



# Azure Web app Diagnostic setting

In this scenario, we are setting up diagnostic logging for an Azure web app and processing the logged data using Stream Analytics. The end goal is to monitor and analyze various metrics and logs generated by the web app, such as performance metrics, errors, and usage patterns. By processing this data, we aim to gain insights into the behavior of the web app, identify any issues or bottlenecks, and make informed decisions for optimization and troubleshooting. Ultimately, this setup helps in ensuring the smooth operation and optimal performance of the web application.

1. In this lab first we will create a web app and then enable the diagnostic settings on it.
2. Now you need to search the web app and start creating one.
3. First you have to create a new resource group for it. Then give your web app a name and choose the runtime stack, OS, and region.

Basics Database Deployment Networking Monitoring Tags Review + create

App Service Web Apps lets you quickly build, deploy, and scale enterprise-grade web, mobile, and API apps running on any platform. Meet rigorous performance, scalability, security and compliance requirements while using a fully managed platform to perform infrastructure maintenance. [Learn more](#)

## Project Details

Select a subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription \* ⓘ Azure Pass - Sponsorship ▾

Resource Group \* ⓘ (New) webapp-RG ▾  
[Create new](#)

## Instance Details

Name \* webapp120120 .azurewebsites.net ✓

Publish \*  Code  Container  Static Web App

Runtime stack \* .NET 8 (LTS) ▾

Operating System \*  Linux  Windows

Region \* North Europe ▾

Not finding your App Service Plan? Try a different region or select your App Service Environment.

4. Then for the pricing plans you have to choose basic b1.

## Pricing plans

App Service plan pricing tier determines the location, features, cost and compute resources associated with your app.  
[Learn more ↗](#)

Windows Plan (North Europe) \* ⓘ (New) ASP-webappRG-b5f5 ▾  
[Create new](#)

Pricing plan Basic B1 (100 total ACU, 1.75 GB memory, 1 vCPU) ▾  
[Explore pricing plans](#)

5. Then you need to go to Monitoring and turn off application insights.
6. Then go to the review page and create your web app.

Basics Database Deployment Networking **Monitoring** Tags Review + create

Azure Monitor application insights is an Application Performance Management (APM) service for developers and DevOps professionals. Enable it below to automatically monitor your application. It will detect performance anomalies, and includes powerful analytics tools to help you diagnose issues and to understand what users actually do with your app. Your bill is based on amount of data used by Application Insights and your data retention settings. [Learn more ↗](#)

[App Insights pricing ↗](#)

### Application Insights

Enable Application Insights \*  No  Yes

7. Once your deployment is completed then go to resources.

### ✓ Your deployment is complete

 Deployment name: Microsoft.Web-WebApp-Portal-730714a8-b033 Start time: 10/5/2024, 12:59:53 pm  
Subscription: [Azure Pass - Sponsorship](#) Correlation ID: 9da213d7-0a3b-4c40-b068-e792b688ed12 

✓ Deployment details

✗ Next steps

[Manage deployments for your app.](#) Recommended

[Protect your app with authentication.](#) Recommended

[Go to resource](#)

