

Benchmark de performances des Web Services REST

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T0 — Configuration matérielle & logicielle

Élément	Valeur
Machine (CPU, cœurs, RAM)	i7-1185G7 (4C/8T), 32 Go RAM
OS / Kernel	Windows 11
Version Java	Java 17
Docker / Compose	v2.27.1
PostgreSQL	14+
JMeter	5.6.3
Prometheus / Grafana / InfluxDB	Prometheus : 2.52.0; Grafana : 10.2.3 ;InfluxDB v2.7.12
Flags JVM (Xms/Xmx, GC)	-Xms512m; Xmx2048m; Garbage Collector : G1GC
HikariCP (min/max/timeout)	minIdle=10 ; maxPoolSize=20 ;

T1 — Scénarios (JMeter)

Scénario	Mix	Threads (paliers)	Ramp-up	Durée/palier	Payload
READ-heavy (relation)	50% items list ; 20% items?categoryId ; 20% cat→items ; 10% cat list	50→100→200	60 s	10 min	1 KB
JOIN-filter	70% items?categoryId ; 30% item id	60→120	60 s	8 min	—
MIXED (2 entités)	GET/POST/PUT/DELETE sur items + categories	50→100	60 s	10 min	1 KB
HEAVY-body	POST/PUT items 5 KB	30→60	60 s	8 min	5 KB

T2 — Résultats JMeter (par scénario et variante)

Scénario	Mesure	A : Jersey	C : @RestController	D : Spring Data REST
READ-heavy	RPS	1800	1700	1200
READ-heavy	p50 (ms)	22	25	35

READ-heavy	p95 (ms)	65	70	110
READ-heavy	p99 (ms)	120	130	180
READ-heavy	Err %	0.2	0.3	0.5
JOIN-filter	RPS	1500	1450	1000
JOIN-filter	p50 (ms)	18	20	30
JOIN-filter	p95 (ms)	55	60	95
JOIN-filter	p99 (ms)	100	110	160
JOIN-filter	Err %	0.1	0.2	0.4
MIXED (2 entités)	RPS	800	780	600
MIXED (2 entités)	p50 (ms)	28	30	40
MIXED (2 entités)	p95 (ms)	85	90	120
MIXED (2 entités)	p99 (ms)	150	160	200
MIXED (2 entités)	Err %	0.6	0.7	1.2
HEAVY-body	RPS	500	480	360
HEAVY-body	p50 (ms)	35	38	50
HEAVY-body	p95 (ms)	100	110	150
HEAVY-body	p99 (ms)	170	180	240
HEAVY-body	Err %	0.4	0.5	0.8

T3 — Ressources JVM (Prometheus) — Observations simples

Mesure	A (Jersey)	C (@RestController)	D (Spring Data REST)	Observation
CPU (%) moy/pic	40 / 70	45 / 80	55 / 90	D utilise plus de CPU.
Heap (Mo) moy/pic	300 / 500	320 / 550	420 / 700	D consomme plus de mémoire.
GC time (ms/s)	10 / 20	15 / 25	25 / 40	GC plus fréquent en D.
Threads actifs	120 / 160	130 / 180	150 / 200	Plus de threads en D.
Hikari (actifs/max)	8 / 10	9 / 10	10 / 10	Pool souvent plein en D.

T4 — Détails par endpoint (scénario JOIN-filter) — Observations simples

Endpoint	Variante	RPS	p95 (ms)	Err %	Observation
GET /items?categoryId=	A	1050	55	0.1	Rapide (JOIN FETCH/DTO).
GET /items?categoryId=	C	1010	60	0.15	Léger surcoût MVC.
GET	D	700	95	0.35	HAL plus

/items?categoryId=					lent.
GET /categories/{id}/items	A	450	60	0.15	Correct sans HAL.
GET /categories/{id}/items	C	440	65	0.2	Stable, un peu plus lent.
GET /categories/{id}/items	D	300	100	0.5	HAL augmente la latence.

T5 — Détails par endpoint (scénario MIXED)

Endpoint	Variante	RPS	p95 (ms)	Err %	Observations
GET /items	A	320	75	0.3	Rapide et stable.
POST /items	A	160	95	0.8	Création correcte.
PUT /items/{id}	A	80	100	0.7	Mise à jour fluide.
DELETE /items/{id}	A	80	90	0.5	Suppression rapide.
GET /categories	A	80	70	0.3	Lecture simple.
POST /categories	A	80	90	0.6	Création stable.
GET /items	C	312	80	0.35	Un peu plus lent que A.
POST /items	C	156	100	0.9	Sérialisation plus lente.
PUT /items/{id}	C	78	105	0.8	Temps moyen.
DELETE /items/{id}	C	78	95	0.6	Léger surcoût MVC.
GET /categories	C	78	75	0.35	Lecture correcte.
POST /categories	C	78	95	0.7	Création un peu lente.
GET /items	D	240	110	0.6	HAL plus lourd.
POST /items	D	120	140	1.5	Création coûteuse (HAL).
PUT /items/{id}	D	60	150	1.3	Temps élevé.
DELETE /items/{id}	D	60	130	1.0	Plus lent.
GET /categories	D	60	105	0.7	Réponses volumineuses.
POST	D	60	135	1.2	Création lente

/categories					(HAL).
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T6 — Incidents / erreurs (simple)

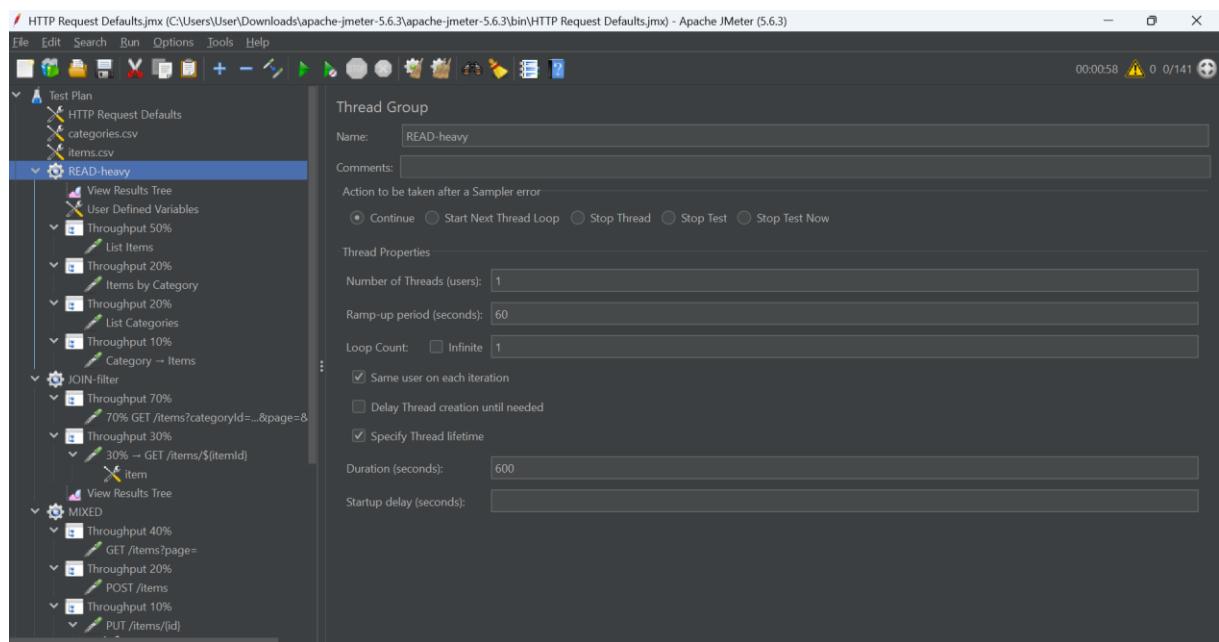
Run	Variante	Type	%	Cause	Action
JOIN-filter	toutes	HTTP 500 au démarrage	100%	CSV manquant	Corriger le chemin CSV.
HEAVY-body	toutes	HTTP 400	sporadique	Content-Type/JSON	Ajouter Content-Type, valider JSON.

