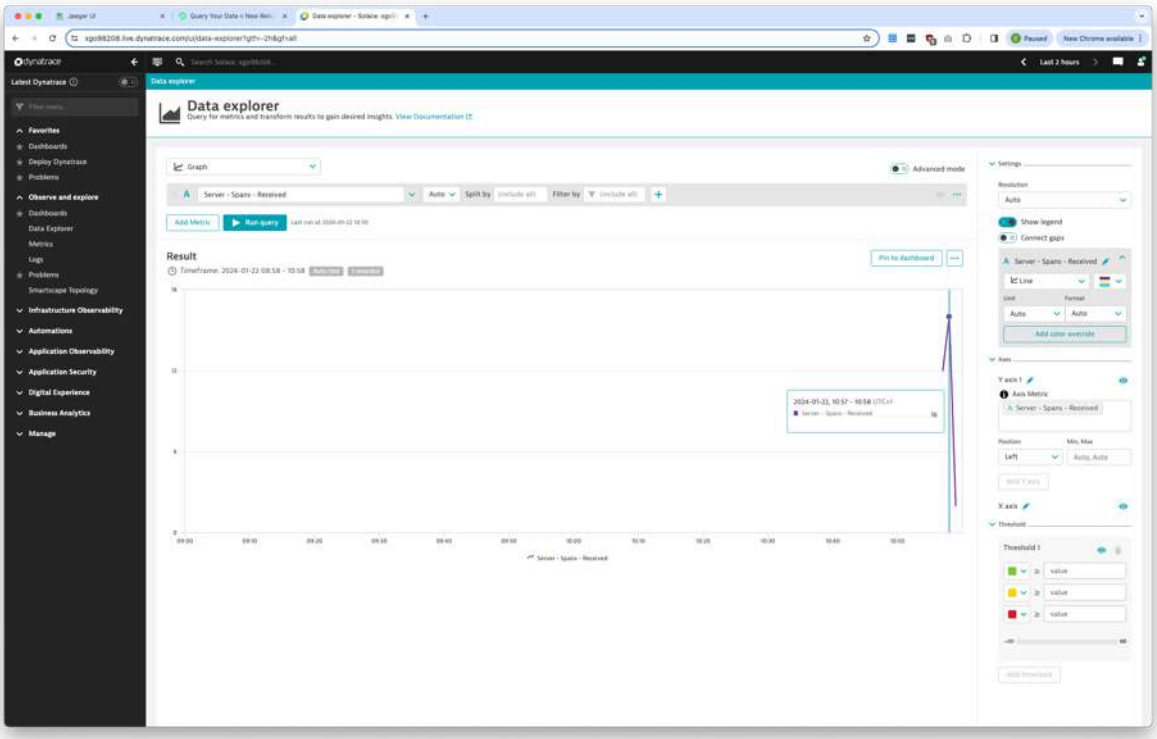
Copy token and add to yaml.

Now send some events with SDKPerf resulting in traces in Dynatrace.

