



AWS User Group Brest – 1er Juin 2022

Observabilité du serverless grâce aux logs

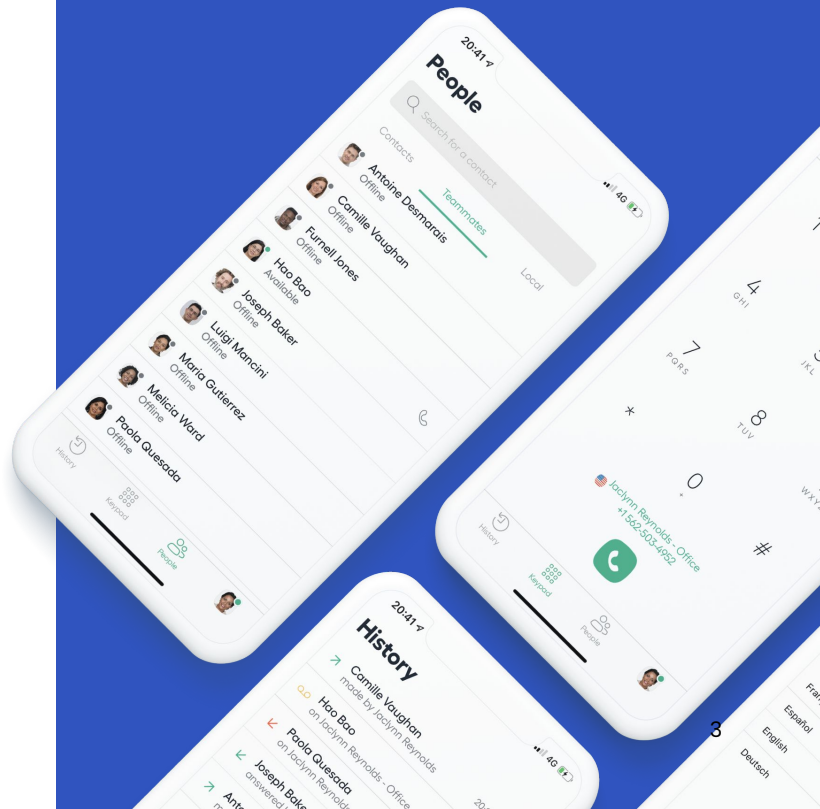


Comment passer d'un hello world à une application serverless prod ready?



Aircall aide les entreprises à utiliser tout le potentiel de la voix.

Aircall est une solution de téléphonie cloud pour les entreprises, intégrée à leurs outils quotidiens : Salesforce, HubSpot, Zendesk, Slack, Intercom, et bien d'autres.



Jobs at Aircall

<https://jobs.lever.co/aircall>

🚀 Key moment to join Aircall in term of growth and opportunities

👤 Our people matter, work-life balance is important at Aircall

📖 Fast-learning environment, entrepreneurial and strong team spirit

🌍 45+ Nationalities: cosmopolite & multi-cultural mindset

💶 Competitive salary package & benefits



On ne parlera pas de



Monitoring & Alerting

CloudWatch permet de collecter et monitorer les metrics des applications serverless.
CloudWatch permet aussi de définir des alertes sur ces metrics



X-Ray

Trace les exécutions des lambdas tout au long de leur parcours.
Permet d'obtenir des informations sur les performances et d'identifier les bottlenecks.



Outils externes

De nombreuses solutions existent telles que :

- DataDog
- NewRelic
- AppDynamics



EC2 & VPC

Serverless or not serverless?
#troll



Piv out?



