

**UNIVERSIDAD MAYOR REAL Y PONTIFICA
DE SAN FRANCISCO XAVIER DE CHUQUISACA**

FACULTAD DE CIENCIAS Y TECNOLOGÍA



PRÁCTICA 7

CARRERA: INGENIERÍA DE SISTEMAS

MATERIA: MICROSERVICIOS (COM600)

DOCENTE: ING. CARLOS MONTELLANO

UNIVERSITARIOS: TORRES LOAYZA ALBERTO ANTONIO

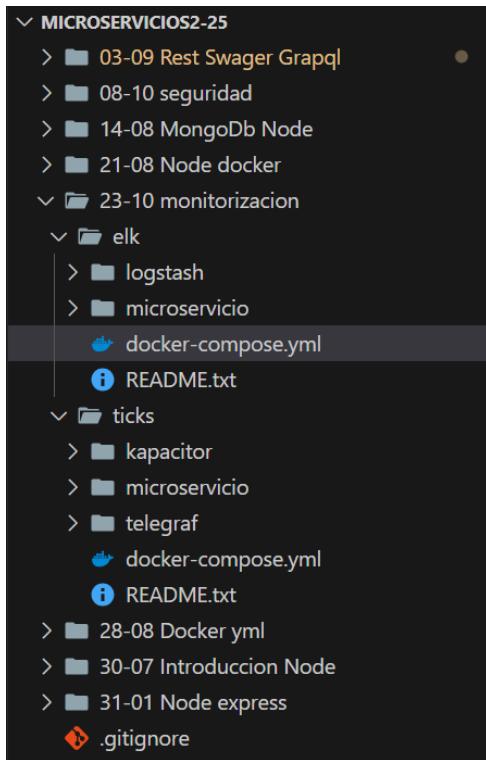
FECHA: 23/10/2025

GESTIÓN: 2/2025

SUCRE – BOLIVIA

I. Monitoreo de un microservicio con Stack ELK

2. Preparación del entorno

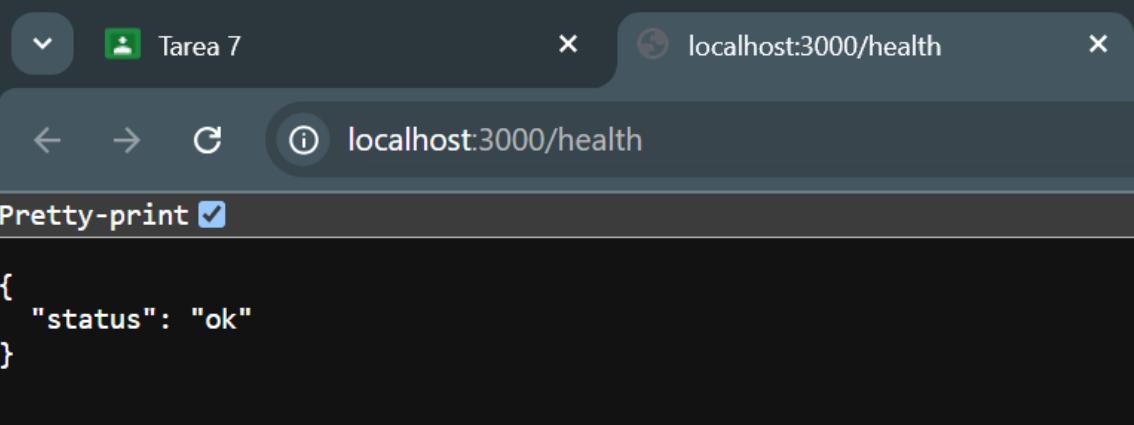


□	elk	-	-	6.02%	3	⋮	⋮	⋮
□	logstash	23cadcc8faec3	logstash/lo_5044:5044	2.52%	1	⋮	⋮	⋮
□	kibana	c1d3584f0343	kibana/kib_5601:5601	2.26%	6	⋮	⋮	⋮
□	elasticsearch	6fee7db888eb	elasticsearch_9200:9200	1.24%	1	⋮	⋮	⋮
□	microservicio	e677a7f86ea6	elk-microse_3000:3000	0%	3	⋮	⋮	⋮