8. Inside it you will see that your web app is running, and it has a domain name.

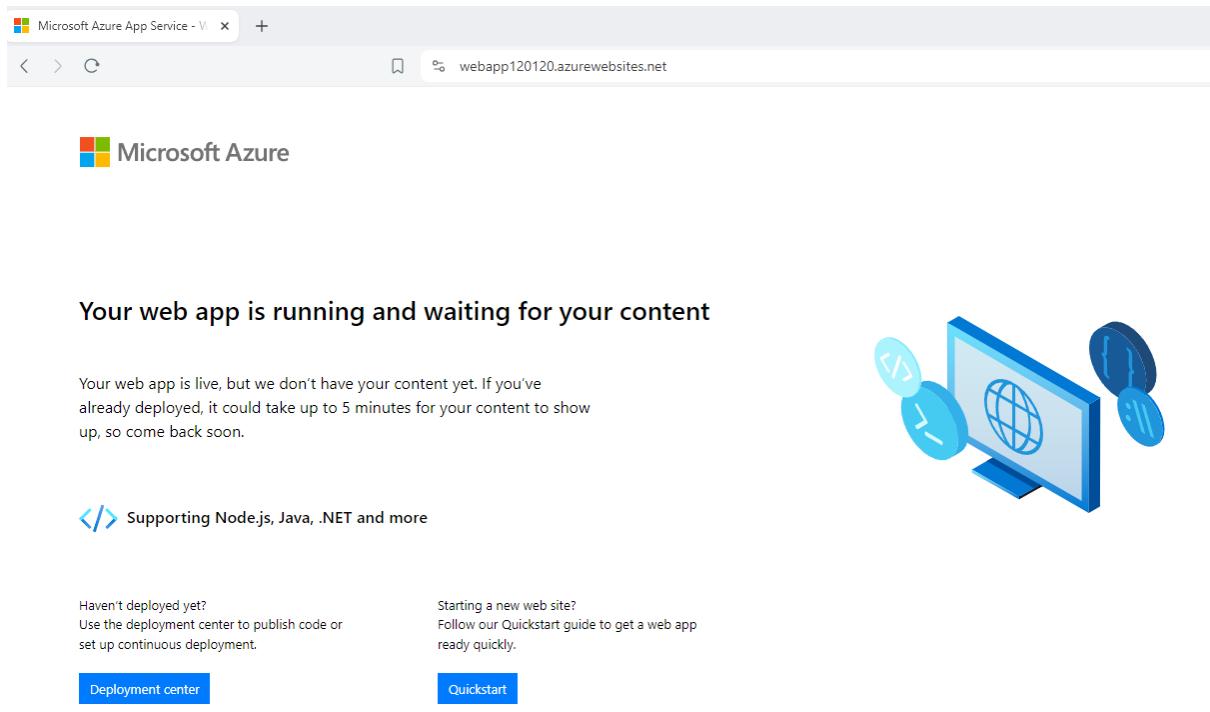
⋮ Browse ⋮ Stop ⋮ Swap ⋮ Restart ⋮ Delete ⋮ Refresh ⋮ Download publish profile ⋮ Reset publish profile ⋮ Share to mobile ⋮ Send us your feedback ⋮

ⓘ Click here to access Application Insights for monitoring and profiling for your app.

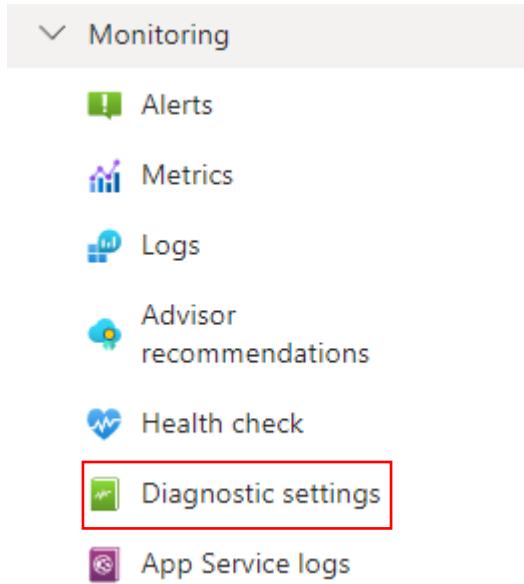
✗ Essentials

Resource group ( <a href="#">move</a> )	: <a href="#">webapp-RG</a>	Default domain	: <a href="#">webapp120120.azurewebsites.net</a> 
Status	: Running	App Service Plan	: <a href="#">ASP-webappRG-b5f5 (B1: 1)</a>
Location ( <a href="#">move</a> )	: North Europe	Operating System	: Windows
Subscription ( <a href="#">move</a> )	: <a href="#">Azure Pass - Sponsorship</a>	Health Check	: <a href="#">Cannot fetch health check data. Please try again later.</a>
Subscription ID	: 3541d15a-44aa-4f6e-a120-1b7a6d5925bf		

9. Now copy this domain name and paste it into a new tab and you will get this web page saying that your web app is running.

A screenshot of a Microsoft Edge browser window titled "Microsoft Azure App Service - V1". The address bar shows the URL "webapp120120.azurewebsites.net". The page content includes the Microsoft Azure logo, a heading "Your web app is running and waiting for your content", a message about deployment status, and icons for supporting technologies like Node.js, Java, and .NET. It also features links for "Deployment center" and "Quickstart".

10. Then in your web app from the left pane scroll down to monitoring, expand it, and choose diagnostic settings.

A screenshot of the Azure portal's left navigation menu. The "Monitoring" section is expanded, showing options like Alerts, Metrics, Logs, Advisor recommendations, Health check, Diagnostic settings (which is highlighted with a red border), and App Service logs.