Jean-Baptiste

Développeur, passionné par le
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B E



Générer une application serverless hello world

Utilisation de SAM

```
> sam init
```

```
You can preselect a particular runtime or package type when using the `sam init` experience.  
Call `sam init --help` to learn more.
```

```
Which template source would you like to use?
```

- 1 - AWS Quick Start Templates
- 2 - Custom Template Location

```
Choice: 1
```

```
Choose an AWS Quick Start application template
```

- 1 - Hello World Example
- 2 - Multi-step workflow

```
Template: 1
```

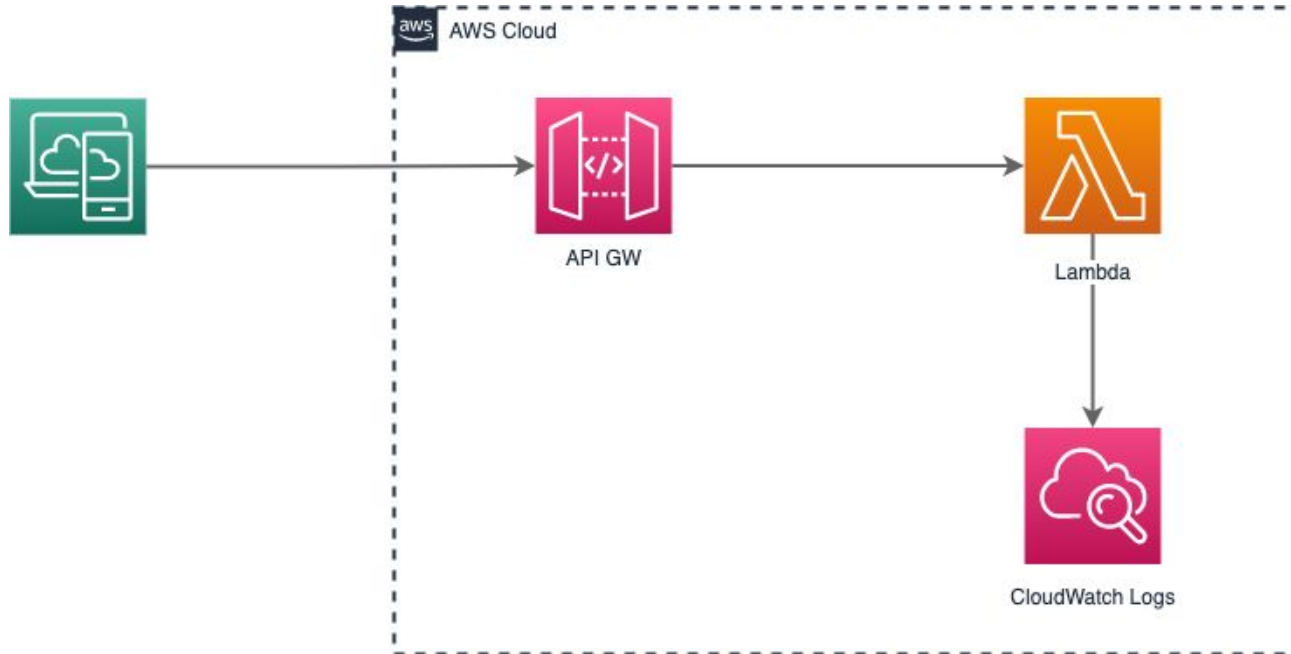
```
Which runtime would you like to use?
```

- 1 - dotnet6
- 2 - dotnet5.0
- 3 - dotnetcore3.1
- 4 - go1.x

```
Runtime: 4
```



Architecture

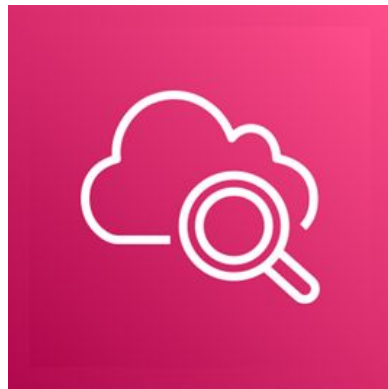


CloudWatch Logs

CloudWatch logs permet de contrôler, de stocker et de consulter les fichiers de logs produits par les différents services de AWS.

Lors de l'exécution d'une Lambda, les logs sont automatiquement transférés vers CloudWatch Logs. A une instance de la lambda sera associé un log stream.

Il est alors possible d'effectuer des recherches sur des codes d'erreurs ou tout autre mot clef sur un log stream.