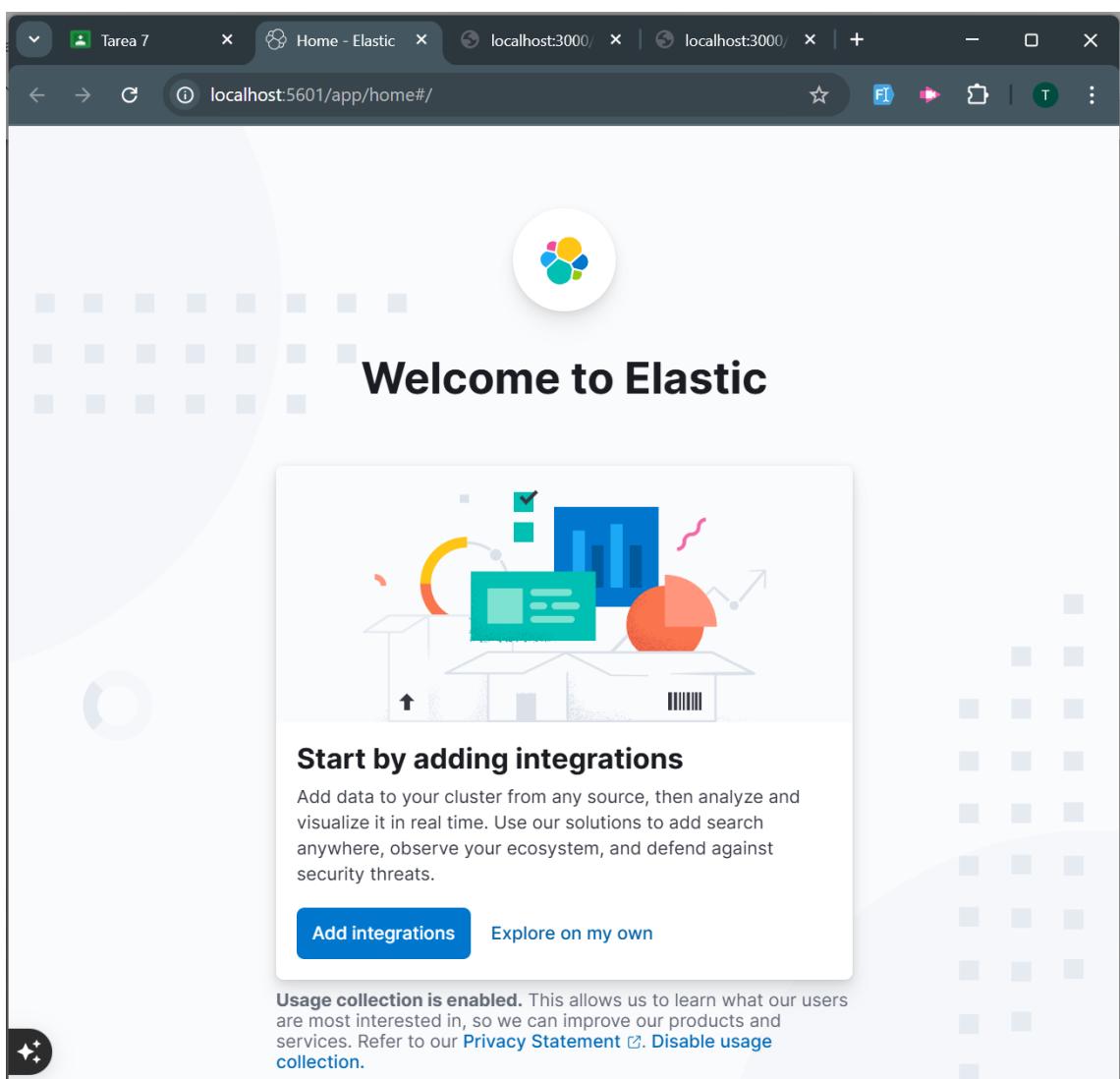
3. Verificación inicial

The screenshot shows a browser window titled 'Tarea 7' with the URL 'localhost:3000/personas'. The page displays a JSON response with two objects:

```
[{"id": 1, "nombre": "Carlos", "edad": 30}, {"id": 2, "nombre": "Ana", "edad": 25}]
```



```
Pretty-print   
  
{  
  "status": "ok"  
}
```



