

# .NET Frameworks Benchmarking

## 21 Feb 2021

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# Who am I?



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# Agenda

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- What is Benchmark? Why Benchmark?
- Serverless Benchmark Setup
- Function Sizes
- Cold Start Results
- Performance Results
- Cost Results
- Q&A

# What is Benchmark ?

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**Benchmarking** is the practice of comparing business processes and performance metrics to industry bests and best practices from other companies.\*



image from <https://www.freepik.com/vectors/abstract>

# Why benchmark?

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We need to understand and see how our system, programming language or implementations are behaving under certain circumstances.

# What will we benchmark?

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- .NET versions.
- Environments.
- Implementations

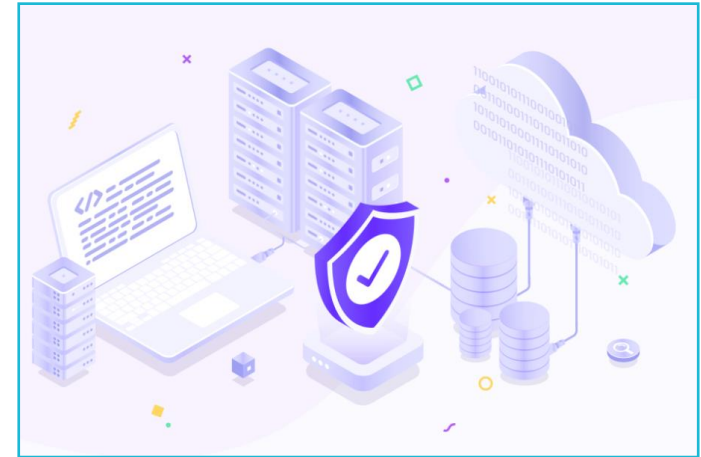
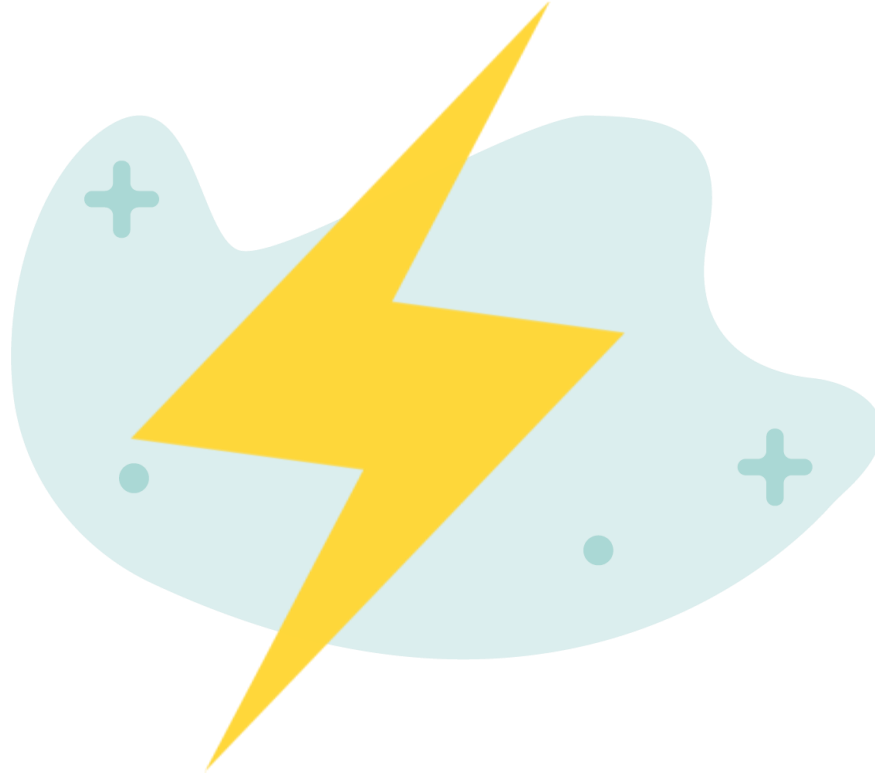