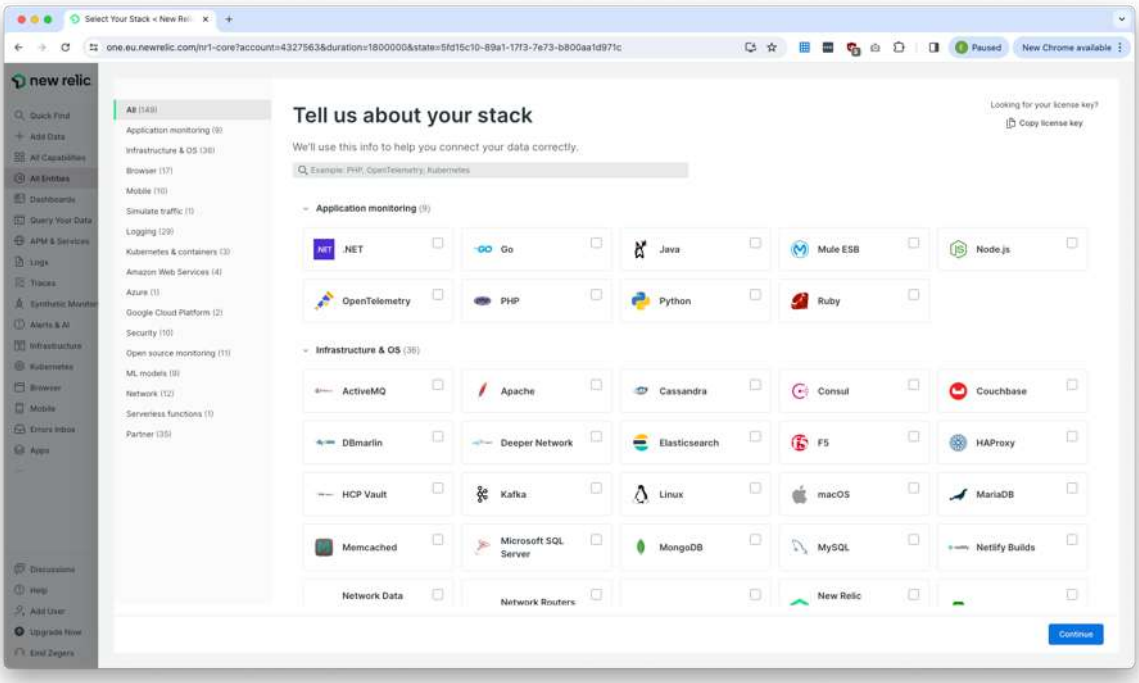


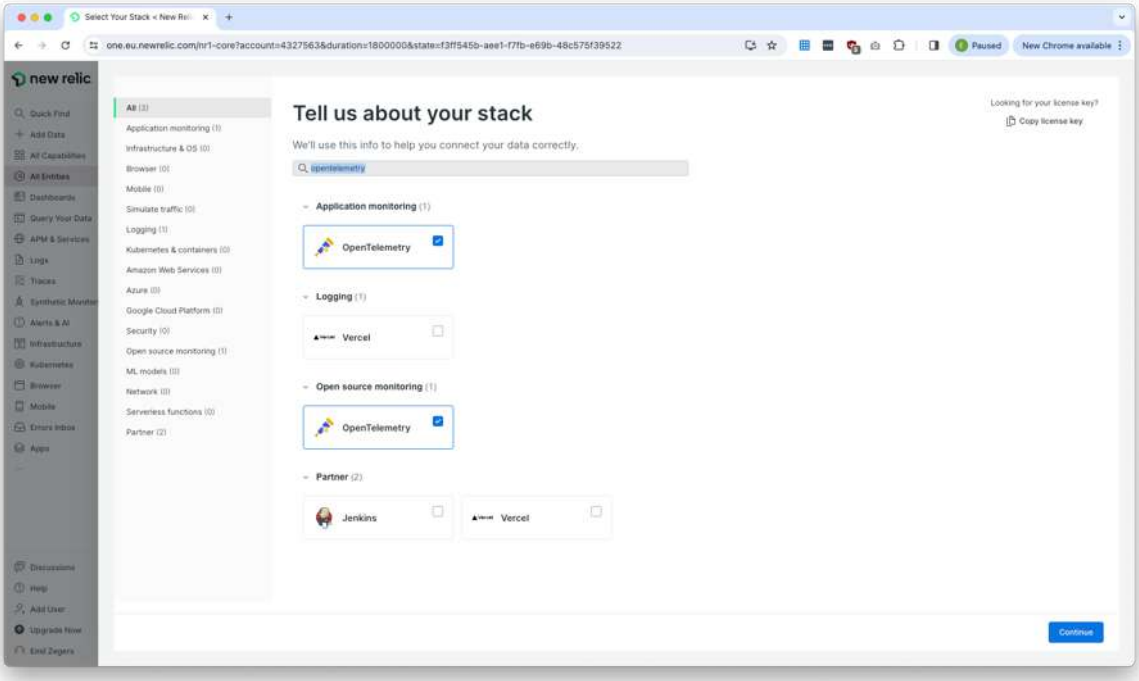


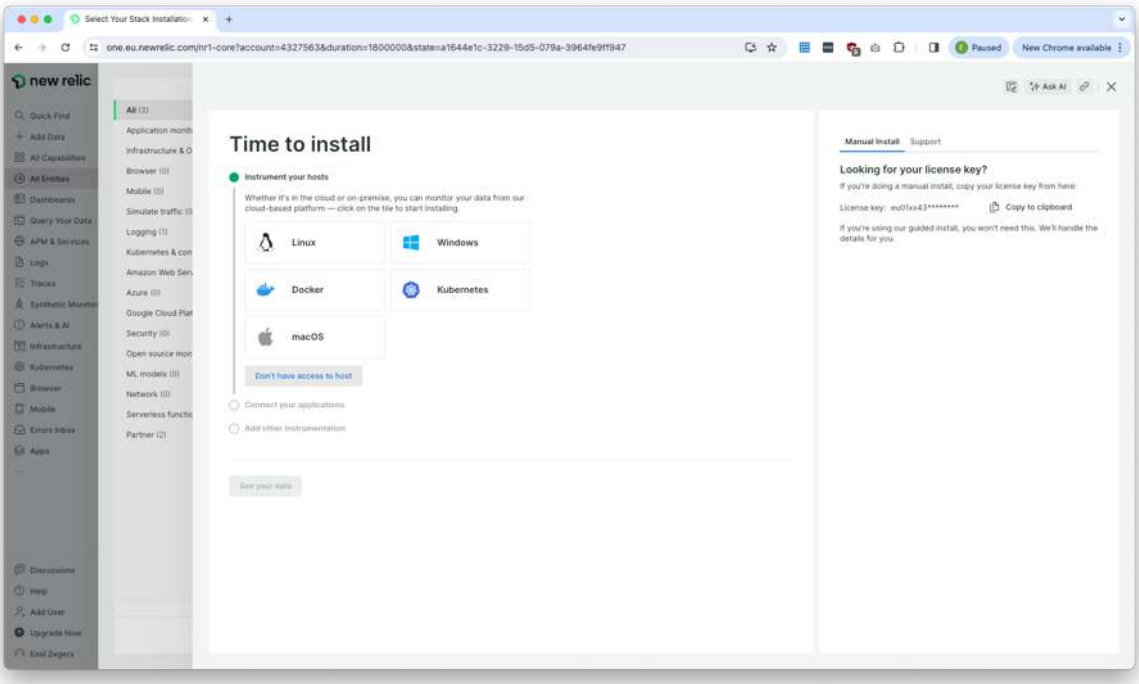
Click [Run query]