5. Generación de logs

Generar peticiones correctas

```

Windows PowerShell
Copyright (C) Microsoft Corporation. Todos los derechos reservados.

Instale la versión más reciente de PowerShell para obtener nuevas características y mejoras. https://aka.ms/PSWindows

PS C:\Users\Alberto Torrez L> curl http://localhost:3000/personas

StatusCode      : 200
StatusDescription : OK
Content          : [{"id":1,"nombre":"Carlos","edad":30}, {"id":2,"nombre":"Ana","edad":25}]
RawContent       : HTTP/1.1 200 OK
                  Connection: keep-alive
                  Keep-Alive: timeout=5
                  Content-Length: 72
                  Content-Type: application/json; charset=utf-8
                  Date: Thu, 23 Oct 2025 19:19:44 GMT
                  ETag: W/\"48-nTHSq+NJBWzBbZPLY3Mk...
Forms           : {}
Headers         : {[Connection, keep-alive], [Keep-Alive, timeout=5], [Content-Length, 72], [Content-Type, application/json; charset=utf-8]...}
Images          : {}
InputFields     : {}
Links           : {}
ParsedHtml      : mshtml.HTMLDocumentClass
RawContentLength : 72

```

Generar un error simulado

```

PS C:\Users\Alberto Torrez L> curl http://localhost:3000/error
curl : Cannot GET /error
En linea: 1 Carácter: 1
+ curl http://localhost:3000/error
+ CategoryInfo          : InvalidOperation: (System.Net.HttpWebRequest:HttpWebRequest) [Invoke-WebRequest], WebException
+ FullyQualifiedErrorMessage : WebCmdletWebResponseException,Microsoft.PowerShell.Commands.InvokeWebRequestCommand
PS C:\Users\Alberto Torrez L>

```

6. Visualización en Kibana

Create data view

Name

Index pattern refresh

Timestamp field ▼

Select a timestamp field for use with the global time filter.

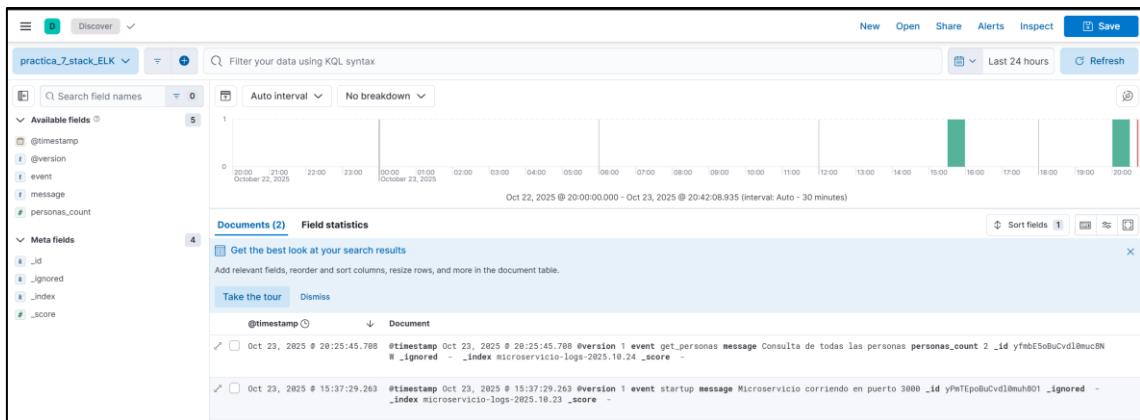
Show advanced settings

✓ Your index pattern matches 1 source.

All sources	Matching sources
microservicio-logs-2025.10.23	Index

Rows per page: 10 ▼

[Close](#)
[Save data view to Kibana](#)



The screenshot shows the Elasticsearch Stack Management interface under the 'Data views' section. The index pattern is set to 'microservicio-*'. The 'Fields (13)' section lists the following fields:

- @timestamp
- @version
- @version.keyword
- _id
- _ignored
- _index
- _score
- _source
- event
- event.keyword

