* * *

Model Checking Contest @ Petri Nets

Report on the 2013 Edition

September 2013

F. Kordon, A. Linard,
M. Beccuti, D. Buchs, Ł. Fronc, L.M. Hillah,
F. Hulin-Hubard, F. Legond-Aubry, N. Lohmann, A. Marechal,
E. Paviot-Adet, F Pommereau, C. Rodríguez, C. Rohr,
Y. Thierry-Mieg, H. Wimmel, K. Wolf

* * *

Table of Contents

Report on the Model Checking Contest at Petri Nets 2013 1
F. Kordon, A. Linard, M. Beccuti, D. Buchs, Ł. Fronc, L.M. Hillah, F. Hulin-Hubard, F. Legond-Aubry, N. Lohmann, A. Marechal, E. Paviot-Adet, F. Pommereau, C. Rodríguez, C. Rohr, Y. Thierry-Mieg, H. Wimmel, and K. Wolf

I Organization of the Model Checking Contest

1 Introduction 5
2 Selected Models 6
2.1 Models from the MCC'2011 7
2.2 Models from the MCC'2012 7
2.3 Models from the MCC'2013 9
2.4 List of Model Contributors 10
2.5 How Models where supported by tools 11
3 Participating Tools 13
3.1 AlPiNA (Univ. Geneva, Switzerland) 13
3.2 Cunf (École Normale Supérieure de Cachan, France) 13
3.3 GreatSPN (Univ. Torino, Italy) 14
3.4 ITS-Tools (Univ. Pierre & Marie Curie, France) 14
3.5 LoLA (Univ. Rostock, Germany) 14
3.6 Marcie (Univ. Cottbus, Germany) 15
3.7 Neco (Univ. Evry-Val-d'Essone, France) 15
3.8 PNXDD (Univ. Pierre & Marie Curie, France) 16
3.9 Sara (Univ. Rostock, Germany) 16
3.10 Summary of the Techniques Reported by Participating Tools 16
4 Evaluation Methodology 18
4.1 The Examinations 18
4.2 Execution Scheme 19
4.3 Involved Machines 19
4.4 The Executions 20
4.5 Know Issues 20
5 Conclusion 22

II State Space Generation

6 The StateSpace Examination 25
6.1 Handling of Models by Tools 25
6.2 Outputs for the StateSpace Examination 37
6.3 Score for the StateSpace Examination 43
6.4 Trophies for this Examination 48

III Reachability Analysis

7 The ReachabilityCardinalityComparison Examination 53
7.1 Handling of Models by Tools 53
7.2 Outputs for the ReachabilityCardinalityComparison Examination 64
7.3 Score for the ReachabilityCardinalityComparison Examination 70

7.4 Trophies for this Examination ... 75
8 The ReachabilityDeadlock Examination ... 77
8.1 Handling of Models by Tools ... 77
8.2 Outputs for the ReachabilityDeadlock Examination ... 88
8.3 Score for the ReachabilityDeadlock Examination ... 94
8.4 Trophies for this Examination ... 99
9 The ReachabilityFireability Examination ... 101
9.1 Handling of Models by Tools ... 101
9.2 Outputs for the ReachabilityFireability Examination ... 112
9.3 Score for the ReachabilityFireability Examination ... 118
9.4 Trophies for this Examination ... 123
10 The ReachabilityMarkingComparison Examination ... 125
10.1 Handling of Models by Tools ... 125
10.2 Outputs for the ReachabilityMarkingComparison Examination ... 130
10.3 Score for the ReachabilityMarkingComparison Examination ... 136
10.4 Trophies for this Examination ... 141
11 The ReachabilityPlaceComparison Examination ... 143
11.1 Handling of Models by Tools ... 143
11.2 Outputs for the ReachabilityPlaceComparison Examination ... 154
11.3 Score for the ReachabilityPlaceComparison Examination ... 160
11.4 Trophies for this Examination ... 165
12 The ReachabilityMix Examination ... 167
12.1 Handling of Models by Tools ... 167
12.2 Outputs for the ReachabilityMix Examination ... 178
12.3 Score for the ReachabilityMix Examination ... 184
12.4 Trophies for this Examination ... 189

IV CTL-based Analysis

13 The CTLCardinalityComparison Examination ... 193
13.1 Handling of Models by Tools ... 193
13.2 Outputs for the CTLCardinalityComparison Examination ... 201
13.3 Score for the CTLCardinalityComparison Examination ... 207
13.4 Trophies for this Examination ... 212
14 The CTLFireability Examination ... 214
14.1 Handling of Models by Tools ... 214
14.2 Outputs for the CTLFireability Examination ... 223
14.3 Score for the CTLFireability Examination ... 229
14.4 Trophies for this Examination ... 234
15 The CTLMarkingComparison Examination ... 235
15.1 Handling of Models by Tools ... 235
15.2 Outputs for the CTLMarkingComparison Examination ... 240
15.3 Score for the CTLMarkingComparison Examination ... 246
15.4 Trophies for this Examination ... 251
16 The CTLPlaceComparison Examination ... 253
16.1 Handling of Models by Tools ... 253
16.2 Outputs for the CTLPlaceComparison Examination ... 261
16.3 Score for the CTLPlaceComparison Examination ... 267
16.4 Trophies for this Examination ... 272
17 The CTLMix Examination ... 274
17.1 Handling of Models by Tools ... 274
17.2 Outputs for the CTLMix Examination ... 282

17.3 Score for the CTLMix Examination 288
17.4 Trophies for this Examination 294

V LTL-based Analysis

18 The LTLCardinalityComparison Examination 297
18.1 Handling of Models by Tools 297
18.2 Outputs for the LTLCardinalityComparison Examination 305
18.3 Score for the LTLCardinalityComparison Examination 311
18.4 Trophies for this Examination 316
19 The LTLFireability Examination 318
19.1 Handling of Models by Tools 318
19.2 Outputs for the LTLFireability Examination 327
19.3 Score for the LTLFireability Examination 333
19.4 Trophies for this Examination 338
20 The LTLMarkingComparison Examination 339
20.1 Handling of Models by Tools 339
20.2 Outputs for the LTLMarkingComparison Examination 344
20.3 Score for the LTLMarkingComparison Examination 350
20.4 Trophies for this Examination 355
21 The LTLPlaceComparison Examination 357
21.1 Handling of Models by Tools 357
21.2 Outputs for the LTLPlaceComparison Examination 365
21.3 Score for the LTLPlaceComparison Examination 371
21.4 Trophies for this Examination 376
22 The LTLMix Examination 378
22.1 Handling of Models by Tools 378
22.2 Outputs for the LTLMix Examination 386
22.3 Score for the LTLMix Examination 392
22.4 Trophies for this Examination 398

References 399

Index 403

Report on the Model Checking Contest at Petri Nets 2013

F. Kordon[1], A. Linard[2],
M. Beccuti[3], D. Buchs[4], Ł. Fronc[5], L.M. Hillah[8], F. Hulin-Hubard[2], F. Legond-Aubry[8],
N. Lohmann[6], A. Marechal[4], E. Paviot-Adet[9], F. Pommereau[4], C. Rodríguez[2], C. Rohr[7],
Y. Thierry-Mieg[1], H. Wimmel[6], and K. Wolf[6]

[1] LIP6, CNRS UMR 7606, Université P. & M. Curie – Paris 6
4, place Jussieu, F-75252 Paris Cedex 05, France
Fabrice.Kordon@lip6.fr, Yann.Thierry-Mieg@lip6.fr
[2] LSV, Inria/École Normale Supérieure de Cachan,
61, avenue du Président Wilson, Cachan, France
Alban.Linard@lsv.ens-cachan.fr, fhh@lsv.ens-cachan.fr, cesar.rodriguez@lsv.ens-cachan.fr
[3] Dipartimienti di Informatica, Univ. di Torino
Corso Svizzera, 185, 10149 Torino, Italy
beccuti@di.unito.it
[4] Centre Universitaire d'Informatique, Université de Genève
7, route de Drize, CH-1227 Carouge, Switzerland
Didier.Buchs@unige.ch
[5] IBISC, Université d'Évry Val d'Essonne
22 Boulevard de France, 91037 Évry Cedex France
lfronc@ibisc.univ-evry.fr, franck.pommereau@ibisc.univ-evry.fr
[6] Universität Rostock, 18051 Rostock, Germany
niels.lohmann@uni-rostock.de, Wimmel@Informatik.Uni-Oldenburg.de,
karsten.wolf@uni-rostock.de
[7] Brandenburg University of Technology at Cottbus
Postbox 10 13 44, 03013 Cottbus, Germany
rohrch@tu-cottbus.de
[8] LIP6, CNRS UMR 7606 and Université Paris Ouest Nanterre La Défense
200, avenue de la République, F-92001 Nanterre CEDEX, FRANCE
Lom-Messan.Hillah@lip6.fr, Fabrice.Legond-Aubry@lip6.fr
[9] LIP6, CNRS UMR 7606 and Université RenÉ Descartes
143 Avenue de Versailles, 75016, Paris, France
Emmanuel.Paviot-Adet@lip6.fr

Abstract. This document presents the results of the Model Checking Contest held at Petri Nets 2013 in Milano. This contest aimed at a fair and experimental evaluation of the performances of model checking techniques applied to Petri nets. This is the third edition after two successful editions in 2011 [34] and 2012 [33].
The participating tools were compared on several examinations (state space generation and evaluation of several types of formulæ – reachability, LTL, CTL for various classes of atomic propositions) run on a set of common models (Place/Transition and Symmetric Petri nets).
After a short overview of the contest, this paper provides the raw results from the contest, model per model and examination per examination. An HTML version of this report is also provided [32].

Keywords: Petri Nets, Model Checking, Contest.

Part I

Organization of the Model Checking Contest

1 Introduction

When verifying by model checking a system with formal methods, such as Petri nets, one may have several questions such as:

> "When creating the model of a system, should we use structural analysis or an explicit model checker to debug the model?"
>
> "When verifying the final model of a highly concurrent system, should we use a symmetry-based or a partial order reduction-based model checker?"
>
> "When updating a model with large variable domains, should we use a decision diagram-based or an abstraction-based model checker?"

Results that help to answer these questions are spread among numerous papers in numerous conferences. The choice of the models and tools used in benchmarks is rarely sufficient to answer these questions. Benchmark results are available a long time after their publication, even if the computer architecture has changed a lot. Moreover, as they are executed over several platforms and composed of different models, conclusions are not easy.

The objective of the Model Checking Contest @ Petri nets is to compare the efficiency of verification techniques according to the characteristics of the models. To do so, the Model Checking Contest compares tools on several classes of models, often with scaling capabilities, *e.g.*, values that set up the "size" of the associated state space.

Through a benchmark, our goal is to identify the techniques that can tackle a given type of problem identified in a "typical model", for a given class of problem (*e.g.*, state space generation, evaluation of reachability or temporal formulaæ, etc.).

After Newcastle and Hamburg, the third edition of the Model Checking Contest @ Petri nets took place within the context of the Petri Nets 2013 conference, in Milano, Italy. The original submission procedure was published early mid-February 2013 and submissions gathered by early May 2013. After some tuning of the execution environment, the evaluation procedure was operated on a cluster early June. Results were presented during on June 25th, 2013.

The goal of this document is to report the raw data provided by this third edition of the Model Checking Contest. It reflects the vision of the MCC'2013 organizers, as it was first presented in Milano. All tool developers are listed in Section 5.

Please note that a web version of this this report (with hyperlinks) is also available at `http://mcc.lip6.fr` [32].

Structure of this report The report for the MCC'2013 is divided in three volumes:

- the main document (the on you read now) that contains all the main data gathered during this event,
- two annexes that only report memory and CPU consumption of tool executions (these should mostly interest tool developers).
  Annex 1 concerns state space generation and reachability examinations (1378 pages) while annex 2 deals with CTL and LTL examinations (1732 pages).

The main document is structured in five parts. The first one deals with factual information about models (section 2), involved tools (section 3), the methodology (section 4) and a a short conclusion.

Other parts are almost completely generated automatically from the outputs gathered during the model checking contest. They deal with the state space examination (part II), Reachability analysis examinations (part III), CTL analysis examinations (part IV) and LTL analysis examinations (part V).

2 Selected Models

This year, there was 28 models. Some of them being colored, they were proposed in two versions: P/T and colored. This made a total of 38 and, if we consider that many of them were proposed with several instances of scaling parameters (values that could set up the size of the state space), the final benchmark contained a total of 255 instances as shown in table 1.

Year	Model
from **MCC'2011**	FMS (P/T, 8 instances)
	Kanban (P/T, 8 instances)
	MAPK (P/T, 6 instances)
	Peterson (Colored, 6 instances)
	Peterson (P/T, 6 instances)
	Philosophers (colored, 13 instances)
	Philosophers (P/T, 11 instances)
	SharedMemory (colored, 14 instances)
	SharedMemory (P/T, 6 instances)
	TokenRing (colored, 7 instances)
	TokenRing (P/T, 4 instances)
from **MCC'2012**	CSRepetitions (Colored, 6 instances)
	CSRepetitions (P/T, 6 instances)
	Echo (P/T, 9 instances)
	Eratosthenes (P/T, 8 instances)
	GlobalRessAlloc (Colored, 7 instances)
	GlobalRessAlloc (P/T, 2 instances)
	LamportFastMutEx (Colored, 7 instances)
	LamportFastMutEx (P/T, 7 instances)
	NeoElection (Colored, 7 instances)
	NeoElection (P/T, 7 instances)
	PhilosophersDyn (colored, 5 instances)
	PhilosophersDyn (P/T, 3 instances)
	Planning (P/T, 1 instance)
	Railroad (P/T, 6 instances)
	Ring (P/T, 1 instance)
	RwMutex (P/T, 12 instances)
	SimpleLoadBal (colored, 5 instances)
	SimpleLoadBal (P/T, 5 instances)
from **MCC'2013**	Dekker (P/T, 6 instances)
	DotAndBoxes (Colored, 4 instances)
	DrinkVendingMachine (Colored, 2 instances)
	DrinkVendingMachine (P/T, 2 instances)
	HouseConstruction (P/T, 8 instances)
	IBMB2S565S3960 (P/T, 1 instance)
	PermAdmissibility (Colored, 6 instances)
	PermAdmissibility (P/T, 6 instances)
	QuasiCertifProtocol (Colored, 6 instances)
	QuasiCertifProtocol (P/T, 6 instances)
	RessAllocation (P/T, 15 instances)
	Vasy2003 (P/T, 1 instance)

Table 1. Summary of the Models processed for the MCC'2013.

For the MCC'2013, models were classed in two types:

- *"known" models* where known when the call for tool participation was issued and tool developers could choose the best technique to model these according to the capacity of their tool. Their analysis show the performance of the tool when it is used by people having a good knowledge of its internals;
- *"surprise" models* (in bold in table 1) models where decided at the very last moment and come from various origins. To process these, tools had to use the provided PNML format and tool developers

could not anticipate any tuning for their tool. Their analysis shows the performance of the tool when it is used by non experts using the "default settings" of the tool.

2.1 Models from the MCC'2011

These models are from the MCC'2011. In this set, MAPK is the only model coming from an industrial-like case study (biology).

FMS belongs to the GreatSPN and SMART [14] benchmarks. It models a Flexible Manufacturing System [13]. The scaling parameter corresponds to the number of initial tokens held in three places. The following values were used: 2, 5, 10, 20, 50, 100, 200, 500.

Kanban [12] models a Kanban system. The scaling parameter corresponds to the number of initial tokens held in four places. The following values were used: 5, 10, 20, 50, 100, 200, 500, 1 000.

MAPK models a biological system: the Mitogen-Activated Protein Kinase Kascade [26]. The scaling parameter changes the initial number of tokens held in seven places. The following values were used: 8, 20, 40, 80, 160, 320.

Peterson models Peterson's mutual exclusion algorithm [38] in its generalized version for N processes. This algorithm is based on shared memory communication and uses a loop with $N-1$ iterations, each iteration is in charge of stopping one of the competing processes. The scaling parameter is the number of involved processes. The following values were used: 2, 3, 4, 5, 6, 7.

Philosophers models the famous Dining Philosophers problem introduced by E.W. Dijkstra in 1965 [47] to illustrate an inappropriate use of shared resources, thus generating deadlocks or starvation. The scaling parameter is the number of philosophers. The following values were used: 5, 10, 20, 50, 100, 500, 1 000, 5 000, 10 000, 50 000, 100 000. For P/T models, due to the size of the PNML file, the two last scaling parameters were not proposed.

SharedMemory is a model taken from the GreatSPN benchmarks [10]. It models a system composed of P processors competing for the access to a shared memory (built with their local memory) using a unique shared bus. The scaling parameter is the number of processors. The following values were used: 5, 10, 20, 50, 100, 200, 500, 1 000, 2 000, 5 000, 10 000, 20 000, 50 000. For P/T models, to avoid too large PNML files, the values over 200 were not proposed

TokenRing is another problem proposed by E.W. Dijkstra [18]. It models a system where a set of machines is placed in a ring, numbered 0 to $N-1$. Each machine i only knows its own state and the state of its left neighbor, i.e., machine $(i-1) \mod (N)$. Machine number 0 plays a special role, and it is called the "bottom machine". A protocol ensuring non-starvation determines which machine has a "privilege" (e.g. the right to access a resource). The scaling parameter is the number of machines. The following values were used: 5, 10, 20, 50, 100, 200, 500. For P/T models, to avoid huge PNML files, the values up to 50 were proposed.

2.2 Models from the MCC'2012

These models were submitted by the community for the MCC'2012. Several are coming from larger case studies: NeoElection, Planning, and Ring.

CSRepetitions models a client/server application with C clients and S servers. Communication from clients to servers is not reliable, with requests stored in a buffer of size B. Communication from servers to clients are reliable. A client send its message until it receives an answer. The scaling parameter is a function of C for a fixed number of severs. The following values were used: 2, 3, 4, 5, 7, 10.

Echo This file specifies the Echo Algorithm (see [41]) for grid like networks. It is a protocol for propagation of information with feedback in a network. A distinguished agent (initiator), starts the distribution

of a message by sending it to all its neighbors. On receiving some first message, every other agent forwards the message to all its neighbors, except the one it received its first message from. Then it awaits messages from all recipients of its forwards (regardless whether these messages had been intended as forwards or acknowledgments) and replies to the agent where it received its first message from. As soon as the initiator receives a message from all its neighbors, the protocol terminates. In this example, agents are arranged in a hypercube that can be scaled in two values: d, the number of *dimensions* and r, the number of *agents per dimensions*. The scaling parameter is a combination of d and r. The following values were used: d02r09, d02r11, d02r15, d02r19, d03r03, d03r05, d03r07, d04r03, d05r03.

Eratosthenes This model implements the sieve of Eratosthenes [48]. The scaling parameter is the size of the sieve. The following values were used: $5, 10, 20, 50, 100, 200, 500$.

GlobalRessAlloc It models the deadlock-free management of mutually exclusive resources known as the "global allocation strategy" [36]. When a process enters a critical section, it locks all the resources needed to be used in the critical section (in the model, 4 max). Then, it can release a subset of these resources (max 2 in the model) at a time (and then stay in the critical section) or exit the critical section, thus releasing all the remaining resources it locks. The scaling parameter is a value N for N processes and $N \times 2$ resources. The following values were used: $3, 5, 6, 7, 9, 10, 11$. For P/T models, due to the huge size of the PNML file, only two values were proposed: 3 and 5.

LamportFastMutEx It models Lamport's fast mutual exclusion algorithm designed for multiprocessor architectures with a shared memory and was studied in [30]. The scaling parameter is the number of processes competing for the critical section. The following values were used: $2, 3, 4, 5, 6, 7, 8$.

NeoElection The Neo protocol aims at managing large distributed databases on clusters of workstations. The machines on the cluster may have several roles. This model focusses on master nodes which handle the communications between all nodes, and in particular requests for accessing database objects. Prior to that all master nodes agree on a primary master which will be the operating one, the other master nodes being secondary, waiting to replace the primary master if needed. This model specifies this election algorithm [11]. The scaling parameter is the number of master nodes. The following values were used: $2, 3, 4, 5, 6, 7, 8$.

PhilosophersDyn is a variation of the Dining Philosophers where philosophers can join or quit the table [9]. Each philosopher has its own fork, as in the usual version. The interesting point is that identifiers of left and right for each philosopher must be computed or stored somewhere. A philosopher can enter the table only if the two forks around his position are available. He can leave if his fork is free, and he is thinking. The scaling parameter is the maximum number of philosophers. The following values were used: $3, 10, 20, 50, 80$. To avoid huge PNML files, only 3, 5 and 10 values were proposed for the scaling parameter.

Planning It models the equipment (displays, canvases, documents, and lamps) of a smart conference room of the University of Rostock. It was derived from a proprietary description format that was used by an AI planning tool to generated plans to bring the room in a desired state, for instance displaying a document on a certain canvas while switching off the lights. This problem can be expressed as a reachability problem. This model has no scaling parameter.

Railroad it corresponds to the Petri nets semantics of an ABCD model of a railroad crossing system. t has three components: a gate sub-net, a controller sub-net and n tracks sub-nets that differ only by an identifier k in $\{0, \ldots, n-1\}$. These components communicate through shared places, some being low-level places to exchange signals, others being integer-valued places to exchange tracks identifiers. The controller also has a place to count the number of trains at a given time. The scaling parameter is the number of tracks. The following values were used: $5, 10, 20, 50, 100$.

Ring It models a three-module ring architecture [17]. The communication architecture contains as many channels as there are modules. It tests the occurrence of global deadlock arising from a local one. It uses stoppable clocking scheme on arbitrated input and output channels. This model has no scaling parameter.

RwMutex It models a system with readers and writers [41]. Reading can be conducted concurrently whereas writing has to be done exclusively. This is modeled by a number of semaphores (one for each reader) that need to be collected by a writer prior to writing. The scaling parameter a combination of r, the number of readers and w, the number of writers. The following values were used: $r10w10$, $r10w20$, $r10w50$, $r10w100$, $r10w500$, $r10w1000$, $r10w2000$, $r20w10$, $r100w10$, $r500w10$, $r1000w10$, $r2000w10$.

SimpleLoadBal models a simple load balancing system composed of a set of clients, two servers, and between these, a load balancer process. The scaling parameter is the number of clients to be balanced over the servers. The following values were used: 2, 5, 10, 15, 20.

2.3 Models from the MCC'2013

In 2013, models were introduced in two steps: "known" models first, and then "surprise" models that enforce tools to work wth their default settings. Among these models (both classes), several came from case studies: DrinkVendingMachine, IBMB2S565S3960, PermAdmissibility, QuasiCertifProtocol

Dekker is a 1-safe P/T net representing a variant of the Dekker's mutual exclusion algorithm for $N > 2$ processes. Each process has three states, **p0**, **p1**, and **p3**. **p0** is initial. From there, the process executes **try** and raises its **flag**, reaching **p1**. In **p1**, if at least one of the other process has a high **flag**, it **withdraw**s its intent and goes back to **p0**. In **p1**, it **enter**s the critical section if all other process' **flag** is zero. From **p3**, the process can only **exit** the critical section. Mutual exclusion and deadlock-freedom is guaranteed. Unfair runs are however possible. The scaling parameter is the number of involved processes. The following values where used: 10, 15, 20, 50, 100, 200.

DotAndBoxes models a pencil and paper game you have certainly played in your childhood: from an empty grid of dots, two players add, in turn, a line between two adjacent dots. The player that finishes a box owns it and can play again. The game ends when all possible lines are drawn and the winner is the player that owns the larger number of boxes. Exceptionally, no P/T equivalent net was provided for this colored net. The scaling parameter defines the size of the square grid. The following values where used: 2, 3, 4, 5.

DrinkVendingMachine is a colored net modeling a simple hot drink vending machine [37]. This model handles cycles of elaborations of a hot drink (*Products*). Each type of elaboration (modelled by the *elaborateX* transitions) carries a set of options (*Options*) for the product. For *elaborate0* the set of options is empty. Products and options are restaured from the places *productSlots* and *optionSlots*. Each type of elaboration has an intrinsic quality level range (*Quality*), which is associated with the service. The cardinal of the set of quality levels is $M = 4 \times N$, N being the number of products. N is the scaling parameter. We used the following values: 2, and 10.

HouseConstruction ("surprise" model) comes from the `petriweb.org` repository (see `http://www.petriweb.org`). According to the provided information, the net was designed by J. L. Peterson [39], from a PERT chart by F. Levy. The PERT chart contains timing information, which is not accurately translated. The scaling parameter is artificially set to the number of houses to be constructed in parallel. We used the following values: 2, 5, 10, 20, 50, 100, 200, 500.

IBMB2S565S3960 ("surprise" model) is the biggest one (273 places, 179 transition, 572 arcs) of a collection of 1386 Petri nets that were derived from industrial business process models that were provided by IBM [21]. The Petri nets have workflow structure (unique source and sink place) and can be checked for soundness (marking the source place, does the CTL formula "AGEF sink" hold). More information on the models can be found in the referenced paper. There is no scaling parameter for this model.

PermAdmissibility describes a 8×8 4 stages shuffle-exchange network [5]. In order to ease readability, the net components are grouped in columns similar to the way the switches are arranged in stages. Thus, whole net is represented as a cascade of columns alternating in type of the components being either place or transition. Transitions occur column-wise from the leftmost to the rightmost and in columns from the topmost to the bottommost. It can be easily seen that no token can visit a place more than once. Direction of the arcs indicates the flow of tokens through the net. The scaling parameter is a multiplier for the initial marking in input places. We used the following values: 1, 2, 5, 10, 20, 50.

QuasiCertifProtocol ("surprise" model) models a quasi certification protocol on top of a DHT [6]. In this protocol, an Actor A contact a server S (key $k = hash(S)$ for the corresponding root node in the DHT) to perform a service. Once S has finished, S contact C (key $k' = hash(A + S)$ for the corresponding root node in the DHT) that will certify that A did a service S at a timestamp t. To get this certificate, any X contact C for his answer.

This service relies on numerous algorithms scheduled by means of a protocol. Reliability over the DHT is ensured by replication over *"leaf sets"* of size L (we assume it is the same value for S and C). The Petri net models this protocol where A, S and C interact. The objective is to certify that either one actor behave maliciously (i.e. does not respect the protocol) and then no certification is issued or, if all is OK, one certificate is appropriately emitted. The scaling parameter is the size of the leafsets for S and C. we use the following values: 2, 6, 10, 18, 22, 28, 32.