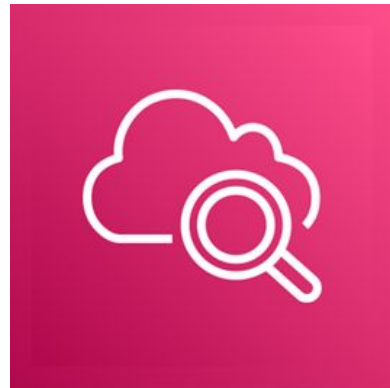


CloudWatch Logs Insights

CloudWatch Logs Insights permet de rechercher et d'analyser de façon interactive les données contenues dans CloudWatch Logs

CloudWatch Logs Insights propose un langage de requête afin de filtrer, transformer et trier les messages.

CloudWatch Logs Insights détecte automatiquement les champs dans les logs au format json.



Etape 1

Ajouter une bibliothèque de logging



Etape 2

Configurer les logs au format json



Etape 3


Logger le request-id



AWS Request ID


Log events

You can use the filter bar below to search for and match terms, phrases, or values in your log events. [Learn more about filter patterns](#)

☐ View as text 

Actions ▼

Create Metric Filter




Clear


1m

30m

1h

12h

Custom 



▶	Timestamp	Message
▶	2022-02-16T20:44:25.659+01:00	START RequestId: 6332d0eb-1a78-5cc7-b2bd-8a6dd3d8642a Version: \$LATEST
▶	2022-02-16T20:44:26.450+01:00	END RequestId: 6332d0eb-1a78-5cc7-b2bd-8a6dd3d8642a
▶	2022-02-16T20:44:26.450+01:00	REPORT RequestId: 6332d0eb-1a78-5cc7-b2bd-8a6dd3d8642a Duration: 790.75 ms Billed Du...





Q "03bea562-ef91-4f46-adf4-a98ee" Appuyez sur Entrée pour rechercher X Clear 1m 30m 1h 12h Custom		
▶	Horodatage	Message
▶	2021-02-10T18:06:45.138Z	START RequestId: 03bea562-ef91-4f46-adf4-a98ee2d41744 Version: \$LATEST
▶	2021-02-10T18:06:45.142Z	{"level":"INFO","time":"2021-02-10T18:06:45.142Z","caller":"budgetcategorizer/main.go:49","message":...
▶	2021-02-10T18:06:45.142Z	{"level":"INFO","time":"2021-02-10T18:06:45.142Z","caller":"budgetcategorizer/command.go:61","messag...
▶	2021-02-10T18:06:45.188Z	{"level":"INFO","time":"2021-02-10T18:06:45.188Z","caller":"budgetcategorizer/command.go:71","messag...
▶	2021-02-10T18:06:45.189Z	{"level":"INFO","time":"2021-02-10T18:06:45.189Z","caller":"parser/parser.go:70","message":"Found 6 ...
▶	2021-02-10T18:06:45.189Z	{"level":"INFO","time":"2021-02-10T18:06:45.189Z","caller":"categorizer/categorizer.go:29","message"...
▶	2021-02-10T18:06:45.189Z	{"level":"WARN","time":"2021-02-10T18:06:45.189Z","caller":"categorizer/categorizer.go:33","message"...
▶	2021-02-10T18:06:45.189Z	{"level":"INFO","time":"2021-02-10T18:06:45.189Z","caller":"categorizer/categorizer.go:29","message"...
▶	2021-02-10T18:06:45.189Z	{"level":"INFO","time":"2021-02-10T18:06:45.189Z","caller":"categorizer/categorizer.go:29","message"...
▶	2021-02-10T18:06:45.189Z	{"level":"WARN","time":"2021-02-10T18:06:45.189Z","caller":"categorizer/categorizer.go:33","message"...
▶	2021-02-10T18:06:45.189Z	{"level":"INFO","time":"2021-02-10T18:06:45.189Z","caller":"categorizer/categorizer.go:29","message"...
▶	2021-02-10T18:06:45.189Z	{"level":"INFO","time":"2021-02-10T18:06:45.189Z","caller":"messaging/message.go:60","message":"Send...
▶	2021-02-10T18:06:45.206Z	{"level":"INFO","time":"2021-02-10T18:06:45.206Z","caller":"messaging/message.go:67","message":"Mess...
▶	2021-02-10T18:06:45.206Z	{"level":"INFO","time":"2021-02-10T18:06:45.206Z","caller":"messaging/message.go:67","message":"Mess...
▶	2021-02-10T18:06:45.206Z	{"level":"INFO","time":"2021-02-10T18:06:45.206Z","caller":"messaging/message.go:67","message":"Mess...
▶	2021-02-10T18:06:45.206Z	{"level":"INFO","time":"2021-02-10T18:06:45.206Z","caller":"messaging/message.go:67","message":"Mess...
▶	2021-02-10T18:06:45.206Z	{"level":"INFO","time":"2021-02-10T18:06:45.206Z","caller":"messaging/message.go:67","message":"Mess...
▶	2021-02-10T18:06:45.206Z	END RequestId: 03bea562-ef91-4f46-adf4-a98ee2d41744
▶	2021-02-10T18:06:45.206Z	REPORT RequestId: 03bea562-ef91-4f46-adf4-a98ee2d41744 Duration: 64.79 ms Billed Duration: 65 ms Mem...