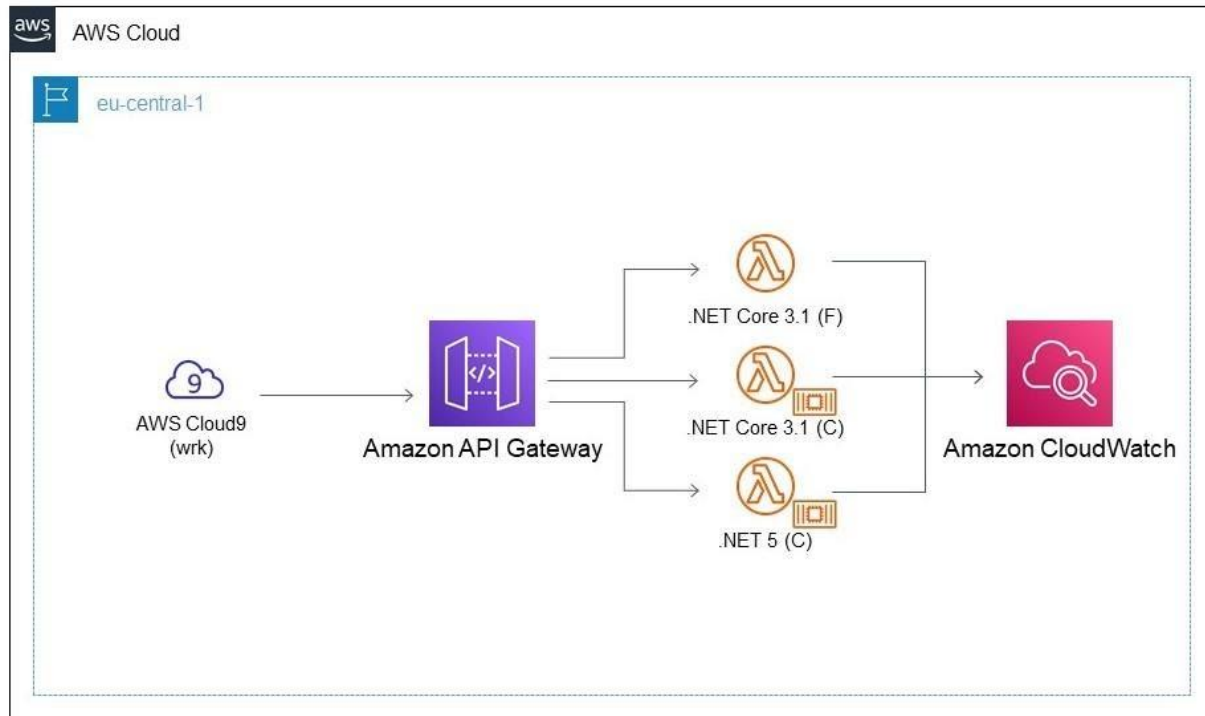
image from <https://bridgecrew.io/blog/infrastructure-as-code-security-101/>