RessAllocation is issued from [46]. It models a kind of chessboard, whose dimensions are nR ($nR \geq 1$) and nC ($nC \geq 2$), respectively, in which each position has a given capacity (let say $K \geq 1$) for holding ants. We then consider ant processes which traverse the board, either North-South or South-North directions, always jumping from one position to the following one. For safety reasons each ant, before jumping to the next position, books the position he is going to jump over and also the adjacent one in the west side of the target position. Of course, because of the position capacity constraint, no more than K ants can stay simultaneously in the same position.

In the set of considered specific models, even columns correspond to North-South ant processes, while odd columns correspond to South-North ant processes. The figure sketches a particular board model for `nR=3`, `nC=5` and `K=1`.

The system can be parametrized in three ways, varying each one of nR, nC and K (here K=1). When varying nR we will call the model a RAS-R, and when varying nC we will call it a RAS-C. The values we used for this couple of scaling parameters are: (2, 2), (2, 3), (2, 5), (2, 10), (2, 15), (2, 20), (2, 50), (2, 100), (3, 3), (3, 5), (3, 10), (3, 15), (3, 20), (3, 50), (3, 100), (5, 2), (10, 2), (15, 2), (20, 2), (50, 2), (100, 2).

Vasy2003 ("surprise" model) was submitted to the Petri net mailing list on July 28, 2003 [24]. It originates from an industrial case study, namely a model (8,500 lines of LOTOS and 3,000 lines of C) developed by Bull for it FAME high-end multiprocessor architecture. The source code of this model (in LOTOS and C) was automatically translated into an interpreted Petri net using the CÆSAR compiler of the CADP toolbox. The present benchmark was obtained by removing all data information (namely, data types, variables, conditions, actions, offers) from the interpreted Petri net in order to obtain a place/transition Petri net. At the time it was submitted, three Petri net tools had failed to handle this benchmark due to a lack of memory (there are nearly 9.810^{21} reachable markings). After the submission, four tools managed to process the benchmark, entirely or at least in part. The purpose of this example is to check how tool capabilities have improved during the last ten years.

There is no scaling parameter. Some of the formula submitted to the tools were issued from the original specification.

2.4 List of Model Contributors

Models were submitted by several people among the community over the successive editions of the Model Checking Contest. Sometime, they are authors of these models, otherwise, they have summarized or retrieved an existing model from the literature... thus, they are "responsible" for these and, since they were of great help for establishing the base of our benchmark, we list them here below:

- *J. Espeleta & F. Trica Garcia* (Univ. Zaragoza, Spain): RessAllocation
- *S.* Evangelista (Univ. Paris 13, France): LamportFastMutEx, NeoElection, SimpleLoadBal
- *H. Garavel* (Inria, France): Vasy2003
- *L. Hillah* (Univ. Paris Ouest Nanterre): DrinkVendingMachine, FMS, Kanban, MAPK, Philosopher, SharedMemory
- *F. Kordon* (Univ. P. & M. Curie, France): GlobalRessAlloc, HouseConstruction, PermAdmissibility, QuasiCertifProtocol
- *A. Linard* (ENS de Cachan, France): CSRepetition, PhilosophersDyn
- *N. Lohmann* (Univ. Rostock, Germany): Echo, IBMB2S565S3960, PLanning, Ring, RwMutex
- *A. Marechal* (Univ. Geneva, Switzerland): TokenRing
- *E. Paviot-Adet* (Univ. René Descartes, France): DotAndBoxes, Peterson
- *F. Pommereau* (Univ. Evry Val d'Essone, France): Eratosthenes, Railroad
- *C. Rodríguez* (ENS de Cachan, France): Dekker

2.5 How Models where supported by tools

We report here how difficult models where for tools in general. Please find below the signification of the icons used in table 2:

- 😡: no tool could process any instance of this model for this examination.
- 😬: less than 33% of the tools could process at least one instance of this model for this examination.
- 😐: 33-66% of the tools could process at least one instance of this model for this examination.
- 🤢: 66% or more tools could process at least one instance of this model for this examination.

In the tables below, the first line of the header shows the class of the verified formulas while the second one shows the type of atomic proposition formulas may contain: **cardinality comparison**, **fireability**, **marking comparison**, **place comparison** and a **mix** of these. For reachability formulas, we also refer to the presence of at least one **deadlock**. The last column refers to state space generation.

Model Name	**CTL**					**LTL**					**Reachability**						
	Card. Comp.	Fireability	Marking. Comp.	Mix	Place Comp.	Card. Comp.	Fireability	Marking. Comp.	Mix	Place Comp.	Card. Comp.	Deadlock	Fireability	Marking. Comp.	Mix	Place Comp.	**State Space**
"Known" Models																	
CSRepetitions (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😬	😬	😬	😡	😬	😬	😬
CSRepetitions (P/T)	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	🤢	😐	😐	😐	😐	😐
Dekker (P/T)	😐	😐	😡	😐	😐	😐	😐	😡	😐	😐	😐	😐	😐	😡	😐	😐	😐
DotAndBoxes (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😬	😬	😬	😡	😬	😬	😬
DrinkVendingMachine (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😬	😬	😬	😡	😬	😬	😬
DrinkVendingMachine (P/T)	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐
Echo (P/T)	😐	😐	😡	😐	😐	😐	😐	😡	😐	😐	😐	😐	😐	😡	😐	😐	😡
Eratosthenes (P/T)	😐	😐	😡	😐	😐	😐	😐	😡	😐	😐	😐	😐	😐	😡	😐	😐	😐
FMS (P/T)	😐	😐	😡	😐	😐	😐	😐	😡	😐	😐	😐	😐	🤢	😡	😐	😐	😐
GlobalRessAlloc (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😬	😬	😬	😡	😡	😬	😬
GlobalRessAlloc (P/T)	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	🤢	😐	😐	😐	😐	😐
Kanban (P/T)	😐	😐	😡	😐	😐	😐	😐	😡	😐	😐	😐	😐	😐	😡	😐	😐	😐
LamportFastMutEx (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😬	😬	😬	😡	😬	😬	😬

.../...

Model Name	**CTL**					**LTL**					**Reachability**						
	Card. Comp.	Fireability	Marking. Comp.	Mix	Place Comp.	Card. Comp.	Fireability	Marking. Comp.	Mix	Place Comp.	Card. Comp.	Deadlock	Fireability	Marking. Comp.	Mix	Place Comp.	**State Space**
LamportFastMutEx (P/T)	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐
MAPK (P/T)	😐	😐	😡	😐	😐	😐	😐	😡	😐	😐	😐	😐	😐	😡	😐	😐	😐
NeoElection (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😬	😬	😬	😡	😬	😬	😬
NeoElection (P/T)	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐
PermAdmissibility (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😬	😬	😬	😡	😬	😬	😬
PermAdmissibility (P/T)	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😆	😐	😐	😐	😐	😐
Peterson (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😬	😬	😬	😡	😬	😬	😬
Peterson (P/T)	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐
Philosophers (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😬
Philosophers (P/T)	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😆	😐	😐	😐	😐	😐
PhilosophersDyn (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😬
PhilosophersDyn (P/T)	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐
Planning (P/T)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡
Railroad (P/T)	😐	😐	😡	😐	😐	😐	😐	😡	😐	😐	😐	😐	😐	😡	😐	😐	😐
RessAllocation (P/T)	😐	😐	😡	😐	😐	😐	😐	😡	😐	😐	😐	😐	😐	😡	😐	😐	😐
Ring (P/T)	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😆	😐	😐	😐	😐	😐
RwMutex (P/T)	😐	😐	😡	😐	😐	😐	😐	😡	😐	😐	😐	😐	😐	😡	😐	😐	😐
SharedMemory (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😬
SharedMemory (P/T)	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😆	😐	😐	😐	😐	😐
SimpleLoadBal (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😬	😬	😬	😡	😬	😬	😬
SimpleLoadBal (P/T)	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐
TokenRing (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😬
TokenRing (P/T)	😡	😐	😐	😐	😡	😡	😐	😐	😐	😡	😡	😆	😐	😐	😐	😡	😐
"Surprise" Models																	
HouseConstruction (P/T)	😐	😐	😡	😐	😐	😐	😐	😡	😐	😐	😐	😐	😐	😡	😐	😐	😐
IBMB2S565S3960 (P/T)	😐	😐	😡	😐	😐	😐	😐	😡	😐	😐	😐	😐	😐	😡	😐	😐	😬
QuasiCertifProtocol (colored)	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡	😡
QuasiCertifProtocol (P/T)	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐
Vasy2003 (P/T)	😐	😐	😡	😐	😐	😐	😐	😡	😐	😐	😐	😐	😐	😡	😐	😐	😬

Table 2. Summary of the way tools handle models

3 Participating Tools

Twelve tools were submitted at MCC'2013 (including the variants of one tool). We list them here by alphabetical order. For each submitted tool, the disk image used to operate them is available from the MCC web page (section Participating tools) [32].

3.1 AlPiNA (Univ. Geneva, Switzerland)

AlPiNA [7,8,29] stands for Algebraic Petri Nets Analyzer and is a model checker for Algebraic Petri Nets created by the SMV Group at the University of Geneva. It is 100% written in Java and it is available under the terms of the GNU general public license. Our goal is to provide a user friendly suite of tools for checking models based of the Algebraic Petri Net formalism. AlPiNA provides a user-friendly user interface that was built with the latest metamodeling techniques on the eclipse platform.

Usually, the number of states of concurrent systems grows exponentially in relation to the size of the system. This is called the State Space Explosion. Symbolic Model Checking (SMC) and particularly SMC based on Decision Diagrams is a proven technique to handle the State Space Explosion for simple formalisms such as P/T Petri nets.

Algebraic Petri Nets (APN : Petri Nets + Abstract Algebraic Data Types) are a powerful formalism to model concurrent systems. The State Space Explosion is even worse in the case of the APNs than in the P/T nets, mainly because their high expressive power allows end users to model more complex systems. To tackle this problem, AlPiNA uses evolutions of the well known Binary Decision Diagrams (BDDs), such as Data Decision Diagrams, Set Decision Diagrams and Sigma-DDs. It also includes some optimizations specific to the APN formalism, such as algebraic clustering and partial algebraic unfolding, to reduce the memory footprint. With these optimizations, AlPiNA provides a good balance between user-friendliness, modeling expressivity and computational performances.

AlPiNA official web page is `http://alpina.unige.ch`.

3.2 Cunf (École Normale Supérieure de Cachan, France)

Cunf is a set of programs for carrying out unfolding-based verification of Petri nets extended with read arcs, also known as contextual nets, or c-nets. The package specifically contains the following tools:

- Cunf: constructs the unfolding of a c-net,
- Cna: performs reachability and deadlock analysis using unfoldings constructed by Cunf,
- Scripts such as pep2dot or grml2pep to do format conversion between various Petri net formats, unfolding formats, etc.

The unfolding of a c-net is another well-defined c-net of acyclic structure that fully represents the reachable markings of the first. Because unfolding represent behavior by partial orders rather than by interleaving, for highly concurrent c-nets, unfolding are often much (exponentially) smaller, which makes for natural interest in them for the verification of concurrent systems.

Cunf requires that the input c-net is 1-safe (i.e., no reachable marking puts more than one token on every place), and for the time being the tool will blindly assume this. It implements the c-net unfolding procedure proposed by Baldan et al. in [4], the algorithms and data structures actually implemented have been partially described in [3].

Cna (Contextual Net Analyzer), checks for place coverability or deadlock-freedom of a c-net by examining its unfolding. The tool reduces these problems to the satisfiability of a propositional formula that it generates out of the unfolding, and uses Minisat as a back-end to solve the formula.

You may download the tool's manual from the tool's webpage, where you will find detailed instructions for installation. The tool is integrated in the Cosyverif environment, whose graphical editor you may want to use to analyze nets constructed by hand. Cunf also comes with Python libraries for producing c-nets programmatically, see Sec. 7 of the manual.

Cunf official web page is `http://code.google.com/p/cunf`. Cunf is also distributed within the CosyVerif environment (`http://cosyverif.org`).

3.3 GreatSPN (Univ. Torino, Italy)

GreatSPN [1,2] is a suite of tools for the design and analysis (qualitative and quantitative) of Generalized Stochastic Petri Nets and Stochastic Well-formed nets. First released by the University of Torino in the late 1980's, GreatSPN has been a widely used tool in the research community since it provides a breadth of solvers for computing net structural properties, the set of Reachable States (RS), the Reachability Graph (RG) with and without symmetry exploitation, and performance evaluation indices using both simulation and numerical solution for steady state and transient measures.

Over the years, GreatSPN functionality has been extended, also thanks to the collaboration with University of Paris 6 and the Università del Piemonte Orientale, by improving and enhancing its solution algorithms, and by providing new solution methods for new formalisms and property languages defined over the years.

The last enhancements include:

- Model checking. A Computational Tree Logic (CTL) model checker for Petri nets with priorities and a CSL-TA stochastic model checker for SPN. The CTL model checker implementation is based on the Meedly library from University of Iowa.
- Optimization problem analyzer. Integration of the Markov Decision Well-formed Net formalism and associated solution algorithms, which allow the study of optimization problems based on Discrete Time Markov Decision Process.
- Fluidification analysis. The addition of the PN2ODE module, which allows to automatically derive from an SPN model a corresponding set of ODEs (in Matlab format), whose solution provides the expected values of the performance indices, as a function of time.
- Dynamic SRG and Extended SRG. The algorithms for the construction of the Symbolic RG have been extended to include Dynamic SRG and Extended SRG construction, two non trivial extensions of the SRG construction which can provide a reduction of the state space size in case of partially symmetrical SWN models.

  GreatSPN official web page is `http://www.di.unito.it/~greatspn`.

3.4 ITS-Tools (Univ. Pierre & Marie Curie, France)

ITS-tools is a suite of model-checking tools, developed in the team MoVe at LIP6. Written in C++, it is available under the terms of the GNU General Public License.

It features state-space generation, reachability analysis, LTL and CTL checking. ITS-tools accept a wide range of inputs: (Time) Petri Nets, ETF (produced by the tool LTSmin), DVE (input format to the tool DiVinE, used in the BEEM database), and a dedicated C-like format known as GAL. The input models can also be given as compiled object files. This allows for large possibilities of interaction with other tools.

Models, even in different formats, can also be easily composed, through the formalism of Instantiable Transition Systems (ITS) [44]. This ease the modeling process. ITS-tools also features a graphical interface, as an Eclipse plug-in, to further help the modeler, especially with compositions.

As for the back-end, ITS-tools rely on decision diagrams [16] to handle efficiently the combinatorial explosion of the state space. The decision diagrams manipulation is performed by the libDDD library, that features several mechanisms for the efficient manipulation of decision diagrams [25,15].

ITS-Tool official web page is `http://move.lip6.fr/software/DDD/itstools.php`.

3.5 LoLA (Univ. Rostock, Germany)

LoLA [50] provides explicit state space verification for place/transition nets. It supports various simple properties. For the contest, mainly the reachability verification features are used.

LoLA offers several techniques for alleviating state explosion, including various stubborn set methods, symmetries (which it can determine fully automated), the sweep-line method (where it computes its own progress measure), bloom filters, and linear algebraic compressions. To our best knowledge, LoLA is the only tool worldwide that provides this large number of explicit state space techniques in this high degree of automaton, and with these possibilities for joint application.

In the MCC, we neither use symmetries nor the sweep-line method. For these methods, performance is too volatile for the black box scenario implemented in the MCC.

NOTE: associated to he main version, three variants (described below) were provided.

LoLA official web page is `http://www.service-technology.org/lola`.

Variant: `LoLa optimistic` It uses a goal oriented stubborn set method and linear algebraic state compression. Goal oriented stubborn sets perform best on reachability queries that are ultimately satisfied in the net under investigation. A heuristics takes care that a satisfying state is reached with high probability already in very early stages of state space exploration. This way, only a tiny portion of the state space is actually explored. If the satisfying states are missed, however, or no satisfying state is reachable, a significantly larger state space is produced than the one produced by lola-pessimistic. Witness paths tend to be very small.

Variant: `LoLa optimistic incomplete` In addition to lola-optimistic, we use a bloom filter for internal representation of states. That is, only the hash value of a state is marked in several hash tables, each belonging to an independent hash function. The state itself is not stored at all. This way, we can handle a larger number of states within a given amount of memory. In the rare case of a hash collision, the colliding state is not explored, so parts of the state space may be missed and false negative results are possible

The user can specify the number of hash tables to be used and thus control the probability of hash collisions.

Variant: `LoLa pessimistic` This variant computes stubborn sets using a standard deletion algorithm. Deletion algorithms are much slower than goal-oriented stubborn sets (quadratic instead of linear) but yield better reduction. This better reduction pays off when the whole state space needs to be explored (i.e. there are no reachable satisfying states). If reachable states exist, this variant is outperformed by the optimistic variant since it has no goal-orienting heuristics and tends to miss reachable states in early phases of state space exploration.

Witness paths are often much longer than in the optimistic variant.

3.6 `Marcie` (Univ. Cottbus, Germany)

MARCIE [27] is a tool for the analysis of Generalized Stochastic Petri Nets, supporting qualitative and quantitative analyses including model checking facilities. Particular features are symbolic state space analysis including efficient saturation-based state space generation, evaluation of standard Petri net properties as well as CTL model checking.

Most of MARCIE's features are realized on top of an Interval Decision Diagram (IDD) implementation [45]. IDDs are used to efficiently encode interval logic functions representing marking sets of bounded Petri nets. This allows to efficiently support qualitative state space based analysis techniques [43]. Further, MARCIE applies heuristics for the computation of static variable orders to achieve small DD representations.

For quantitative analysis MARCIE implements a multi-threaded on-the-fly computation of the underlying CTMC [42]. It is thus less sensitive to the number of distinct rate values than approaches based on, e.g., Multi-Terminal Decision Diagrams. Further it offers symbolic CSRL model checking and permits to compute reward expectations. Additionally MARCIE provides simulative and explicit approximative numerical analysis techniques.

MARCIE official web page is `http://www-dssz.informatik.tu-cottbus.de/DSSZ/Software/Marcie`.

3.7 `Neco` (Univ. Evry-Val-d'Essone, France)

Neco is a suite of Unix tools to compile high-level Petri nets into libraries for explicit model-checking. These libraries can be used to build state spaces. It is a command-line tool suite available under the GNU Lesser GPL.

Neco compiler is based on SNAKES [40] toolkit and handles high-level Petri nets annotated with arbitrary Python objects. This allows for big degree of expressivity. Extracting information form models, Neco can identify object types and produce optimized Python or C++ exploration code. The later is done using the Cython language. Moreover, if a part of the model cannot be compiled efficiently a Python fallback is used to handle this part of the model.

The compiler also performs model based optimizations using place bounds [23] and control flow places for more efficient firing functions. However, these optimizations are closely related to a modeling language we use which allows them to be assumed by construction. Because the models from the contest were not provided with such properties, these optimizations could not be used.

The tool suite provides tools to compile high-level Petri nets and build state spaces but this year we also provide a LTL model-checker: Neco-spot. It builds upon Neco and upon Spot [20,22], a C++ library of model-checking algorithms.

Neco official web page is `https://code.google.com/p/neco-net-compiler`.

3.8 PNXDD (Univ. Pierre & Marie Curie, France)

PNXDD is CTL model-checker based on Set Decision Diagrams (SDD) [44] for PT-nets, a variant of the decision diagrams (DD) family with hierarchy. Symmetric Petri Nets are handled via an optimized unfolding [35] (removing places structurally detected as always empty and the associated transitions).

Hierarchy paradigm, used together with DDs offers greater sharing possibilities compared to traditional DDs. The ordering of variables in the diagram, a crucial parameter to obtain good performances in DDs, becomes a new challenge since portions of the model offering similar comportments must be statically identified to obtain a good hierarchical order. PNXDD relies on heuristics that are described in [28].

PNXDD official web page is `http://cosyverif.org` (it is integrated in the CosyVerif Verification Environment).

3.9 Sara (Univ. Rostock, Germany)

Sara [49] answers reachability queries using the Petri net state equation. From this equation and inequations derived from the query, a linear programming problem is generated and solved using a standard package. If the system does not have solutions, we conclude that there are no reachable states satisfying the query. Other wise, we obtain a firing count vector which describes candidate firing sequences.

We check whether there is an executable firing sequence for the given vector. If so, we have a reachable satisfying state and a witness path. If not, we add inequalities that are not satisfied by the spurious solution. We result in one or more new linear programming problems which enable less serious solutions but still cover all feasible solutions. We proceed recursively with the new problems.

Sara has excellent performance if the state equation as such rules out reachability, or if an early solution reveals reachability. It may be used for unbounded Petri nets. since it does not try to represent or to explore the state space.

In worst case, Sara will not terminate (otherwise, our approach would contradict the known EXPSPACE hardness of the general reachability problem).

SARA official web page is `http://www.service-technology.org/sara`.

3.10 Summary of the Techniques Reported by Participating Tools

During the MCC'2013, tools could report the use of identified techniques. We summarize in table 3. Identified techniques were:

- Abstractions: the tool exploits the use of abstractions (on the fly state elimination),
- Decision Diagrams: the tool uses any kind of decision diagrams,
- Explicit: the tool does explicit model checking,
- Net Unfolding: the tool uses MacMillan unfolding,

- Parallel Processing[10]: the tool uses multithreading,
- Structural Reduction: the tool uses structural reductions (Berthelot, Haddad, etc.),
- SAT/SMT: the tool uses a constraint solver,
- State Compression: the tool uses some compression technique (other than decision diagrams),
- Stubborn Sets: the tool uses partial order technique,
- Symmetries: the tool exploits symmetries of the system,
- Topological: the tool uses structural informations on the Petri net itself (e.g. siphons, traps, S-invariants or T-invariants, etc.) to optimize model checking,
- Unfolding to P/T net: the tool transforms colored nets into their equivalent P/T,

Tool Name	**Reported Technique**
AlPiNA	Decision Diagrams
Cunf	Net Unfolding SAT/SMT
greatSPN	Decision Diagrams
ITS-Tools	Decision Diagrams Structural Reductions
LoLA (all variants)	Explicit model checking State compression Stubborn sets
Marcie	Decision Diagrams
Neco	Explicit model checking
PNXDD	Decision Diagrams Topological
Sara	SAT/SMT Stubborn sets Topological

Table 3. Summary of the techniques reported to be used by tools for the MCC'2013

No tool did report a non listed technique (this was possible).

[10] In fact, only one core was allocated to each Virtual Machine so no parallelism could be enabled in practice (but no tool reported this feature).

4 Evaluation Methodology

Roughly, the evaluation methodology was the same as for MCC'2011 and MCC'2012 (it is presented in [34]). The main differences are the following:

1. we created more categories for the formula evaluation examinations, to enable a more precise support by tools;
2. since the virtual machine-based monitoring experimented in 2012 was a success, a dedicated environment to operate tests (multi-purpose and thus usable in other contexts) was implemented: *B*ench*K*it [31]. So, the MCC execution environment is now composed of *B*ench*K*it and numerous post-analysis scripts that gather and integrate data from the outputs delivered by tools.

4.1 The Examinations

The MCC'2011 reported numerous problems with formula classification (reachability, CTL, LTL). One of them was the absence of classification for atomic propositions in formula to be verified. Thus, many tools had troubles to support a significative set of formulas.

For the MCC'2013, we thus also classified the type of atomic propositions they involved. This lead to the list of examination reported in table 4

Value	Signification
`StateSpace`	we ask for state space generation only
`CTLCardinalityComparison`	we evaluate CTL properties dealing with checking cardinality of marking only
`CTLFireability`	we evaluate CTL properties dealing with transition fireability only
`CTLMarkingComparison`	we evaluate CTL properties dealing with marking comparison only
`CTLPlaceComparison`	we evaluate CTL properties dealing with the comparison of places marking only
`CTLMix`	we evaluate CTL properties dealing with all the previous type of atomic proposition
`LTLCardinalityComparison`	we evaluate LTL properties dealing with checking cardinality of marking only
`LTLFireability`	we evaluate LTL properties dealing with transition fireability only
`LTLMarkingComparison`	we evaluate LTL properties dealing with marking comparison only
`LTLPlaceComparison`	we evaluate LTL properties dealing with the comparison of places marking only
`LTLMix`	we evaluate LTL properties dealing with all the previous type of atomic proposition
`ReachabilityDeadlock`	we evaluate reachability properties dealing with transition deadlocks only
`ReachabilityCardinalityComparison`	we evaluate reachability properties dealing with checking cardinality of marking only
`ReachabilityFireability`	we evaluate reachability properties dealing with transition fireability only
`ReachabilityMarkingComparison`	we evaluate reachability properties dealing with marking comparison only
`ReachabilityPlaceComparison`	we evaluate reachability properties dealing with the comparison of places marking only
`ReachabilityMix`	we evaluate reachability properties dealing with all the previous type of atomic proposition

Table 4. List of the examinations proposed at the MCC'2013

4.2 Execution Scheme

The main execution loop is very simple. It is presented in Algorithm 1. For each model/instance and for each examination, we perform a test and extract data from the *BenchKit* monitor (CPU and memory consumption, if time confinement was reached or not) and from the tool (stdout, result had to be formatted in dedicated lines).

Input: M, a set of scalable models to be processed
foreach $m \in M$ *and* $v \in ScalingParameters(M)$ **do**
  launch the virtual machine for m/v
  report information to the database
  halt the virtual machine

Algorithm 1: Actions performed for each tool by the invocation script

The main difficulty, handled by *BenchKit* was to dispatch the executions over the set of involved machines. To keep consistency of the executions and make these comparable, all the examinations related to a given model m ware operated on the same host.

4.3 Involved Machines

Three computers were made available to operate the submitted tools by various institutions: cluster1[11], ebro and quadhexa-2. Their characteristics are reported in table 5.