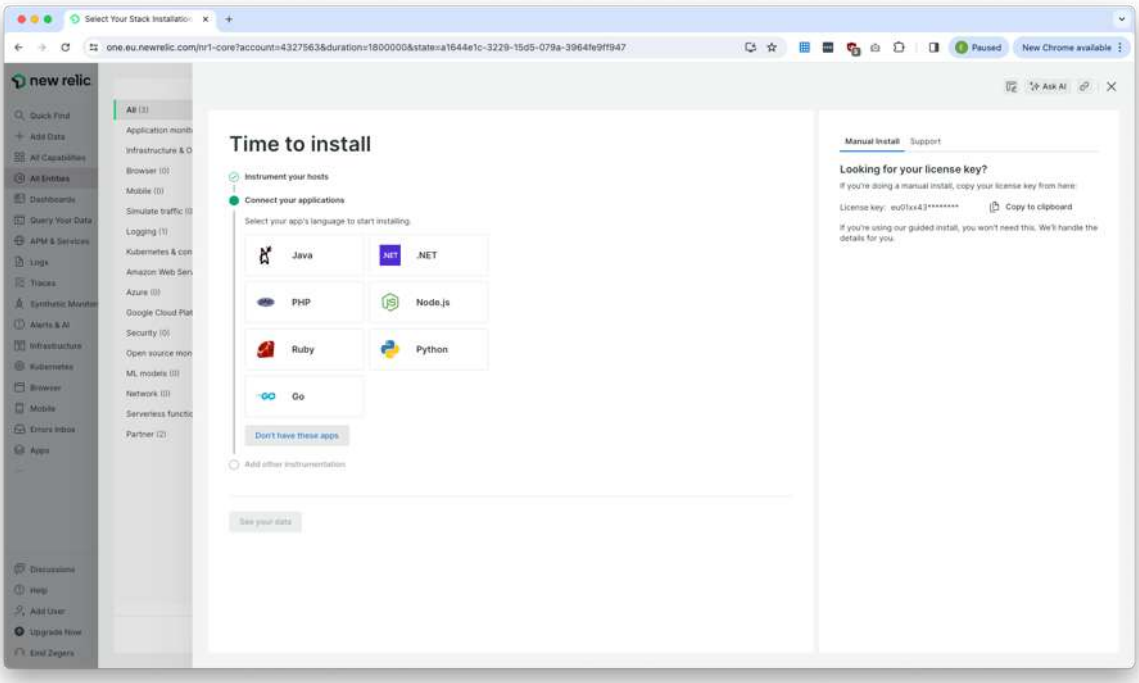

Data explorer
Query for metrics and transform results to gain desired insights.
Result

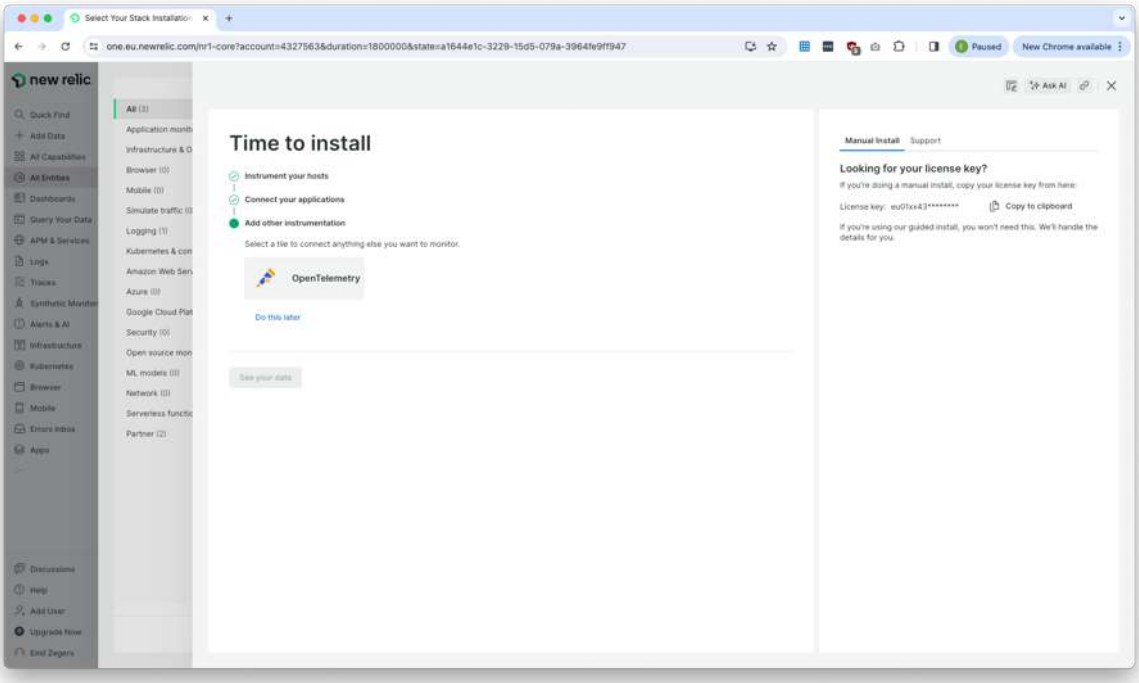
4.4 New Relic


Tell us about your stack
We'll use this info to help you connect your data correctly.
Application monitoring
Infrastructure & OS
.NET
Go
Java
Mule ESB
Node.js
OpenTelemetry
PHP
Python
Ruby
ActiveMQ
Apache
Cassandra
Consul
Couchbase
DBmarlin
Deeper Network
Elasticsearch
F5
HAProxy
HCP Vault
Kafka
Linux
macOS
MariaDB
Memcached
Microsoft SQL Server
MongoDB
MySQL
Netlify Builds
Network Data
Network Routers
New Relic
Continue

