Experimental Reports for *Sparkle*

Sparkle

9th April 2021

1 Introduction

Sparkle [2] is a multi-agent problem-solving platform based on Programming by Optimisation (PbO) [1], and would provide a number of effective algorithm optimisation techniques (such as automated algorithm configuration, portfolio-based algorithm selection, etc.) to accelerate the existing solvers.

This experimental report is automatically generated by *Sparkle*. This report presents experimental results of *Sparkle* parallel portfolio containing 5 solver(s).

2 Experimental Preliminaries

This section presents the experimental preliminaries, including the list of solvers in the portfolio(s), the list of instance sets and information about the experimental setup.

2.1 Solvers

There are 5 solver(s) included in *Sparkle*, as listed below.

1. **PbO-CCSAT-Generic-variation-0**
2. **PbO-CCSAT-Generic-variation-1**
3. **PbO-CCSAT-Generic-variation-2**
4. **PbO-CCSAT-Generic-variation-3**
5. **PbO-CCSAT-Generic-variation-4**

2.2 Instance Set(s)

There are 1 instance set(s) included in *Sparkle*, as listed below.

1. **PTN**, number of instances: 1

2.3 Experimental Setup

The experimental setup is described below.

Performance computation: *Sparkle* runs the portfolio one time on each instance. The cutoff time for the computation run is set to 3000 seconds. The outcome of the computation is listed below.

1. **Ptn-7824-b03.cnf**, was solved by: **PbO-CCSAT-Generic-variation-3** in 2322.36 seconds

2.4 Comparison between parallel and sequential

References

[1] Holger H. Hoos. Programming by optimization. *Communications of the ACM*, 55(2):70–80, 2012.

[2] Holger H. Hoos. Sparkle: A pbo-based multi-agent problem-solving platform. Technical report, Department of Computer Science, University of British Columbia, 2015.