Memory confinement was 4Gbyte of memory and 45mn of CPU for all examinations.

cluster1 (Univ P. & M. Curie)	**ebro (Univ. Rostock)**	**quadhexa-2 (Univ. Nanterre)**
Characteristics of the CPU		
total of 46 CPU 23 × Intel Xeon E5645 2.4 GHz, 6-Core, 6× 1536KB/12288KB L2/L3	total of 64 CPU 4 × AMD Opteron 6200 Series 2.7 GHz, 16-Core, 16× 1024KB/16MB L2/L3	total of 24 CPU 4 × Intel Xeon X7460 2.66 GHz, 6-Core, 3 × 3MB/16NB L2/L3
Memory		
23 × 8GB (2×4GB) DDR3 / PC1333	512GB (32× 16GB) DDR3 / PC1600	128BG (8× 16BG) DDR3 / PC1333
Disks		
23 × 500GB SATA 7200 + 1TB SATA 7200	2 × 1TB SAS2-Server-RAID + 2 × 128GB SSD Samsung 830 SERIES SATA III MLC	4 × 400GB RAID 1 (mirror) Seagate SAS Cheetah
Linux Kernel		
`2.6.38.8-server-10.mga`	`2.6.32-358.11.1.el6.x86_64`	`3.8.1-server-1.mga3`

Table 5. Characteristics of the machines used for the MCC'2013

[11] For cluster1, only 18 of the 23 available nodes where allocated due to parallel experimentations.

The organizers thank the Universities of Paris-Ouest-Nanterre[12], Rostock[13] and Pierre & Marie Curie[14] for letting us using their computers.

4.4 The Executions

Table 6 provides a summary concerning the executions over the proposed benchmark, for both the "Known" and the "Surprise" models. Please note that the number of execution does not includes a large number of preliminary tests in cooperation with the tool developers?

"Known" Models	**"Surprise" Models**
Total Number of tool executions	
49 380	4 913
Execution per Machine	
cluster1: 24 937 quadhexa-2: 24 443	ebro: 1 640 quadhexa-2: 3 273
Total CPU Time required	
80 days, 18 hours, 17 minutes, 11 seconds	3 days, 11 hours, 45 minutes, 12 seconds
Size of collected raw data (CSV, outputs, etc. excluding charts)	
1.77GBytes	122.3MBytes
Produced Performance Charts (for models)	
1 182	177
Produced Execution Charts (for relevant executions)	
13 763	1 541

Table 6. Characteristics of the machines used for the MCC'2013

4.5 Know Issues

This section reports the open issues identified during the discussion following the presentation of results on June 25th, 2013 in Milano. We differentiate organizational matters from technical issues.

Organizational Matters are listed below:

Io1 Live Event: this event, lately announced, had to be canceled, which is a pity. Its objective is to provide feedback on tools from a "usability" point of view (look and feel, quality of documentation and tutorials, etc). We will announce it earlier for the next edition in 2014.

Io2 People: so far, active people in the model checking contest are to few...

Io3 Global schedule: the submission deadline should be pushed earlier to allow more time for analysis of the tools.

Io4 "known" and "surprise" models: A strong suggestion is, after the call for model, to decide that all new models will be "surprise" and thus not submitted after the call for models. Models of previous years will then be the only "known" models. This should ease the management of the MCC and help to relax the agenda and have the call for tools submission out earlier.

Io5 Rules: some people suggest to clean up the rules in order to make clear what is possible and what is not allowed. In particular, all precomputed aspects should be carefully investigated

Io6 Trophies: we all agreed on the fact that the formulas used this year are mainly temporary. This formula should be discussed and should introduce more aspects on the results like, time and memory consumption, how correct the outputs are (only for the state space examination this year), support of P/T and/or colored models, etc.

Technical issues are listed below:

[12] http://www.u-paris10.fr
[13] http://www.uni-rostock.de
[14] http://www.upmc.fr

It1 Generation of formulas: this is an issue for the second year and it was not yet solved. The problem is to select a large number of formulas for which we can state their result: satisfied or unsatisfied. Considering the number of models and instances of these models (a total of 255 in 2013), these mush be generated automatically
It seems that SPOT [20] could provide a basis of solution for LTL formulas. In particular, it offers a mechanism to generate random formulas and to select them according to numerous criteria (*e.g.* size of the related Büchi automata) [19].
During the discussion, several other possible solutions. One is the definition of formula patterns that could be repeated and arranged randomly and combined together with atomic propositions.
Another possibility is to propose manually sort of "parameterized" formulas that are scaled up for each instances, however, if this requires less formulas, there are yet numerous formulas to provide.
The participants agree on the fact that purely random formulas are not good but it is necessary to generate formulas automatically in "a good way". We can insert existing formulas when they are available (this was done for the surprise model "Vasy2003"). Another important point is that the output values of formula should be known in advance so that: 1) their veracity could be checked, and 2) there can be the same amount of satisfied and unsatisfied formulas to be processes (maybe separately).
There is however a real problem due to issue Io2; manpower is quite low and must be extended to let time for these tasks.

It2 Grammar for formula: It could be made less ambiguous (e.g. fully braketed expressions). Some people reported difficulties of interpretation and then translation. The idea is to have a small task force that will bring out proposals, especially for the atomic propositions. Somebody suggested to use PNML identifiers of objects instead of their labels (but this may cause problems with the equivalences between colored nets and P/T ones).

It3 BenchKit (resolved at this stage[15]): if this benchmarking tool appear to be operational (it was successfully used to operate the 54293 executions required this year), its usage remains difficult for the non-developers. A new version should appear, making its "individual use" easier, thus allowing the community to reuse outputs from this contest and later ones.

It4 High-level colored nets: a solution should be proposed to have high-level colored nets (the problem in 2012 and 2013 was how to produce their PNML representation). This would allow some tools using such models to be "more on their playground" than with lower level Petri nets.

[15] A new release of *B*ench*K*it is available at `http://benchkit.cosyverif.org`.

5 Conclusion

This documen reported our experience with the Model Checking Contest 2013 (third edition).

From the tool developers' point of view, such an event allows to compare tools on a common benchmark that could become a public repository. Also, some mechanisms established for the contest, such as a language to elaborate the formula to be verified could become, over the years, a common way to provide formulæ to the various tools developed by the community.

If the results for the state space generation are clear and can be interpreted, we still faced, as last year, some troubles with formulæ. The main problem is the quite complex execution chain and, more particularly, the translation from the provided formula language to the one of the tool. Since formulæ were generated automatically (and distinct for each instance of a given model) it was impossible to predict their result and, most often, no consensus was found between the participating tools.

For that reason, we only consider the fact that at least one value could be completed by a given tool for these examinations (this is mentioned in the corresponding sections).

Let us note that both the benchmarks and the tool submissions are available on the MCC'2013's web site (`http://mcc.lip6.fr/2013`). Experiments can thus be reproduced thanks to the *BenchKit* confined run environment [31] available at `http://benchkit.cosyverif.org`.

Acknowledgements The Model Checking Contest @ Petri nets organizers would like to thank the following people for the help they provided in setting up this event: Fabrice Legon-Aubry and Harro Wimmel (multi-core machine management), and Lom Hillah (definition of properties).

The Model Checking Contest organizers would also like to thank the following institutions that borrowed a powerful multi-core or cluster machine for the numerous execution required for the MCC'2013: Université Pierre & Marie Curie, Université Paris Ouest Nanterre and Universität Rostock.

The Model Checking Contest organizers would finally like to thank the tool developers who made possible such a contest. They are:

- `AlPiNA`: Steve Hostettler, Alexis Marechal, and Edmundo Lopez;
- `Cunf`: César Rodríguez;
- `GreatSPN`: Elvio Amparore and Marco Beccuti;
- `ITS-Tools`: Yann Thierry-Mieg, Maximilien Colange et. al.;
- `LoLA` (all variants): Niels Lohmann and Karsten Wolf;
- `Marcie`: Alexey Tovchigrechko, Martin Schwarick, and Christian Rohr;
- `Neco`: Lukasz Fronc;
- `PNXDD`: Silien Hong and Emmanuel Paviot-Adet;
- `Sara`: Harro Wimmel and Karsten Wolf.

Part II

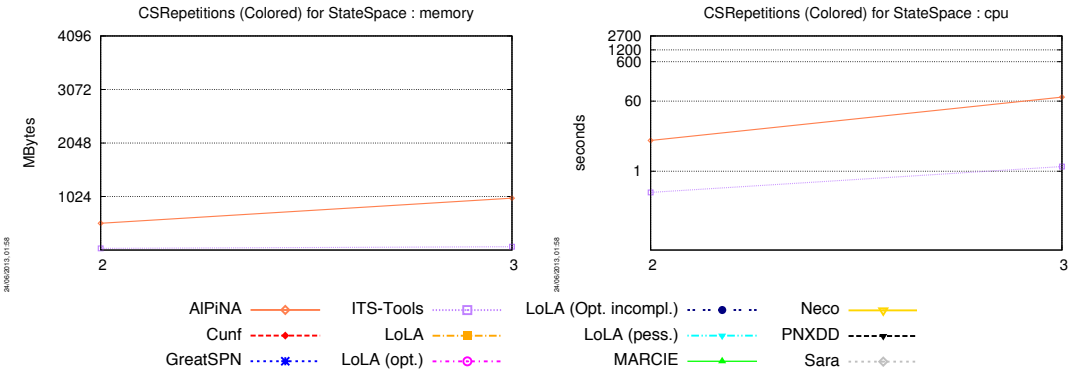
State Space Generation

6 The StateSpace Examination

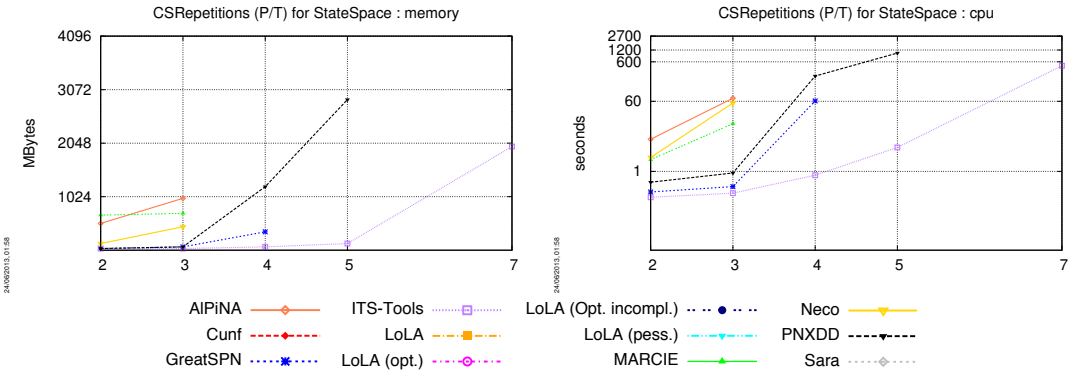
This examination deals with state space generation only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

6.1 Handling of Models by Tools

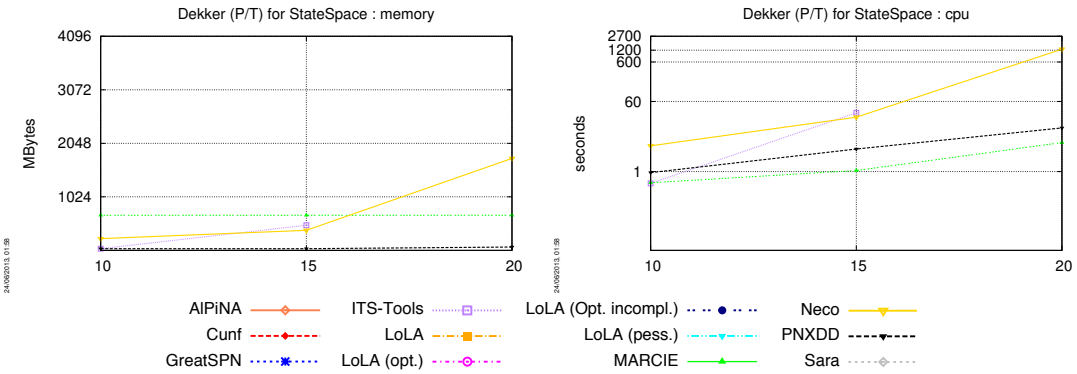
CSRepetitions (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



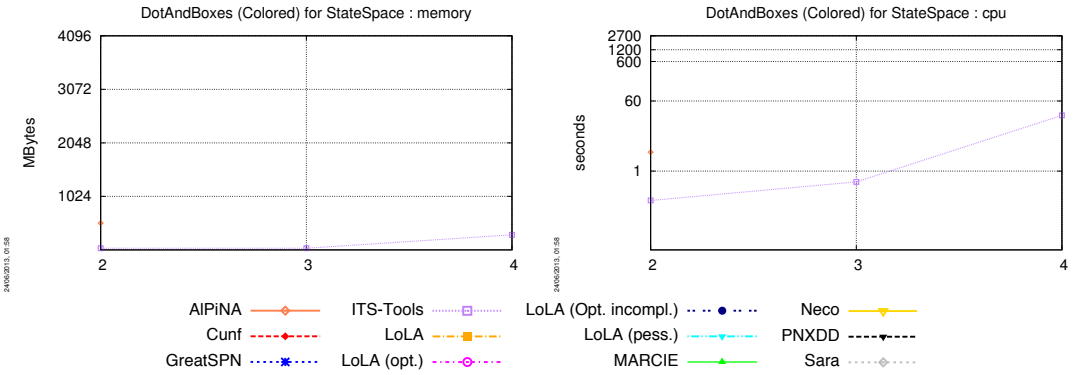
CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



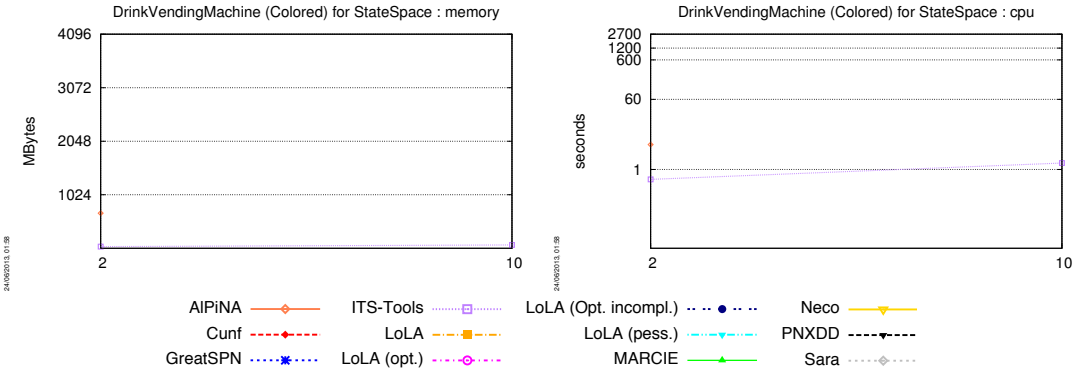
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



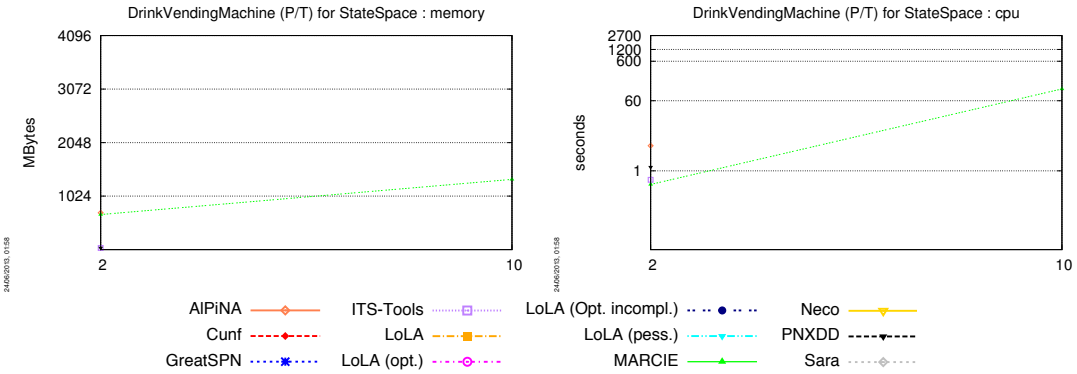
DotAndBoxes (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



DrinkVendingMachine (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

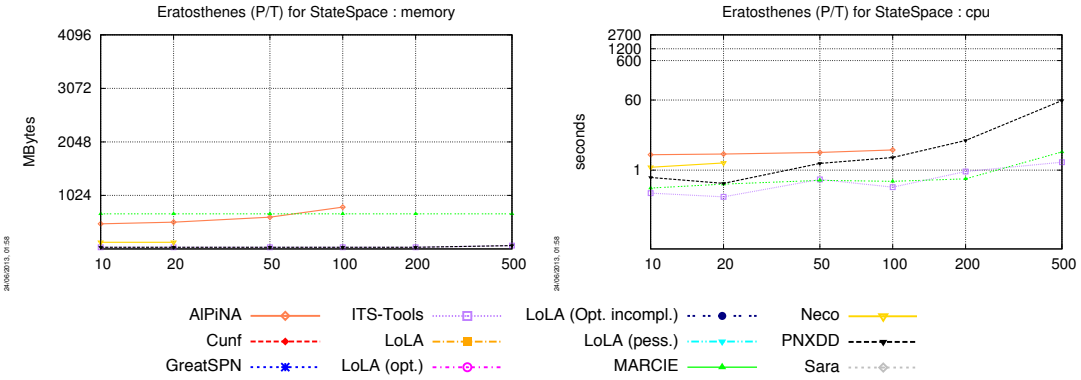


DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

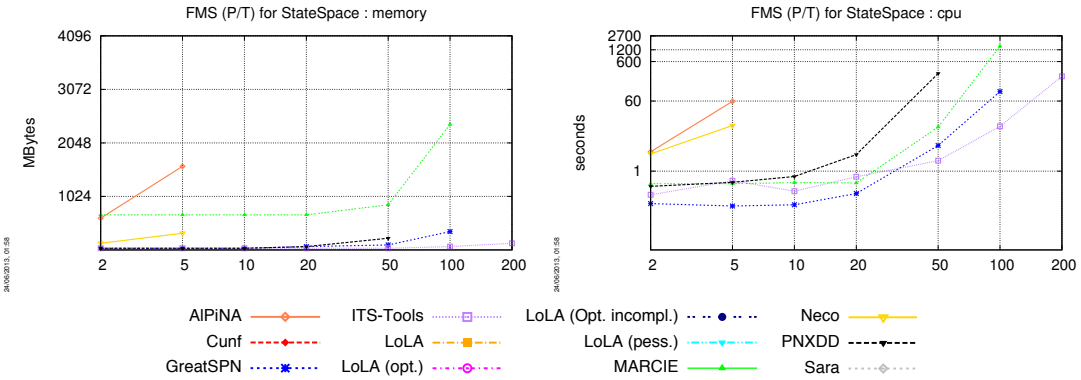


Echo (P/T) No instance of this model could be computed for the **StateSpace** examination.

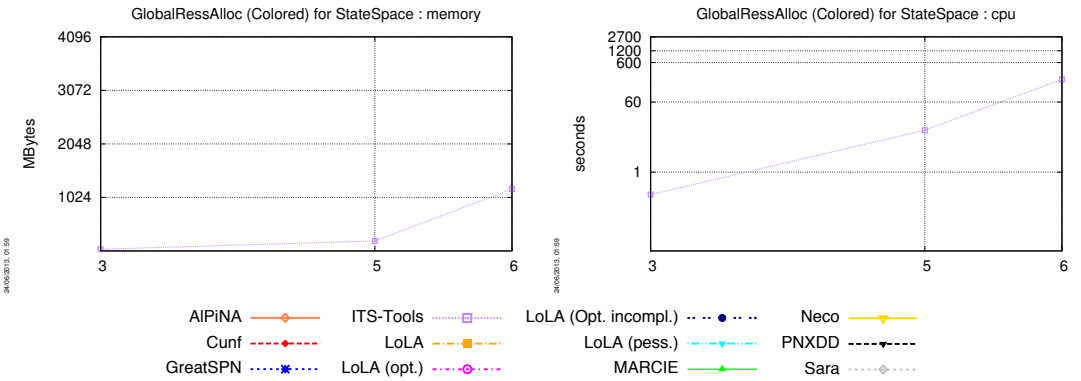
Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



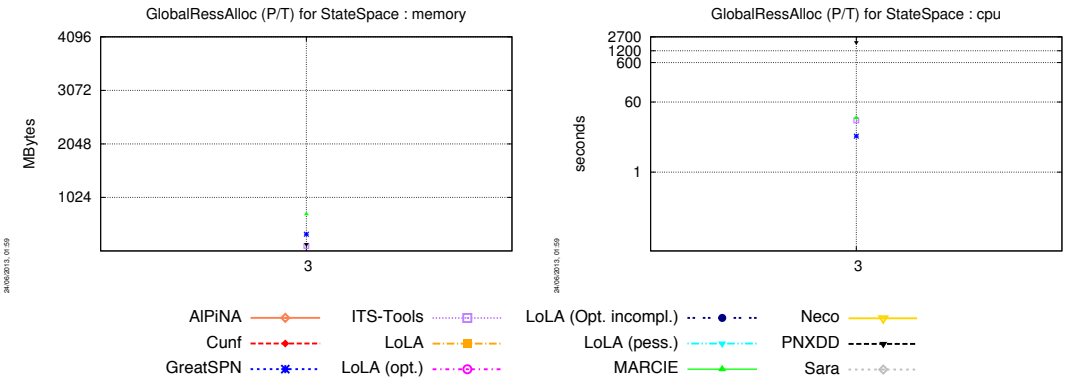
FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



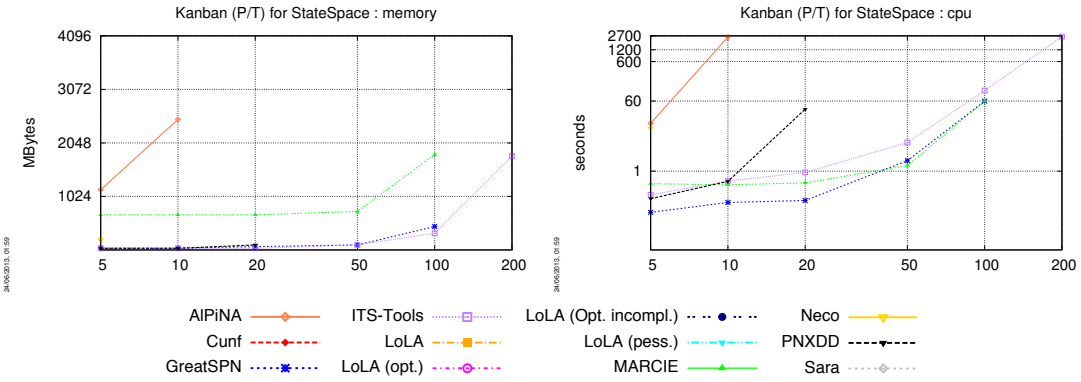
GlobalRessAlloc (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



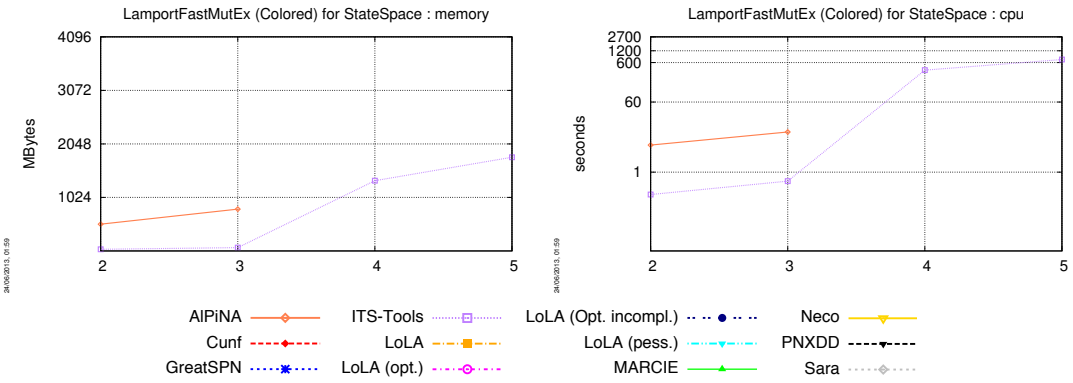
GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



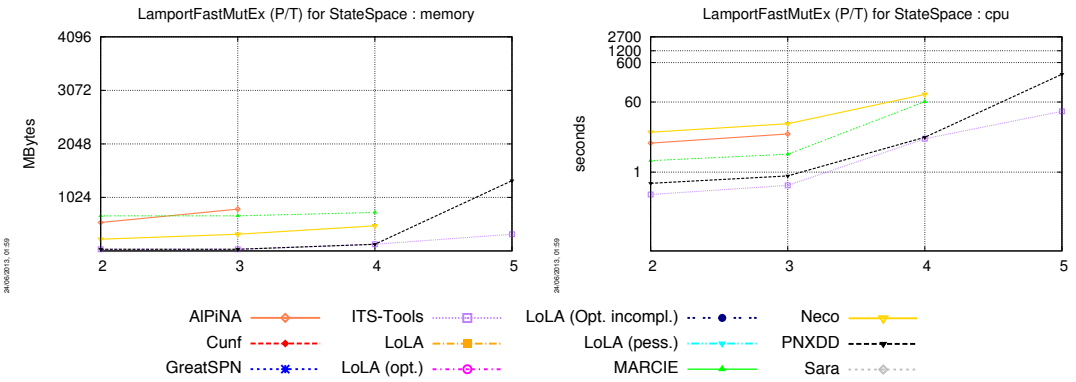
Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



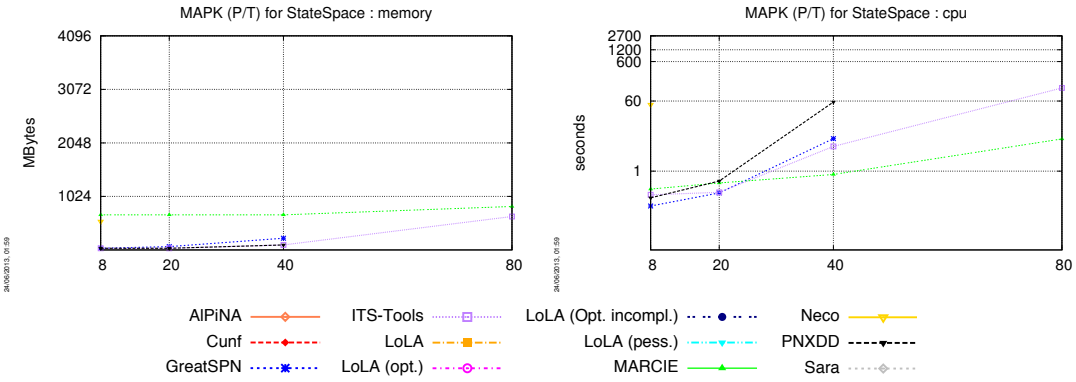
LamportFastMutEx (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