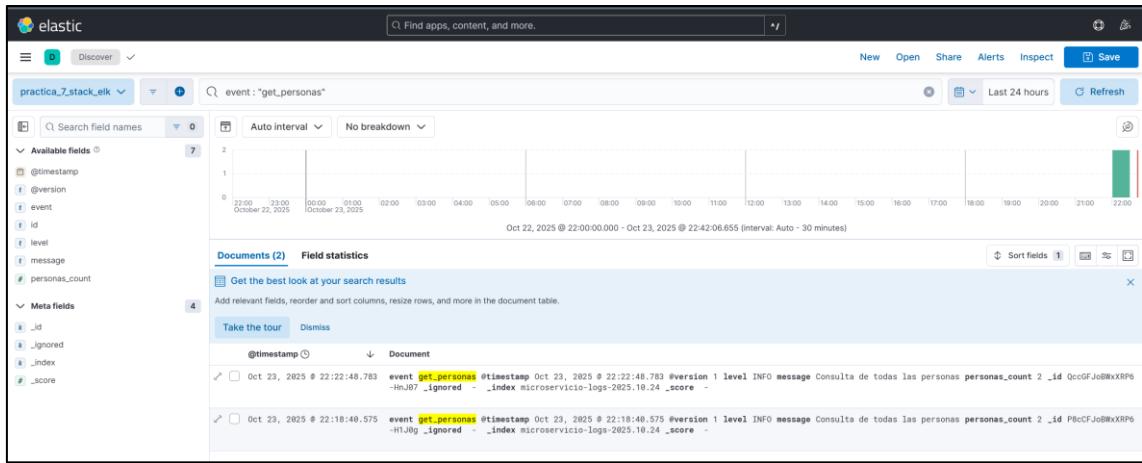
7. Análisis y monitoreo

Ejercicio 1 — Filtrado de errores

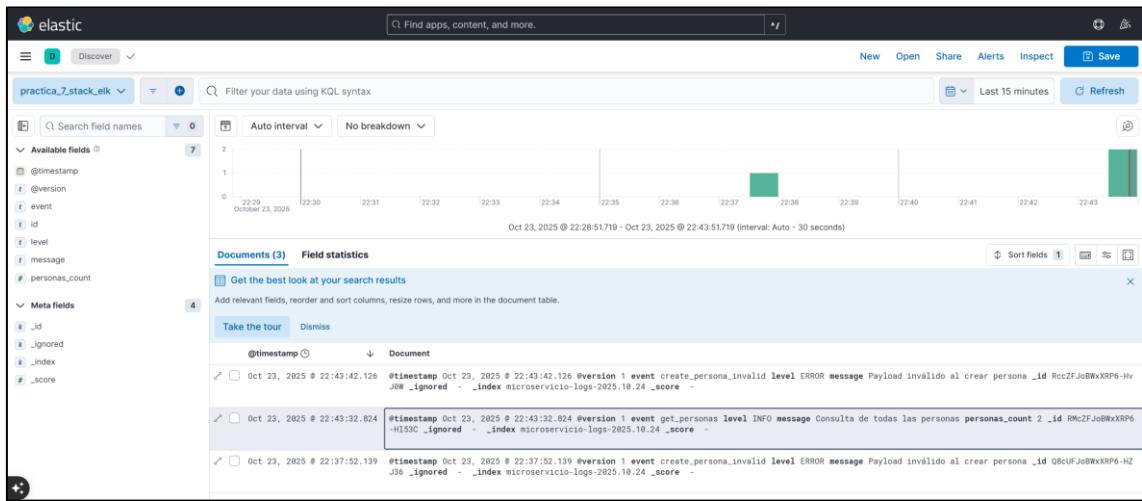
The screenshot shows the Elasticsearch Discover interface with a search query of 'level : "ERROR"'. The results table has one row:

- Oct 23, 2025 @ 22:37:52.139 level ERROR @timestamp Oct 23, 2025 @ 22:37:52.139 @version 1 event create_persona_invalid message Payload inválido al crear persona _id Q8cUFJ0BwXRP6-HZ _ignored - _index microservicio-logs-2025.10.24 _score -