11. Then you need to add the diagnostic settings.

Refresh Feedback

Diagnostic settings are used to configure streaming export of platform logs and metrics for a resource to the destination of your choice. You may create up to five different diagnostic settings to send different logs and metrics to independent destinations. [Learn more about diagnostic settings](#)

Diagnostic settings					
Name	Storage account	Event hub	Log Analytics workspace	Partner solution	Edit setting
No diagnostic settings defined					
<a href="#">+ Add diagnostic setting</a>					
Click 'Add Diagnostic setting' above to configure the collection of the following data:					
<ul style="list-style-type: none"><li>• HTTP logs</li><li>• App Service Console Logs</li><li>• App Service Application Logs</li><li>• Access Audit Logs</li><li>• IPSecurity Audit logs</li><li>• App Service Platform logs</li><li>• App Service Authentication logs (preview)</li><li>• AllMetrics</li></ul>					

12. Now here first you are going to name it. After that you need to choose the storage account, and then you need to choose the logs as shown below.

13. Click on save, now you have to wait for at least one hour so that the data gets into your storage account.

Diagnostic setting ...

Save Discard Delete Feedback

A diagnostic setting specifies a list of categories of platform logs and/or metrics that you want to collect from a resource, and one or more destinations that you would stream them to. Normal usage charges for the destination will occur. [Learn more about the different log categories and contents of those logs](#)

Diagnostic setting name *	<input type="text" value="WebLogSetting"/>
Logs	Destination details
Categories	<input type="checkbox"/> Send to Log Analytics workspace
<input checked="" type="checkbox"/> HTTP logs	<input checked="" type="checkbox"/> Archive to a storage account
<input type="checkbox"/> App Service Console Logs	You'll be charged normal data rates for storage and transactions when you send diagnostics to a storage account.
<input type="checkbox"/> App Service Application Logs	Showing all storage accounts including classic storage accounts
<input type="checkbox"/> Access Audit Logs	Location
<input type="checkbox"/> IPSecurity Audit logs	North Europe
<input type="checkbox"/> App Service Platform logs	Subscription
<input type="checkbox"/> App Service Authentication logs (preview)	<input type="text" value="Azure Pass - Sponsorship"/>
Metrics	Storage account *
<input checked="" type="checkbox"/> AllMetrics	<input type="text" value="appstorage120"/>
	<input type="checkbox"/> Stream to an event hub

## Formulating the Query

1. So, after 50 minutes we checked for the new containers in our storage account and they were there.

Name	Last modified	Anonymous access level	Lease state	...
Slogs	9/5/2024, 3:12:17 pm	Private	Available	...
csv	9/5/2024, 11:40:50 pm	Private	Available	...
eventhubcontainer	10/5/2024, 12:29:25 pm	Private	Available	...
insights-logs-appservicehttplogs	10/5/2024, 1:26:28 pm	Private	Available	...
insights-metrics-pt1m	10/5/2024, 1:12:34 pm	Private	Available	...
parquet	9/5/2024, 11:41:25 pm	Private	Available	...
staging	9/5/2024, 11:42:06 pm	Private	Available	...

2. We are interested in our metrics container. So, open it.
3. After multiple layers of folders, we found our JSON file. Now you need to download it.

Name	Modified	Access tier	Archive status	Blob type	Size	Lease state	...
[..]							...
PT1H.json	10/5/2024, 1:36:35 pm			Append blob	16.2 KiB	Available	...

4. Now we need to understand what the structure of our data is. For that, we need to navigate to Stream analytics and open queries from there.
5. There you will see that we have an option to upload our data.

Input preview    Test results    SQL table schema (preview)    Job simulation (preview)

Showing sample events from 'blobhub'.

Table    Raw    Refresh    Select time range    Upload sample input    Send events    Download sample data

6. Click on upload and then choose your file then click on save.

## Upload sample data X

Upload sample data from file \*



You can upload a file with sample input to test your query against. Stream Analytics supports processing input in JSON, CSV and Avro formats with UTF-8 encoding natively.

7. Then you will see that we have the data in place in tabular format and we can get the idea of what it contains now.

Input preview Test results SQL table schema (preview) Job simulation (preview)

Showing data from uploaded file 'PT1H.json'.