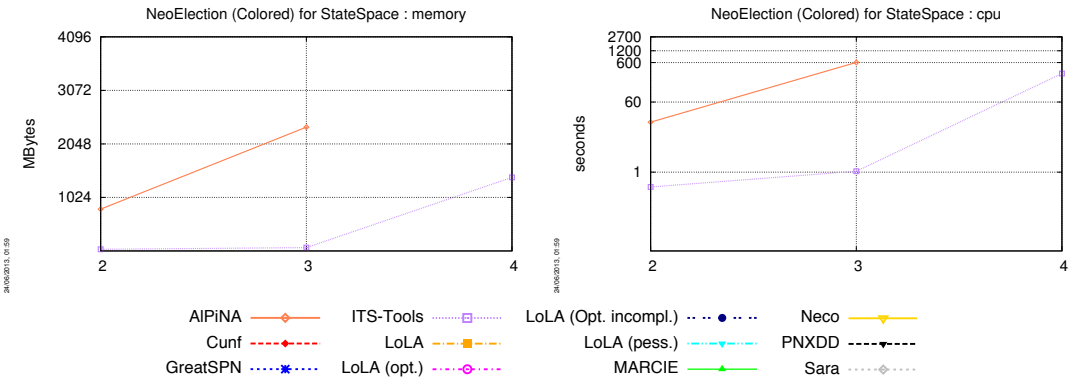
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



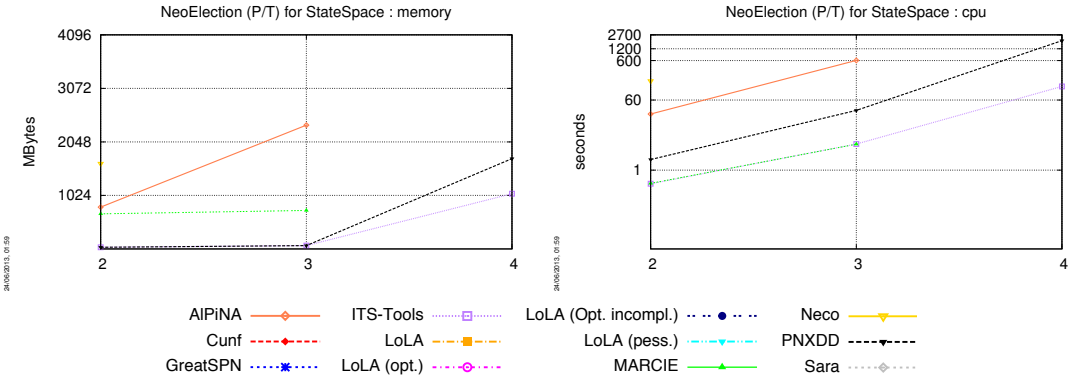
MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



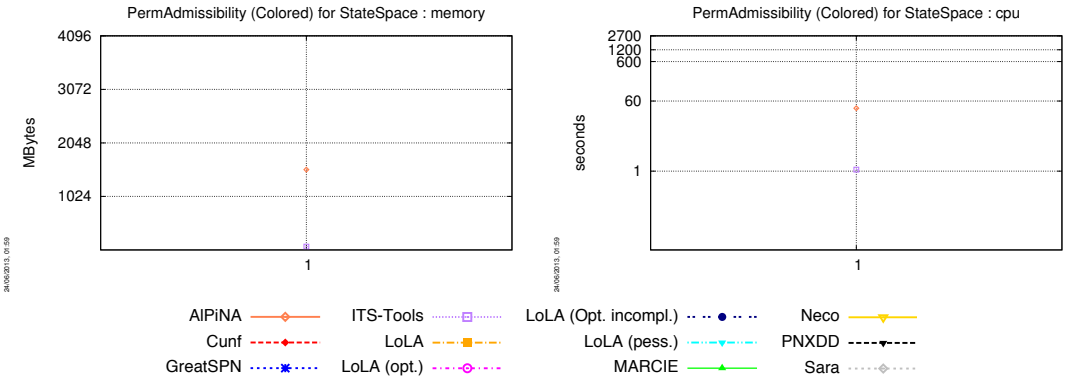
NeoElection (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



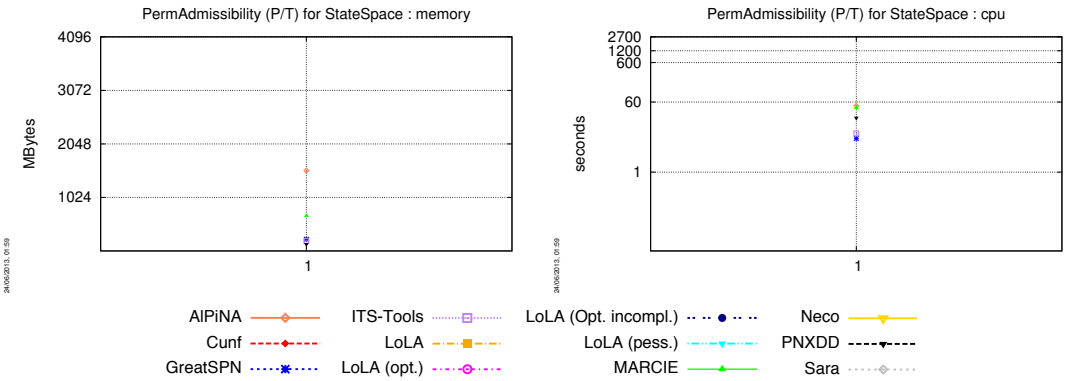
NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



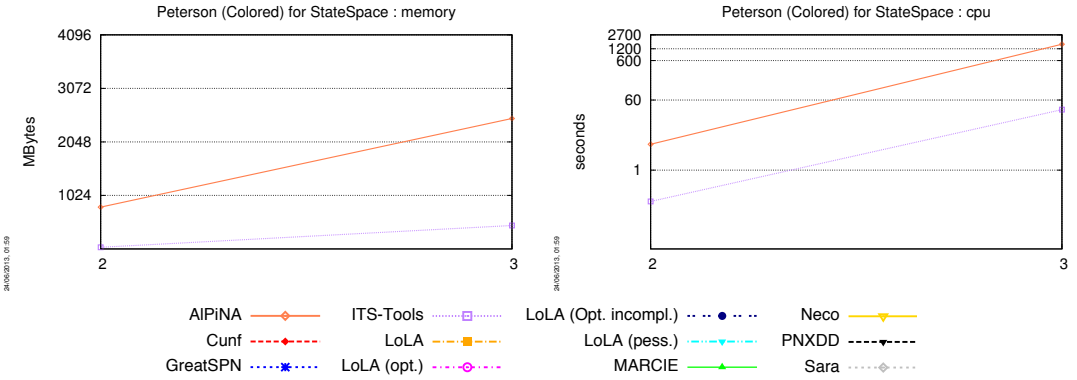
PermAdmissibility (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



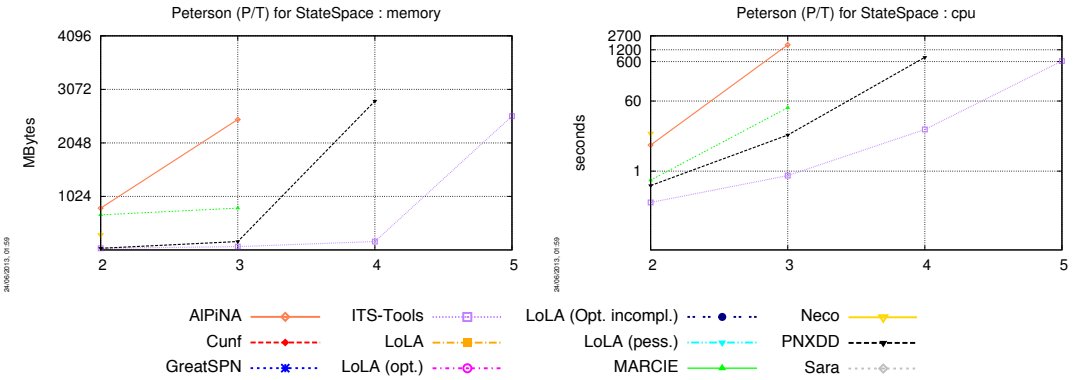
PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



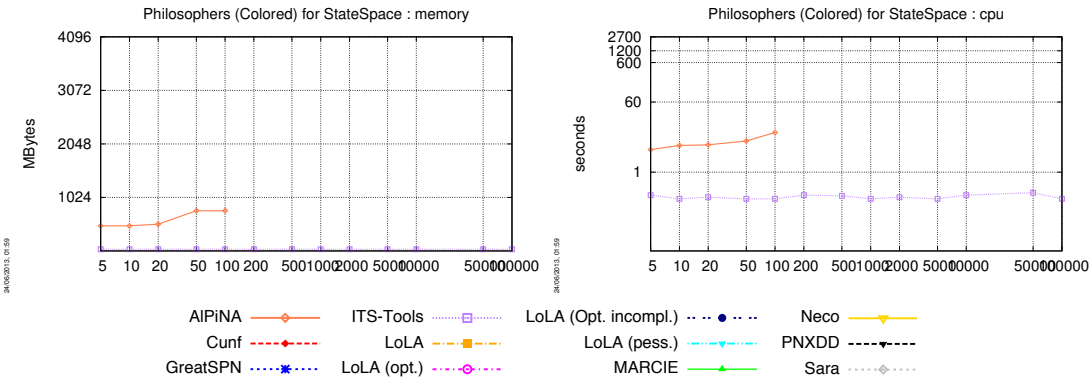
Peterson (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



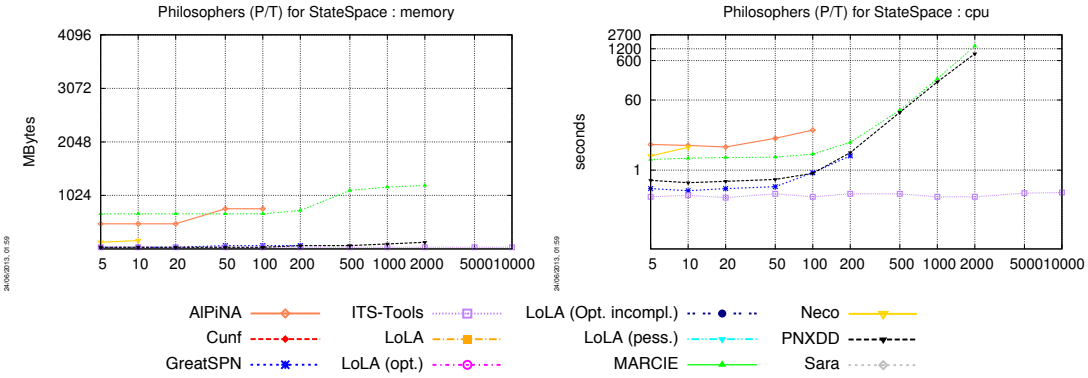
Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



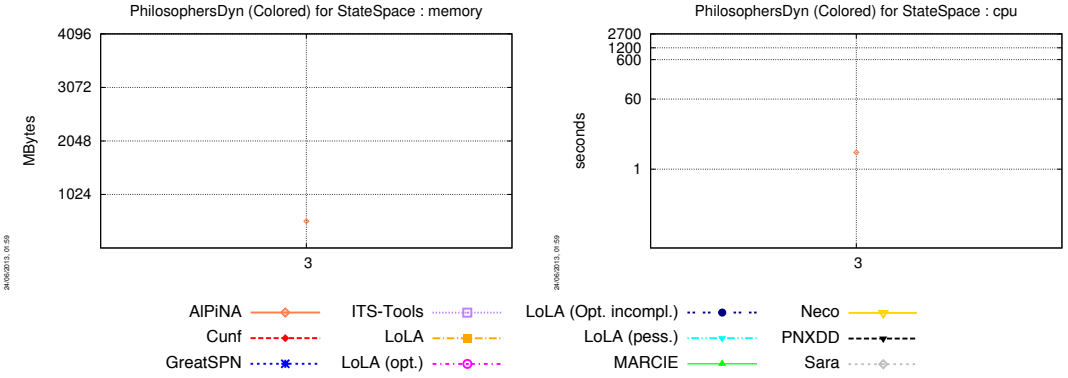
Philosophers (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



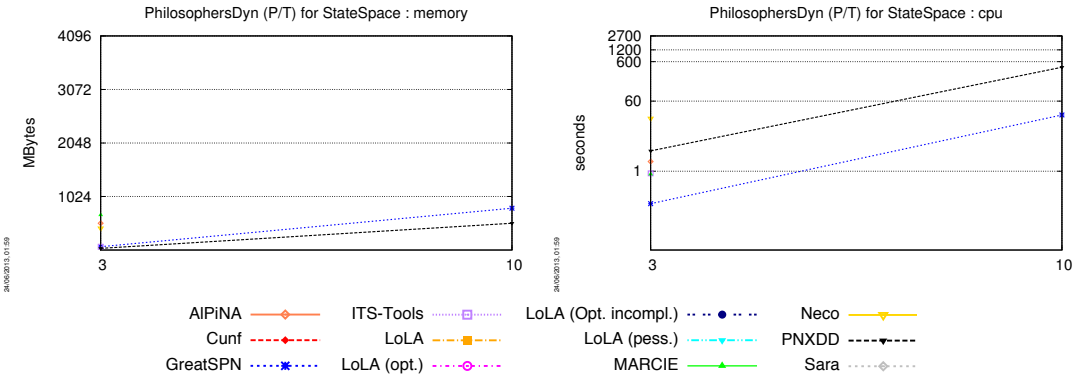
Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



PhilosophersDyn (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

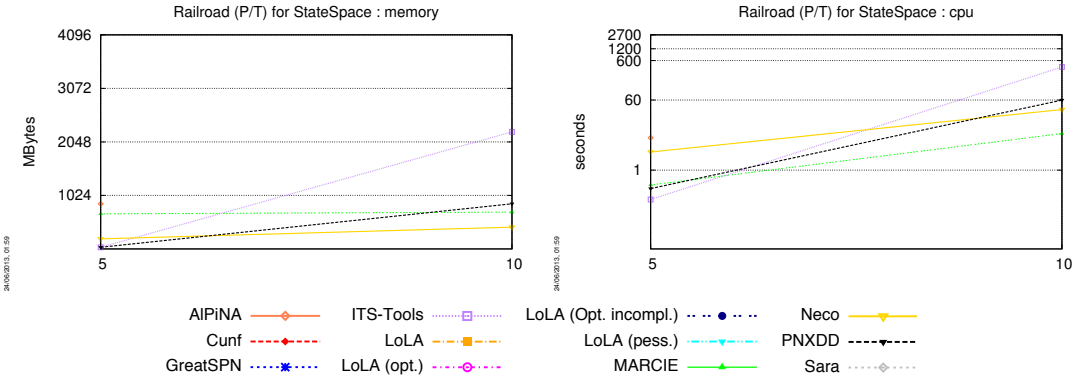


PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

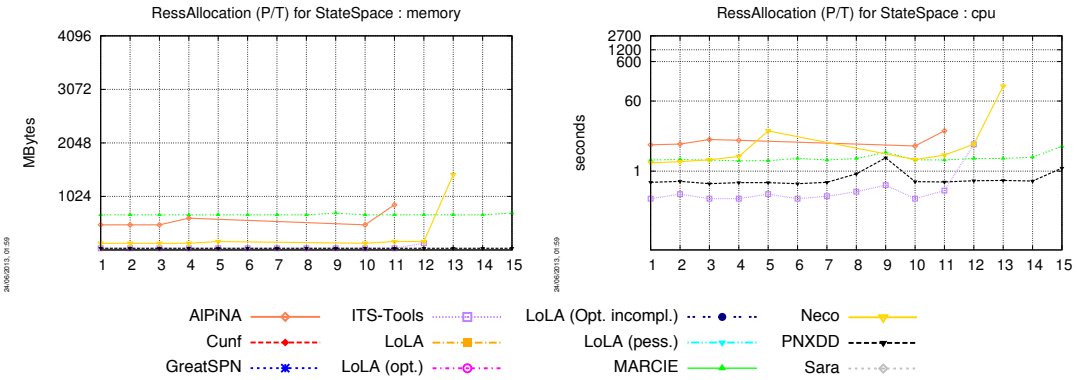


Planning (P/T) No instance of this model could be computed for the **StateSpace** examination.

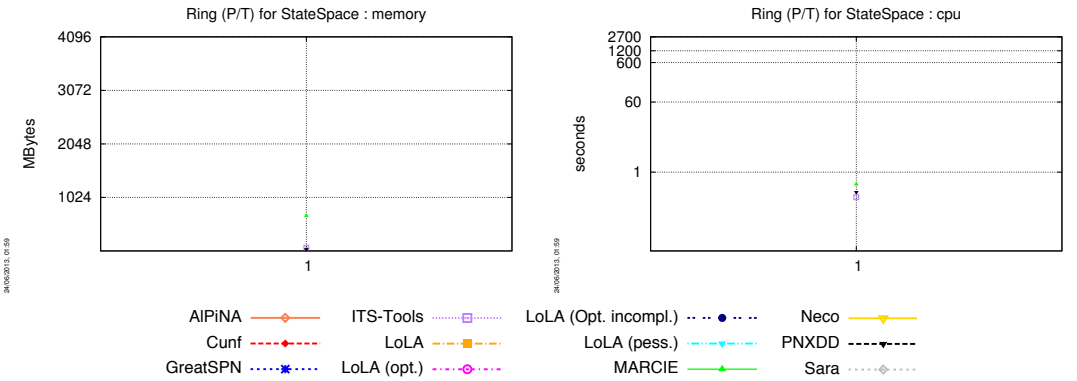
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



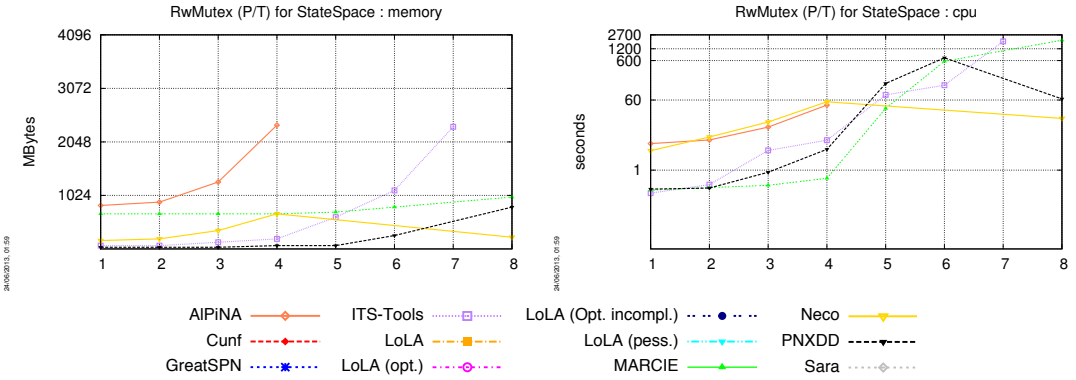
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



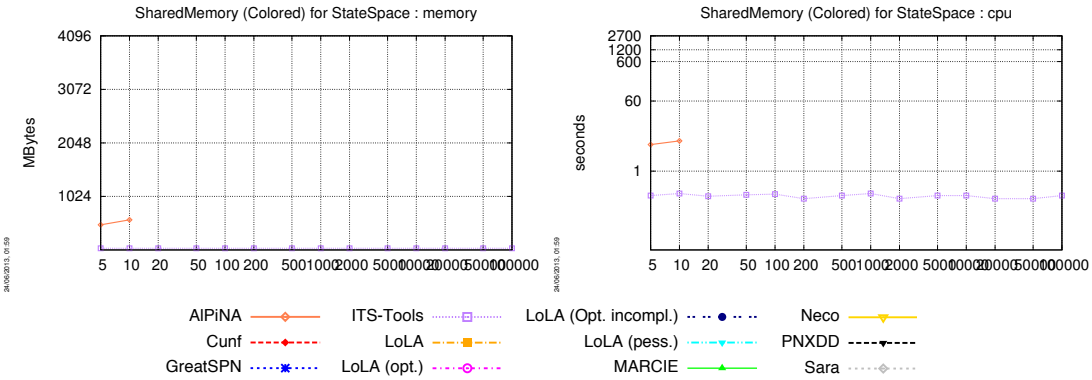
Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



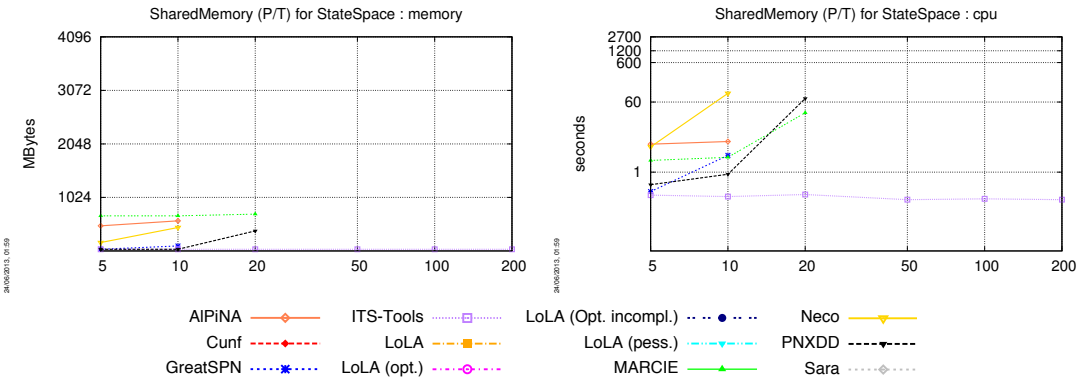
RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



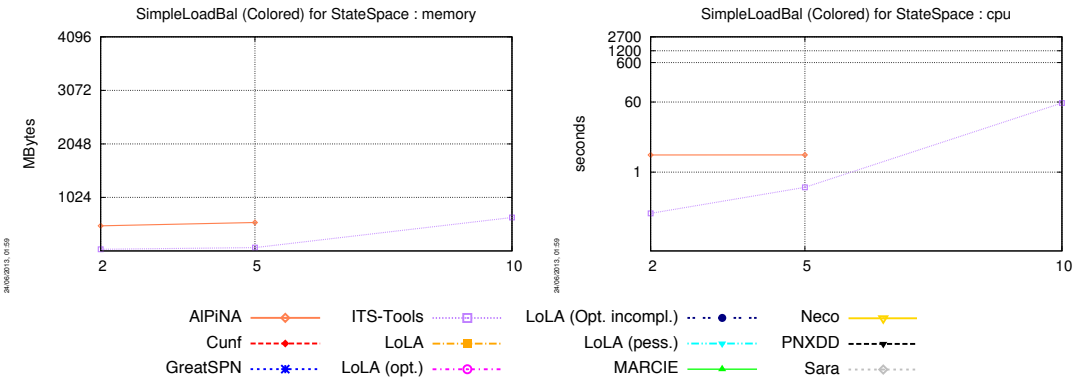
SharedMemory (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



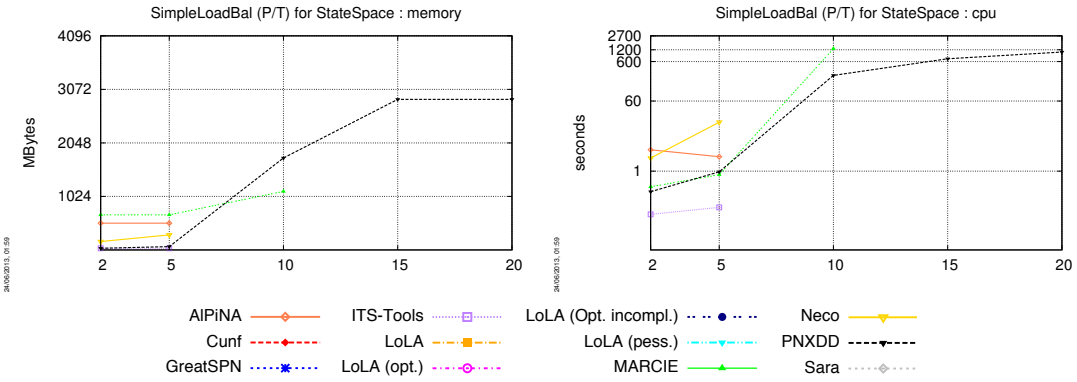
SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



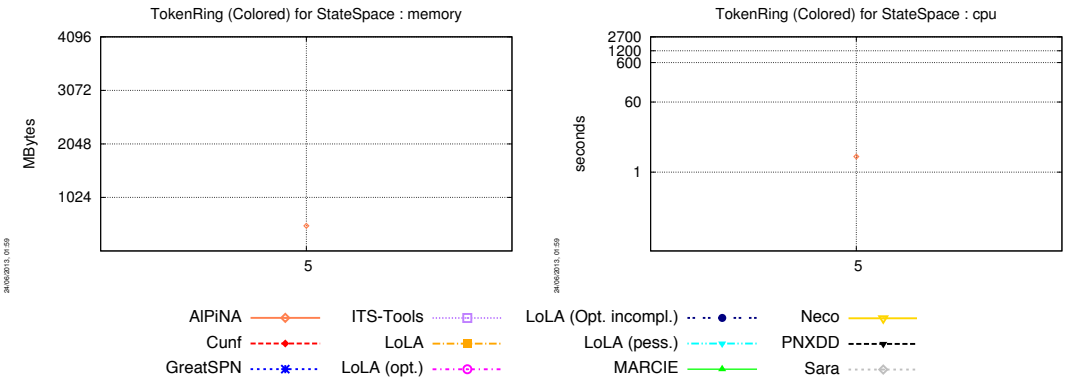
SimpleLoadBal (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