Ejercicio 2 — Búsqueda por endpoint

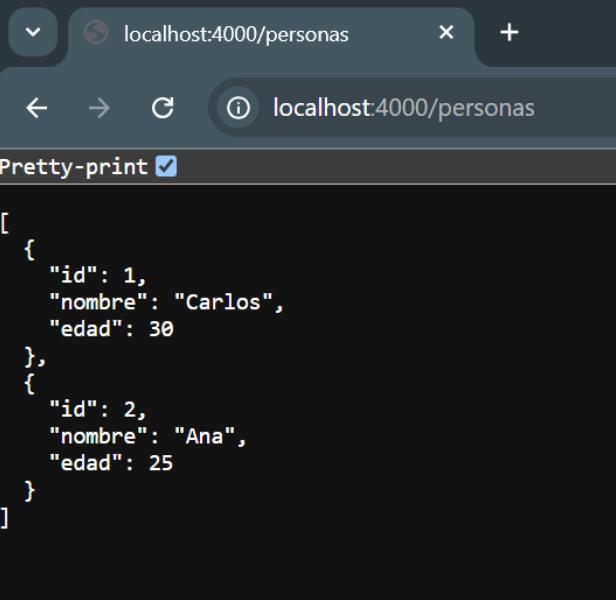


Ejercicio 3 — Análisis temporal

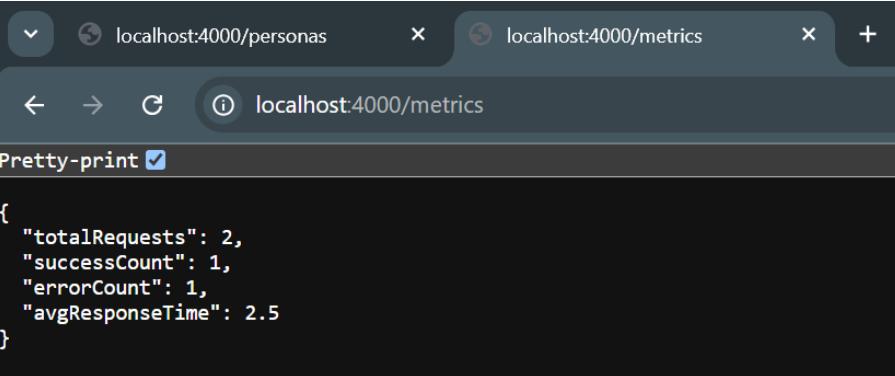


II. Monitoreo de un microservicio con Stack TICKS

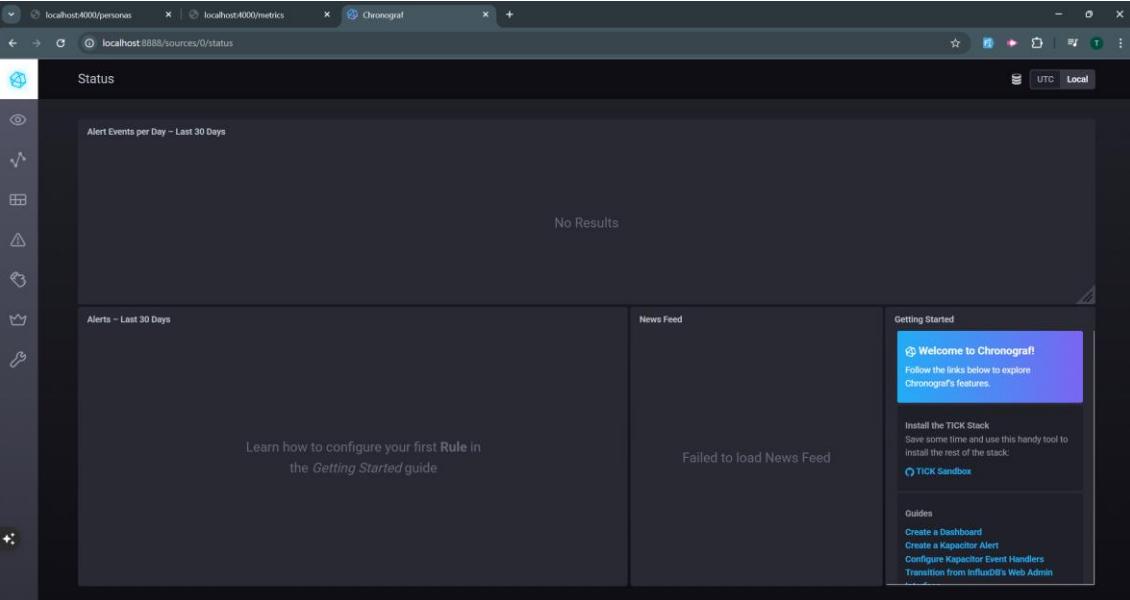
3. Verificación inicial



```
Pretty-print   
[  
  {  
    "id": 1,  
    "nombre": "Carlos",  
    "edad": 30  
  },  
  {  
    "id": 2,  
    "nombre": "Ana",  
    "edad": 25  
  }  
]
```



```
Pretty-print   
{  
  "totalRequests": 2,  
  "successCount": 1,  
  "errorCount": 1,  
  "avgResponseTime": 2.5  
}
```