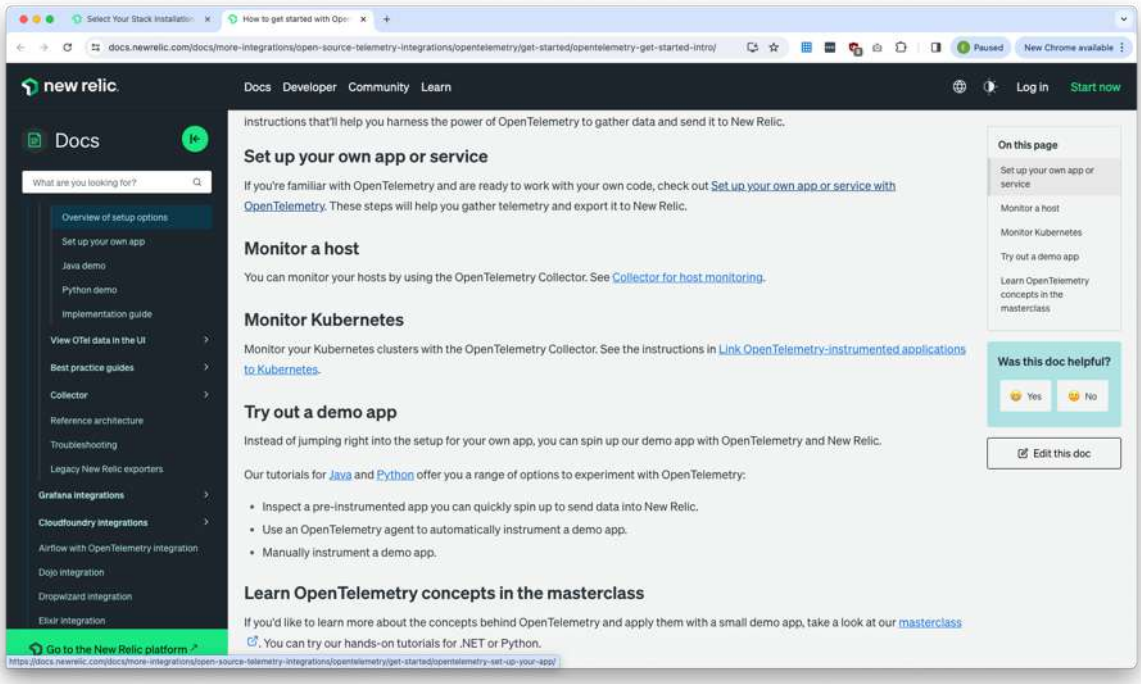

Tell us about your stack
We'll use this info to help you connect your data correctly.
Application monitoring (1)
OpenTelemetry
Logging (1)
Vercel
Open source monitoring (1)
OpenTelemetry
Partner (2)
Jenkins
Vercel
Continue


Time to install
Instrument your hosts
Linux
Windows
Docker
Kubernetes
macOS
Looking for your license key?