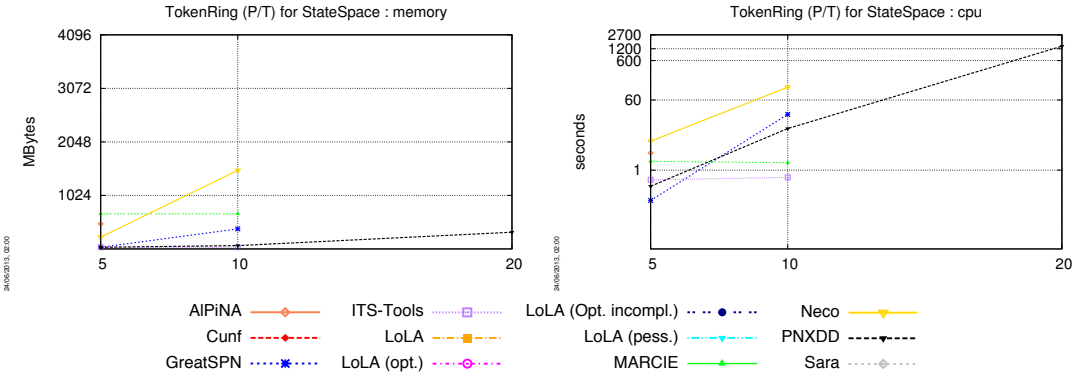
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



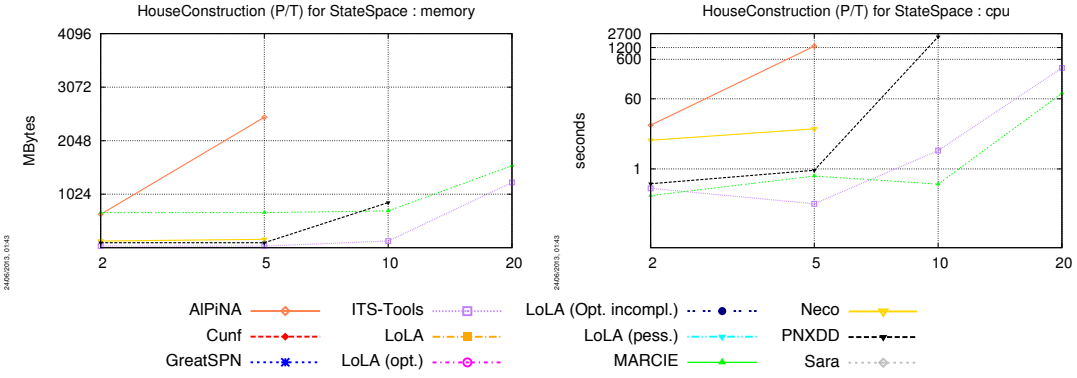
TokenRing (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



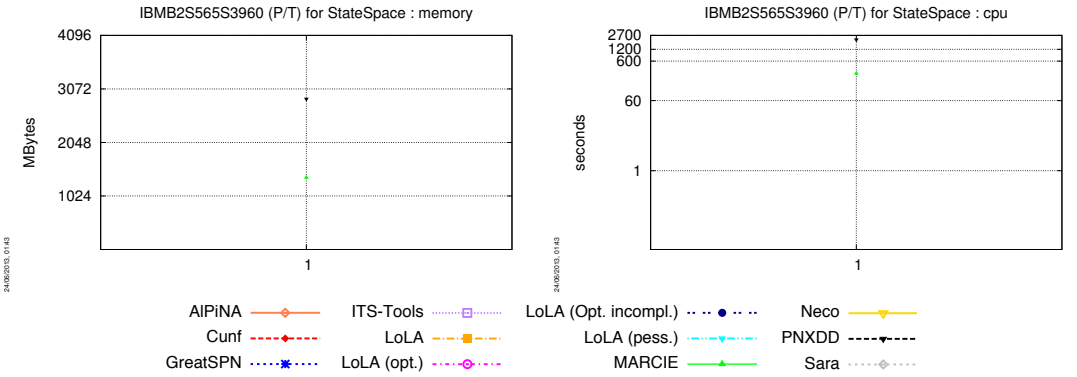
TokenRing (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

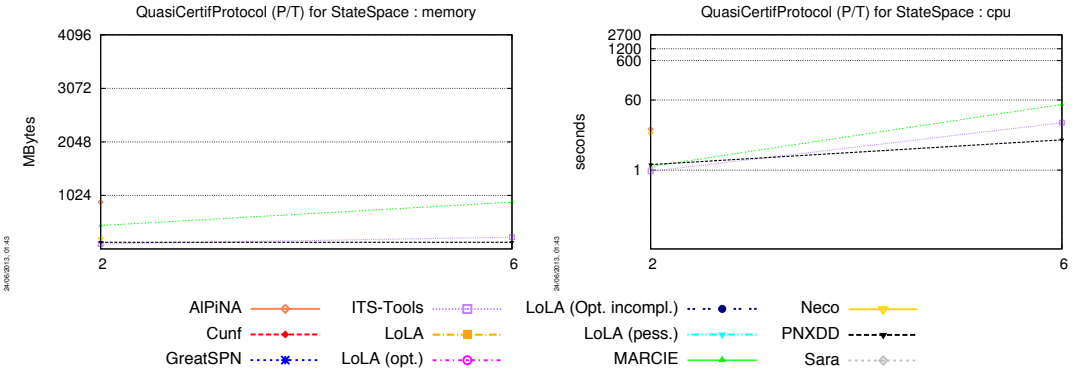


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

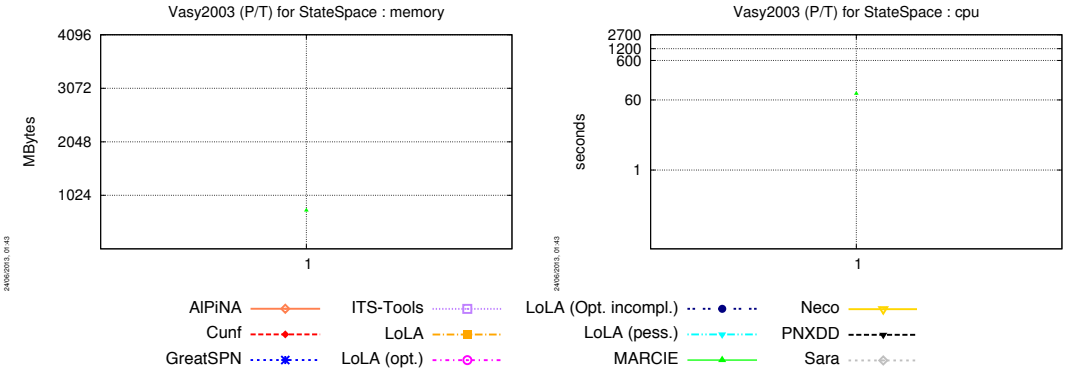


QuasiCertifProtocol (colored) No instance of this model could be computed for the **StateSpace** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



6.2 Outputs for the StateSpace Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Please note that, for some models/instances, we could not reformat the number of the state space (apparently over 10^{239} states) and then provide "∞ (ovf)" as an answer.

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)							
Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa pess	Marcie	Neco	PNXDD
02	7424	nc	7424	nc	nc	nc	nc
03	1.341×10^{08}	nc	1.341×10^{08}	nc	nc	nc	nc
04	to	nc	mp	nc	nc	nc	nc
05	to	nc	mp	nc	nc	nc	nc
07	cc	nc	mp	nc	nc	nc	nc
10	cc	nc	mp	nc	nc	nc	nc

CSRepetitions (P/T)							
Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
02	7424	1872	1872	nc	1872	1872	1872
03	1.341×10^{08}	3.952×10^{06}	3.952×10^{06}	nc	3.952×10^{06}	3.952×10^{06}	3.952×10^{06}
04	to	6.417×10^{10}	6.417×10^{10}	nc	to	cc	6.417×10^{10}
05	to	to	6.668×10^{15}	nc	to	nc	6.668×10^{15}
07	cc	mp	1.308×10^{28}	nc	to	nc	to
10	cc	mp	mp	nc	to	nc	to
Dekker (P/T)							
Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
010	to	nc	6144	nc	6144	6144	6144
015	to	nc	278528	nc	278528	278528	278528
020	to	nc	mp	nc	1.153×10^{07}	1.153×10^{07}	1.153×10^{07}
050	cc	nc	mp	nc	to	cc	nc
100	cc	nc	mp	nc	to	nc	to
200	to	nc	mp	nc	to	nc	to
DotAndBoxes (colored)							
Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
2	11	nc	11	nc	nc	nc	nc
3	cc	nc	383	nc	nc	nc	nc
4	cc	nc	270156	nc	nc	nc	nc
5	cc	nc	mp	nc	nc	nc	nc
DrinkVendingMachine (colored)							
Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
02	1024	nc	1024	nc	nc	nc	nc
10	cc	nc	1.153×10^{18}	nc	nc	nc	nc
DrinkVendingMachine (P/T)							
Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
02	1024	nc	1024	nc	1024	nc	1024
10	cc	nc	to	nc	1.153×10^{18}	nc	to
Echo (P/T)							
Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
d02r09	cc	nc	mp	nc	to	nc	to
d02r11	cc	nc	mp	nc	to	nc	to
d02r15	cc	nc	mp	nc	to	nc	to
d02r19	cc	nc	mp	nc	to	nc	to
d03r03	to	nc	mp	nc	to	nc	mp
d03r05	cc	nc	mp	nc	to	nc	mp
d03r07	cc	nc	mp	nc	to	nc	to
d04r03	cc	nc	mp	nc	to	nc	mp
d05r03	cc	nc	mp	nc	to	nc	to
Eratosthenes (P/T)							
Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
010	32	nc	32	nc	32	32	32
020	2048	nc	2048	nc	2048	2048	2048
050	1.718×10^{10}	nc	1.718×10^{10}	nc	1.718×10^{10}	cc	1.718×10^{10}
100	1.889×10^{22}	nc	1.889×10^{22}	nc	1.889×10^{22}	nc	1.889×10^{22}
200	cc	nc	1.142×10^{46}	nc	1.142×10^{46}	nc	1.142×10^{46}
500	cc	nc	4.13×10^{121}	nc	4.13×10^{121}	nc	4.13×10^{121}
FMS (P/T)							
Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
002	3444	3444	3444	nc	3444	3444	3444
005	2.895×10^{06}	2.895×10^{06}	2.895×10^{06}	nc	2.895×10^{06}	2.895×10^{06}	2.895×10^{06}
010	to	2.501×10^{09}	2.501×10^{09}	nc	2.501×10^{09}	cc	2.501×10^{09}
020	to	6.029×10^{12}	6.029×10^{12}	nc	6.029×10^{12}	cc	6.029×10^{12}
050	to	4.240×10^{17}	4.240×10^{17}	nc	4.240×10^{17}	nc	4.240×10^{17}
100	to	2.703×10^{21}	2.703×10^{21}	nc	2.703×10^{21}	nc	to
200	to	to	1.954×10^{25}	nc	to	nc	to
500	to	to	to	nc	to	nc	to
GlobalRessAlloc (colored)							

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
03	to	nc	6320	nc		nc	nc	nc
05	to	nc	1.066×10^{08}	nc		nc	nc	nc
06	to	nc	2.572×10^{10}	nc		nc	nc	nc
07	to	nc	mp	nc		nc	nc	nc
09	to	nc	mp	nc		nc	nc	nc
10	to	nc	mp	nc		nc	nc	nc
11	to	nc	mp	nc		nc	nc	nc

GlobalRessAlloc (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
03	to	6320	6320	nc		6320	nc	6320
05	to	cc	to	nc		to	nc	to

Kanban (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
0005	2.546×10^{06}	2.546×10^{06}	2.546×10^{06}	nc		2.546×10^{06}	2.546×10^{06}	2.546×10^{06}
0010	1.006×10^{09}	1.006×10^{09}	1.006×10^{09}	nc		1.006×10^{09}	cc	1.006×10^{09}
0020	to	8.054×10^{11}	8.054×10^{11}	nc		8.054×10^{11}	cc	8.054×10^{11}
0050	to	1.043×10^{16}	1.043×10^{16}	nc		1.043×10^{16}	nc	to
0100	to	1.726×10^{19}	1.726×10^{19}	nc		1.726×10^{19}	nc	to
0200	to	cc	3.173×10^{22}	nc		to	nc	to
0500	to	cc	to	nc		to	nc	to
1000	to	to	to	nc		to	nc	to

LamportFastMutEx (colored)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
2	380	nc	1370	nc		nc	nc	nc
3	19742	nc	34529	nc		nc	nc	nc
4	to	nc	3.978×10^{07}	nc		nc	nc	nc
5	to	nc	1.585×10^{09}	nc		nc	nc	nc
6	to	nc	mp	nc		nc	nc	nc
7	to	nc	mp	nc		nc	nc	nc
8	to	nc	mp	nc		nc	nc	nc

LamportFastMutEx (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
2	380	nc	380	nc		380	380	380
3	19742	nc	19742	nc		19742	19742	19742
4	to	nc	1.915×10^{06}	nc		1.915×10^{06}	1.915×10^{06}	1.915×10^{06}
5	to	nc	5.307×10^{08}	nc		to	cc	5.307×10^{08}
6	to	nc	mp	nc		to	cc	mp
7	to	nc	mp	nc		to	to	mp
8	to	nc	mp	nc		to	to	mp

MAPK (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
008	to	6.111×10^{06}	6.111×10^{06}	nc		6.111×10^{06}	6.111×10^{06}	6.111×10^{06}
020	to	8.813×10^{10}	8.813×10^{10}	nc		8.813×10^{10}	cc	8.813×10^{10}
040	to	4.783×10^{14}	4.783×10^{14}	nc		4.783×10^{14}	nc	4.783×10^{14}
080	to	to	5.635×10^{18}	nc		5.635×10^{18}	nc	to
160	to	to	to	nc		to	nc	to
320	to	to	mp	nc		to	nc	to

NeoElection (colored)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
2	241	nc	241	nc		nc	nc	nc
3	29024	nc	974325	nc		nc	nc	nc
4	to	nc	2.919×10^{11}	nc		nc	nc	nc
5	to	nc	mp	nc		nc	nc	nc
6	to	nc	mp	nc		nc	nc	nc
7	to	nc	mp	nc		nc	nc	nc
8	to	nc	mp	nc		nc	nc	nc

NeoElection (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
2	241	nc	241	nc		241	241	241

3	29024	nc	974325	nc	974325	nc	974325
4	to	nc	2.919×10^{11}	nc	to	nc	2.919×10^{11}
5	to	nc	mp	nc	to	nc	nc
6	to	nc	mp	nc	to	nc	to
7	to	nc	to	nc	to	nc	to
8	to	nc	to	nc	to	nc	to

PermAdmissibility (colored)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
01	52537	nc	52537	nc	nc	nc	nc	
02	to	nc	mp	nc	nc	nc	nc	
05	to	nc	mp	nc	nc	nc	nc	
10	to	nc	mp	nc	nc	nc	nc	
20	to	nc	mp	nc	nc	nc	nc	
50	to	nc	mp	nc	nc	nc	nc	

PermAdmissibility (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
01	52537	52537	52537	nc	52537	nc	52537	
02	to	cc	mp	nc	to	nc	to	
05	to	cc	mp	nc	to	nc	to	
10	to	cc	mp	nc	to	nc	mp	
20	to	cc	mp	nc	to	nc	mp	
50	to	cc	mp	nc	to	nc	mp	

Peterson (colored)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
2	20754	nc	20754	nc	nc	nc	nc	
3	3.408×10^{06}	nc	3.408×10^{06}	nc	nc	nc	nc	
4	to	nc	mp	nc	nc	nc	nc	
5	cc	nc	mp	nc	nc	nc	nc	
6	cc	nc	mp	nc	nc	nc	nc	
7	cc	nc	mp	nc	nc	nc	nc	

Peterson (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
2	20754	nc	20754	nc	20754	20754	20754	
3	3.408×10^{06}	nc	3.408×10^{06}	nc	3.408×10^{06}	to	3.408×10^{06}	
4	to	nc	6.299×10^{08}	nc	to	cc	6.299×10^{08}	
5	cc	nc	1.366×10^{11}	nc	to	nc	nc	
6	cc	nc	mp	nc	to	nc	nc	
7	cc	nc	mp	nc	to	nc	nc	

Philosophers (colored)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
000005	243	nc	243	nc	nc	nc	nc	
000010	59049	nc	59049	nc	nc	nc	nc	
000020	3.487×10^{09}	nc	3.487×10^{09}	nc	nc	nc	nc	
000050	7.179×10^{23}	nc	7.179×10^{23}	nc	nc	nc	nc	
000100	5.154×10^{47}	nc	5.154×10^{47}	nc	nc	nc	nc	
000200	cc	nc	2.656×10^{95}	nc	nc	nc	nc	
000500	cc	nc	3.64×10^{238}	nc	nc	nc	nc	
001000	cc	nc	∞ (ovf)	nc	nc	nc	nc	
002000	cc	nc	∞ (ovf)	nc	nc	nc	nc	
005000	cc	nc	∞ (ovf)	nc	nc	nc	nc	
010000	cc	nc	∞ (ovf)	nc	nc	nc	nc	
050000	cc	nc	∞ (ovf)	nc	nc	nc	nc	
100000	cc	nc	∞ (ovf)	nc	nc	nc	nc	

Philosophers (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
000005	243	243	243	nc	243	243	243	
000010	59049	59049	59049	nc	59049	59049	59049	
000020	3.487×10^{09}	3.487×10^{09}	3.487×10^{09}	nc	3.487×10^{09}	cc	3.487×10^{09}	
000050	7.179×10^{23}	7.179×10^{23}	7.179×10^{23}	nc	7.179×10^{23}	nc	7.179×10^{23}	
000100	5.154×10^{47}	5.154×10^{47}	5.154×10^{47}	nc	5.154×10^{47}	nc	5.154×10^{47}	

000200	cc	2.656×10^{95}	2.656×10^{95}	nc	2.656×10^{95}	nc	2.656×10^{95}
000500	cc	to	3.64×10^{238}	nc	3.64×10^{238}	nc	3.64×10^{238}
001000	cc	mp	∞ (ovf)	nc	∞ (ovf)	nc	∞ (ovf)
002000	cc	mp	∞ (ovf)	nc	∞ (ovf)	nc	∞ (ovf)
005000	cc	mp	∞ (ovf)	nc	to	nc	to
010000	cc	cc	∞ (ovf)	nc	to	nc	to

PhilosophersDyn (colored)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
03	325	nc	nc	nc	nc	nc	nc	nc
10	cc	nc	nc	nc	nc	nc	nc	nc
20	to	nc	nc	nc	nc	nc	nc	nc
50	to	nc	nc	nc	nc	nc	nc	nc
80	to	nc	nc	nc	nc	nc	nc	nc

PhilosophersDyn (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
03	325	7251	7251	nc	7251	7251	7251	7251
10	cc	199051	mp	nc	to	cc	199051	199051
20	to	mp	mp	nc	to	nc	to	to

Planning (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
cc	nc	nc	nc	cc	nc	nc	nc	nc

Railroad (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
005	1838	nc	1838	nc	1838	1838	1838	1838
010	to	nc	2.038×10^{06}	nc	2.038×10^{06}	2.038×10^{06}	2.038×10^{06}	2.038×10^{06}
020	to	nc	mp	nc	to	cc	nc	nc
050	cc	nc	mp	nc	to	nc	nc	nc
100	cc	nc	to	nc	to	nc	nc	to

RessAllocation (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
R002C002	8	nc	8	nc	8	8	8	8
R003C002	20	nc	20	nc	20	20	20	20
R003C003	92	nc	92	nc	92	92	92	92
R003C005	1200	nc	1200	nc	1200	1200	1200	1200
R003C010	to	nc	823552	nc	823552	823552	823552	823552
R003C015	to	nc	5.789×10^{08}	nc	5.789×10^{08}	cc	5.789×10^{08}	5.789×10^{08}
R003C020	to	nc	4.065×10^{11}	nc	4.065×10^{11}	cc	4.065×10^{11}	4.065×10^{11}
R003C050	to	nc	4.872×10^{28}	nc	4.872×10^{28}	to	4.872×10^{28}	4.872×10^{28}
R003C100	cc	nc	1.420×10^{57}	nc	1.420×10^{57}	to	1.420×10^{57}	1.420×10^{57}
R005C002	112	nc	112	nc	112	112	112	112
R010C002	6144	nc	6144	nc	6144	6144	6144	6144
R015C002	to	nc	278528	nc	278528	278528	278528	278528
R020C002	to	nc	mp	nc	1.153×10^{07}	1.153×10^{07}	1.153×10^{07}	1.153×10^{07}
R050C002	to	nc	mp	nc	2.927×10^{16}	cc	2.927×10^{16}	2.927×10^{16}
R100C002	to	nc	mp	nc	6.465×10^{31}	to	6.465×10^{31}	6.465×10^{31}

Ring (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
none	to	nc	9.027×10^{11}	nc	9.027×10^{11}	nc	9.027×10^{11}	9.027×10^{11}

RwMutex (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
r0010w0010	1034	nc	1034	nc	1034	1034	1034	1034
r0010w0020	1044	nc	1044	nc	1044	1044	1044	1044
r0010w0050	1074	nc	1074	nc	1074	1074	1074	1074
r0010w0100	1124	nc	1124	nc	1124	1124	1124	1124
r0010w0500	cc	nc	1524	nc	1524	cc	1524	1524
r0010w1000	cc	nc	2024	nc	2024	cc	2024	2024
r0010w2000	cc	nc	3024	nc	to	cc	to	to
r0020w0010	to	nc	mp	nc	1048586	1048586	1048590	1048590
r0100w0010	to	nc	mp	nc	cc	to	nc	nc
r0500w0010	cc	nc	mp	nc	cc	cc	nc	nc

r1000w0010	cc	nc	mp	nc	cc	cc	nc
r2000w0010	cc	nc	to	nc	cc	cc	to

SharedMemory (colored)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
000005	1863	nc	1863	nc	nc	nc	nc	
000010	1.831×10^{06}	nc	1.831×10^{06}	nc	nc	nc	nc	
000020	cc	nc	4.451×10^{11}	nc	nc	nc	nc	
000050	cc	nc	5.870×10^{26}	nc	nc	nc	nc	
000100	cc	nc	1.701×10^{51}	nc	nc	nc	nc	
000200	to	nc	3.524×10^{99}	nc	nc	nc	nc	
000500	cc	nc	3.02×10^{243}	nc	nc	nc	nc	
001000	cc	nc	∞ (ovf)	nc	nc	nc	nc	
002000	cc	nc	∞ (ovf)	nc	nc	nc	nc	
005000	cc	nc	∞ (ovf)	nc	nc	nc	nc	
010000	cc	nc	∞ (ovf)	nc	nc	nc	nc	
020000	cc	nc	∞ (ovf)	nc	nc	nc	nc	
050000	cc	nc	∞ (ovf)	nc	nc	nc	nc	
100000	cc	nc	∞ (ovf)	nc	nc	nc	nc	

SharedMemory (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
000005	1863	1863	1863	nc	1863	1863	1863	
000010	1.831×10^{06}	1.831×10^{06}	1.831×10^{06}	nc	1.831×10^{06}	1.831×10^{06}	1.831×10^{06}	
000020	cc	mp	4.451×10^{11}	nc	4.451×10^{11}	cc	4.451×10^{11}	
000050	cc	mp	5.870×10^{26}	nc	to	nc	to	
000100	cc	mp	1.701×10^{51}	nc	to	nc	to	
000200	to	cc	3.524×10^{99}	nc	to	nc	to	

SimpleLoadBal (colored)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
02	832	nc	832	nc	nc	nc	nc	
05	832	nc	116176	nc	nc	nc	nc	
10	cc	nc	4.060×10^{08}	nc	nc	nc	nc	
15	cc	nc	mp	nc	nc	nc	nc	
20	cc	nc	mp	nc	nc	nc	nc	

SimpleLoadBal (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
02	832	nc	832	nc	832	832	832	
05	832	nc	116176	nc	116176	116176	116176	
10	cc	nc	nc	nc	4.060×10^{08}	cc	4.060×10^{08}	
15	cc	nc	nc	nc	to	cc	1.374×10^{12}	
20	cc	nc	nc	nc	to	cc	4.583×10^{15}	

TokenRing (colored)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
005	65	nc	nc	nc	nc	nc	nc	
010	cc	nc	nc	nc	nc	nc	nc	
020	cc	nc	nc	nc	nc	nc	nc	
050	cc	nc	nc	nc	nc	nc	nc	
100	cc	nc	nc	nc	nc	nc	nc	
200	to	nc	nc	nc	nc	nc	nc	
500	cc	nc	nc	nc	nc	nc	nc	

TokenRing (P/T)

Instances	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
005	65	166	166	nc	166	166	166	
010	cc	58905	58905	nc	58905	58905	58905	
020	cc	mp	nc	nc	to	nc	2.447×10^{10}	
050	cc	cc	nc	nc	to	nc	to	

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)

instances	AlPiNA	ITS-Tools	Marcie	Neco	PNXDD

002	1501	1501	1501	1501	1501
005	1187984	1187984	1187984	1187984	1187980
010	to	1.664×10^{09}	1.664×10^{09}	cc	1.664×10^{09}
020	to	1.367×10^{13}	1.367×10^{13}	cc	to
050	to	mp	cc	cc	to
100	to	mp	cc	cc	to
200	to	mp	cc	cc	to
500	to	to	to	cc	to
IBMB2S565S3960 (P/T)					
instances	AlPiNA	ITS-Tools	Marcie	Neco	PNXDD
none	to	cc	1.551×10^{16}	to	1.551×10^{16}
QuasiCertifProtocol (colored)					
instances	AlPiNA	ITS-Tools	Marcie	Neco	PNXDD
02	cc	nc	nc	nc	nc
06	cc	nc	nc	nc	nc
10	cc	nc	nc	nc	nc
18	cc	nc	nc	nc	nc
22	cc	nc	nc	nc	nc
28	cc	nc	nc	nc	nc
32	cc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)					
instances	AlPiNA	ITS-Tools	Marcie	Neco	PNXDD
02	1029	1029	1029	1029	1029
06	to	2.272×10^{06}	2.272×10^{06}	to	2.272×10^{06}
10	to	mp	to	to	to
18	cc	mp	to	cc	nc
22	cc	mp	cc	cc	nc
28	cc	mp	cc	cc	nc
32	cc	mp	cc	cc	nc
Vasy2003 (P/T)					
instances	AlPiNA	ITS-Tools	Marcie	Neco	PNXDD
none	cc	mp	9.795×10^{21}	cc	to

6.3 Score for the StateSpace Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
Total Score	**103**	**47**	**234**	**0**		**129**	**64**	**139**
CSRepetitions (Colored)								
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0		0	0	0
instances	2	0	2	0		0	0	0
max reached	0	0	0	0		0	0	0
best	2	0	2	0		0	0	0
subtotal	**5**	**0**	**5**	**0**		**0**	**0**	**0**