The screenshot shows the Chronograf application interface. The top navigation bar includes tabs for localhost:4000/personas, localhost:4000/metrics, and Chronograf. Below the tabs, there's a sidebar with various icons. The main area has several panels:

- Status**: A panel titled "Alert Events per Day – Last 30 Days" which shows "No Results".
- Alerts**: A panel titled "Alerts – Last 30 Days" with the message "Learn how to configure your first Rule in the [Getting Started](#) guide".
- News Feed**: A panel with the message "Failed to load News Feed".
- Getting Started**: A panel with a purple header "Welcome to Chronograf" and sub-sections for "Install the TICK Stack", "Guides", and "TICK Sandbox".

6. Simulación de actividad

Solicitudes normales

curl http://localhost:4000/personas

```
AlbertoTorres@DESKTOP-PDA4NTQ MINGW64 ~
$ curl http://localhost:4000/personas
% Total    % Received % Xferd  Average Speed   Time   Time   Time  Current
          Dload  Upload Total   Spent   Left Speed
100  72  100  72     0      0  4673       0 --:--:-- --:--:-- --:--:-- 4800[{"id":1,"nombre":"Carlos","edad":30},{"id":2,"nombre":"Ana","edad":25}]
```

Generar errores (simula fallos)

curl http://localhost:4000/error

curl http://localhost:4000/error

curl http://localhost:4000/error

curl <http://localhost:4000/error>

```
MINGW64:/c/Users/Alberto Torrez L
AlbertoTorres@DESKTOP-PDA4NTQ MINGW64 ~
$ curl http://localhost:4000/error
curl: http://localhost:4000/error
curl: http://localhost:4000/error
curl: http://localhost:4000/error
% Total    % Received % Xferd  Average Speed   Time   Time   Time  Current
          Dload  Upload Total   Spent   Left Speed
100 144 100 144     0      0 38772       0 --:--:-- --:--:-- --:--:-- 4800<!
DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>Error</title>
</head>
<body>
<pre>Cannot GET /error</pre>
</body>
</html>

% Total    % Received % Xferd  Average Speed   Time   Time   Time  Current
          Dload  Upload Total   Spent   Left Speed
100 144 100 144     0      0 35520       0 --:--:-- --:--:-- --:--:-- 36000<!
DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>Error</title>
</head>
<body>
<pre>Cannot GET /error</pre>
</body>
</html>

% Total    % Received % Xferd  Average Speed   Time   Time   Time  Current
          Dload  Upload Total   Spent   Left Speed
100 144 100 144     0      0 33676       0 --:--:-- --:--:-- --:--:-- 36000<!
DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>Error</title>
</head>
<body>
<pre>Cannot GET /error</pre>
</body>
</html>

% Total    % Received % Xferd  Average Speed   Time   Time   Time  Current
          Dload  Upload Total   Spent   Left Speed
100 144 100 144     0      0 36548       0 --:--:-- --:--:-- --:--:-- 48000<!
DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>Error</title>
</head>
<body>
<pre>Cannot GET /error</pre>
</body>
</html>
```

The screenshot shows the Chronograf interface with the title bar "localhost:8888/sources/0/alerts". The main area is titled "Alert History" and displays "1 Alerts". A table lists the alert details:

Name	Level	Time (local)	Host	Value
ErrorCountAlert	●	2025-10-24T00:04:30.000	-	10

7. Visualización en Chronograf

The screenshot shows the Chronograf interface with the title bar "localhost:8888/sources/0/chronograf/data-explorer?query=SELECT%20sum%28errorCount%29%20AS%20sum_errorCount%20FROM%20metrics%20WHERE%20time%20>%202025-10-24T00:00:00.000Z%20AND%20time%20<%202025-10-24T00:05:00.000Z%20GROUP%20BY%20time(:interval)%20FILL%28null%29%20ORDER%20BY%20time%20DESC%20LIMIT%201%29". The main area shows a line chart for "metrics.sum.errorCount" from 23:55 to 00:09. Below the chart, the InfluxQL query is displayed:

```
SELECT sum("errorCount") AS "sum_errorCount" FROM "metrics"."autogen"."metrics" WHERE time > :dashboardTime AND time < :upperDashboardTime GROUP BY time(:interval) FILL(null)
```

The query was successful.