# Serverless Benchmark

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# Setup





# Functions Sizes

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## Functions Sizes

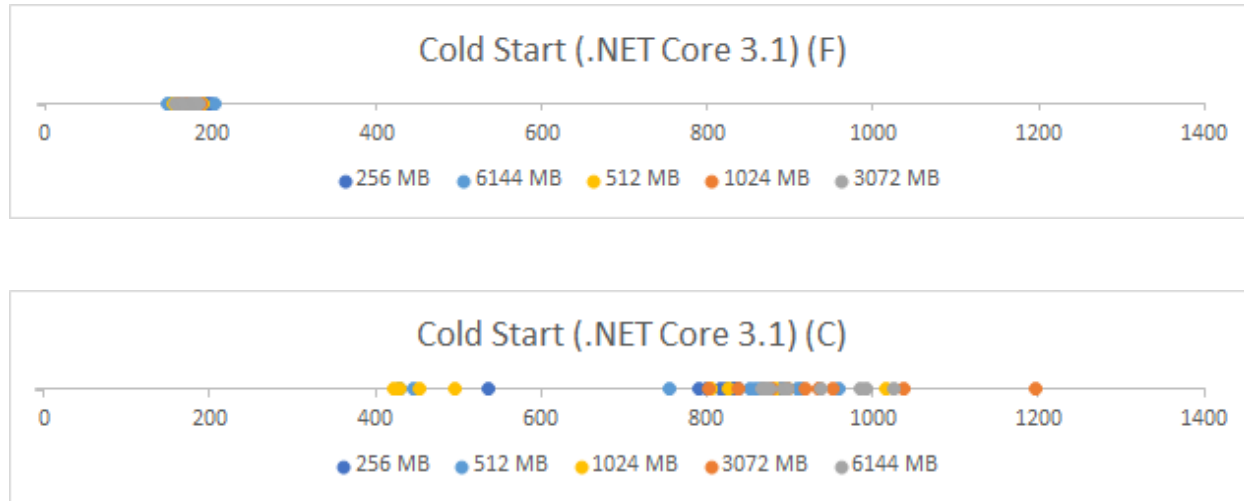
1	Framework	Container Size	Function Size
2	.NET Core 2.1	360.63 MB	231.7 kB
3	.NET Core 3.1	205.26 MB	41.8 kB
4	.NET 5	144.80 MB	-

# What is Cold Start?

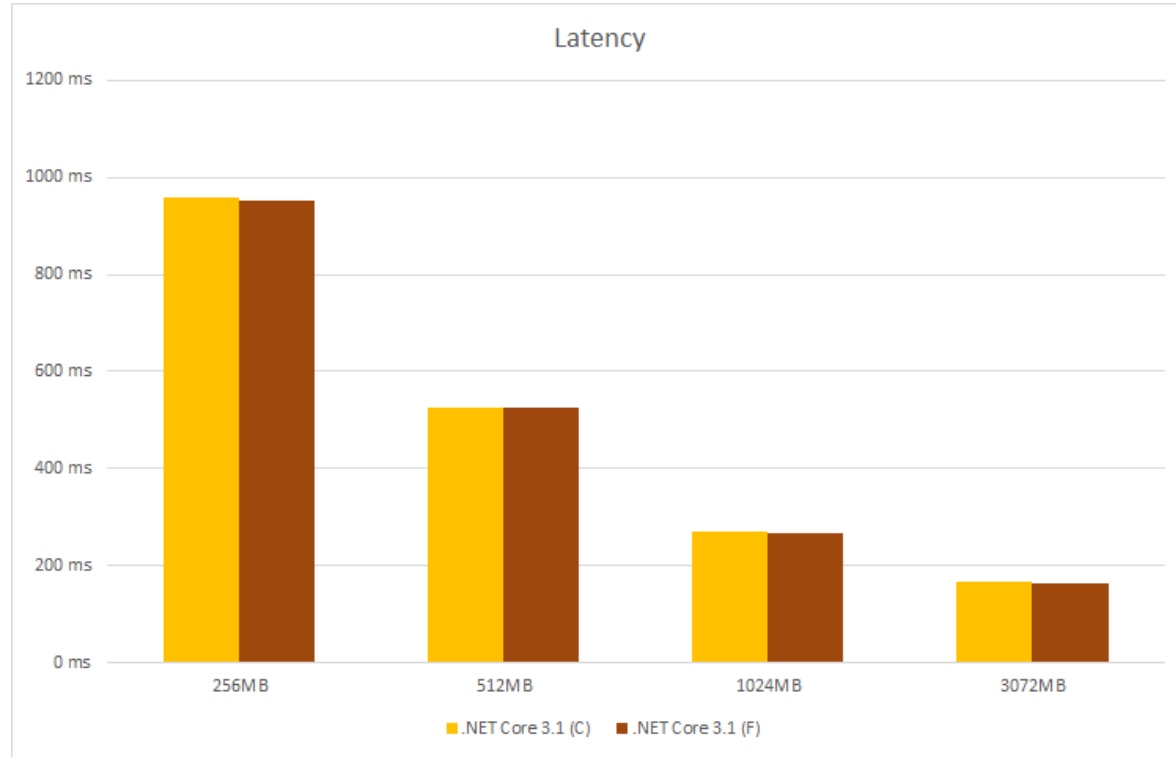
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From when an event happens to start up a function until that function completes responding to the event. So more precisely, a cold start is an **increase in latency** for Functions which haven't been called recently.\*

