COSE: Configuring Serverless Functions using Statistical Learning

Simulation Parameters

1 For AWS Lambda

The results reported in Fig. 5 were generated with the following parameters.

Name	Value	Description
α	0.01	BO parameter
ω	0.1	EI parameter

2 Simulator Parameters

The results reported in Fig. 6, 7 and 8 were generated with the following parameters.

Name	Value	Description
Delay (Edge)	1.0 sec	Propagation delay between the service provider and edge cloud
Delay (Core)	5.0 sec	Propagation delay between the service provider and core clou
Arrival Rate	30 /sec	Request to the serverless functions followed Poisson arrival with the λ being the arrival rate
EI threshold	0.05	This parameter was used as convergence criteria for BO
Co-Location slop	0.1051	This parameter was used to model co-location effect, its the slop of the line in Fig. 1d
Cold Start	0.25 sec	Cold start for serverless functions
α	0.01	BO parameter
ω	0.1	EI parameter

3 Function Execution Modeling

We used Func-1 for convergence related evaluation i.e. Fig. 6, 7 and 8. We used chain of Func-1 & Func-2 for delay bounded chaining in Fig. 9.

3.1 Func-1

Name	Value	Description
$t^f(v, m_{min})$	40.0	The running time for function at the minimum possible (128MB) memory
$t^f(v, m_{max})$	2.0	The running time for function at the maximum possible (3008MB) memory
λ	0.01	The decay constant

3.2 Func-2

Name	Value	Description
$t^f(v, m_{min})$	20.0	The running time for function at the minimum possible (128MB) memory
$t^f(v, m_{max})$	10.0	The running time for function at the maximum possible (3008MB) memory
λ	0.01	The decay constant