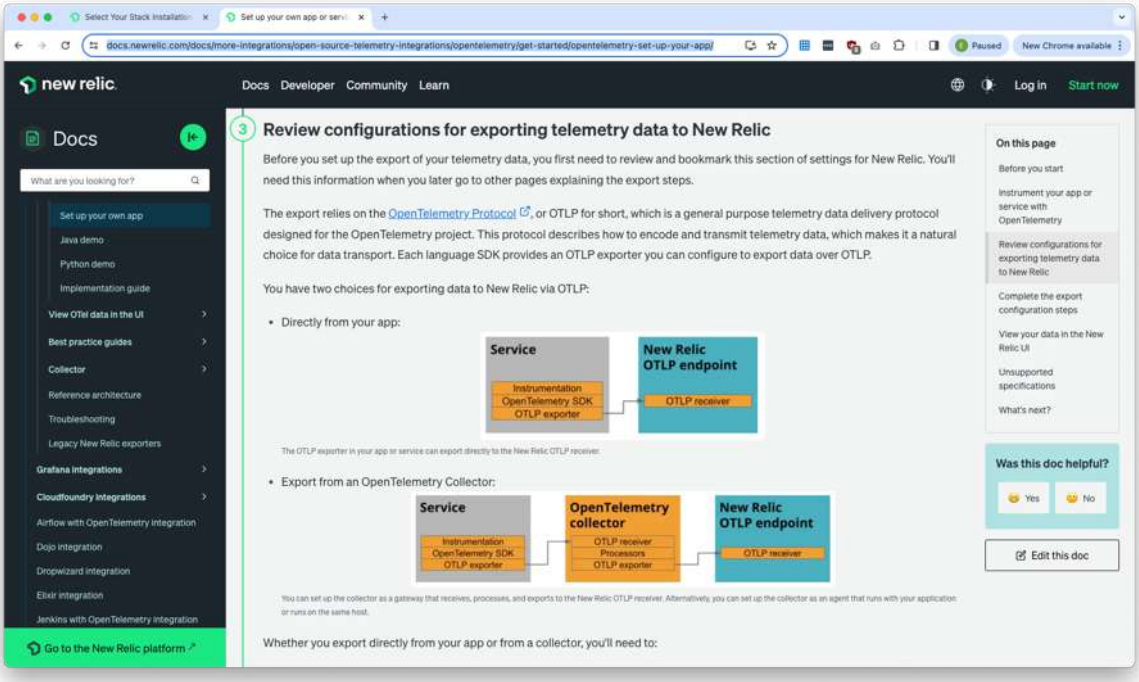




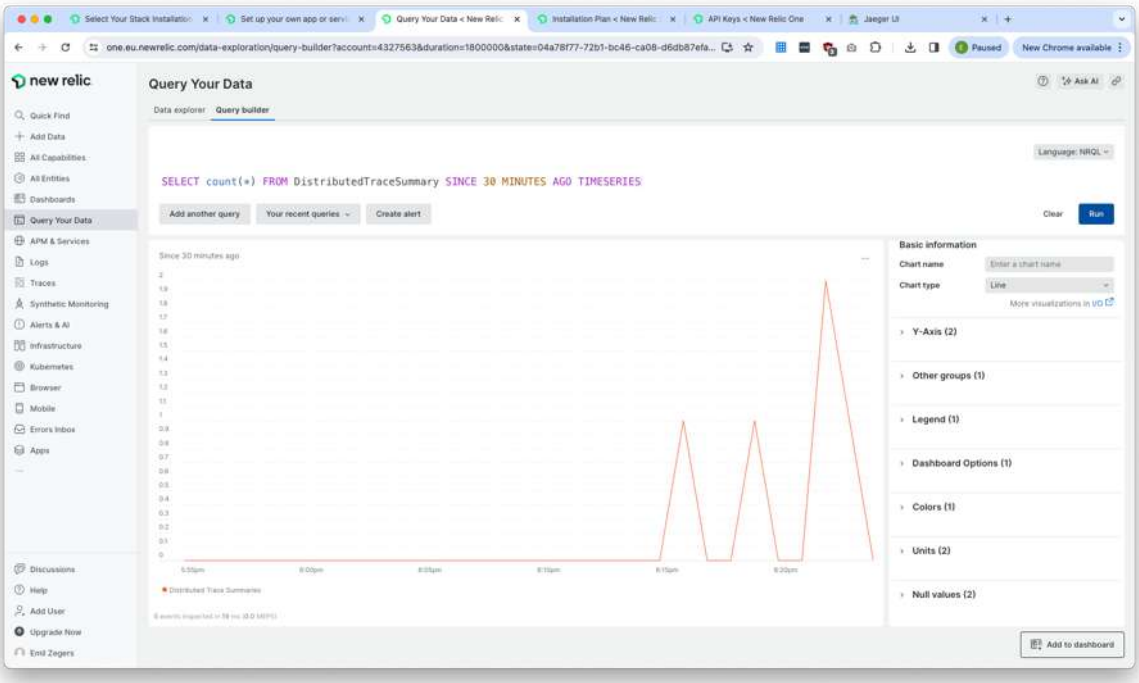
https://docs.newrelic.com/docs/more-integrations/open-source-telemetry-integrations/opentelemetry/get-started/opentelemetry-get-started-intro/



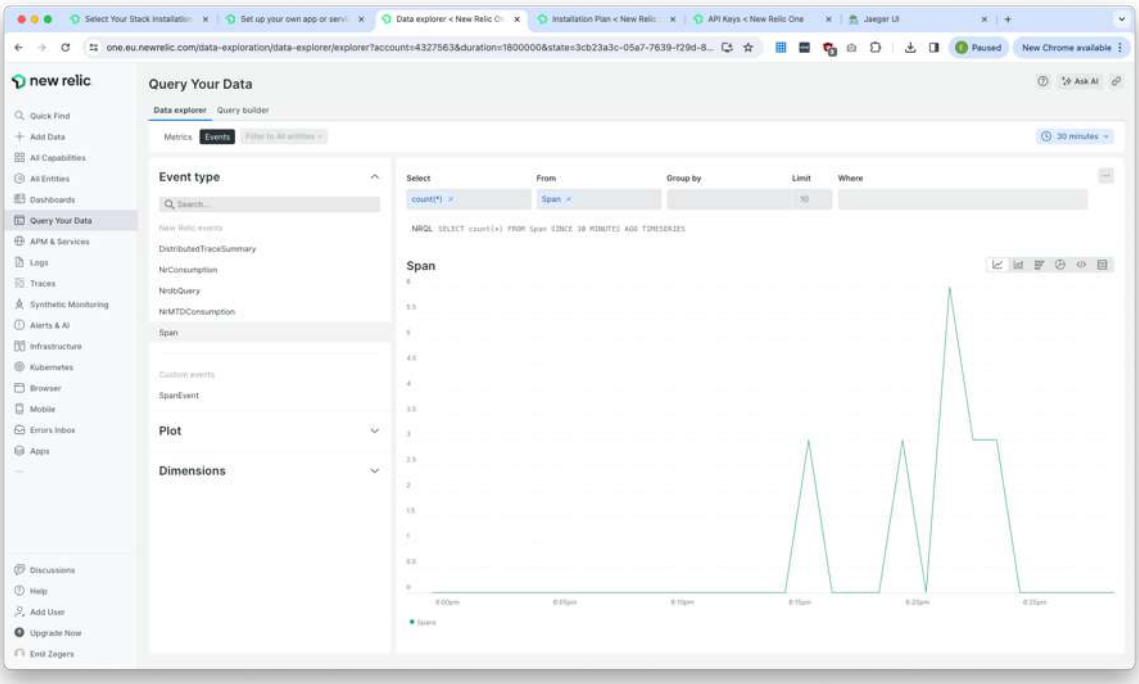
https://docs.newrelic.com/docs/more-integrations/open-source-telemetry-integrations/opentelemetry/get-started/opentelemetry-set-up-your-app/