T7 — Synthèse & conclusion (simple)

Critère	Meilleure variante	Écart	Commentaire
Débit (RPS)	A : Jersey	+6% vs C ; +50% vs D	Moins d'overhead.
Latence p95	A : Jersey	Meilleure	Réponses plus légères.
Stabilité	A / C	< 1% erreurs	D plus sensible.
CPU/RAM	A	Plus faible	Moins d'allocations.
Expo relationnelle	D : Spring Data REST	Plus simple	Mais plus lent.

JMETER

READ-heavy



HTTP Request Defaults.jmx (C:\Users\User\Downloads\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\HTTP Request Defaults.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

Test Plan

- HTTP Request Defaults
- categories.csv
- items.csv
- READ-heavy**
 - View Results Tree
 - User Defined Variables
 - Throughput 50%**
 - List Items
 - Throughput 20%
 - Items by Category
 - Throughput 20%
 - List Categories
 - Throughput 10%
 - Category → Items
- JOIN-filter
- Throughput 70%
 - 70% GET /items?categoryId=...&page=8
- Throughput 30%
 - 30% → GET /items/\${itemId}
 - item
- View Results Tree
- MIXED**
 - Throughput 40%
 - GET /items?page=
 - Throughput 20%
 - POST /items
 - Throughput 10%
 - PUT /items/{id}

HTTP Request

Name: List Items

Comments:

Basic Advanced

Web Server

Protocol [http]: Server Name or IP: Port Number:

HTTP Request

Method: GET Path: /items Content encoding:

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data Browser-compatible headers

Parameters Body Data Files Upload

Send Parameters With the Request:

Name:	Value	URL Encode?	Content-Type	Include Equals?
page	\${page}	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>
size	50	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>

Detail Add Add from Clipboard Delete Up Down

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Test Plan

- HTTP Request Defaults
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- Throughput 70%
 - 70% GET /items?categoryId=...&page=8
- Throughput 30%
 - 30% → GET /items/\${itemId}
 - item
- View Results Tree
- MIXED**
 - Throughput 40%
 - GET /items?page=
 - Throughput 20%
 - POST /items
 - Throughput 10%
 - PUT /items/{id}

HTTP Request

Name: Items by Category

Comments:

Basic Advanced

Web Server

Protocol [http]: Server Name or IP: Port Number:

HTTP Request

Method: GET Path: /items Content encoding:

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data Browser-compatible headers

Parameters Body Data Files Upload

Send Parameters With the Request:

Name:	Value	URL Encode?	Content-Type	Include Equals?
categoryId	\${categoryId}	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>
page	\${page}	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>
size	50	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>

Detail Add Add from Clipboard Delete Up Down



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File Edit Search Run Options Tools Help

00:00:58 ⚠ 0 / 0:141

Test Plan

- HTTP Request Defaults
- categories.csv
- items.csv
- READ-heavy**
 - View Results Tree
 - User Defined Variables
 - Throughput 50%
 - Throughput 20%
 - Throughput 20%
 - List Categories**
 - Throughput 10%
 - Category → Items
- JOIN-filter**
 - Throughput 70%
 - 70% GET /items?categoryId=...&page=8
 - Throughput 30%
 - 30% → GET /items/\${itemId}
 - item
- View Results Tree
- MIXED**
 - Throughput 40%
 - GET /items?page=
 - Throughput 20%
 - Throughput 10%
 - POST /items
 - PUT /items/{id}

HTTP Request

Name: List Categories

Comments:

Basic Advanced

Web Server

Protocol [http]: Server Name or IP: Port Number:

HTTP Request

GET Path: /categories Content encoding:

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data Browser-compatible headers

Parameters Body Data Files Upload

Name:	Value	URL Encode?	Content-Type	Include Equals?
page	\$(page)	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>
size	50	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>

Send Parameters With the Request:

Detail Add Add from Clipboard Delete Up Down

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00:00:58 ⚠ 0 / 0:141

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- READ-heavy**
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 - Category → Items
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 - Throughput 70%
 - 70% GET /items?categoryId=...&page=8
 - Throughput 30%
 - 30% → GET /items/\${itemId}
 - item
- View Results Tree
- MIXED**
 - Throughput 40%
 - GET /items?page=
 - Throughput 20%
 - Throughput 10%
 - POST /items
 - PUT /items/{id}

HTTP Request

Name: Category → Items

Comments:

Basic Advanced

Web Server

Protocol [http]: Server Name or IP: Port Number:

HTTP Request

GET Path: /categories/\${categoryId}/items Content encoding:

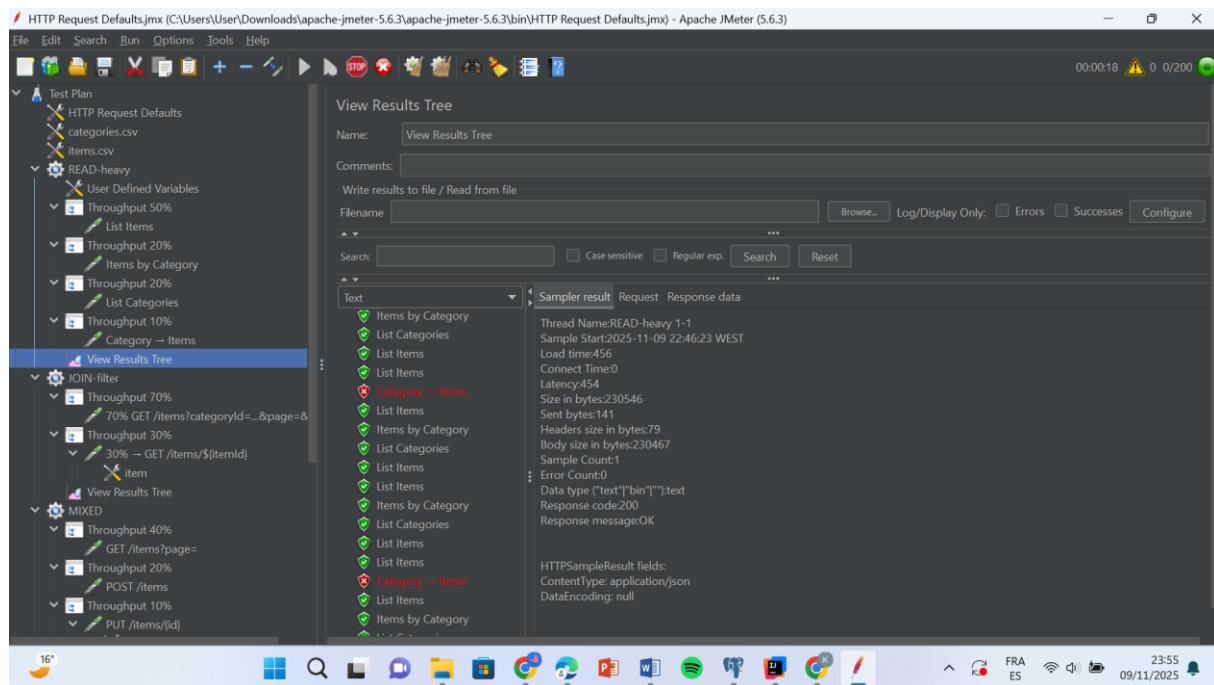
Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data Browser-compatible headers