Etape 4

Écrire des logs structurés



Logs structurés ou non ?

Log events

You can use the filter bar below to search for and match terms, phrases, or values

☐ View as text

Actions ▼

Create Metric Filter

▼	Timestamp	Message
▼	2022-02-16T21:44:05.292Z	<pre>{"level":"INFO","time":"2022-02-16T21:44:05.292Z", "caller": "parser/parser.go:70", "message": "Found 1 transactions", "request-id": "46d41c4e-beac-44bb-b32e-b8e685a21475"}</pre>

▼	Timestamp	Message
▼	2022-02-21T20:12:59.789Z	<pre>{"level":"INFO","time": { "level": "INFO", "time": "2022-02-21T20:12:59.789Z", "caller": "parser/parser.go:70", "message": "Done parsing transactions", "request-id": "141e6487-12cf-4350-a9a6-4bd6a7443899", "totalTx": 4 } }</pre>



Attributs json

Q { \$.totalTx > 3 }		
▼	Timestamp	Message
▼	2022-02-21T20:12:59.789Z	<pre>{"level":"INFO","time":"2022-02-21T20:12:59.789Z", { "level": "INFO", "time": "2022-02-21T20:12:59.789Z", "caller": "parser/parser.go:70", "message": "Done parsing transactions", "request-id": "141e6487-12cf-4350-a9a6-4bd6a7443899", "totalTx": 4 } }</pre>



Etape 5

Activer les access logs de l'API Gateway



Log events

You can use the filter bar below to search for and match terms, phrases, or values in your log events. [Learn more about filter patterns](#)

☐ View as text



Actions ▾

Create Metric Filter

Filter events

Clear

1m

30m

1h

12h

Custom



Timestamp

Message

No older events at this moment. [Retry](#)

```
▼ 2022-03-08T14:08:12.035Z {"requestTime":"05/Mar/2022:14:08:12 +0000","requestId":"a8db1a10-ee08-425b-823a-7d1394ae3f83","httpMethod":"GET","path":"/Staging/hello"...
{
  "requestTime": "05/Mar/2022:14:08:12 +0000",
  "requestId": "a8db1a10-ee08-425b-823a-7d1394ae3f83",
  "httpMethod": "GET",
  "path": "/Staging/hello",
  "resourcePath": "/hello",
  "status": 200,
  "responseLatency": 40,
  "xrayTraceId": "-",
  "integrationRequestId": "a7441f67-1671-4884-a29c-c6412a456751",
  "functionResponseStatus": "200",
  "integrationLatency": "37",
  "integrationServiceStatus": "200",
  "ip": "123.214.133.72",
  "userAgent": "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/99.0.4844.51 Safari/537.36"
}
```



▶	Timestamp	Message
▶	2022-05-25T10:45:57.883+02:00	START RequestId: 010cddbde-4a52-4d6b-a587-e2378ca14405 Version: \$LATEST
▼	2022-05-25T10:45:58.251+02:00	<pre>{ "level": "INFO", "time": "2022-05-25T08:45:58.251Z", "caller": "hello-world/main.go:51", "message": "Received a request", "request-id": "010cddbde-4a52-4d6b-a587-e2378ca14405", "ip": "123.156.789.000" }</pre>
▶	2022-05-25T10:45:58.271+02:00	END RequestId: 010cddbde-4a52-4d6b-a587-e2378ca14405
▶	2022-05-25T10:45:58.271+02:00	REPORT RequestId: 010cddbde-4a52-4d6b-a587-e2378ca14405 Duration: 385.20 ms

