

Service Dependency Graph

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介紹


Grafana 的插件之一。適用於監控設備間的延遲、錯誤和所需服務的請求。
Service Dependency Graph 藉由設定所需欄位，讓使用者一眼就能清楚地看出各個服務或裝置間傳輸的狀態，提升排查除錯的效率。

設定&操作

1. 資料格式概況

資料基本需包含來源 service、回傳率，另可多新增目標 service、回傳時間及 error 數等。

*如使用 Elasticsearch 需再新增 @timestamp 欄位



```
["@timestamp", "app", "target_app", "req_rate", "resp_time",  
"2022-07-12", "service a", "service b", "50", "4000",  
"2022-07-12", "service a", "service c", "75", "13650",  
"2022-07-12", "service c", "service d", "25", "750",
```

2. plugin 設定概況

> Panel options	
> Connection Mapping	資料串接欄位設定
> Data Mapping	資料數值欄位設定
> General Settings	一般設定
> Appearance	閾值顏色設定
> Icon Mapping	Service icon 設定
> External Icon Mapping	
▼ Tracing Drilldown	
Backend URL	<input type="text"/>

3. 資料串接格式概況 (Connection Mapping)

key	value
Component Column	service (數據關聯的服務)
Source Component Column	origin_service (在傳入服務的情況下，這是來源服務)
Target Component Column	target_service (在傳出服務的情況下，這是目標服務)
Type	protocol (通信類型，如 HTTP、JMS)
External Origin	origin_external (傳入服務的來源，例如第三方應用程序的 HTTP 請求)
External Target	target_external (傳出服務的目標，例如第三方 HTTP 端點)

Step.1 先設定所需資料欄位

Query: Lucene Query Alias: ⓘ

Metric (1) ⓘ Average req_rate > Options +

Metric (3) ⓘ Average resp_time > Options

Group By ⓘ Terms target_app > Top 10, Min Doc Count: 1, Order by: Term value +

Then By ⓘ Terms app > Top 10, Min Doc Count: 1, Order by: Term value

Step.2 再依據需求將所設定之欄位，填入 Connection Mapping 中

Query 1 Transform 0

Data source: service ⓘ > Query options MD = auto = 1014 Interval = 3h Query inspector

Panel options

Connection Mapping

Component Column: app

Source Component Column: Enter column name...

Target Component Column: target_app

Type: HTTP

External Origin: Enter column name...

External Target: Enter column name...

4. 資料數值設定概況 (Data Mapping)

key	value
Response Time	in_timesum (所有傳入請求回應時間的總和)
Request Rate	in_count (傳入請求的總數)
Error Rate	error_in (傳入請求產生 error 的數量)
Response Time (Outgoing)	out_timesum (所有傳出請求回應時間的總和)
Request Rate (Outgoing)	out_count (傳出請求的總數)
Error Rate (Outgoing)	error_out (傳出請求產生 error 的數量)
Response Time Baseline (Upper)	threshold (傳入請求回應時間的閾值)

Step.1 先設定所需資料欄位

The screenshot shows the Lucene Query configuration interface. A red box highlights the 'Metric (1)' and 'Metric (3)' rows, which are set to 'Average' for 'req_rate' and 'resp_time' respectively. The 'Group By' and 'Then By' sections are also visible, showing 'target_app' and 'app' as terms.


Step.2 再依據需求將所設定之欄位，填入 Data Mapping 中 該欄位必須設置為 req_rate- 列的名稱，如 Average req_rate。


The screenshot shows the Data Mapping interface. The 'Data source' is set to 'service'. The 'Query' section shows 'Average req_rate' and 'Average resp_time' selected. The 'Data Mapping' section on the right shows the mapping of these metrics to the 'Request Rate Column' and 'Response Time Column' respectively. A red box highlights the 'Average req_rate' column name in the mapping section.

5. 一般設定 (General Settings)


General Settings

顯示紅色區塊部分


Show Connection Statistics 


Handle Timings as Sums 
If this setting is active, the timings provided by the mapped response time columns are considered as a continually increasing sum of response times. When deactivated, it is considered that the timings provided by columns are the actual average response times.


將時間作為總和處理

Filter Empty Data 
If this setting is active, the timings provided by the mapped response time columns are considered as a continually increasing sum of response times. When deactivated, it is considered that the timings provided by columns are the actual average response times.

過濾空值

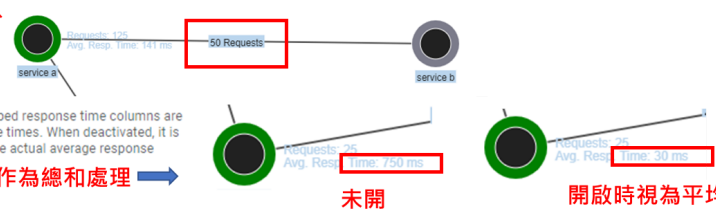
Show Debug Information  顯示 debug 資訊

Show Dummy Data  顯示預設資訊

Show Baselines  顯示基線

Maximum Time Unit to Resolve
This setting controls to which time unit time values will be resolved to. Each value always includes the smaller units.

m



未開

開啟時視為平均

6. 顏色閾值設定 (Appearance)


Healthy Color

Danger Color

No Data Color

7. 服務圖標 (Icon Mapping)

允許在繪製的節點中顯示符號。



Transform

Query options MD = auto = 1014 Interval = 3h

Query inspector

(service)

Data Mapping

General Settings

Appearance

Icon Mapping

This setting controls which images should be mapped to your directly monitored nodes. The node names are matched by the regex pattern provided in the "Target Name (Regex)" column.

Target Name (Regex)	Icon
service c	java
service a	default
service d	database

Add Icon Mapping