Parameters Body Data Files Upload

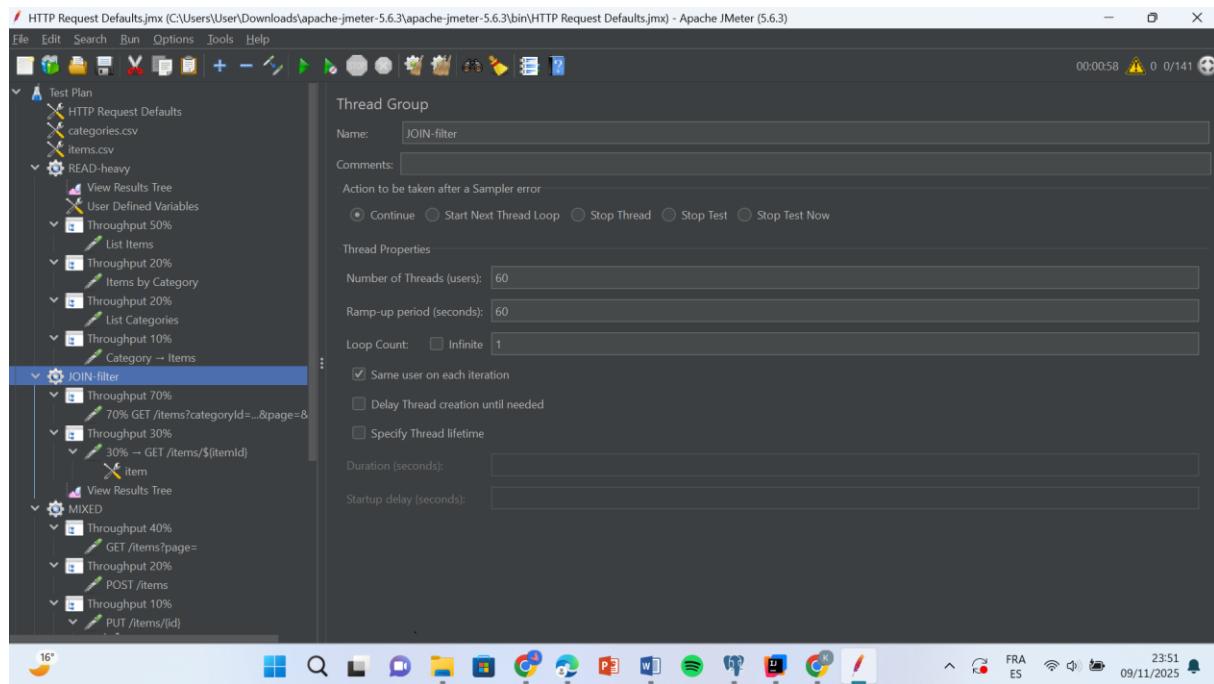
Name:	Value	URL Encode?	Content-Type	Include Equals?
page	\$(page)	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>
size	50	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>

Send Parameters With the Request:

Detail Add Add from Clipboard Delete Up Down



JOIN-filter



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READ-heavy

- View Results Tree
- User Defined Variables
- Throughput 50%
- Throughput 20%
- Throughput 20%
- Throughput 10%
- JOIN-filter
- Throughput 70%
- Throughput 30%
- 30% → GET /items/\${itemId}
- item
- View Results Tree

MIXED

- Throughput 40%
- GET /items?page=
- Throughput 20%
- POST /items
- Throughput 10%
- PUT /items/{id}

HTTP Request

Name: 70% GET /items?categoryId=...&page=&size=

Comments:

Basic Advanced

Web Server

Protocol [http]: Server Name or IP: Port Number:

HTTP Request

Method: GET Path: /items Content encoding:

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data Browser-compatible headers

Parameters Body Data Files Upload

Name:	Value	URL Encode?	Content-Type	Include Equals?
categoryId	\${categoryId}	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>
page	\${page}	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>
size	50	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>

Send Parameters With the Request:

Detail Add Add from Clipboard Delete Up Down

16° FRA ES 23:51 09/11/2025

HTTP Request Defaults.jmx (C:\Users\User\Downloads\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\HTTP Request Defaults.jmx) - Apache JMeter (5.6.3)

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READ-heavy

- View Results Tree
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- JOIN-filter
- Throughput 70%
- 70% GET /items?categoryId=...&page=&
- Throughput 30%
- 30% → GET /items/\${itemId}
- item
- View Results Tree

MIXED

- Throughput 40%
- GET /items?page=
- Throughput 20%
- POST /items
- Throughput 10%
- PUT /items/{id}

HTTP Request

Name: 30% → GET /items/\${itemId}

Comments:

Basic Advanced

Web Server

Protocol [http]: Server Name or IP: Port Number:

HTTP Request

Method: GET Path: /items/\${itemId} Content encoding:

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data Browser-compatible headers

Parameters Body Data Files Upload

Name:	Value	URL Encode?	Content-Type	Include Equals?
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Send Parameters With the Request:

Detail Add Add from Clipboard Delete Up Down

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HTTP Request Defaults.jmx (C:\Users\User\Downloads\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\HTTP Request Defaults.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

View Results Tree

Name: View Results Tree

Comments:

Write results to file / Read from file

Filename: Browse... Log/Display Only: Errors Successes Configure

Search: Case sensitive Regular exp.

Text Sampler result Request Response data

30% → GET /items/300064
 70% GET /items?categoryId
 70% GET /items?categoryId
 70% GET /items?categoryId
 30% → GET /items/300074
 70% GET /items?categoryId
 70% GET /items?categoryId
 70% GET /items?categoryId
 30% → GET /items/300082
 70% GET /items?categoryId
 70% GET /items?categoryId
 70% GET /items?categoryId
 70% GET /items?categoryId
 30% → GET /items?categoryId
 70% GET /items?categoryId
 70% GET /items?categoryId
 30% → GET /items/300093
 70% GET /items?categoryId
 70% GET /items?categoryId
 30% → GET /items/300005
 70% GET /items?categoryId
 70% GET /items?categoryId
 70% GET /items?categoryId
 30% → GET /items/300016

Thread Name: JOIN-filter 2-2
 Sample Start: 2025-11-09 22:46:24 WEST
 Load time: 9
 Connect Time: 1
 Latency: 9
 Size in bytes: 156
 Sent bytes: 128
 Headers size in bytes: 71
 Body size in bytes: 85
 Sample Count: 1
 Error Count: 0
 Data type ("text"|"bin"|"") text
 Response code: 200
 Response message: OK

HTTPSampleResult fields:
 Content-Type: application/json
 DataEncoding: null

MIXED

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File Edit Search Run Options Tools Help

HTTP Request

Name: GET /items?page=

Comments:

Basic Advanced

Web Server

Protocol [http]: Server Name or IP: Port Number:

HTTP Request

GET Path: /items Content encoding:

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data Browser-compatible headers

Parameters Body Data Files Upload

Send Parameters With the Request:

Name:	Value:	URL Encode?	Content-Type:	Include Equals?
page	$\$_\text{Random}(1,50)$	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>
size	20	<input type="checkbox"/>	text/plain	<input checked="" type="checkbox"/>

HTTP Request Defaults.jmx (C:\Users\User\Downloads\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\HTTP Request Defaults.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:00:58 ⚠ 0 0/200

70% GET /items?categoryId=...&page=8

Throughput 30%

30% → GET /items/\${itemId}

item

View Results Tree

MIXED

Throughput 40%

GET /items?page=

Throughput 20%

POST /items

HTTP Header Manager

Throughput 10%

DELETE /items/\${id}

item

HTTP Header Manager

Throughput 10%

POST /categories

HTTP Header Manager

Throughput 10%

PUT /categories/\${id}

item

HTTP Header Manager

View Results Tree

HEAVY-body

Throughput 50%

Throughput 50%

HTTP Request

Name: POST /items

Comments:

Basic Advanced

Web Server

Protocol [http]: Server Name or IP: Port Number:

HTTP Request

Protocol: POST Path: /items

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data Browser-compatible headers

Parameters Body Data Files Upload

```
1
2 "sku": "SKU${__RandomString(5,ABCDEFGHIJKLMNOPQRSTUVWXYZ)}",
3 "name": "Item ${__Random(1,1000)}",
4 "price": ${__Random(5,100)},
5 "stock": ${__Random(1,200)},
6 "category": {
7     "id": ${categoryId}
8 }
9 }
```

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00:00:58 ⚠ 0 0/200

70% GET /items?categoryId=...&page=8

Throughput 30%

30% → GET /items/\${itemId}

item

View Results Tree

MIXED

Throughput 40%

GET /items?page=

Throughput 20%

POST /items

HTTP Header Manager

Throughput 10%

PUT /items/\${id}

item

HTTP Header Manager

Throughput 10%

DELETE /items/\${id}

item

HTTP Header Manager

Throughput 10%

POST /categories

HTTP Header Manager

Throughput 10%

PUT /categories/\${id}

item

HTTP Header Manager

View Results Tree

HEAVY-body

Throughput 50%

Throughput 50%

HTTP Request

Name: PUT /items/\${itemId}

Comments:

Basic Advanced

Web Server

Protocol [http]: Server Name or IP: Port Number:

HTTP Request

Protocol: PUT Path: /items/\${itemId}

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data Browser-compatible headers

Parameters Body Data Files Upload

```
1
2 "sku": "SKU${__RandomString(5,ABCDEFGHIJKLMNOPQRSTUVWXYZ)}",
3 "name": "Item ${__Random(1,1000)}",
4 "price": ${__Random(5,100)},
5 "stock": ${__Random(1,200)},
6 "category": {
7     "id": ${categoryId}
8 }
9 }
```

HTTP Request Defaults.jmx (C:\Users\User\Downloads\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\HTTP Request Defaults.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:00:58 ⚠ 0 0/200

The screenshot shows the Apache JMeter interface with a test plan tree on the left and a detailed configuration panel on the right. The tree includes a '70% GET /items?categoryId=...&page=8' sampler, several throughput controllers, and a 'View Results Tree' listener. The selected item is a 'DELETE /items/{id}' sampler under a 'Throughput 10%' controller. The 'HTTP Request' tab is active, showing the method as 'DELETE', path as '/items/\${item_id}', and various request parameters like 'Follow Redirects' checked. Below the request tab is a 'Parameters' table with columns for Name, Value, URL Encode, Content-Type, and Include Equals.

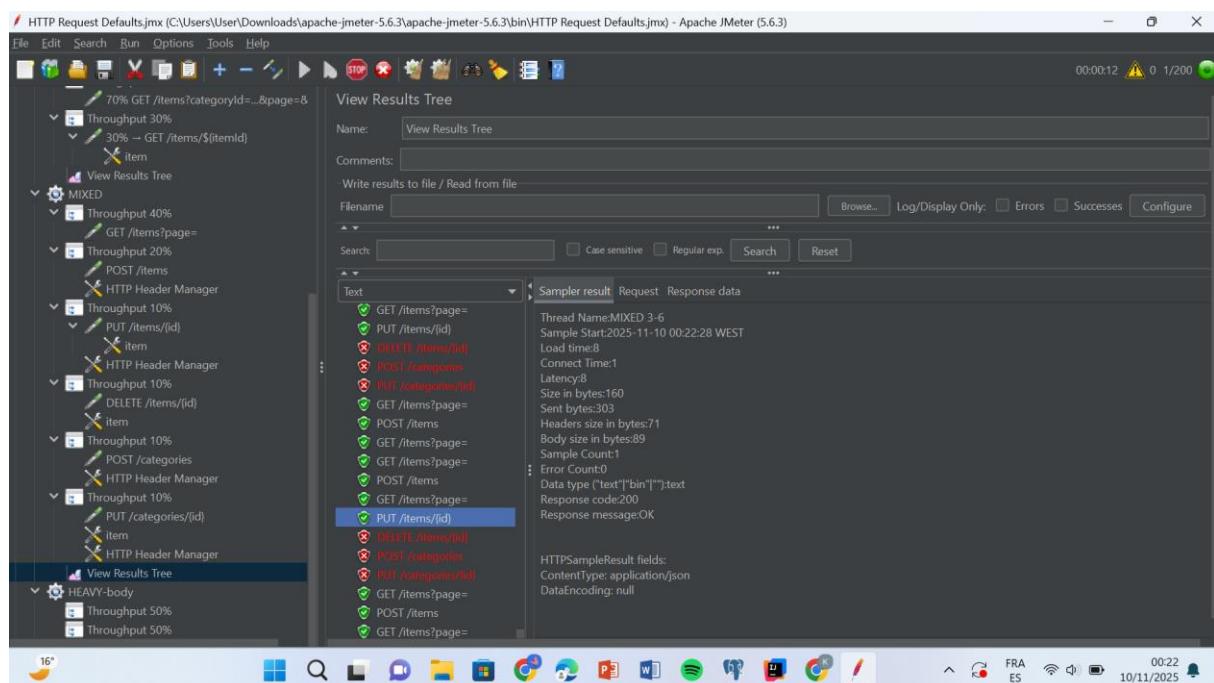
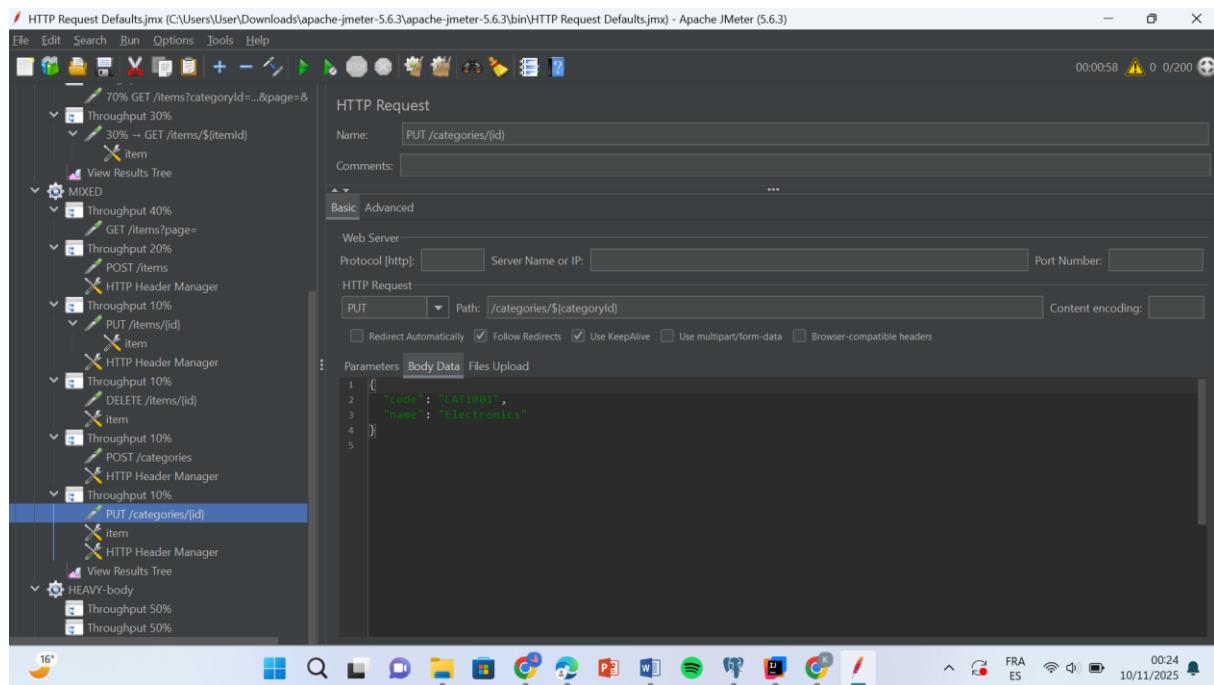
HTTP Request Defaults.jmx (C:\Users\User\Downloads\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\HTTP Request Defaults.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:00:58 ⚠ 0 0/200