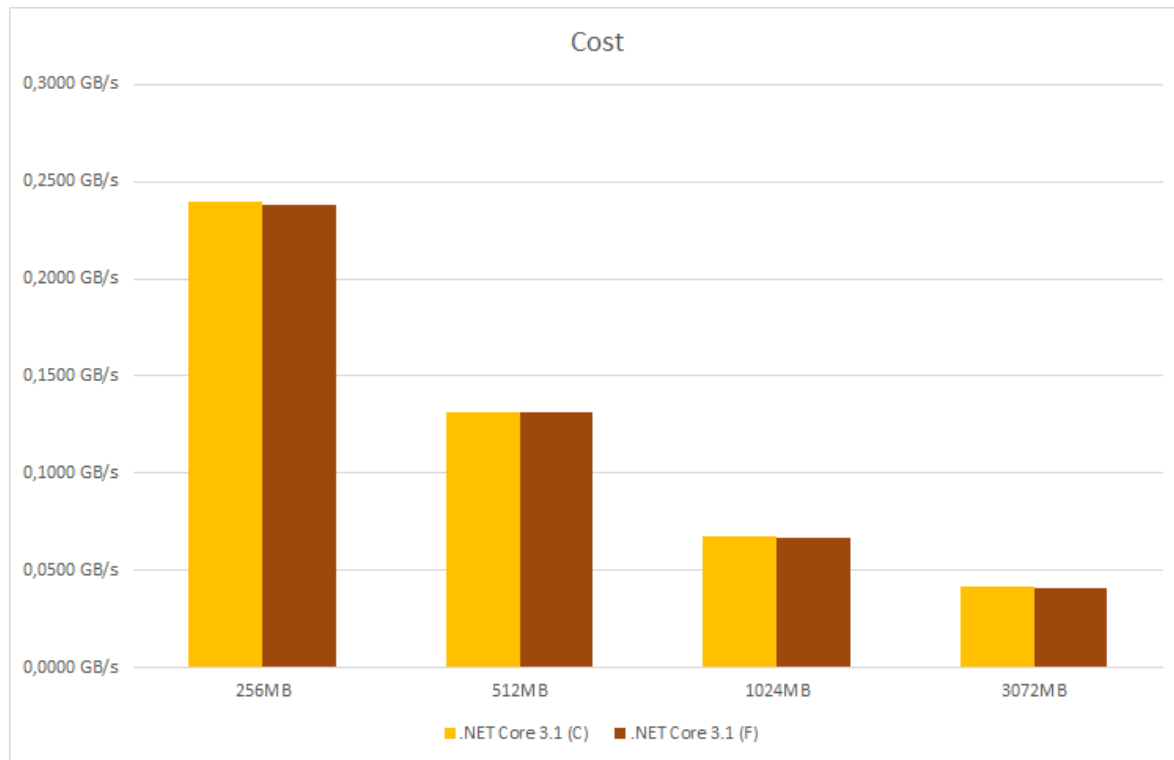
# Cold Start (Zip vs Container)



