Managed Environment Profiling

Introduction

An experiment was run to measure the overhead of the managed context for the `blpconngo` library. In the managed environment there two points with overhead: (a) subscription process and (b) extending the macroeconmic events with reference data.

This experiment was focused on the subscription process. It was measure the time since the subscription was sent until the moment a log message was received indicating that the subscription was successful. It is important to notice that period includes the delay in the communication channel and the response processing time in the server.

Methodology

- A Go program was written to execute the two kind of subscriptions: managed and simple (it is located in `./go/profiler/main.go`).
- This program implements a simplified notification handler that only catches log messages.
- If the message is a subscription success report, then the elapsed time is estimated.
- To repeat the process, a bash script was written to filter the output and saved the results into a file (`output.txt`).
- The experiment was run 25 times.
- A Python script was written to summarize the results.

Results

Times are reported in milliseconds.

Type	count	mean	std	min	25%	50%	75%	max
managed	25	0.499855	0.0648325	0.328106	0.4656	0.495705	0.527442	0.623193
simple	25	0.480881	0.109816	0.374018	0.394977	0.457602	0.510921	0.831958

It should note that the managed subscription tends to be greater than the simple subscription by 0.018 in average for this experiment. On the other hand, the variability on subscription times tend to be less for the managed context.

Performing a Welch's two sample t-test:

- t-statistic: 0.7439
- Degress of freedom (approx.): 38.92
- p-value: 0.4614

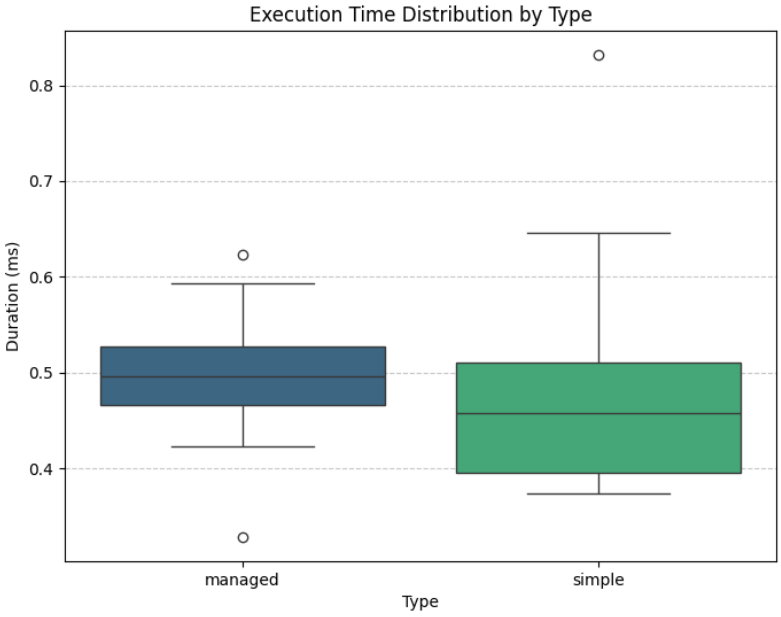

Figure 1: Boxplots

It is observed that the p-value is to high to reject the hypotesis that there is no difference between the means of the two cases. In consequence, the difference is not statistically significant.