View in JSON Table Raw Reset Upload sample input Send events Download sample data

total	minimum	maximum	average	resourceId	time	metricName	timeGrain	count
float	float	float	float	string	datetime	string	string	bigint
0	0	0	0	"/SUBSCRIPTIONS/354...	"2024-05-10T08:00:00...	"CpuTime"	"PT1M"	
0	0	0	0	"/SUBSCRIPTIONS/354...	"2024-05-10T08:01:00...	"CpuTime"	"PT1M"	
0	0	0	0	"/SUBSCRIPTIONS/354...	"2024-05-10T08:02:00...	"CpuTime"	"PT1M"	
0	0	0	0	"/SUBSCRIPTIONS/354...	"2024-05-10T08:00:00...	"BytesSent"	"PT1M"	0
0	0	0	0	"/SUBSCRIPTIONS/354...	"2024-05-10T08:01:00...	"BytesSent"	"PT1M"	0
0	0	0	0	"/SUBSCRIPTIONS/354...	"2024-05-10T08:02:00...	"BytesSent"	"PT1M"	0
17215488	17215488	17371136	3456040.96	"/SUBSCRIPTIONS/354...	"2024-05-10T08:00:00...	"MemoryWorkingSet"	"PT1M"	5
15943680	14745600	16670720	2657280	"/SUBSCRIPTIONS/354...	"2024-05-10T08:01:00..."	"MemoryWorkingSet"	"PT1M"	6

Success

8. If you want to check the Raw representation of your data then you can do that too.

Input preview Test results SQL table schema (preview) Job simulation (preview)

Showing data from uploaded file 'PT1H.json'.

View in JSON Table Raw Reset Upload sample input Send events Download sample data

```

1 [ 
2 {
3   "total": 0,
4   "minimum": 0,
5   "maximum": 0,
6   "average": 0,
7   "resourceId": "/SUBSCRIPTIONS/3541D15A-44AA-4F6E-A120-1B7A6D5925BF/RESOURCEGROUPS/WEBAPP-RG/PROVIDERS/MICROSOFT.WEB/SITES/WEBAPP120120",
8   "time": "2024-05-10T08:00:00.000000Z",
9   "metricName": "CpuTime",
10  "timeGrain": "PT1M"
11 },
12 {
13   "total": 0,
14   "minimum": 0,
15   "maximum": 0,
16   "average": 0,
17   "resourceId": "/SUBSCRIPTIONS/3541D15A-44AA-4F6E-A120-1B7A6D5925BF/RESOURCEGROUPS/WEBAPP-RG/PROVIDERS/MICROSOFT.WEB/SITES/WEBAPP120120",
18   "time": "2024-05-10T08:01:00.000000Z",
19   "metricName": "CpuTime",
20   "timeGrain": "PT1M"
21 },
22 ]

```

Success

9. Now we are going to write a query as shown below and we do not care where the data is going to be written now.

```

SELECT
  minimum AS Minimum,
  maximum AS Maximum,
  average AS Average,
  time as MetricTime,
  metricName as MetricName
INTO
  [BlobDiagnostics]
FROM
  [blobhub] b

```

```

6  SELECT
7      minimum AS Minimum,
8      maximum AS Maximum,
9      average AS Average,
10     time as Metrictime,
11     metricName as MetricName
12  INTO
13      [BlobDiagnostics]
14  FROM
15      [blobhub] b

```

10. Then click on test query and we getting the data accordingly.

Input preview					Test results	SQL table schema (preview)	Job simulation (preview)
Minimum	Maximum	Average	Metrictime	MetricName			
float	float	float	datetime	string			
0	0	0	"2024-05-10T08:00:00.000000Z"	"CpuTime"			
0	0	0	"2024-05-10T08:01:00.000000Z"	"CpuTime"			
0	0	0	"2024-05-10T08:02:00.000000Z"	"CpuTime"			
0	0	0	"2024-05-10T08:00:00.000000Z"	"BytesSent"			
0	0	0	"2024-05-10T08:01:00.000000Z"	"BytesSent"			
0	0	0	"2024-05-10T08:02:00.000000Z"	"BytesSent"			
17215488	17371136	3456040.96	"2024-05-10T08:00:00.000000Z"	"MemoryWorkingSet"			
14745600	16670720	2657280	"2024-05-10T08:01:00.000000Z"	"MemoryWorkingSet"			
16719872	16900096	3366420.48	"2024-05-10T08:02:00.000000Z"	"MemoryWorkingSet"			