CSRepetitions (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	1	1	0	1	1	1
instances	2	3	5	0	2	2	4
max reached	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0
subtotal	**3**	**4**	**8**	**0**	**3**	**3**	**5**
Dekker (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	0	0	1	0	1	1	1
instances	0	0	2	0	3	3	3
max reached	0	0	0	0	0	0	0
best	0	0	0	0	2	2	2
subtotal	**0**	**0**	**3**	**0**	**6**	**6**	**6**
DotAndBoxes (Colored)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	0	0	0
instances	1	0	3	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0
subtotal	**2**	**0**	**6**	**0**	**0**	**0**	**0**
DrinkVendingMachine (Colored)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	0	0	0
instances	1	0	2	0	0	0	0
max reached	0	0	2	0	0	0	0
best	0	0	2	0	0	0	0
subtotal	**2**	**0**	**7**	**0**	**0**	**0**	**0**
DrinkVendingMachine (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	1	0	1
instances	1	0	1	0	2	0	1
max reached	0	0	0	0	2	0	0
best	0	0	0	0	2	0	0
subtotal	**2**	**0**	**2**	**0**	**7**	**0**	**2**
Echo (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Eratosthenes (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	1	1	1
instances	4	0	6	0	6	2	6
max reached	0	0	2	0	2	0	2
best	0	0	2	0	2	0	2
subtotal	**5**	**0**	**11**	**0**	**11**	**3**	**11**
FMS (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	1	1	0	1	1	1
instances	2	6	7	0	6	2	5
max reached	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0
subtotal	**3**	**7**	**10**	**0**	**7**	**3**	**6**
GlobalRessAlloc (Colored)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	0	0	1	0	0	0	0
instances	0	0	3	0	0	0	0

max reached	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0
subtotal	**0**	**0**	**6**	**0**	**0**	**0**	**0**
GlobalRessAlloc (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	0	1	1	0	1	0	1
instances	0	1	1	0	1	0	1
max reached	0	0	0	0	0	0	0
best	0	2	2	0	2	0	2
subtotal	**0**	**4**	**4**	**0**	**4**	**0**	**4**
Kanban (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	1	1	0	1	1	1
instances	2	5	6	0	5	1	3
max reached	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0
subtotal	**3**	**6**	**9**	**0**	**6**	**2**	**4**
LamportFastMutEx (Colored)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	0	0	0
instances	2	0	4	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0
subtotal	**3**	**0**	**7**	**0**	**0**	**0**	**0**
LamportFastMutEx (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	1	1	1
instances	2	0	4	0	3	3	4
max reached	0	0	0	0	0	0	0
best	0	0	2	0	0	0	2
subtotal	**3**	**0**	**7**	**0**	**4**	**4**	**7**
MAPK (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	0	1	1	0	1	1	1
instances	0	3	4	0	4	1	3
max reached	0	0	0	0	0	0	0
best	0	0	2	0	2	0	0
subtotal	**0**	**4**	**7**	**0**	**7**	**2**	**4**
NeoElection (Colored)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	0	0	0
instances	2	0	3	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0
subtotal	**3**	**0**	**6**	**0**	**0**	**0**	**0**
NeoElection (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	1	1	1
instances	2	0	3	0	2	1	3
max reached	0	0	0	0	0	0	0
best	0	0	2	0	0	0	2
subtotal	**3**	**0**	**6**	**0**	**3**	**2**	**6**
PermAdmissibility (Colored)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	0	0	0
instances	1	0	1	0	0	0	0
max reached	0	0	0	0	0	0	0
best	2	0	2	0	0	0	0
subtotal	**4**	**0**	**4**	**0**	**0**	**0**	**0**
PermAdmissibility (P/T)							

	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	1	1	0	1	0	1	
instances	1	1	1	0	1	0	1	
max reached	0	0	0	0	0	0	0	
best	2	2	2	0	2	0	2	
subtotal	**4**	**4**	**4**	**0**	**4**	**0**	**4**	

Peterson (Colored)

	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	0	0	0	
instances	2	0	2	0	0	0	0	
max reached	0	0	0	0	0	0	0	
best	2	0	2	0	0	0	0	
subtotal	**5**	**0**	**5**	**0**	**0**	**0**	**0**	

Peterson (P/T)

	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	1	1	1	
instances	2	0	4	0	2	1	3	
max reached	0	0	0	0	0	0	0	
best	0	0	2	0	0	0	0	
subtotal	**3**	**0**	**7**	**0**	**3**	**2**	**4**	

Philosophers (Colored)

	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	0	0	0	
instances	5	0	13	0	0	0	0	
max reached	0	0	2	0	0	0	0	
best	0	0	2	0	0	0	0	
subtotal	**6**	**0**	**18**	**0**	**0**	**0**	**0**	

Philosophers (P/T)

	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	1	1	0	1	1	1	
instances	5	6	11	0	9	2	9	
max reached	0	0	2	0	0	0	0	
best	0	0	2	0	0	0	0	
subtotal	**6**	**7**	**16**	**0**	**10**	**3**	**10**	

PhilosophersDyn (Colored)

	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	0	0	0	0	0	
instances	1	0	0	0	0	0	0	
max reached	0	0	0	0	0	0	0	
best	2	0	0	0	0	0	0	
subtotal	**4**	**0**	**0**	**0**	**0**	**0**	**0**	

PhilosophersDyn (P/T)

	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	1	1	0	1	1	1	
instances	1	2	1	0	1	1	2	
max reached	0	0	0	0	0	0	0	
best	0	2	0	0	0	0	2	
subtotal	**2**	**5**	**2**	**0**	**2**	**2**	**5**	

Planning (P/T)

	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	0	0	0	0	0	0	0	
instances	0	0	0	0	0	0	0	
max reached	0	0	0	0	0	0	0	
best	0	0	0	0	0	0	0	
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Railroad (P/T)

	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	1	1	1	
instances	1	0	2	0	2	2	2	
max reached	0	0	0	0	0	0	0	

best	0	0	2	0	2	2	2
subtotal	**2**	**0**	**5**	**0**	**5**	**5**	**5**
RessAllocation (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	1	1	1
instances	6	0	12	0	15	9	15
max reached	0	0	0	0	2	0	2
best	0	0	0	0	2	0	2
subtotal	**7**	**0**	**13**	**0**	**20**	**10**	**20**
Ring (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	0	0	1	0	1	0	1
instances	0	0	1	0	1	0	1
max reached	0	0	2	0	2	0	2
best	0	0	2	0	2	0	2
subtotal	**0**	**0**	**6**	**0**	**6**	**0**	**6**
RwMutex (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	1	1	1
instances	4	0	7	0	7	5	7
max reached	0	0	0	0	0	0	0
best	0	0	0	0	2	2	2
subtotal	**5**	**0**	**8**	**0**	**10**	**8**	**10**
SharedMemory (Colored)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	0	0	0
instances	2	0	14	0	0	0	0
max reached	0	0	2	0	0	0	0
best	0	0	2	0	0	0	0
subtotal	**3**	**0**	**19**	**0**	**0**	**0**	**0**
SharedMemory (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	1	1	0	1	1	1
instances	2	2	6	0	3	2	3
max reached	0	0	2	0	0	0	0
best	0	0	2	0	0	0	0
subtotal	**3**	**3**	**11**	**0**	**4**	**3**	**4**
SimpleLoadBal (Colored)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	0	0	0
instances	2	0	3	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0
subtotal	**3**	**0**	**6**	**0**	**0**	**0**	**0**
SimpleLoadBal (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	1	0	1	1	1
instances	2	0	2	0	3	2	5
max reached	0	0	0	0	0	0	2
best	0	0	0	0	0	0	2
subtotal	**3**	**0**	**3**	**0**	**4**	**3**	**10**
TokenRing (Colored)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
1st instance	1	0	0	0	0	0	0
instances	1	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	2	0	0	0	0	0	0
subtotal	**4**	**0**	**0**	**0**	**0**	**0**	**0**
TokenRing (P/T)							
	AlPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD

1st instance	1	1	1	0	1	1	1
instances	1	2	2	0	2	2	3
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	2
subtotal	**2**	**3**	**3**	**0**	**3**	**3**	**6**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination					
	AlPiNA	ITS-Tools	Marcie	Neco	PNXDD
Total Score	**5**	**12**	**24**	**5**	**15**
HouseConstruction (P/T)					
	AlPiNA	ITS-Tools	Marcie	Neco	PNXDD
1st instance	1	1	1	1	1
instances	2	4	4	2	3
max reached	0	0	0	0	0
best	0	2	2	0	0
subtotal	**3**	**7**	**7**	**3**	**4**
IBMB2S565S3960 (P/T)					
	AlPiNA	ITS-Tools	Marcie	Neco	PNXDD
1st instance	0	0	1	0	1
instances	0	0	1	0	1
max reached	0	0	2	0	2
best	0	0	2	0	2
subtotal	**0**	**0**	**6**	**0**	**6**
QuasiCertifProtocol (Colored)					
	AlPiNA	ITS-Tools	Marcie	Neco	PNXDD
1st instance	0	0	0	0	0
instances	0	0	0	0	0
max reached	0	0	0	0	0
best	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)					
	AlPiNA	ITS-Tools	Marcie	Neco	PNXDD
1st instance	1	1	1	1	1
instances	1	2	2	1	2
max reached	0	0	0	0	0
best	0	2	2	0	2
subtotal	**2**	**5**	**5**	**2**	**5**
Vasy2003 (P/T)					
	AlPiNA	ITS-Tools	Marcie	Neco	PNXDD
1st instance	0	0	1	0	0
instances	0	0	1	0	0
max reached	0	0	2	0	0
best	0	0	2	0	0
subtotal	**0**	**0**	**6**	**0**	**0**

6.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models

1	2	3
ITS-Tools	PNXDD	Marcie
234 points	139 points	129 points

For "Surprise" Models

1	2	3
Marcie	PNXDD	ITS-Tools
24 points	15 points	12 points

Global

1	2	3
ITS-Tools	Marcie	PNXDD
258 points	177 points	169 points

Part III

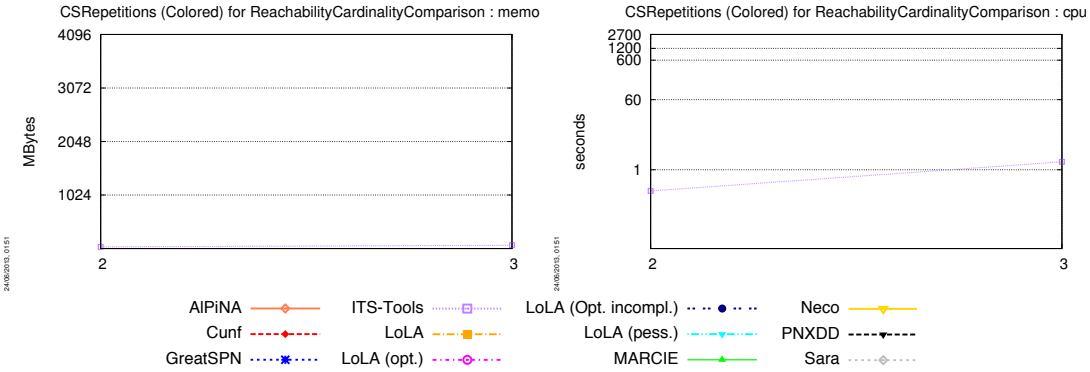
Reachability Analysis

7 The ReachabilityCardinalityComparison Examination

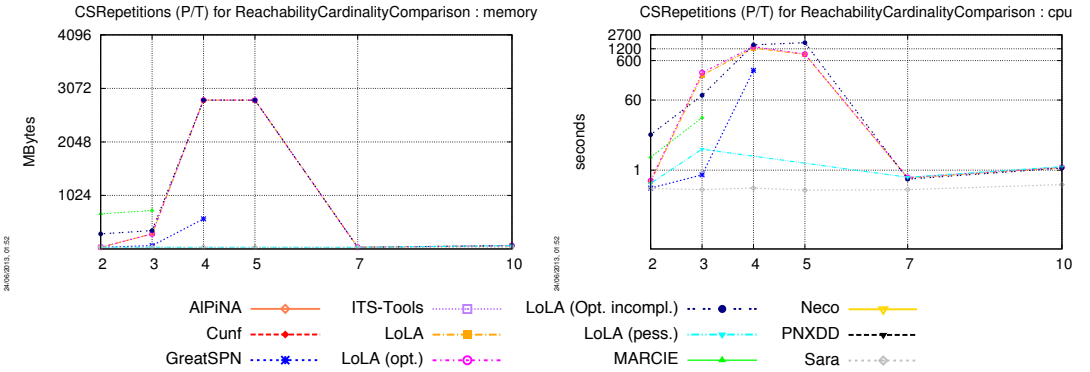
This examination deals with reachability properties dealing with checking cardinality of marking only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

7.1 Handling of Models by Tools

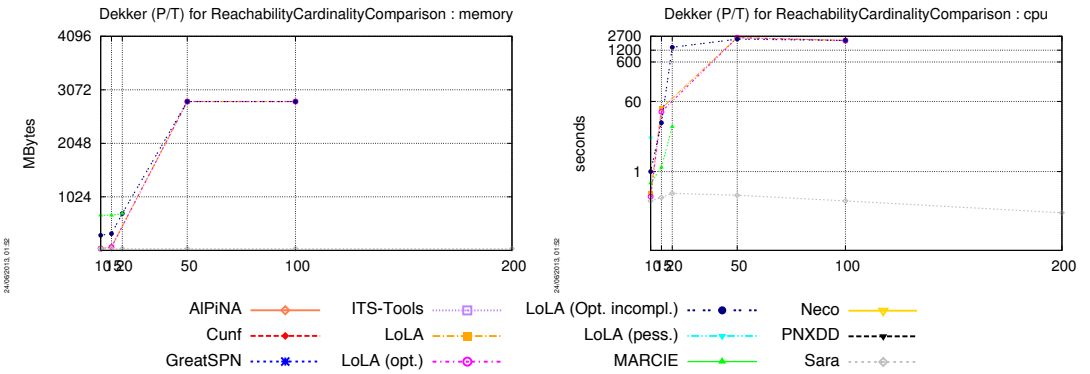
CSRepetitions (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



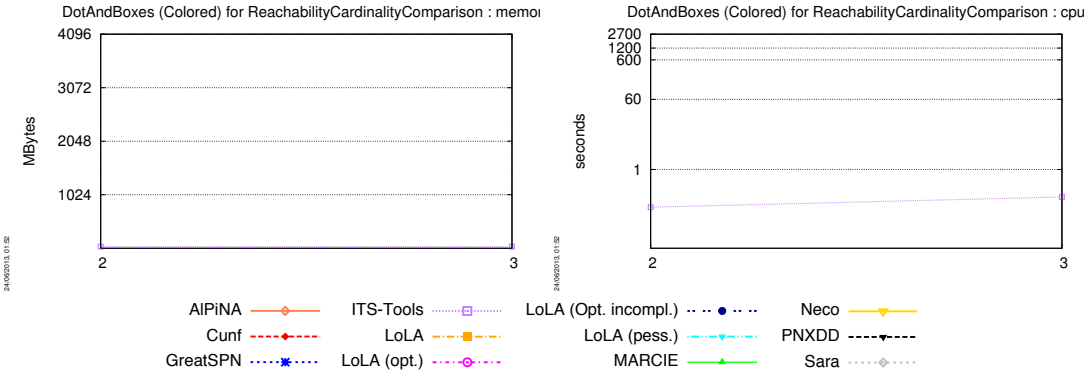
CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



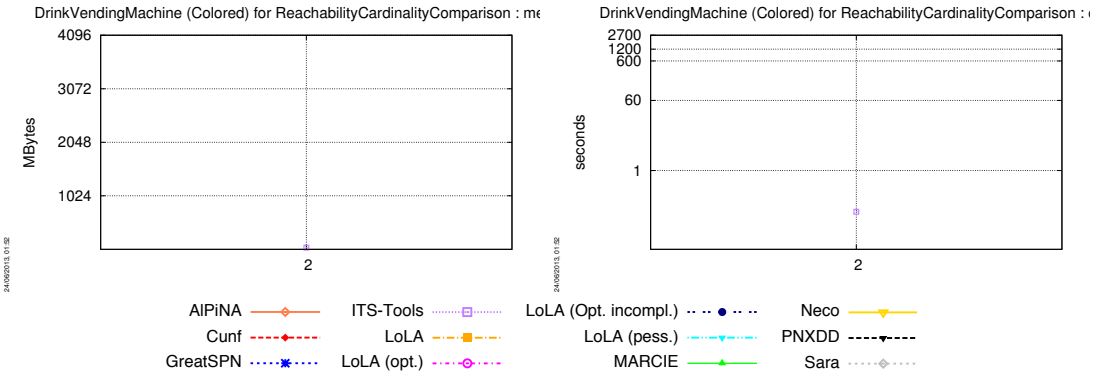
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



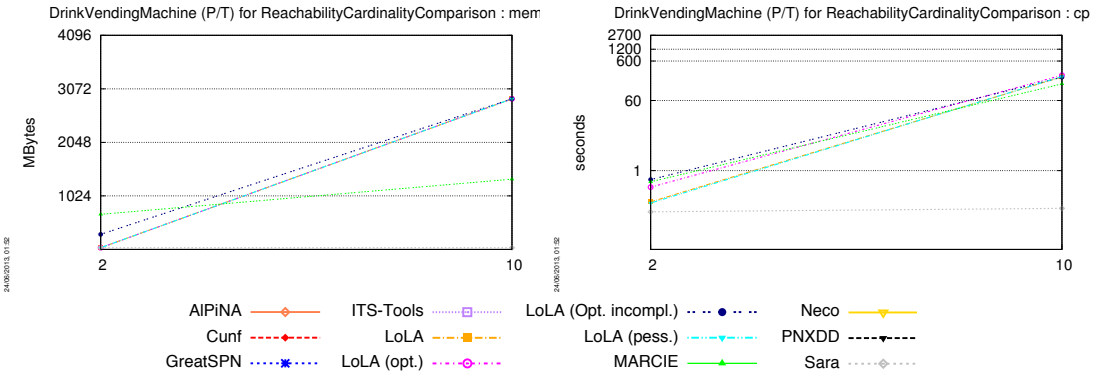
DotAndBoxes (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



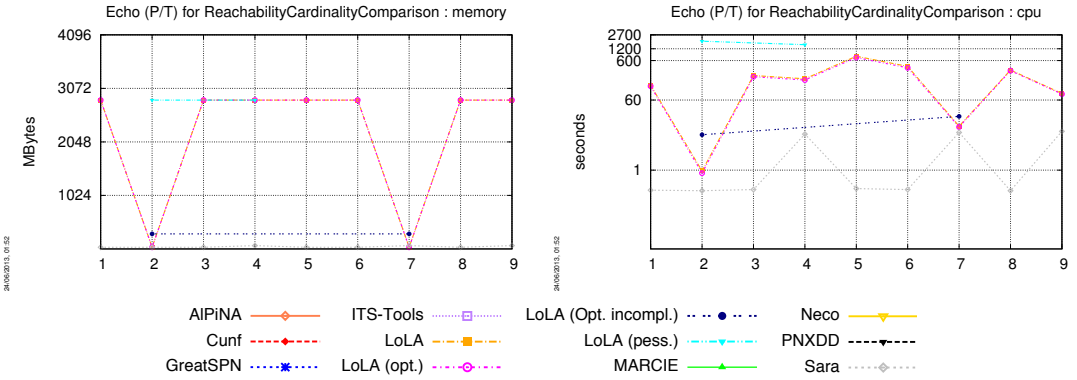
DrinkVendingMachine (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



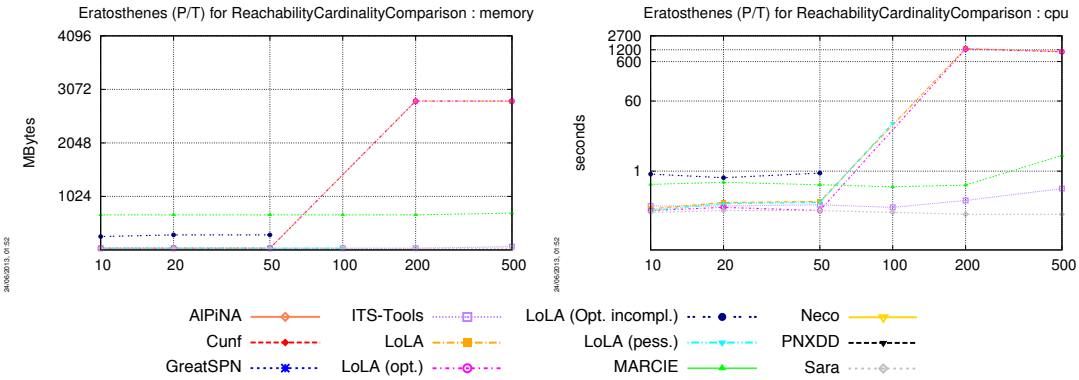
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



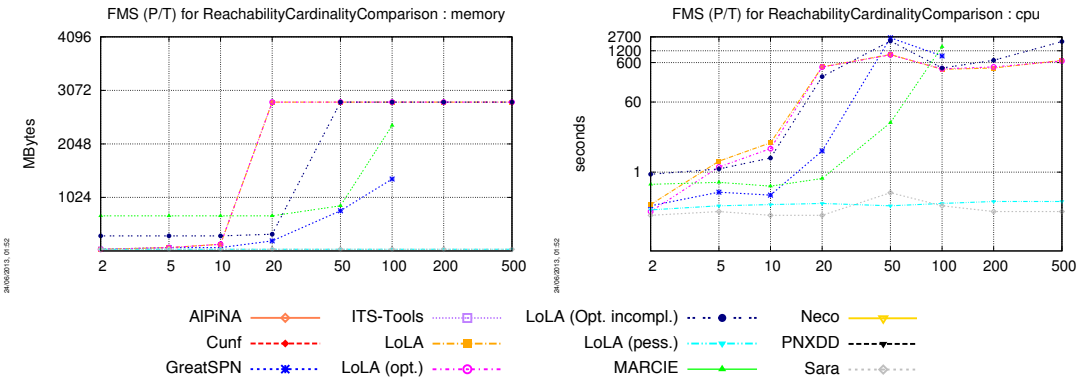
Echo (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



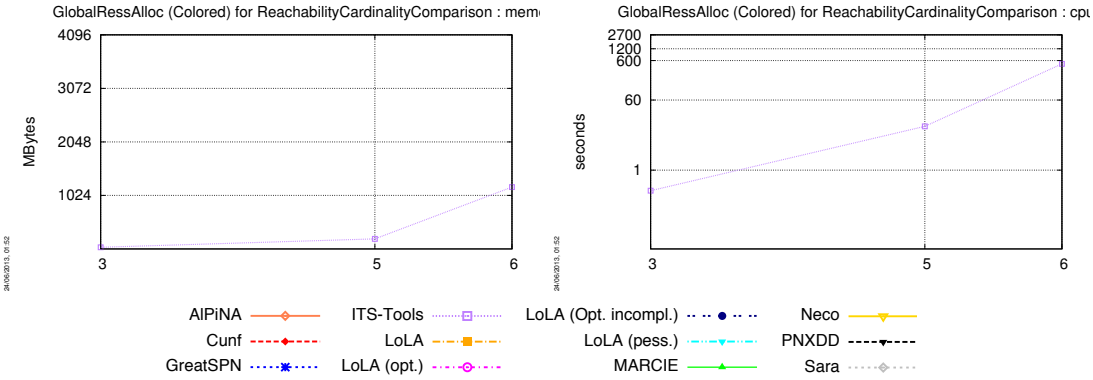
Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



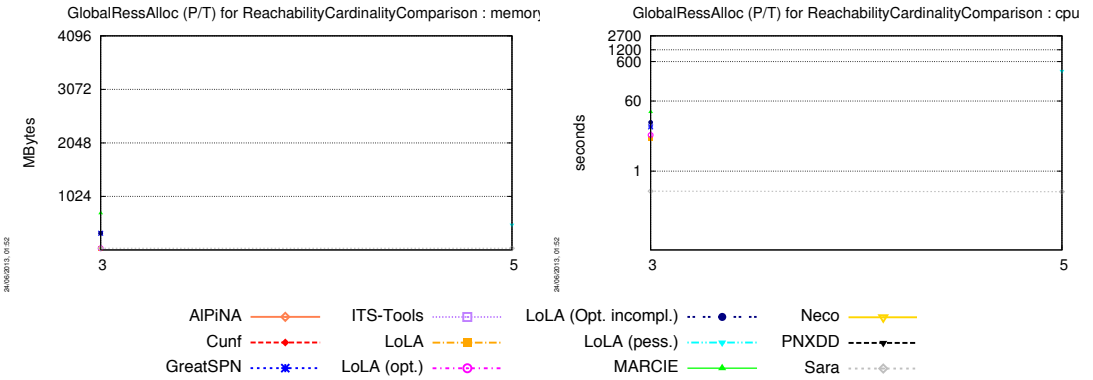
FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



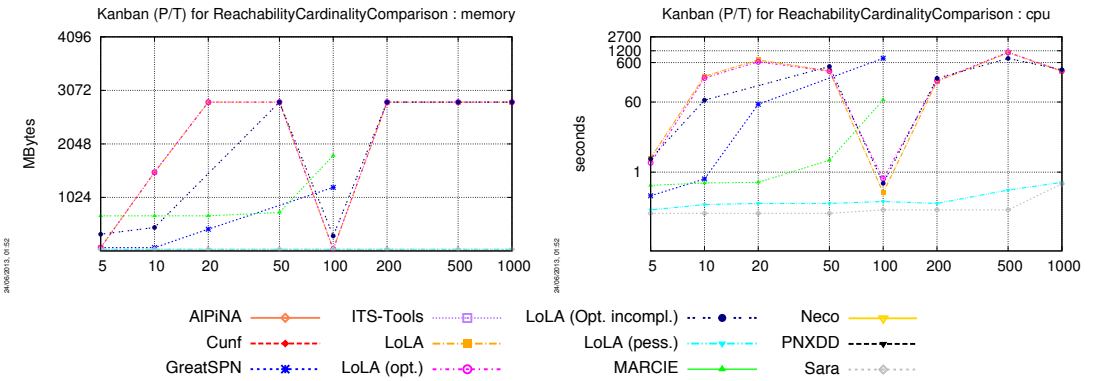
GlobalRessAlloc (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



