Distributed Systems (2020W)
Homework 04 - Distribute an application with Serverless Computing (FaaS)
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Discussion

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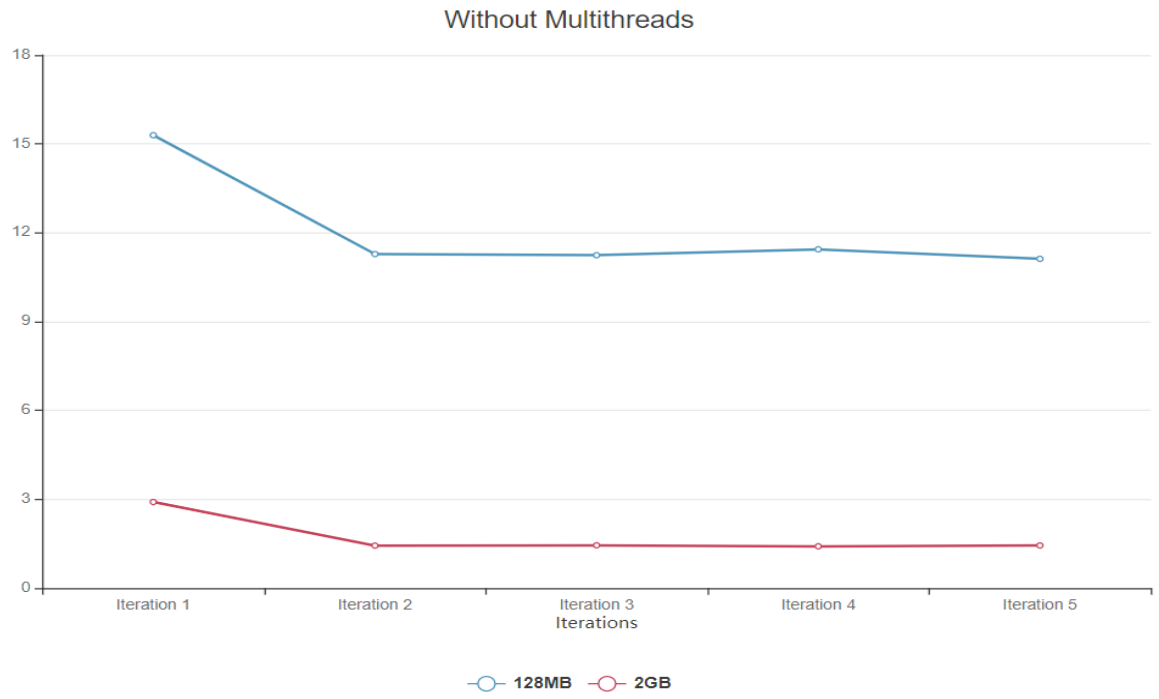
Times used to plot the graphs:				
	128MB	128MB Multi	2GB	2GB Multi
Iteration 1	15,29	9,44	2,91	2,76
Iteration 2	11,28	7,79	1,44	1,09
Iteration 3	11,24	4,61	1,445	1,62
Iteration 4	11,44	5,22	1,411	1,24
Iteration 5	11,12	4,95	1,44	1,32
Average	12,08	6,4	1,73	1,61
Total	60,37	32,01	8,64	8,03
	Time in Seconds			

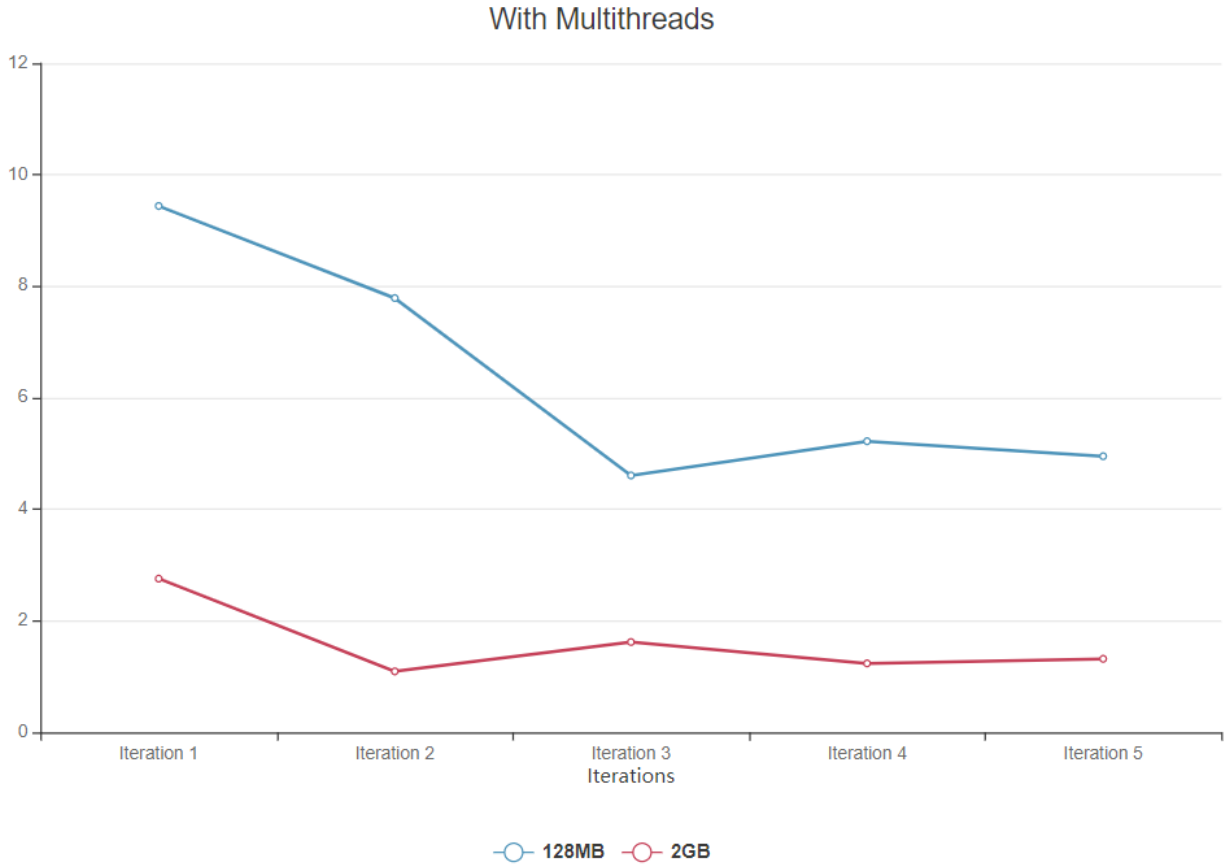
2.4 Evaluation task - Evaluate cold-warm start and memory impact