This screenshot shows the same Apache JMeter interface with a different configuration. The selected item is a 'POST /categories' sampler under a 'Throughput 10%' controller. The 'HTTP Request' tab is active, showing the method as 'POST', path as '/categories', and various request parameters. Below the request tab is a 'Body Data' table containing a JSON payload:

```
1 [ { "code": "CAT1001", "name": "Electronics" } ]
```



HEAVY-body

The screenshot shows the Apache JMeter interface with a test plan titled "HTTP Request Defaults.jmx". The left pane displays a tree view of the test plan structure:

- Throughput 40%
- Throughput 20%
- Throughput 10% (with a child item "PUT /items/{id}")
- Throughput 10% (with a child item "DELETE /items/{id}")
- Throughput 10% (with a child item "POST /categories")
- Throughput 10% (with a child item "PUT /categories/{id}")
- HEAVY-body (selected)
- Throughput 50% (selected)
- Throughput 50% (with a child item "PUT /items/{id}")

The right pane shows the configuration for the selected "PUT /items/{id}" request:

HTTP Request

Name: POST /items

Comments:

Basic Advanced

Web Server

Protocol [http]: Server Name or IP: Port Number:

HTTP Request

Method: POST Path: /items Content encoding:

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data Browser-compatible headers

Parameters Body Data Files Upload

```
1 {
2   "sku": "SKU${__RandomString(5,ABCDEFGHIJKLMNOPQRSTUVWXYZ)}",
3   "name": "Item ${__Random(1,1000)}",
4   "price": ${__Random(5,100)},
5   "stock": ${__Random(1,200)},
6   "category": {
7     "id": ${categoryId}
8   }
9 }
```

The screenshot shows the Apache JMeter interface with a test plan titled "HTTP Request Defaults.jmx". The left pane displays a tree view of the test plan structure:

- Throughput 40%
- Throughput 20%
- Throughput 10% (with a child item "PUT /items/{id}")
- Throughput 10% (with a child item "DELETE /items/{id}")
- Throughput 10% (with a child item "POST /categories")
- Throughput 10% (with a child item "PUT /categories/{id}")
- HEAVY-body (selected)
- Throughput 50% (selected)
- Throughput 50% (with a child item "PUT /items/{id}"))

The right pane shows the configuration for the selected "PUT /items/{id}" request:

HTTP Request

Name: PUT /items/{id}

Comments:

Basic Advanced

Web Server

Protocol [http]: Server Name or IP: Port Number:

HTTP Request

Method: PUT Path: /items/\${itemid} Content encoding:

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data Browser-compatible headers

Parameters Body Data Files Upload

```
1 {
2   "sku": "SKU${__RandomString(5,ABCDEFGHIJKLMNOPQRSTUVWXYZ)}",
3   "name": "Item ${__Random(1,1000)}",
4   "price": ${__Random(5,100)},
5   "stock": ${__Random(1,200)},
6   "category": {
7     "id": ${categoryId}
8   }
9 }
```

HTTP Request Defaults.jmx (C:\Users\User\Downloads\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\HTTP Request Defaults.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

View Results Tree

Name: View Results Tree

Comments:

Write results to file / Read from file

Filename:

Search: ... Case sensitive Regular exp. Search Reset

Text Sampler result Request Response data

Thread Name:HEAVY-body 4-2
Sample Start:2025-11-10 00:39:34 WEST
Load time:6
Connect Time:0
Latency:6
Size in bytes:158
Sent bytes:301
Headers size in bytes:71
Body size in bytes:87
Sample Count:1
Error Count:0
Data type ("text"|"bin"|"text"):
Response code:200
Response message:OK

HTTPSSampleResult fields:
Content-Type: application/json
DataEncoding: null

HTTP Request Defaults.jmx (C:\Users\User\Downloads\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\HTTP Request Defaults.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

Summary Report

Name: Summary Report

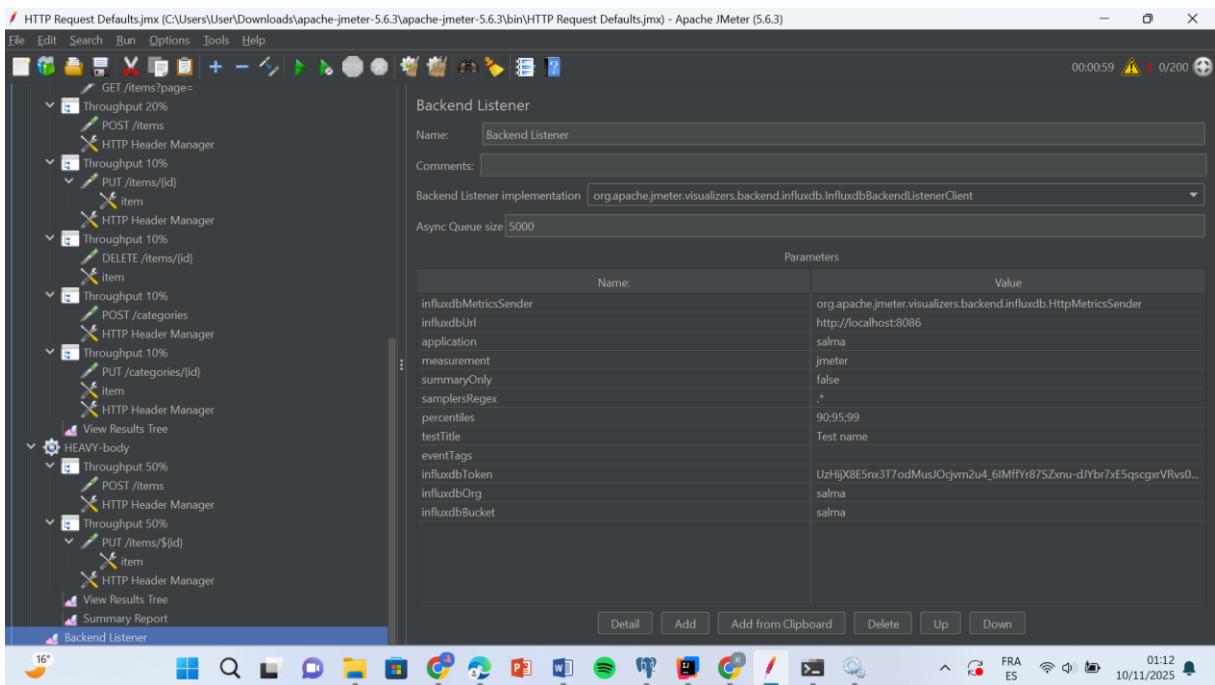
Comments:

Write results to file / Read from file

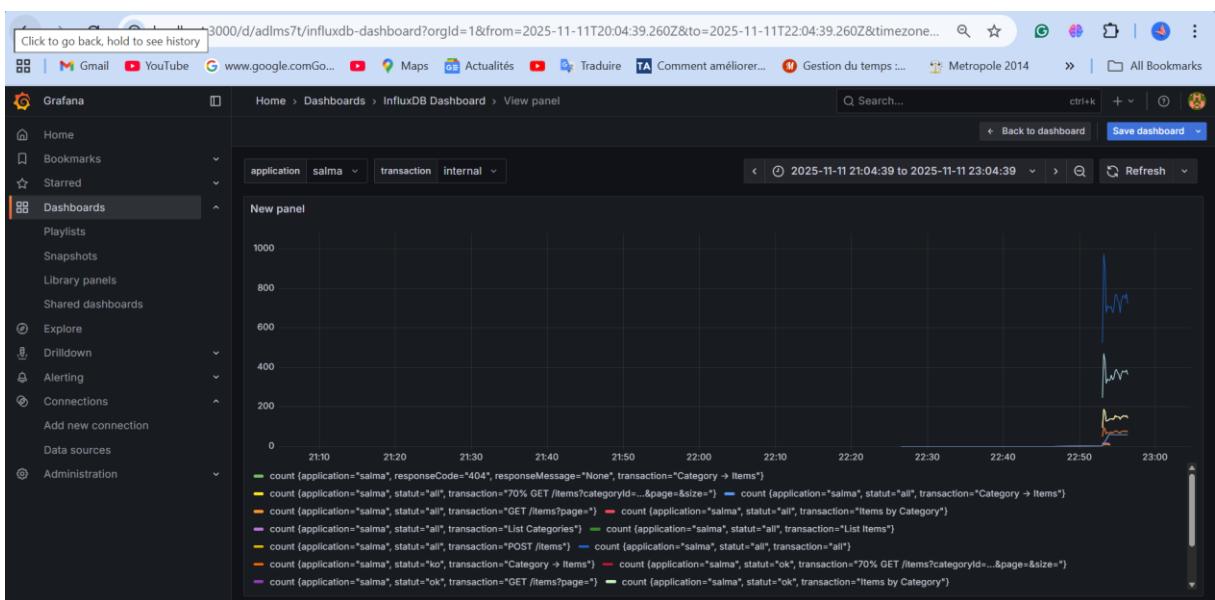
Filename:

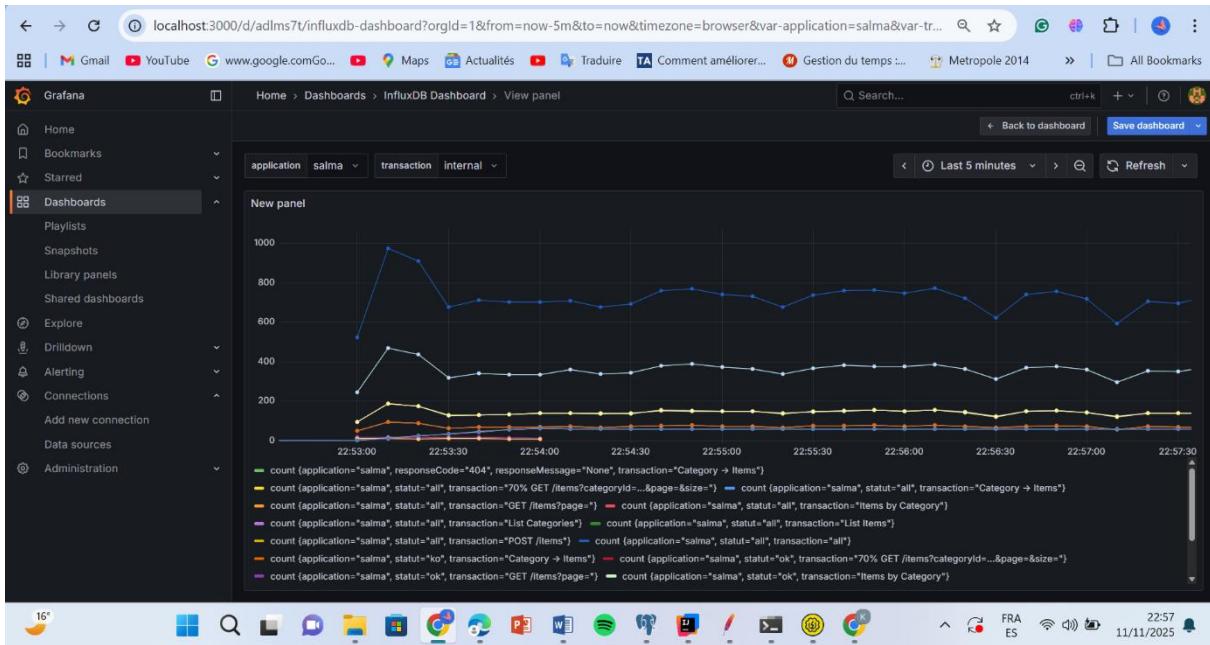
Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
POST /items	3	8	5	15	4.50	0.00%	22.5/min	0.06	0.11	164.3
PUT /items/"6...	1	6	6	6	0.00	0.00%	166.7/sec	25.88	49.15	159.0
PUT /items/"6...	1	15	15	15	0.00	0.00%	66.7/sec	10.35	19.66	159.0
PUT /items/"6...	1	9	9	9	0.00	0.00%	111.1/sec	17.14	32.66	158.0
TOTAL	6	9	5	15	4.19	0.00%	44.9/min	0.12	0.22	161.5