Showing 109 rows from 'BlobDiagnostics'. Ln 15, Col 16

## 😊 Running Stream analytics Job

1. First you are going to create a table in your SQL Database so that we can send the data into that table.
2. For that either open SSMS or directly your query editor. Below you can see that we have created our table.

```

CREATE TABLE WebMetrics
(
    Minimum decimal,
    Maximum decimal,
    Average decimal,
    Metrictime datetime,
    MetricName varchar(200)
)

```

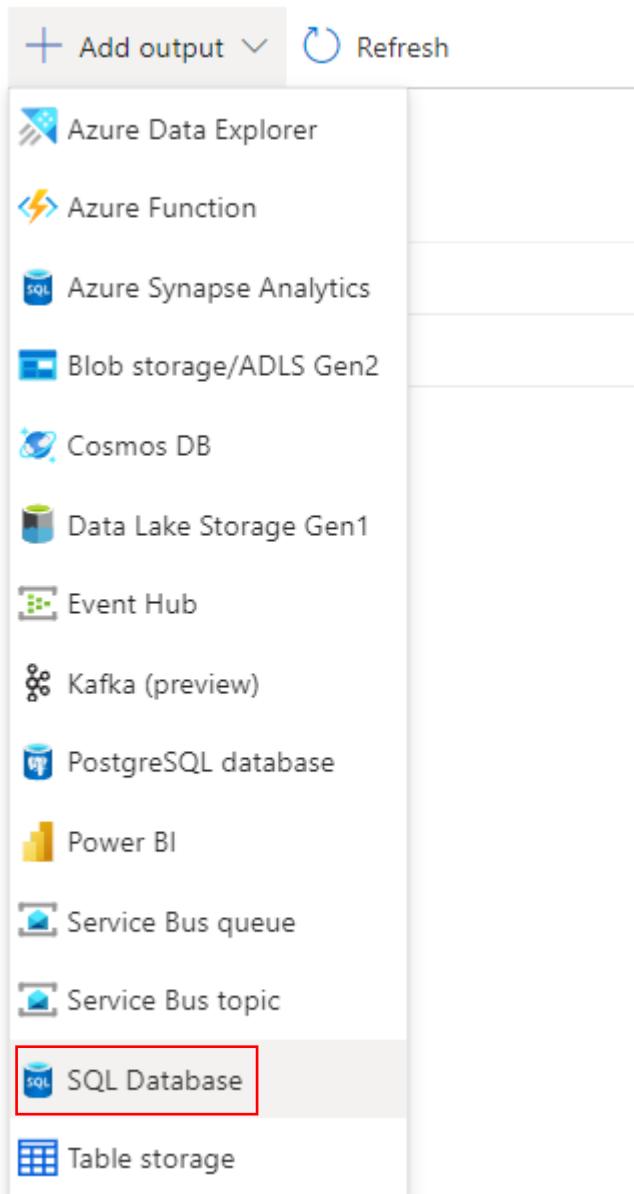
▷ Run  Cancel query  Save query  Export data as  Show only Editor

```
1 CREATE TABLE WebMetrics
2 (
3     Minimum decimal,
4     Maximum decimal,
5     Average decimal,
6     MetricTime datetime,
7     MetricName varchar(200)
8 )
```

Results Messages

Query succeeded: Affected rows: 0

3. Then we are going to output and create an output for our table.
4. Click on add output then choose SQL Database.



5. Then you need to give a name for your output and the table name.
6. Then give your username and password.

## SQL Database

X

New output

Output alias \*

WebMetrics 

Manual entry

Off

Subscription

Azure Pass - Sponsorship 

Database \* 

demodata1201 (sqlserver120) 

Table \*

WebMetrics 

Authentication mode

SQL server authentication 

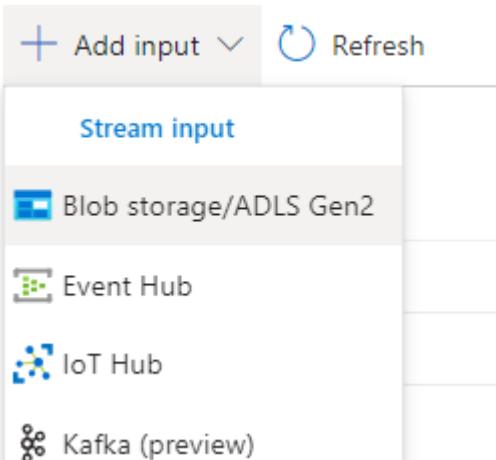
Username \*

sqladmin 

Password \*

\*\*\*\*\* 

7. Now we need to add our input as our storage account but the thing is, so remember, we have quite a deep structure when it comes to the directories before we can reach the JSON-based file that's being recorded.
8. Go to inputs click on add input and choose blob storage.