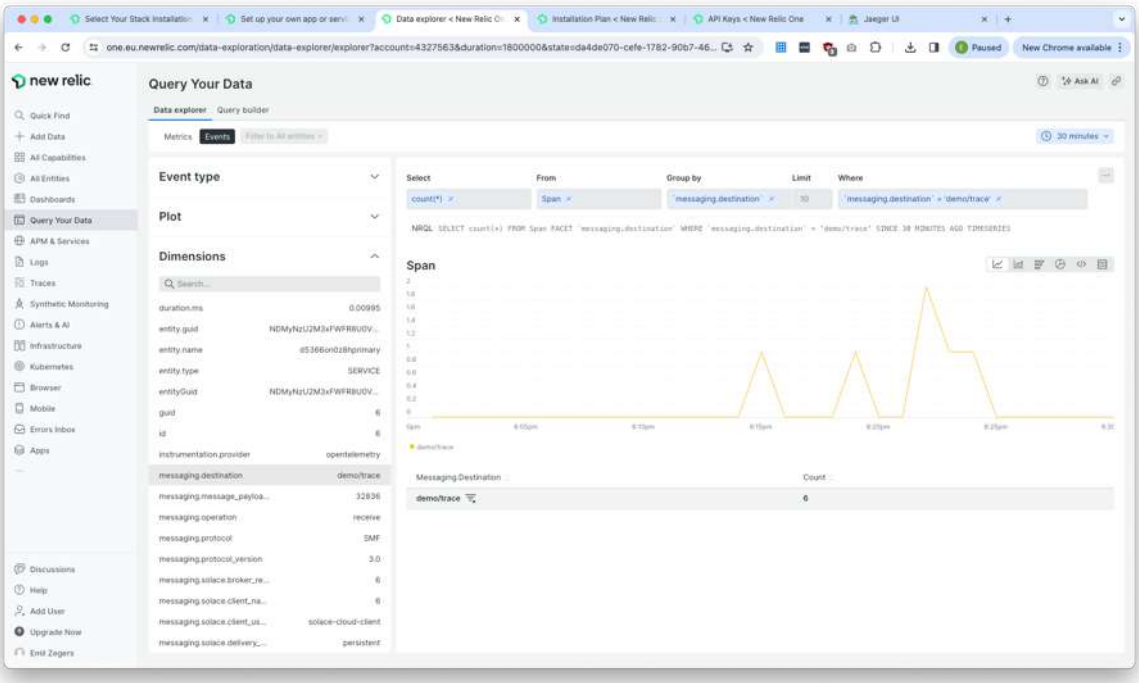


See yaml example at https://docs.newrelic.com/docs/more-integrations/open-source-telemetry-integrations/opentelemetry/collector/opentelemetry-collector-basic/



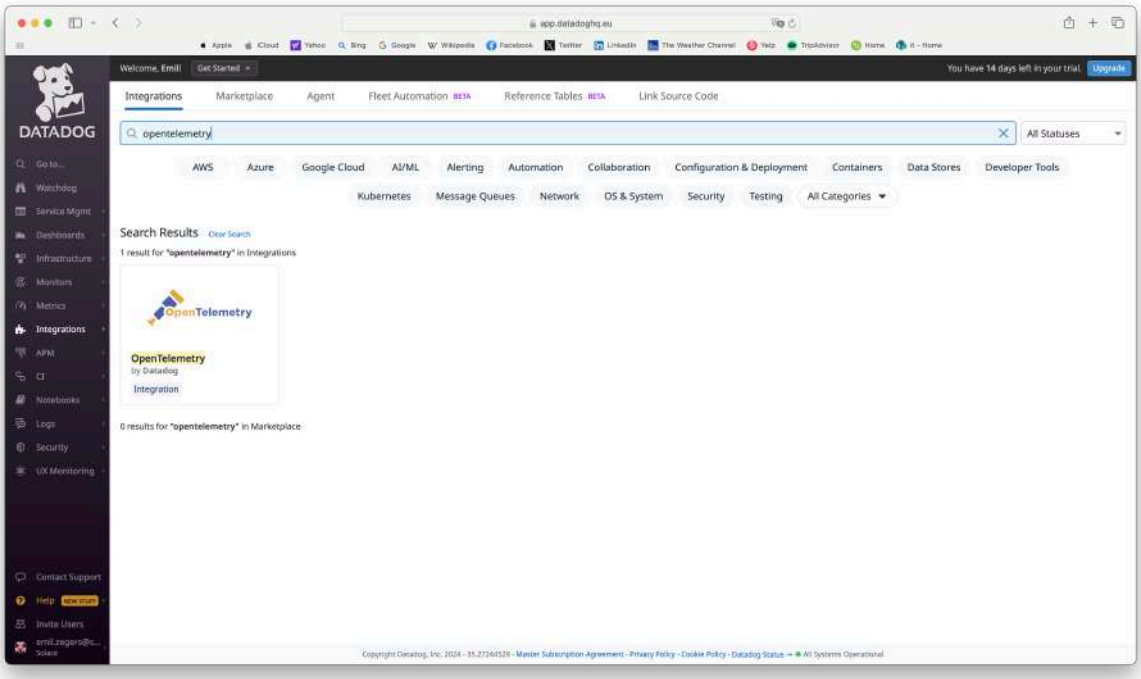
In **Query Your Data** select **Event Type Span**