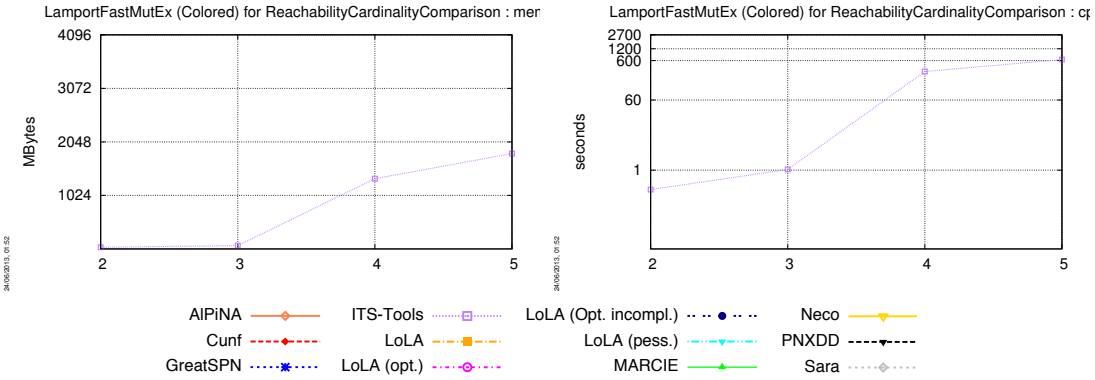
GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



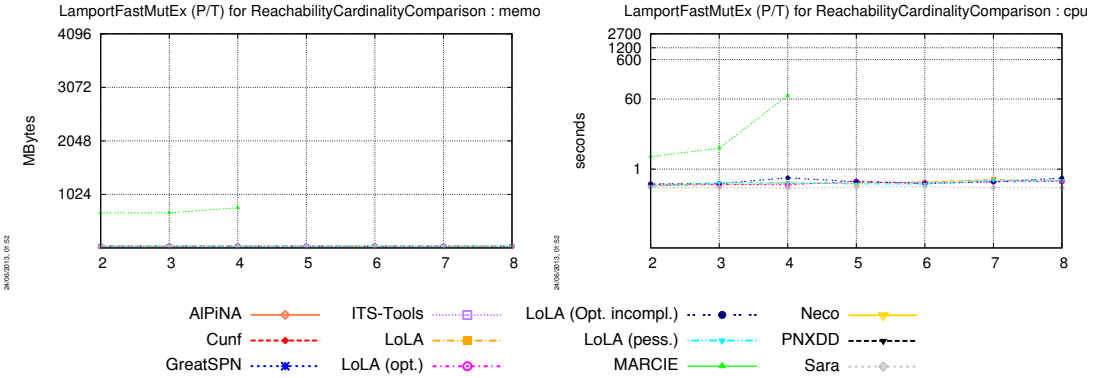
Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



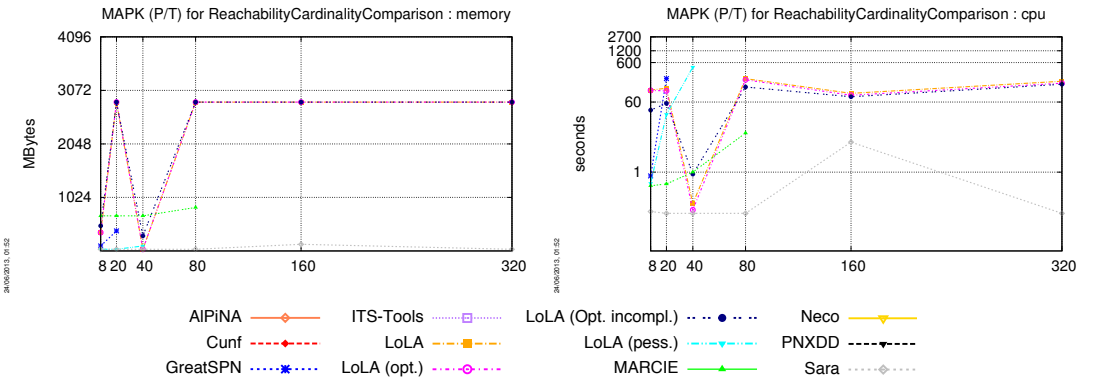
LamportFastMutEx (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



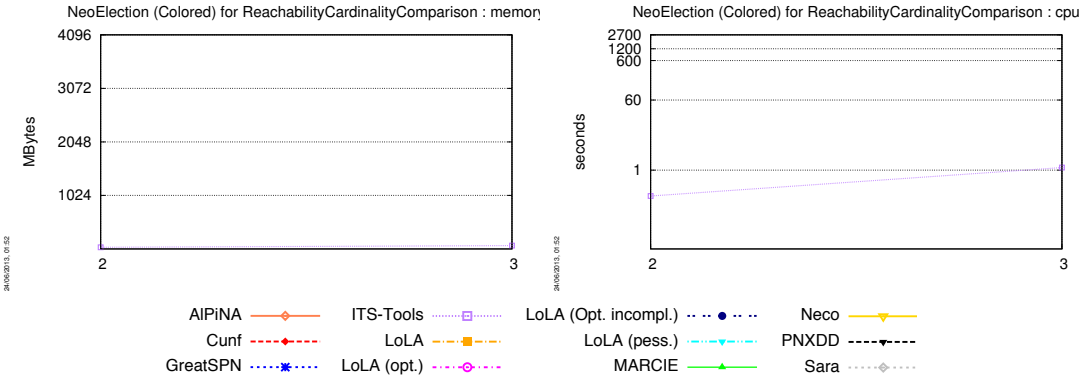
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



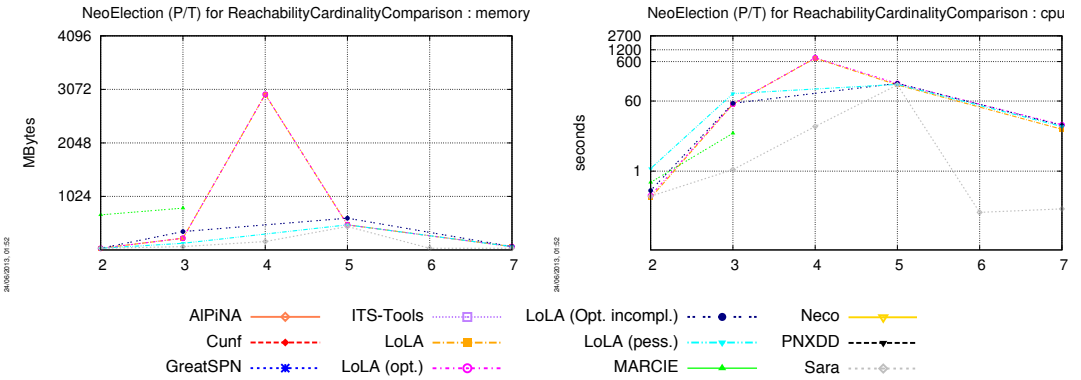
MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



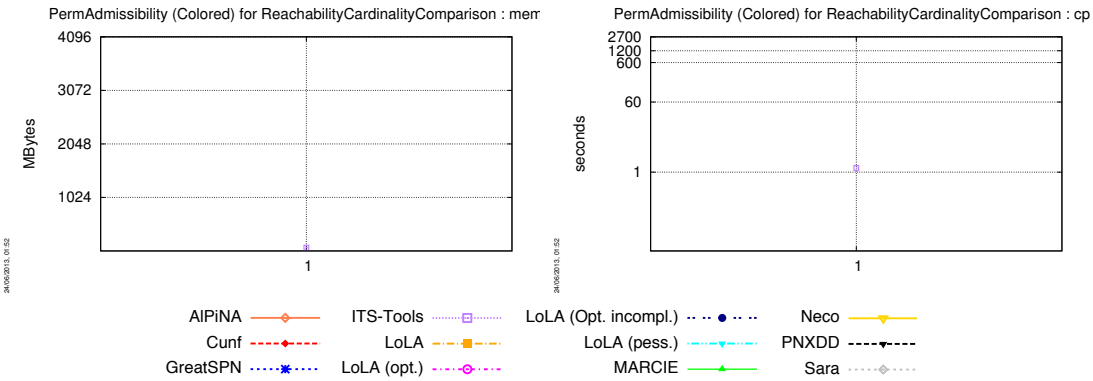
NeoElection (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



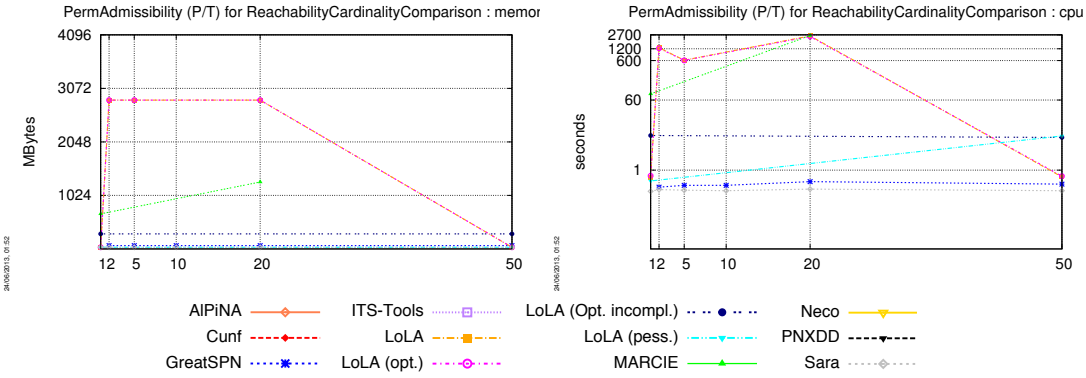
NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



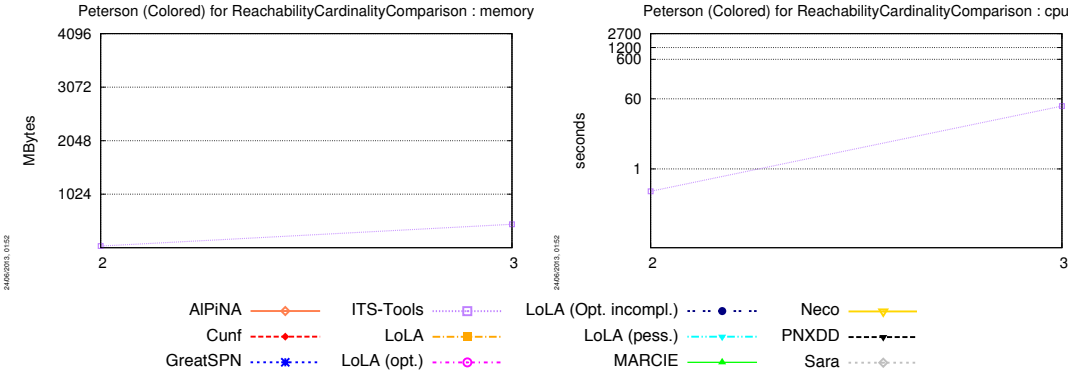
PermAdmissibility (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



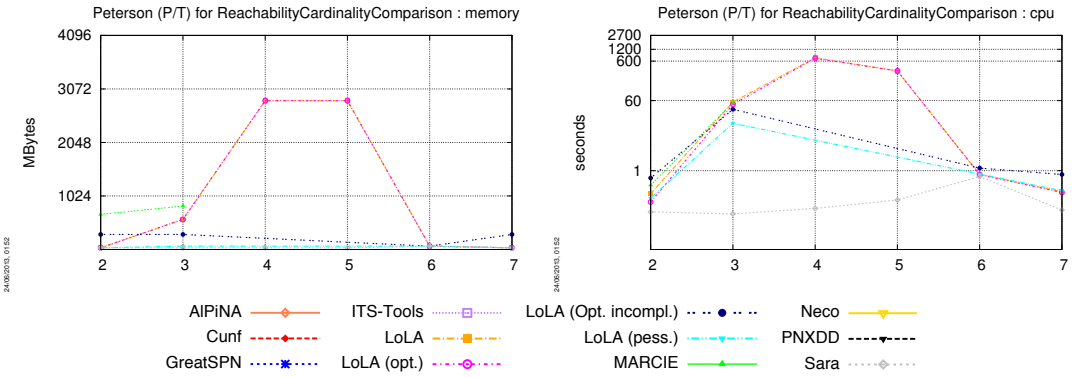
PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Peterson (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

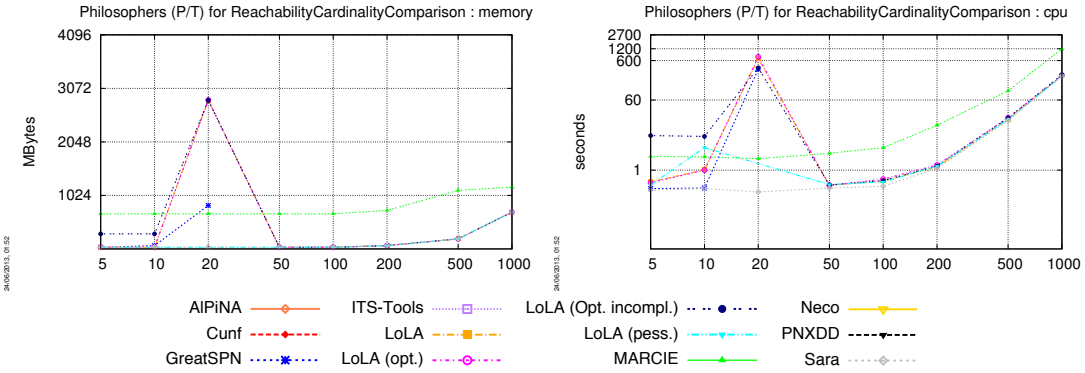


Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



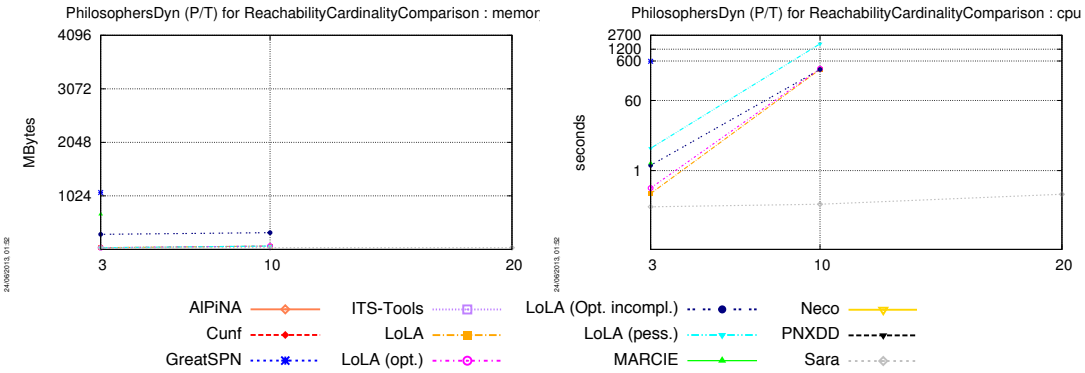
Philosophers (colored) No instance of this model could be computed for the **ReachabilityCardinalityComparison** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



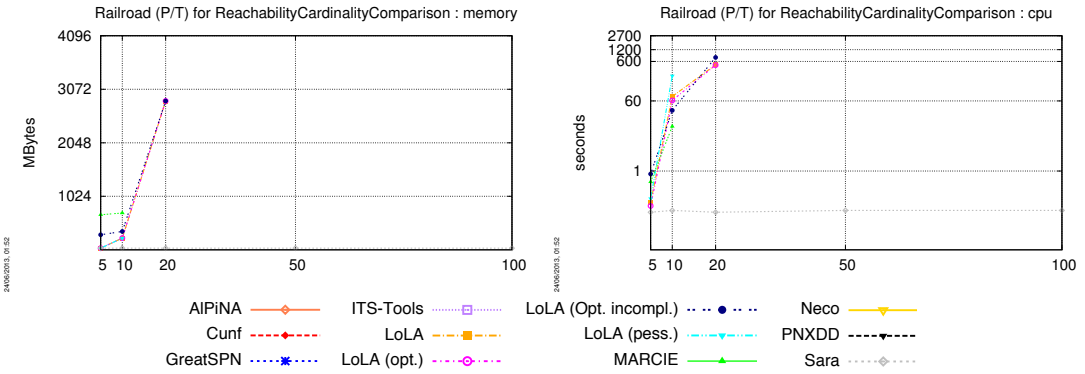
PhilosophersDyn (colored) No instance of this model could be computed for the **ReachabilityCardinalityComparison** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

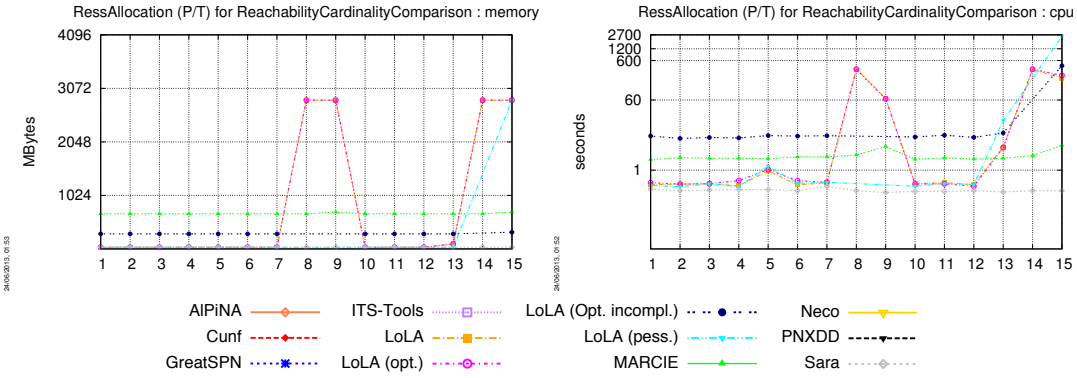


Planning (P/T) No instance of this model could be computed for the **ReachabilityCardinalityComparison** examination.

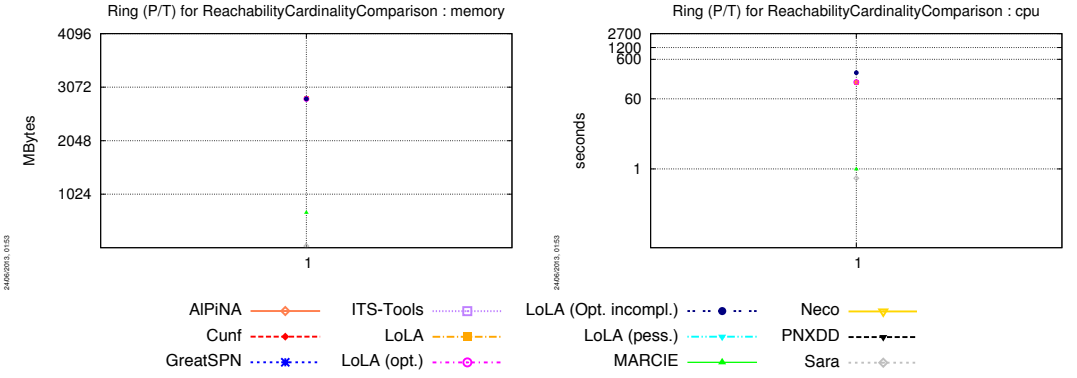
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



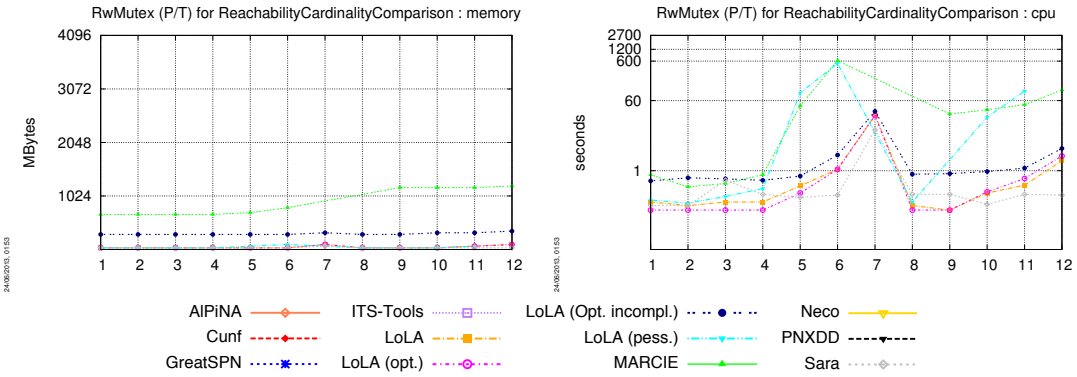
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

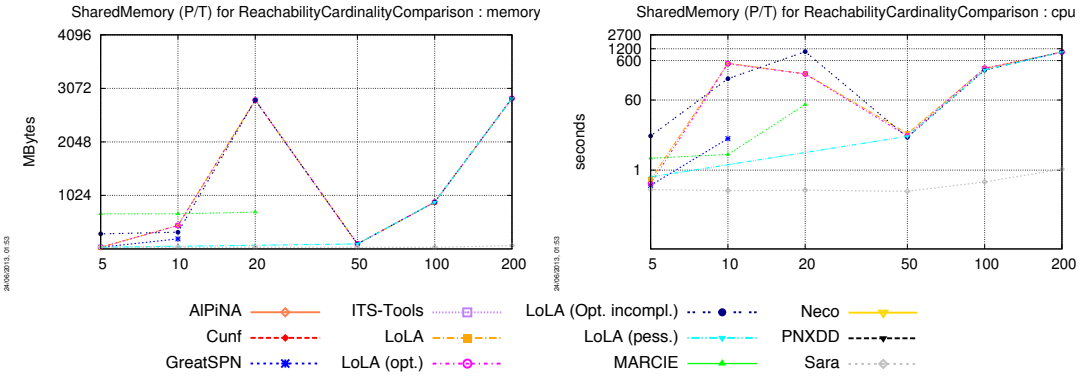


RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

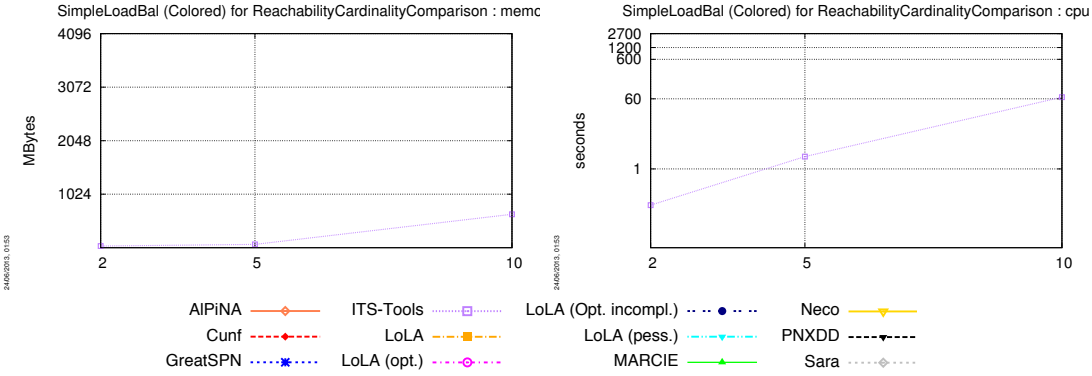


SharedMemory (colored) No instance of this model could be computed for the **ReachabilityCardinalityComparison** examination.

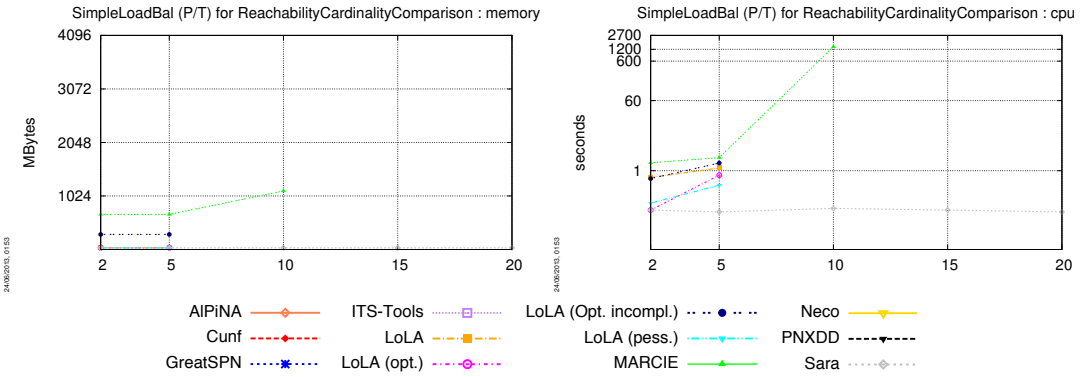
SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



SimpleLoadBal (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



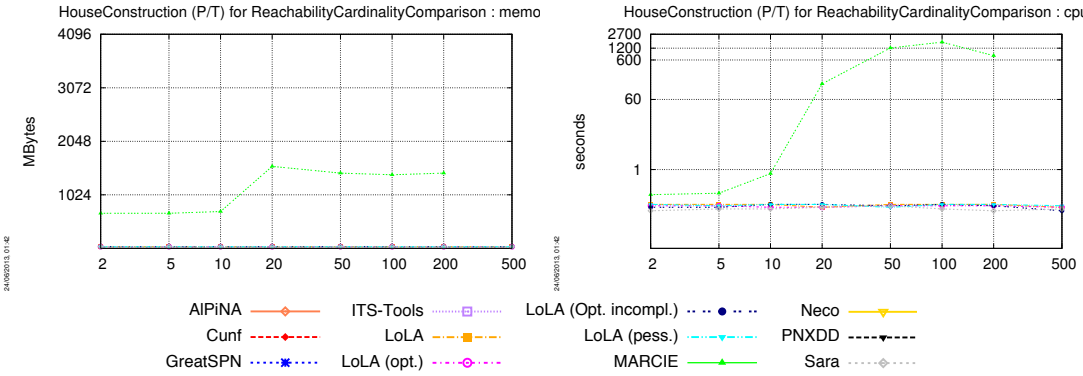
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



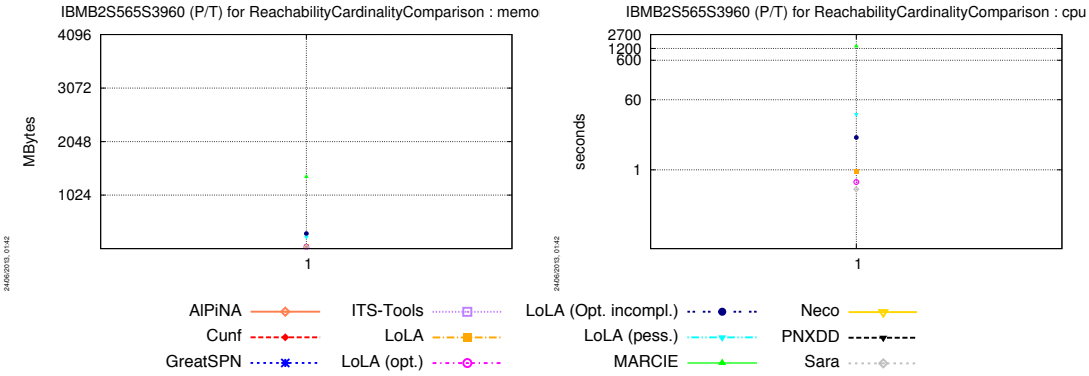
TokenRing (colored) No instance of this model could be computed for the **ReachabilityCardinality-Comparison** examination.