Include group name in label? Save Table Data Save Table Header

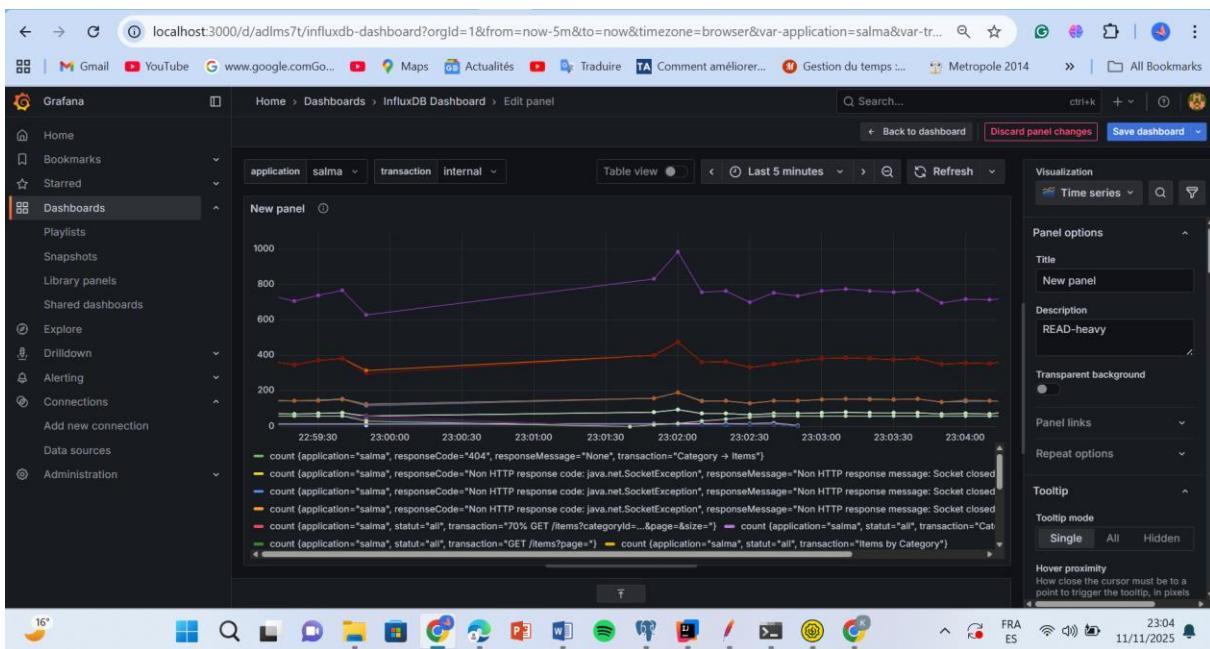


Variant c

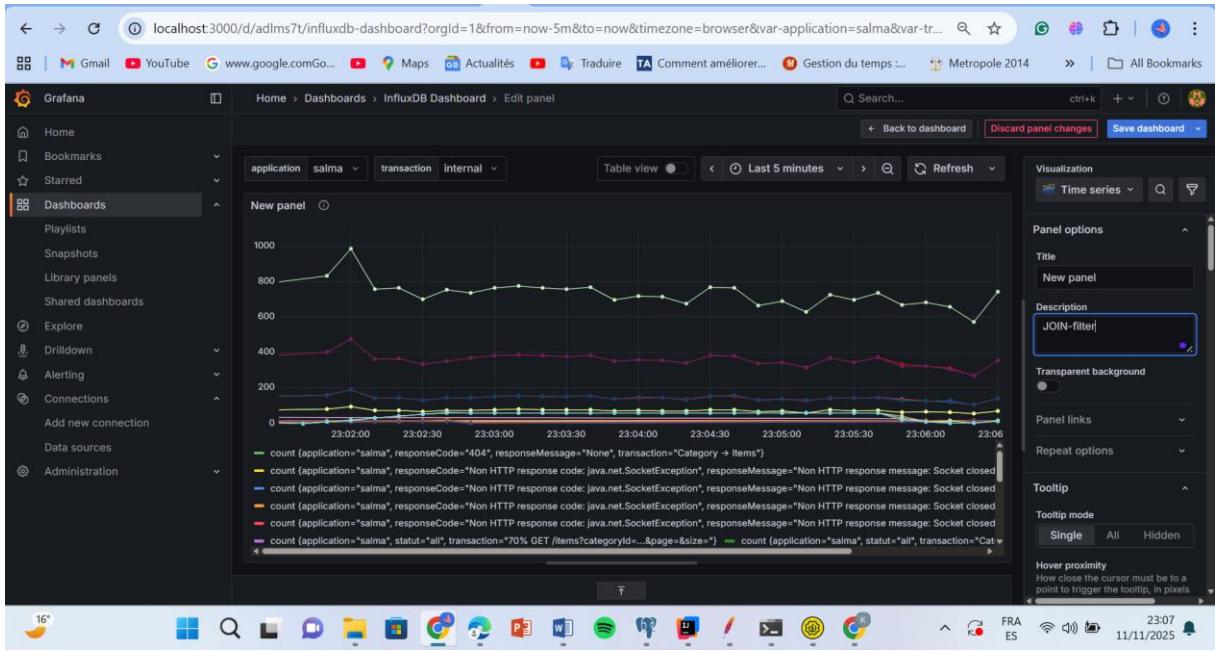




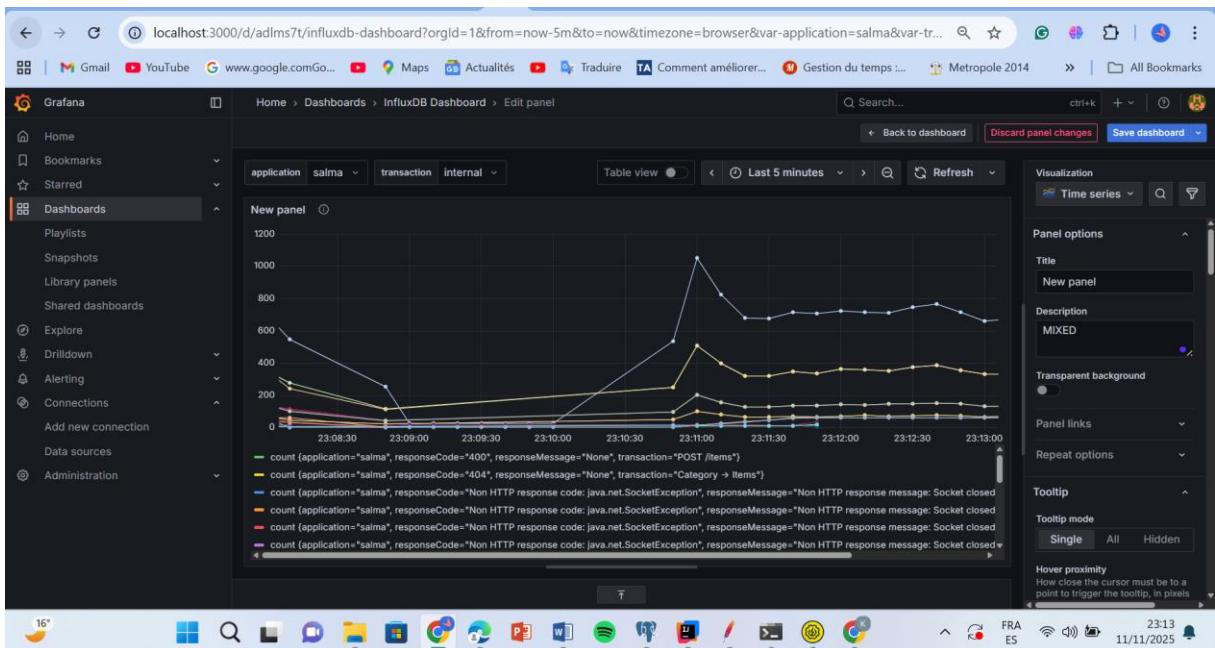
READ-heavy



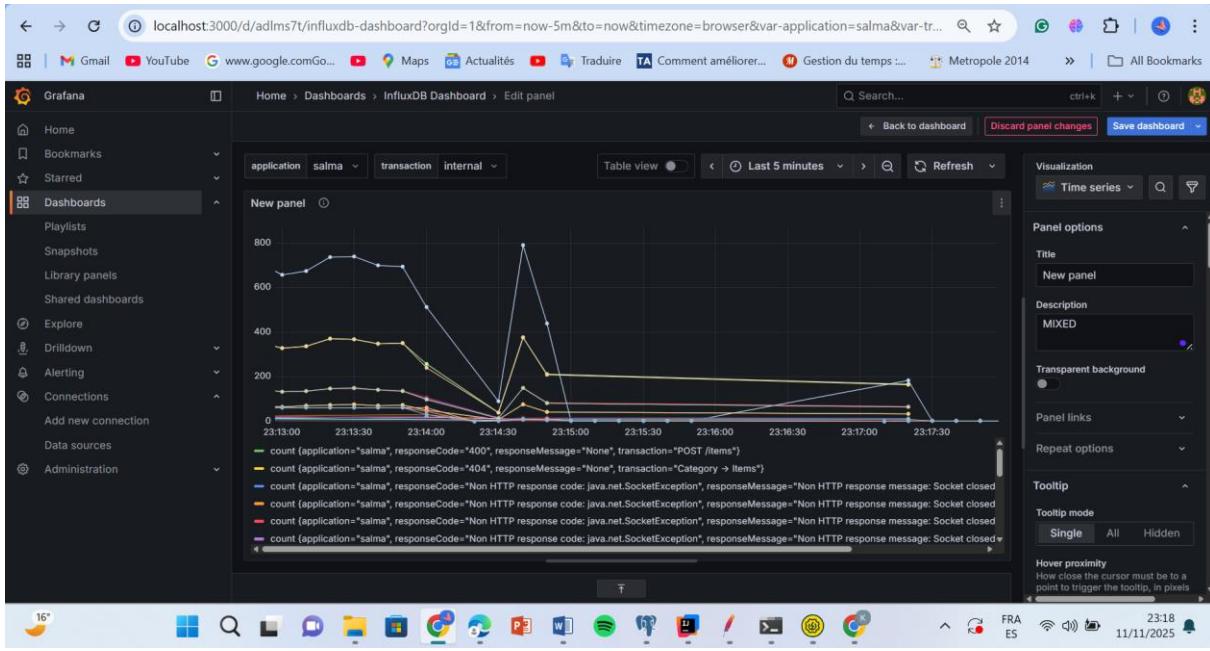