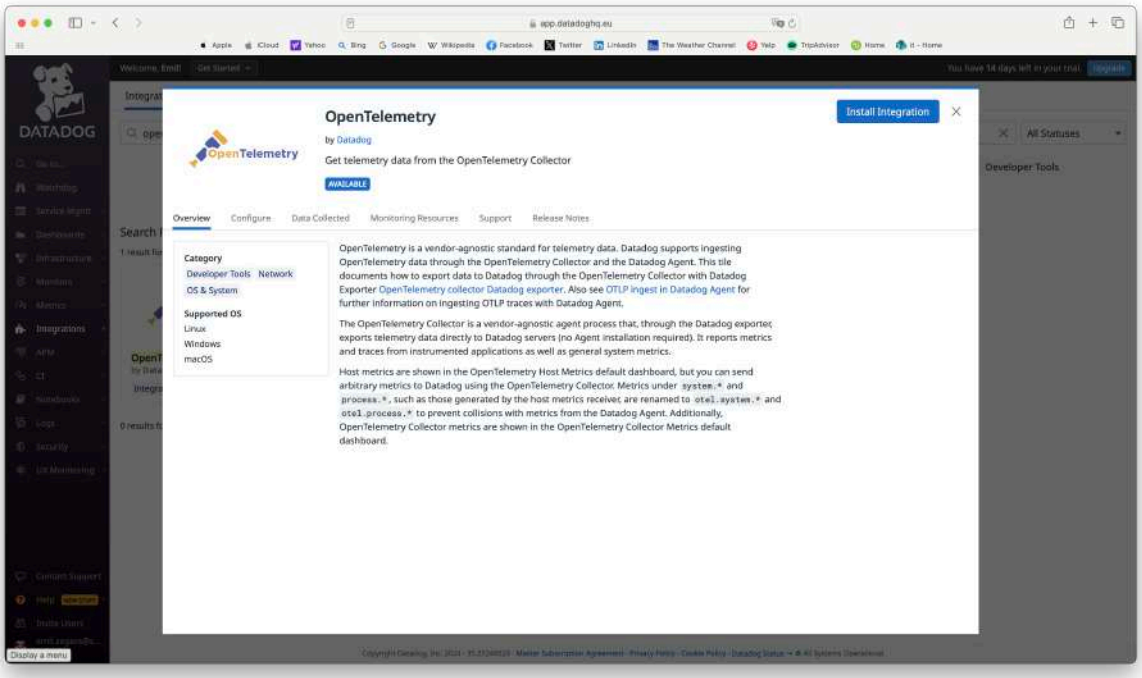


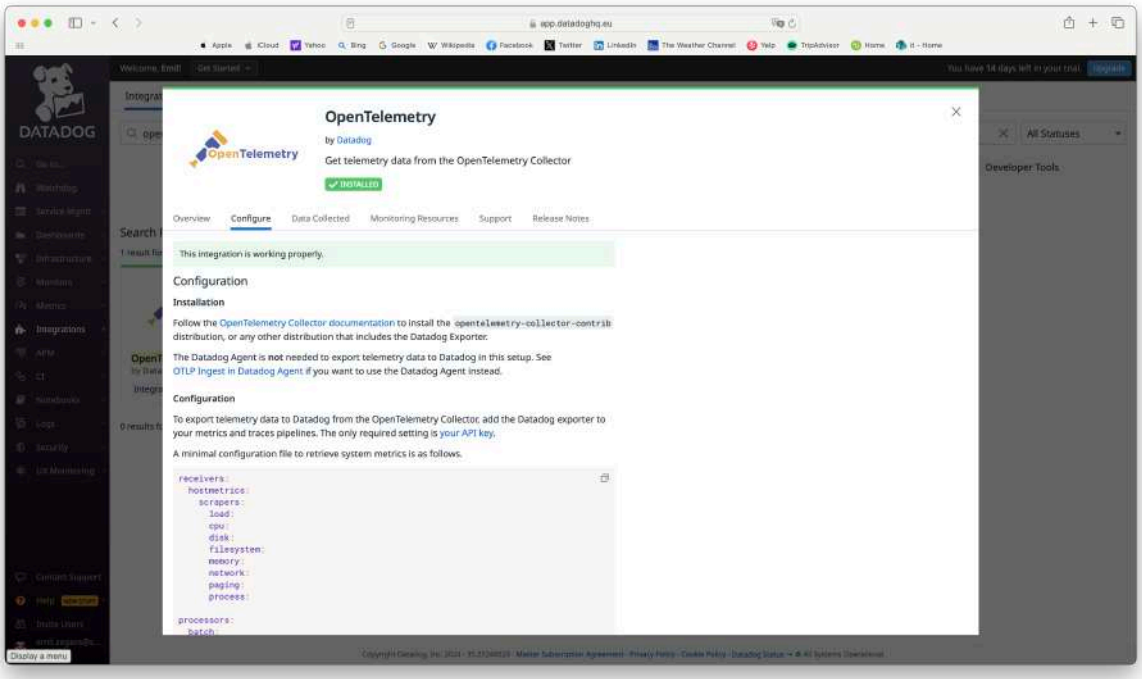


4.5 DataDog

NOTE: no time yet to add… Keep an eye on updates.








```
exporters:
  datadog:
    api:
      key: "<Your API key goes here>"

service:
  pipelines:
    metrics:
      receivers: [hostmetrics]
      processors: [batch]
      exporters: [datadog]
```

4.6 Splunk

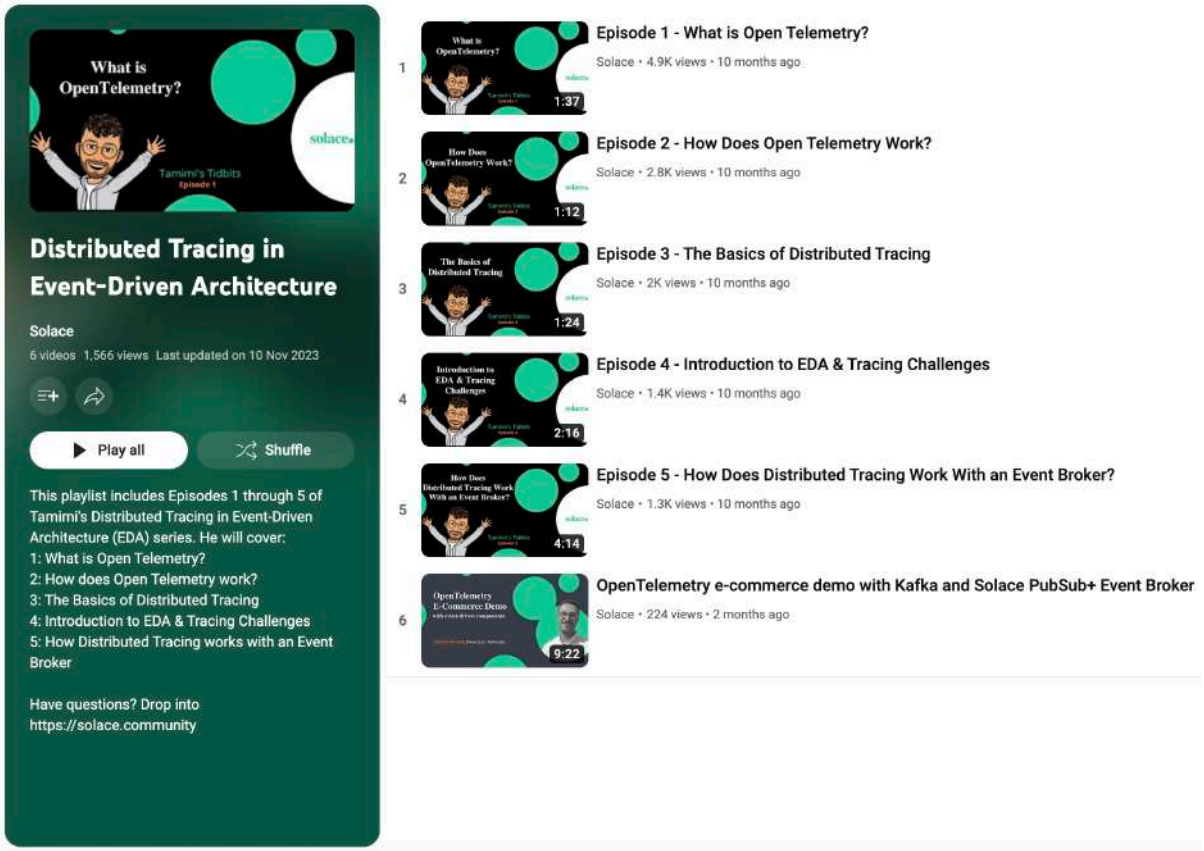
NOTE: no time yet to add… Keep an eye on updates.

TODO: need for enterprise cloud package with Splunk?

5 Resources

https://github.com/taatuut/clear-agnostic
The repo also contains this document and the deck on Distributed Tracing used at the Solace Connect user group in Amsterdam on January 25th, 2024 https://solace.com/event/solace-connect-user-group-benelux-2024/

https://www.youtube.com/playlist?list=PLY1Ks8JEfJR7jWm3aafht9cou2oleB_Ef



OpenTelemetry e-commerce demo with Kafka and Solace PubSub+ Event Broker
https://www.youtube.com/watch?v=RIHQGVS5KNM