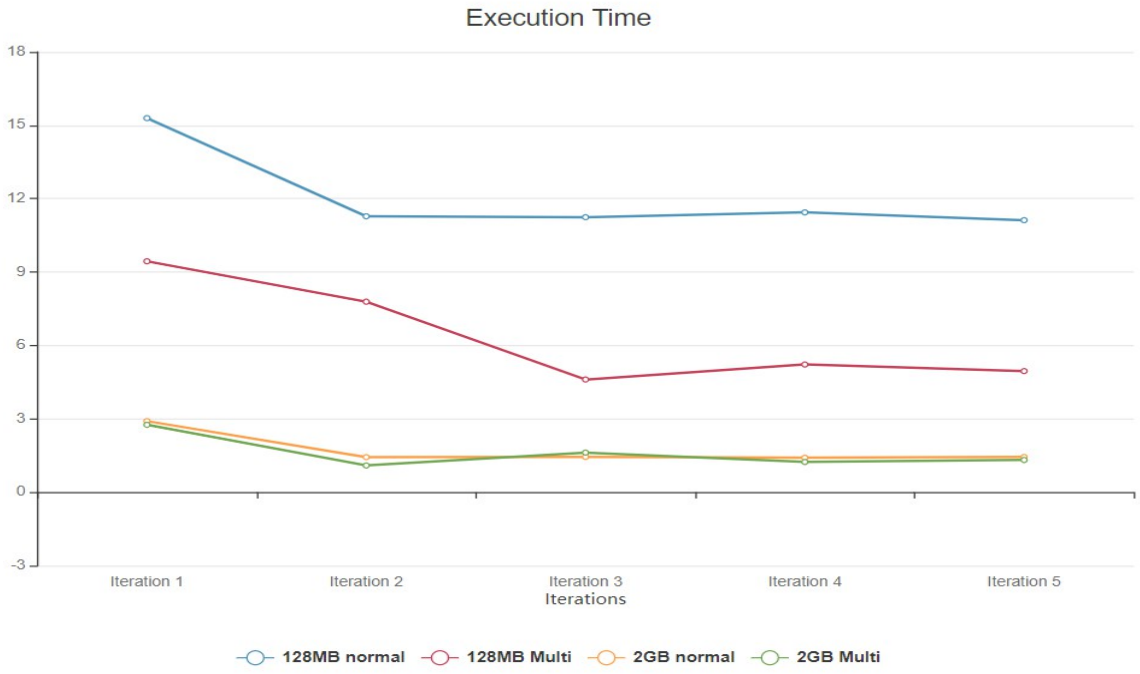
As you can clearly see the execution time of the function is dependent on wheater its a cold (iteration 1) or a warm start (iteration 2-5). The cold start uses much more time than the warmstart, as some instructions or maybe even results are still in the chache when warm-starting the function. Also one can clearly see, that the function with die 2GB ram is much faster than the one with 128MB allthought both functions use pretty much the same amount of memory (arround

95Mb/Iteration)
For calculating 35 fibonacci nummber we use around 95 megabytes, this obviously stays the same for both different functions. The performance allthoug is much faster when using more ram, so our assumtion is the performance difference would most likly grow bigger, if we wanted to calculate more fibonacci numbers (if we use more than 128 Mb)

3.2 Evaluation task - Evaluate distribution of the work



Again, the execution time is dependent on wheater its a cold or a warm start, a warm start of the function leads to a shorter execution time than a cold start.
While on 128 mb we achive a significant performance increase with multiple threads, this statement doesnt hold for 2GB, here the performance pretty much stays the same
Cost-Performacne Ratio 128MB fat: 8,5106MB/s
Cost-Performacne Ratio 128MB thin: 12,235 MB/s
Cost-Performacne Ratio 2Gb thin: 65,2778 MB/s
As we can see the 2GB version has the best cost/performance ratio by computing 65MB/s


Execution Time
18
15
12
9
6
3
0
-3
Iteration 1
Iteration 2
Iteration 3
Iteration 4
Iteration 5
Iterations
128MB normal
128MB Multi
2GB normal
2GB Multi