JOIN-filter



MIXED

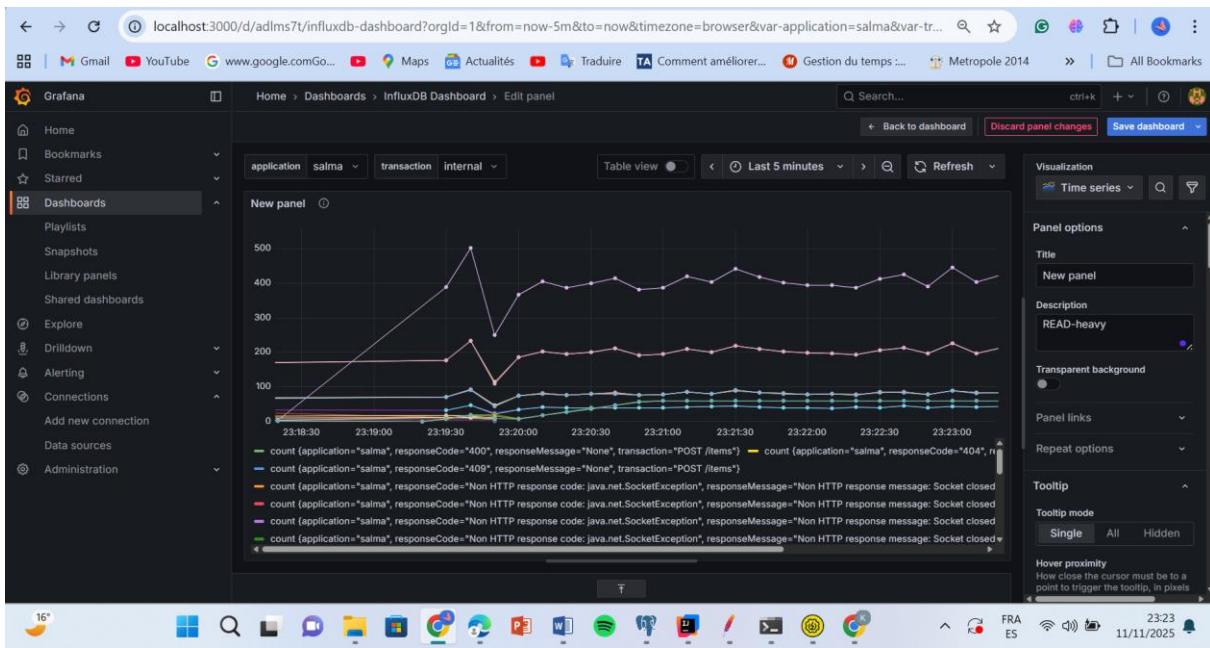


HEAVY-body

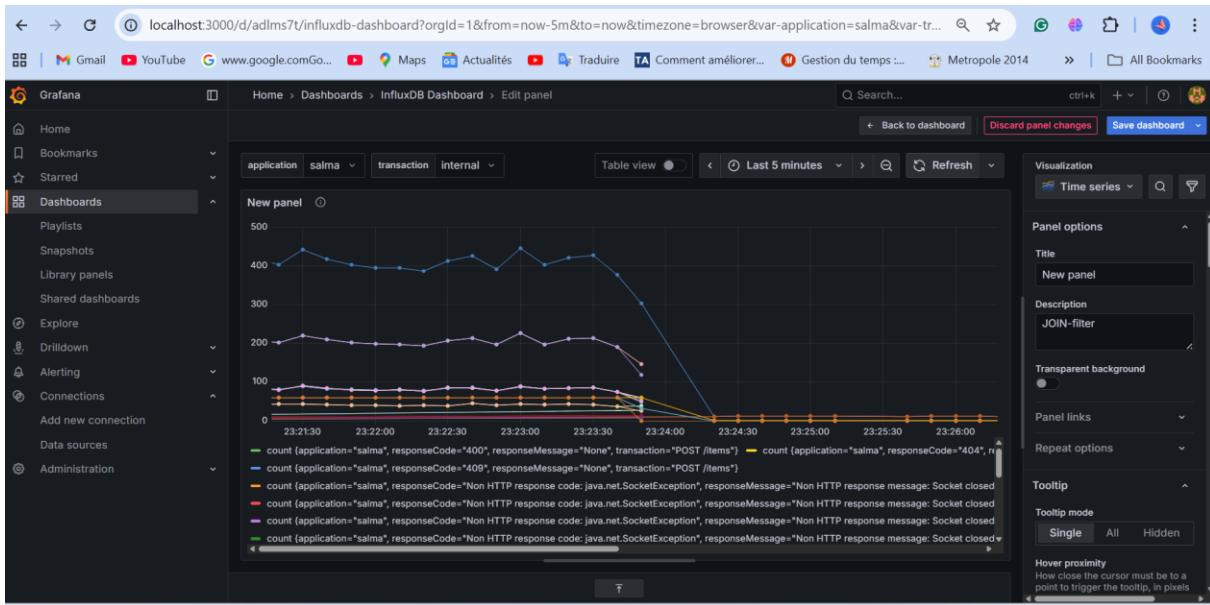


Variant d

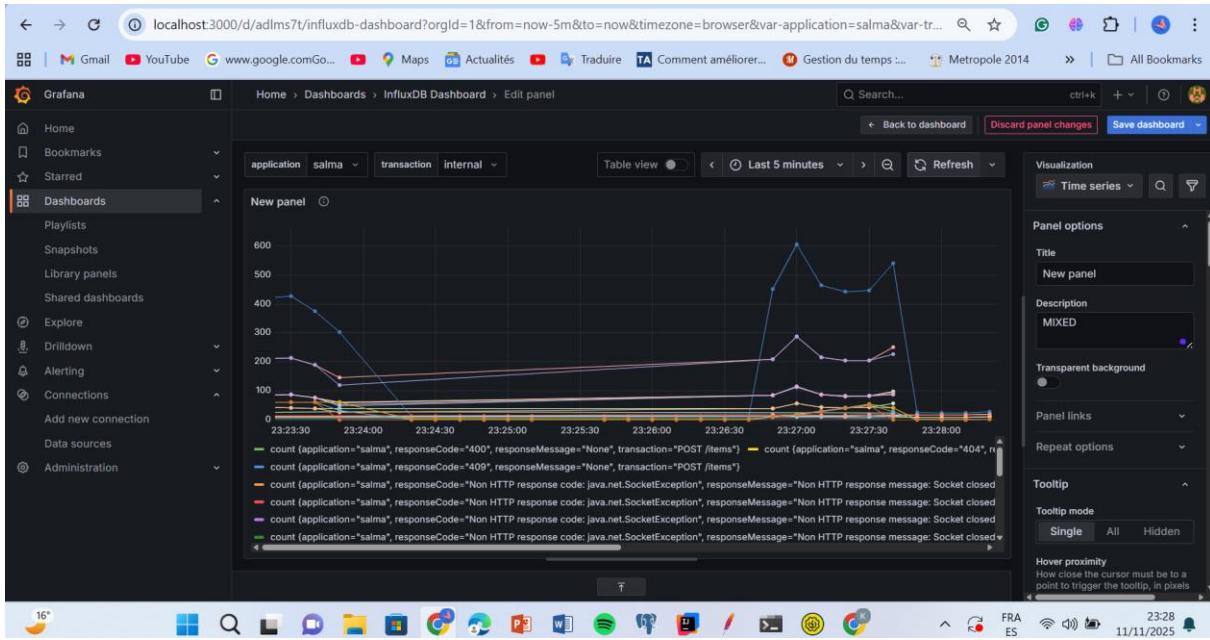
READ-heavy



JOIN-filter



MIXED



HEAVY-body