9. Now you need to give a name for your input and choose your storage account.

## Blob storage/ADLS Gen2 X

New input

Input alias \*

insightsmetrics ✓

- Provide Blob storage/ADLS Gen2 settings manually  
 Select Blob storage/ADLS Gen2 from your subscriptions

Subscription

Azure Pass - Sponsorship ▼

Storage account \*

appstorage120 ▼

10. Then for the container choose existing, then select metrics container for the web app.

11. Now to give the path pattern first we need to copy the path of the file from our storage account then we need to paste it into our notepad.

12. After that delete all the content which exists before the resource ID and after the web app.

13. Then go back to the input and in the path, pattern click use common path pattern, you need to copy that pattern and paste it after the web app which is highlighted.

**resourcId=/SUBSCRIPTIONS/3541D15A-44AA-4F6E-A120-  
1B7A6D5925BF/RESOURCEGROUPS/WEBAPP-  
RG/PROVIDERS/MICROSOFT.WEB/SITES/WEBAPP120120/y={datetime:yyyy}/m={d  
atetime:MM}/d={datetime:dd}/h={datetime:HH}/m={datetime:mm}**

Container \*

Create new  Use existing

insights-metrics-pt1m

Authentication mode

Connection string

Storage account key ⓘ  
.....

Path pattern ⓘ  
resourceId=/SUBSCRIPTIONS/3541D15A-44AA-4F6E-A120-

Use common path pattern: Application Insights

14. Then just save your input. Below you can see that our input was added and the connection test was successful.

✓ Successful connection test ×

Connection to input 'insightsmetrics' succeeded.

a few seconds ago

✓ Added input ×

Added input 'insightsmetrics' to Stream Analytics job 'demostream120'.

a few seconds ago

15. Now you need to go to query and select insight metrics from input if you get the data then it is good. But if you don't get the data then you have to select a different time range.

16. Now we need to write the query as shown below go to overview and start the job.

```

1  /*
2  Here are links to help you get started with Stream Analytics Query Language:
3  Common query patterns - https://go.microsoft.com/fwlink/?LinkID=619153
4  Query language - https://docs.microsoft.com/stream-analytics-query/query-language-elements-azure-stream-analytics
5  */
6  SELECT
7      |    minimum AS Minimum,
8      |    maximum AS Maximum,
9      |    average AS Average,
10     |    time as Metrictime,
11     |    metricName as MetricName
12 INTO
13     |    [WebMetrics]
14 FROM
15     |    [insightsmetrics]

```

17. While starting your job choose custom and start it from the past.

# Start job

X

demostream120

i You have not configured the diagnostic settings for this job yet.  
[Add diagnostic settings in the diagnostic settings pane.](#)

Streaming units i

3

Environment i

Standard

Job output start time i

Now

Custom

When last stopped

Start time

Fri May 10 2024

13:00:00

18. Once your job has successfully started then go to query editor in your SQL Database or open SSMS and run the select statement to check the data.

## ✓ Stream Analytics job started successfully

X

Started Stream Analytics job 'demostream120' successfully.

a few seconds ago

19. Below you can see that we got the data successfully.

```
10  SELECT * FROM [dbo].[WebMetrics]
```

Results

Messages

Search to filter items...

Minimum	Maximum	Average	MetricTime	MetricName
0	0	0	2024-05-10T08:00:00.0000000	CpuTime
0	0	0	2024-05-10T08:01:00.0000000	CpuTime
0	0	0	2024-05-10T08:02:00.0000000	CpuTime
0	0	0	2024-05-10T08:00:00.0000000	BytesSent
0	0	0	2024-05-10T08:01:00.0000000	BytesSent
0	0	0	2024-05-10T08:02:00.0000000	BytesSent

Query succeeded | 0s