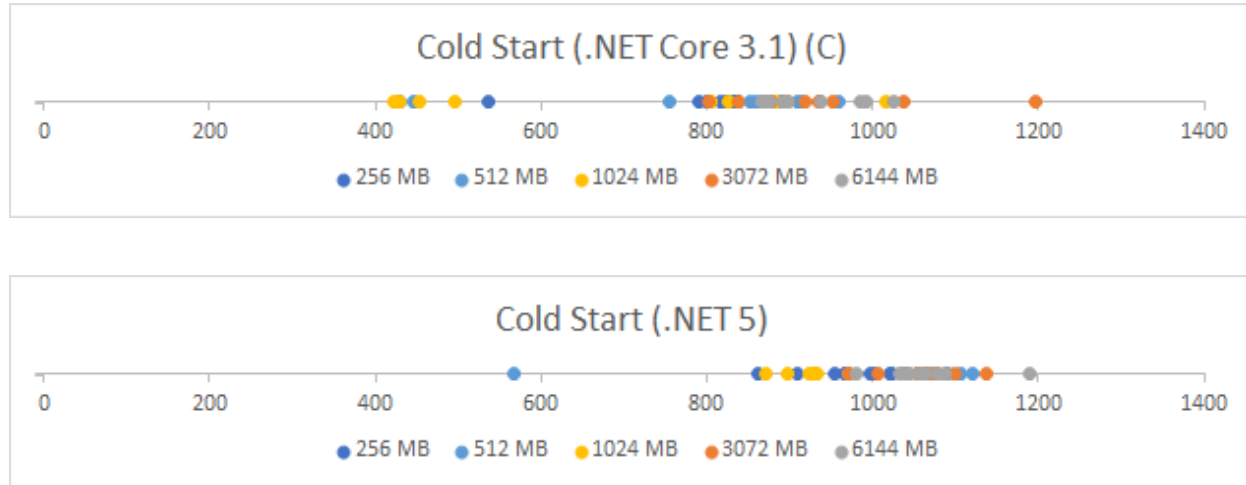
# Performance (Zip vs Container)



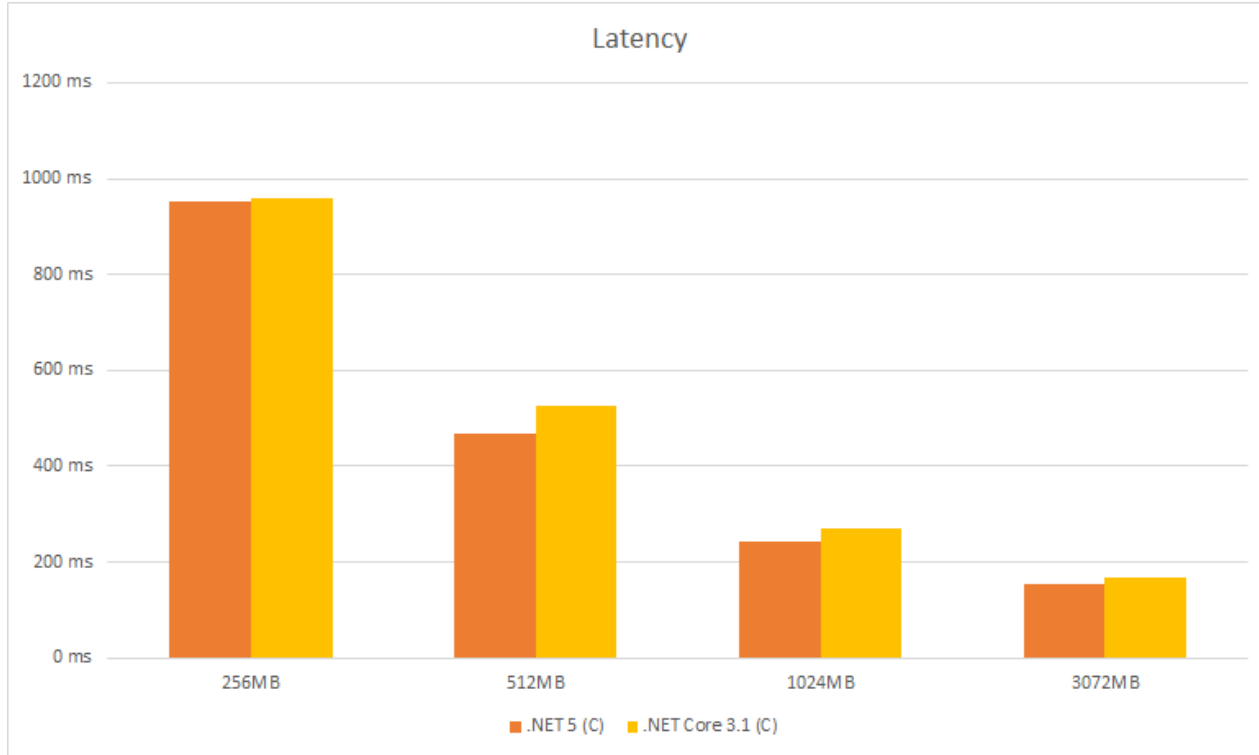
# Cost (Zip vs Container)