Logs Lambda

```
{
  "requestTime": "25/May/2022:20:45:57 +0000",
  "requestId": "7c206cdf-c0d8-433b-8a94-a5361603d7e2",
  "httpMethod": "GET",
  "path": "/Staging/hello",
  "resourcePath": "/hello",
  "status": 200,
  "responseLatency": 383,
  "xrayTraceId": "-",
  "integrationRequestId": "010cddbde-4a52-4d6b-a587-e2378ca14405",
  "functionResponseStatus": "200",
  "integrationLatency": "381",
  "integrationServiceStatus": "200",
  "ip": "217.128.133.182",
  "userAgent": "curl/7.79.1"
}
```

Access Logs API GW



Etape 6

Optimiser les coûts des logs



Tarification de CloudWatch logs



Ingestion des données

Correspond au volume des logs qui vont être écrits.

Chaque gigaoctet ingéré sera facturé **0,5985 dollars** pour la région **eu-west-3** (Paris).





Stockage des données

Pendant combien de temps vont être conservés les logs dans le cloud AWS ?
Chaque gigaoctet stocké pendant un mois sera facturé **0,0315 dollars** pour la région **eu-west-3** (Paris).




Rétention infinie par défaut

CloudWatch > Log groups

Log groups (7)  **Actions**  **View in Logs Insights** **Create log group**

By default, we only load up to 10000 log groups.

☐ Exact match < 1 > 

<input type="checkbox"/>	Log group	▲	Retention ▼	Metric filters
<input type="checkbox"/>	/aws/apigateway/helloworld-golang		Never expire	-
<input type="checkbox"/>	/aws/lambda/helloworld-golang-HelloWorldFunction-U7ZCD0JreHf6		Never expire	-



Limiter ce qui est loggé



Quel niveau pour quel env?

Il est courant d'avoir une variable d'environnement pour identifier l'environnement de déploiement (`prod` ou `dev`).

Il est alors possible de l'utiliser pour changer le level des logs.



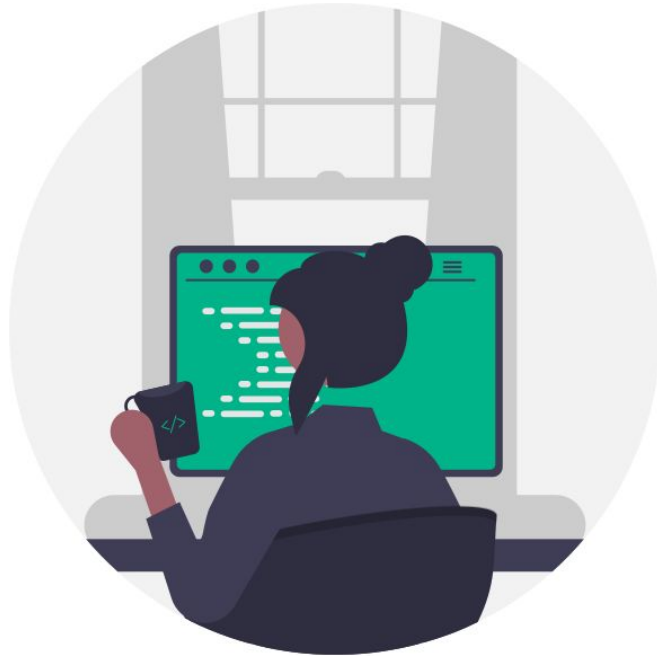
Débrayage si nécessaire

Ceci peut-être combiné à une deuxième variable, permettant de forcer le niveau par défaut si besoin.

Par exemple activer plus de logs temporairement pour identifier les causes d'un bug.



En pratique on fait comment ?



<https://github.com/jbleduigou/golang-serverless-blueprint>

Questions/Réponses