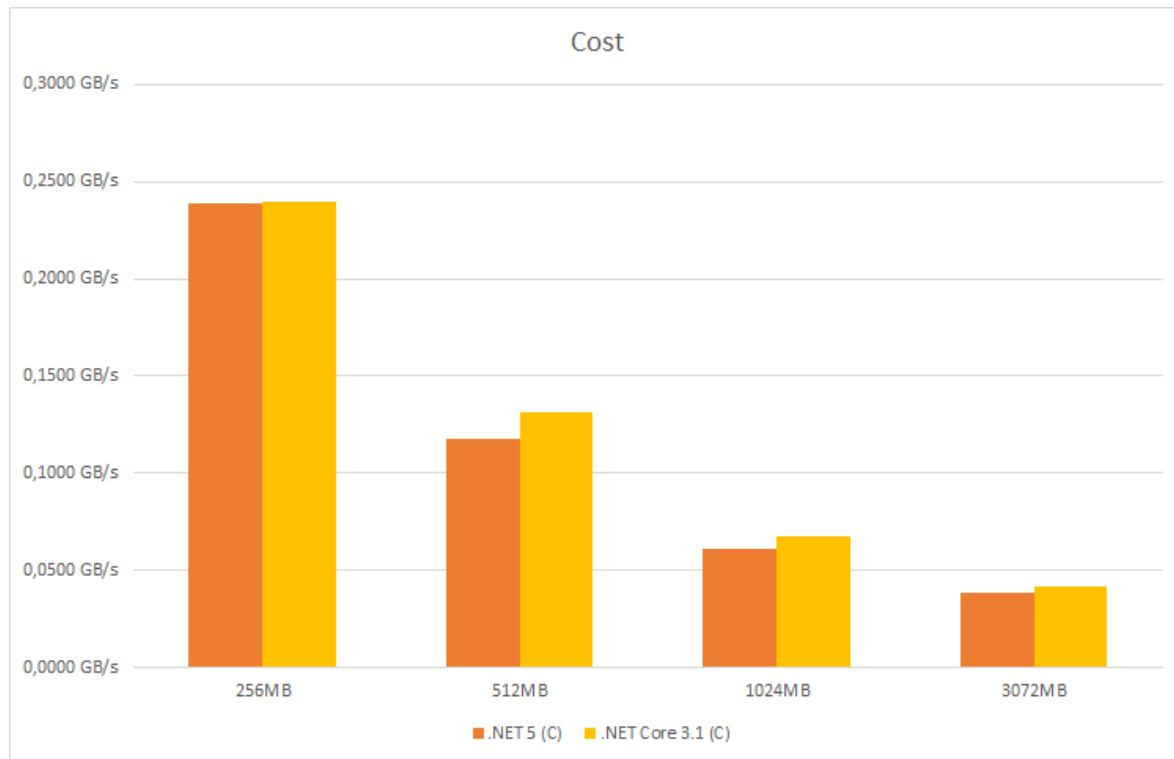
# Cold Start (.NET Core 3.1 vs .NET 5)



# Performance (.NET Core 3.1 vs .NET 5)



# Cost (.NET Core 3.1 vs .NET 5)





# Demo

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# Q & A

Thank you for listening.



RESOURCES MENTIONED IN THIS SESSION

<https://github.com/kloia/dotnetkonfDotNETBenchmark>



[kloia.com](https://kloia.com)



[blog.kloia.com](https://blog.kloia.com)



[@kloia\\_com](https://twitter.com/kloia_com)

# Sources

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- <https://en.wikipedia.org/wiki/Benchmarking>
- <https://gist.github.com/irensaltali/4f6b8b3ff9d788e015371d6798570ae1>
- <https://azure.microsoft.com/ru-ru/blog/understanding-serverless-cold-start/>
- <https://github.com/wg/wrk>
- <https://github.com/giltene/wrk2>