TokenRing (P/T) No instance of this model could be computed for the **ReachabilityCardinality-Comparison** examination.

HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

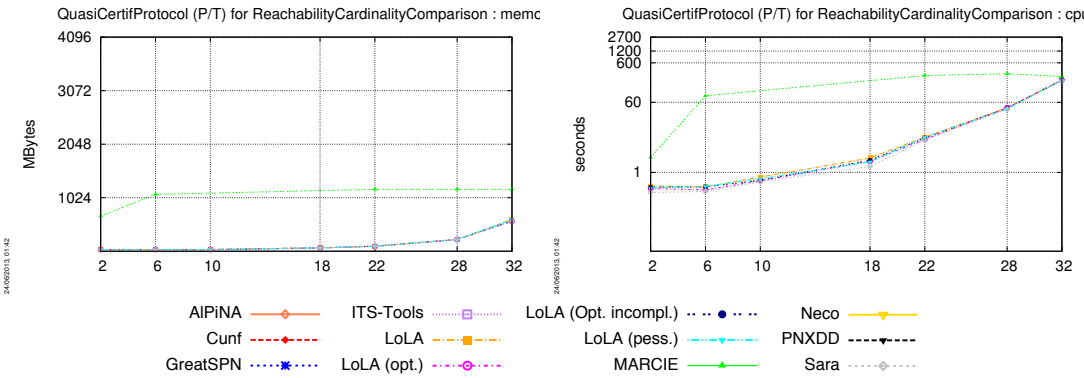


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

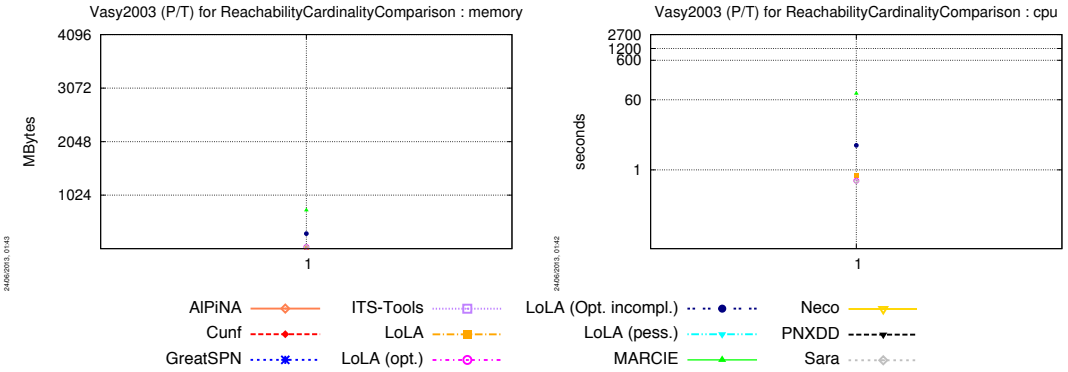


QuasiCertifProtocol (colored) No instance of this model could be computed for the **ReachabilityCardinalityComparison** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



7.2 Outputs for the ReachabilityCardinalityComparison Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	FFFFFFTF	nc	nc	nc	nc	nc	nc
03	nc	FTFTFFFF	nc	nc	nc	nc	nc	nc
04	nc	mp	nc	nc	nc	nc	nc	nc
05	nc	mp	nc	nc	nc	nc	nc	nc
07	nc	mp	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc

CSRepetitions (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	FFFFFFTF	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	TFTFFTFT	FFFFFFFT	cc
03	FTFTFFFF	nc	TFTFFFFT	TFTFFFFT	-F-FFFF-	TFTFFTFT	FFFFTFFF	cc
04	FFFFTFTF	nc	-F-FF-FF	-F-FF-FF	-F-FF-FF	to	to	cc
05	to	nc	--F-FFF	--F-FFF	--F-FFF	to	to	cc
07	mp	nc	cc	cc	cc	cc	to	cc
10	mp	nc	cc	cc	cc	cc	to	cc

Dekker (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	nc	TFTFTTFF	TFTFTTFF	-F-F-FF	TFTFTTFF	FFFFFFFF	cc
015	nc	nc	TTTFFFFF	TTTFFFFF	--FFFFF	to	FFFTTFFF	cc
020	nc	nc	to	to	FFFFF-F-	to	FFFFTFFF	cc

050	nc	nc	-F-FFFFF	-F-FFFFF	-F-FFFFF	to	to	cc
100	nc	nc	-FFFFFFF	-FFFFFFF	-FFFFFFF	to	to	cc
200	nc	nc	to	to	to	to	to	cc
DotAndBoxes (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFFTF	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFTF	nc	nc	nc	nc	nc	nc
4	nc	cc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
10	nc	cc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	TFFFFFFF	TFFFFFFF	-FFFFFFF	TFFFFFFF	FFFTFFFF	cc
10	nc	nc	cc	cc	cc	cc	FFFTFFFF	cc
Echo (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
d02r09	nc	nc	-F-FFFFF	-F-FFFFF	to	to	to	cc
d02r11	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFF-F-	to	cc
d02r15	nc	nc	--F-FFF	--F-FFF	to	to	to	cc
d02r19	nc	nc	-F-FFFFF	-F-FFFFF	to	-F-FFFFF	to	---TTT
d03r03	nc	nc	---FFF	---FFF	to	to	to	cc
d03r05	nc	nc	-F-FF-FF	-F-FF-FF	to	to	to	cc
d03r07	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	---TT-
d04r03	nc	nc	-F-F-F-	-F-F-F-	to	to	to	cc
d05r03	nc	nc	-F-FFFFF	-F-FFFFF	to	to	to	---TTT
Eratosthenes (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	FFFFFFFF	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTF-TFT	FFFFTFFF	cc
020	nc	FFFFFFFF	FFFFFTFF	FFFFFTFF	FFFFF-FF	FF-FFTFT	FFFTFFFF	----T
050	nc	FFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FF-F-FFF	FFFTFFFF	cc
100	nc	FFFF	to	to	to	-F-FF--	FFFFFFFF	cc
200	nc	FFFFFFFF	FFFFF-F-	FFFFF-F-	to	to	FFFFTFFF	cc
500	nc	FFFF	-FFFFFFF	-FFFFFFF	to	to	FFFTTFFF	cc
FMS (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	FFFFFFTF	nc	FFFFFTTT	FFFFFTTT	FFFFF--	-F-FF--	FFFTTFFF	cc
005	FFFFFFFF	nc	TFFFTTFT	TFFFTTFT	-FFF-F-	-FF-TF-	FFTTFFFF	cc
010	FFFFFFFF	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	---F-	FFFFFFFF	cc
020	FFFFFFFF	nc	-F-FFFFF	-F-FFFFF	-F-FFFFF	-F-FF-F-	FFFFFFFF	cc
050	FFFFFFFF	nc	--F-FFF	--F-FFF	--F-FFF	--F-FFF	FFFTFFFF	---TTT
100	F	cc	-F-FFFFF	-F-FFFFF	-F-FFFFF	-F-FFFFF	FFFFFFFF	cc
200	to	nc	-F-FFFFF	-F-FFFFF	-F-FFFFF	-F-FF-F-	to	cc
500	to	nc	--FFFFF	--FFFFF	--FFFFF	--FFFFF	to	cc
GlobalRessAlloc (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	FFFFFFTF	nc	nc	nc	nc	nc	nc
05	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
06	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
07	nc	mp	nc	nc	nc	nc	nc	nc
09	nc	mp	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc
11	nc	mp	nc	nc	nc	nc	nc	nc
GlobalRessAlloc (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FFFFFFTF	nc	FFTFFTFT	FFTFFTFT	FF-FF-F-	to	FFFTTFFF	cc
05	cc	nc	to	to	to	cc	to	cc
Kanban (P/T)								

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
0005	FFFFFFFF	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	-F-FF-F-	FFFTTFFF	cc
0010	FFFFFFFF	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	--F-F-	FFFTFFFF	----T
0020	FFFFFFFF	nc	-F-FFFFF	-F-FFFFF	to	-F-FFFF-	FFFFFFFF	cc
0050	to	nc	-F-FFFFF	-F-FFFFF	-F-FFFFF	--FFFFF	FFFTTFFF	cc
0100	FFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFF--	FFFTTFFF	---TTT
0200	mp	nc	FFFFF-FF	FFFFF-FF	FFFFF-FF	FFFFF-FF	to	cc
0500	mp	nc	-FF-F-	-FF-F-	-FF-F-	-FF-F-	to	cc
1000	to	nc	-F-F-FFF	-F-F-FFF	-F-F-FFF	----F	to	---TT-

LamportFastMutEx (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFFTF	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
4	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
5	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc
8	nc	mp	nc	nc	nc	nc	nc	nc

LamportFastMutEx (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	cc	cc	cc	cc	FFFTFFFF	cc
3	nc	nc	cc	cc	cc	cc	FFTTFFFF	cc
4	nc	nc	cc	cc	cc	cc	FFFFFFFF	cc
5	nc	nc	cc	cc	cc	cc	to	cc
6	nc	nc	cc	cc	cc	cc	to	cc
7	nc	nc	cc	cc	cc	cc	to	cc
8	nc	nc	cc	cc	cc	cc	to	cc

MAPK (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
008	FFFFFFFF	nc	TTTFTFFF	TTTFTFFF	--F-FFF	--F-F-	FFFTFFFF	cc
020	FFFFFFFF	nc	-FFFFFFF	-FFFFFFF	-FFFFFFF	--FFFFF	FFFTTFFF	cc
040	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FFFFF	FFFFTFFF	cc
080	to	nc	-F-FFFFF	-F-FFFFF	-F-FFFFF	to	FFFFFFFF	cc
160	to	nc	-F-FFFFF	-F-FFFFF	-F-FFFFF	to	to	---FF-
320	to	nc	-FF-FFF	-FF-FFF	-FF-FFF	to	to	----T

NeoElection (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
4	nc	cc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc
8	nc	mp	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	cc	cc	cc	cc	FFTTFFFF	cc
3	nc	nc	TFFFT--	TFFFT--	-FFF--	cc	FFFTFFFF	cc
4	nc	nc	---FF-	---FF-	to	to	to	cc
5	nc	nc	---FFF	---FFF	---FFF	---FFF	to	cc
6	nc	nc	to	to	to	to	to	cc
7	nc	nc	cc	cc	cc	cc	to	cc
8	nc	nc	to	to	to	to	to	to

PermAdmissibility (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	nc	FTFTFFFF	nc	nc	nc	nc	nc	nc
02	nc	mp	nc	nc	nc	nc	nc	nc
05	nc	mp	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	nc	nc	nc	nc

50	nc	mp	nc	nc	nc	nc	nc	nc
PermAdmissibility (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFTFFF	cc
02	FTFTTFTF	nc	-F-FFFF-	-F-FFFF-	to	to	to	cc
05	TTTTFFFF	nc	FFFFF-F-	FFFFF-F-	to	to	to	cc
10	FFFFTFFF	nc	to	to	to	to	to	cc
20	FTFTFFTF	nc	-F-F-F-	-F-F-F-	to	to	cc	cc
50	TTTTTFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	cc
Peterson (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
4	nc	mp	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc
Peterson (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	-F-F-FFF	FFFTTFFF	cc
3	nc	nc	TFTFF--	TFTFF--	-F-FF--	-F-F--	FFFFFFFF	cc
4	nc	nc	--FF--	--FF--	to	to	to	cc
5	nc	nc	-F-FF--	-F-FF--	to	to	to	cc
6	nc	nc	cc	cc	cc	cc	to	cc
7	nc	nc	FFFFF--	FFFFF--	FFFFF--	FFFFF--	to	cc
Philosophers (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc	nc
Philosophers (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FFFFFFFF	nf	TFTFFFFF	TFTFFFFF	-F-FFFFF	--F-FFF	FFFTFFFF	cc
000010	FFFFTFFF	nf	TTFFFFFF	TTFFFFFF	-FFFFFF	TTFFFFFF	FFTTTFFF	cc
000020	FFFFFFFF	nf	-F-FFFFF	-F-FFFFF	-F-FFFFF	to	FFFTFFFF	cc
000050	to	nf	cc	cc	cc	cc	FFFTTFFF	cc
000100	mp	nf	cc	cc	cc	cc	FFFTFFFF	cc
000200	mp	nf	cc	cc	cc	cc	FFFTFFFF	cc
000500	to	nf	cc	cc	cc	cc	FFFFFFFF	cc
001000	mp	nf	cc	cc	cc	cc	FFFTTFFF	cc
002000	mp	nf	mp	mp	mp	mp	to	mp
005000	mp	nf	to	to	to	to	to	to
010000	cc	nf	to	to	to	to	to	to
PhilosophersDyn (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc	nc	nc

PhilosophersDyn (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FFFFFFFF	nc	TTTFTFFF	TTTFTFFF	--F-FFF	TTTFTFFF	FFFTFFFF	cc
10	mp	nc	TTTTFTFT	TTTTFTFT	--F-F-	TTTTFTFT	to	cc
20	mp	nc	to	to	to	to	to	cc

Planning (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
nf	nf	nf	nf	nf	nf	nf	nf	

Railroad (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	nc	TTTFFTFT	TTTFFTFT	--FF-F-	TTTFFTFT	FFFTTFFF	cc
010	nc	nc	FFFFFTTT	FFFFFTTT	FFFFF--	FFFF--	FFFFFFFF	cc
020	nc	nc	-FFFFFFF	-FFFFFFF	-FFFFFFF	to	to	cc
050	nc	nc	to	to	to	to	to	cc
100	nc	nc	to	to	to	to	to	cc

RessAllocation (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
R002C002	nc	nc	TFFFFTFF	TFFFFTFF	-FFFF-FF	-FFF-F-	FFFTTFFF	----T
R003C002	nc	nc	TFFFFFFF	TFFFFFFF	-FFFFFFF	TFFFFFF-	FFFTTFFF	cc
R003C003	nc	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	FFFFF-F-	FFFTFFFF	cc
R003C005	nc	nc	FFFFFTFF	FFFFFTFF	FFFFF-FF	-F-FFTFF	FFFFFFFT	cc
R003C010	nc	nc	TTTFTFFF	TTTFTFFF	--F-FFF	-TF-FF	FFFTFFFF	cc
R003C015	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	cc
R003C020	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	---TTT
R003C050	nc	nc	-F-FFFFF	-F-FFFFF	to	to	FFFFFFFF	cc
R003C100	nc	nc	-FFFFFFF	-FFFFFFF	to	to	FFFTTFFF	cc
R005C002	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTFFFFF	FFFFFFFF	----T
R010C002	nc	nc	TTTTTTFT	TTTTTTFT	---F-	TTTT-TFT	FFFFFFFF	cc
R015C002	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFTFFF	----T
R020C002	nc	nc	TFTFFTTT	TFTFFTTT	-F-FF--	TFTFFTTT	FFFFFFFF	cc
R050C002	nc	nc	T-T-FFFF	T-T-FFFF	to	to	FFFFTFFF	cc
R100C002	nc	nc	-F-FFFFF	-F-FFFFF	-F-FFFFF	-F-FFFFF	FFFFFFFF	cc

Ring (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nc	nc	FFFFF-F-	FFFFF-F-	FFFFF-F-	to	FFFFFFFF	cc

RwMutex (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
r0010w0010	nc	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	TFTFF--	FFFFFFFF	cc
r0010w0020	nc	nc	TFTFTTFF	TFTFTTFF	-F-F-FF	TFTFT--	FFFFFFFF	cc
r0010w0050	nc	nc	TFTFFTFF	TFTFFTFF	-F-FF-FF	---TFF	FFFFFFFF	cc
r0010w0100	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	cc	FFFTFFFF	cc
r0010w0500	nc	nc	TFFFFTFF	TFFFFTFF	-FFFF-FF	TF--TFF	FFFTTFFF	cc
r0010w1000	nc	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	FFFFFTFT	FFFTFFFF	cc
r0010w2000	nc	nc	TFTFTTFF	TFTFTTFF	-F-F-FF	to	to	---TT-
r0020w0010	nc	nc	TTTTFFFF	TTTTFFFF	--FFFF	--F-F-	to	cc
r0100w0010	nc	nc	TTTFTFFF	TTTFTFFF	--F-FFF	to	cc	cc
r0500w0010	nc	nc	TTTFTTFF	TTTFTTFF	--F-FF	--F-F-	cc	cc
r1000w0010	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-F-F-	cc	cc
r2000w0010	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	cc	cc

SharedMemory (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	cc	nc	nc	nc	nc	nc	nc
000010	nc	cc	nc	nc	nc	nc	nc	nc
000020	nc	cc	nc	nc	nc	nc	nc	nc
000050	nc	cc	nc	nc	nc	nc	nc	nc
000100	nc	cc	nc	nc	nc	nc	nc	nc
000200	nc	cc	nc	nc	nc	nc	nc	nc
000500	nc	cc	nc	nc	nc	nc	nc	nc
001000	nc	cc	nc	nc	nc	nc	nc	nc
002000	nc	cc	nc	nc	nc	nc	nc	nc

005000	nc	cc	nc	nc	nc	nc	nc	nc
010000	nc	cc	nc	nc	nc	nc	nc	nc
020000	nc	cc	nc	nc	nc	nc	nc	nc
050000	nc	cc	nc	nc	nc	nc	nc	nc
100000	nc	cc	nc	nc	nc	nc	nc	nc

SharedMemory (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FTFFFFFT	cc	TTTFFTTF	TTTFFTTF	--FF-F	--FF-F	FFFTTFFT	cc
000010	FTFTFFFF	cc	TTTTTFFT	TTTTTFFT	---FF-	to	FFFFFFFF	cc
000020	mp	cc	-FFFFFFF	-FFFFFFF	-FFFFFFF	to	FFFTTFFF	cc
000050	mp	cc	cc	cc	cc	cc	to	cc
000100	mp	cc	cc	cc	cc	cc	to	cc
000200	cc	cc	cc	cc	cc	cc	to	cc

SimpleLoadBal (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
05	nc	FTFTTFFF	nc	nc	nc	nc	nc	nc
10	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
15	nc	mp	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	nc	nc	nc	nc

SimpleLoadBal (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	TFFFFTFT	TFFFFTFT	-FFFF-F-	-FFF-TFT	FFFTTFFF	cc
05	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	-F-FFFFF	FFFFFFFF	cc
10	nc	nc	to	to	to	to	FFFFFFFF	cc
15	nc	nc	to	to	to	to	to	cc
20	nc	nc	to	to	to	to	to	cc

TokenRing (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nf	nf	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf	nf	nf

TokenRing (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nf	nf	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf	nf

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)

instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	cc	cc	cc	cc	FFFTFFFF	cc
005	cc	cc	cc	cc	FFFTFFFF	cc
010	cc	cc	cc	cc	FFFFTFFF	cc
020	cc	cc	cc	cc	FFFTTFFF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	to	cc

IBMB2S565S3960 (P/T)

instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFF-	FFFFFFFT	cc

QuasiCertifProtocol (colored)

instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc

QuasiCertifProtocol (P/T)

instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	cc	cc	cc	cc	FFFTFFFF	cc
06	cc	cc	cc	cc	FFFTFFFF	cc
10	cc	cc	cc	cc	to	cc
18	cc	cc	cc	cc	to	cc
22	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc
32	cc	cc	cc	cc	cc	cc

Vasy2003 (P/T)

instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	FF--FFF	FF--FFF	FF--FFF	to	FFFFFFFF	F--TT-

7.3 Score for the ReachabilityCardinalityComparison Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**42**	**58**	**174**	**174**	**148**	**106**	**122**	**34**

CSRepetitions (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

CSRepetitions (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	0
instances	3	0	4	4	4	2	2	0
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	0	0	0
subtotal	**4**	**0**	**7**	**7**	**7**	**3**	**3**	**0**

Dekker (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	4	4	5	1	3	0
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	0	0	0
subtotal	**0**	**0**	**7**	**7**	**8**	**2**	**4**	**0**

DotAndBoxes (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

DrinkVendingMachine (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	1	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**

DrinkVendingMachine (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	1	1	1	1	2	0
max reached	0	0	0	0	0	0	2	0
best	0	0	0	0	0	0	2	0
subtotal	**0**	**0**	**2**	**2**	**2**	**2**	**7**	**0**

Echo (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	0	1
instances	0	0	9	9	2	2	0	3
max reached	0	0	2	2	0	0	0	2
best	0	0	2	2	0	0	0	2
subtotal	**0**	**0**	**14**	**14**	**3**	**3**	**0**	**8**

Eratosthenes (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1	1
instances	0	6	5	5	3	4	6	1
max reached	0	2	2	2	0	0	2	0
best	0	2	2	2	0	0	2	0
subtotal	**0**	**11**	**10**	**10**	**4**	**5**	**11**	**2**

FMS (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	6	0	8	8	8	8	6	1
max reached	0	0	2	2	2	2	0	0
best	0	0	2	2	2	2	0	0
subtotal	**7**	**0**	**13**	**13**	**13**	**13**	**7**	**2**

GlobalRessAlloc (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	3	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**

GlobalRessAlloc (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	0	1	0
instances	1	0	1	1	1	0	1	0
max reached	0	0	0	0	0	0	0	0
best	2	0	2	2	2	0	2	0
subtotal	**4**	**0**	**4**	**4**	**4**	**0**	**4**	**0**

Kanban (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	4	0	8	8	7	8	5	3

max reached	0	0	2	2	2	2	0	2
best	0	0	2	2	2	2	0	2
subtotal	**5**	**0**	**13**	**13**	**12**	**13**	**6**	**8**

LamportFastMutEx (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	4	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**

LamportFastMutEx (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	1	0
instances	0	0	0	0	0	0	3	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**

MAPK (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	2	0	6	6	6	3	4	2
max reached	0	0	2	2	2	0	0	2
best	0	0	2	2	2	0	0	2
subtotal	**3**	**0**	**11**	**11**	**11**	**4**	**5**	**7**

NeoElection (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	3	3	2	1	2	0
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	2	0	0
subtotal	**0**	**0**	**6**	**6**	**5**	**4**	**3**	**0**

PermAdmissibility (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	1	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**

PermAdmissibility (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	0
instances	5	0	5	5	2	2	1	0
max reached	2	0	2	2	2	2	0	0
best	2	0	2	2	2	2	0	0
subtotal	**10**	**0**	**10**	**10**	**7**	**7**	**2**	**0**

Peterson (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	5	5	3	3	2	0
max reached	0	0	2	2	2	2	0	0
best	0	0	2	2	2	2	0	0
subtotal	**0**	**0**	**10**	**10**	**8**	**8**	**3**	**0**

Philosophers (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Philosophers (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	0
instances	3	0	3	3	3	2	8	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	2	0
subtotal	**4**	**0**	**4**	**4**	**4**	**3**	**11**	**0**

PhilosophersDyn (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PhilosophersDyn (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	0
instances	1	0	2	2	2	2	1	0
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	2	0	0
subtotal	**2**	**0**	**5**	**5**	**5**	**5**	**2**	**0**

Planning (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Railroad (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	3	3	3	2	2	0
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	0	0	0
subtotal	**0**	**0**	**6**	**6**	**6**	**3**	**3**	**0**

RessAllocation (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	15	15	12	12	15	4
max reached	0	0	2	2	2	2	2	0
best	0	0	2	2	2	2	2	0
subtotal	**0**	**0**	**20**	**20**	**17**	**17**	**20**	**5**

Ring (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	0	1	0
instances	0	0	1	1	1	0	1	0
max reached	0	0	2	2	2	0	2	0

best	0	0	2	2	2	0	2	0
subtotal	**0**	**0**	**6**	**6**	**6**	**0**	**6**	**0**

RwMutex (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	12	12	12	8	6	1
max reached	0	0	2	2	2	0	0	0
best	0	0	2	2	2	0	0	0
subtotal	**0**	**0**	**17**	**17**	**17**	**9**	**7**	**2**

SharedMemory (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

SharedMemory (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	0
instances	2	0	3	3	3	1	3	0
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	0	2	0
subtotal	**3**	**0**	**6**	**6**	**6**	**2**	**6**	**0**

SimpleLoadBal (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	3	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**

SimpleLoadBal (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	2	2	2	2	3	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	2	0
subtotal	**0**	**0**	**3**	**3**	**3**	**3**	**6**	**0**

TokenRing (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TokenRing (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**12**	**12**	**12**	**6**	**24**	**6**

HouseConstruction (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

1st instance	0	0	0	0	1	0
instances	0	0	0	0	4	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**7**	**0**

IBMB2S565S3960 (P/T)

	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Marcie	Sara
1st instance	1	1	1	1	1	0
instances	1	1	1	1	1	0
max reached	2	2	2	2	2	0
best	2	2	2	2	2	0
subtotal	**6**	**6**	**6**	**6**	**6**	**0**

QuasiCertifProtocol (Colored)

	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

QuasiCertifProtocol (P/T)

	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Marcie	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**

Vasy2003 (P/T)

	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Marcie	Sara
1st instance	1	1	1	0	1	1
instances	1	1	1	0	1	1
max reached	2	2	2	0	2	2
best	2	2	2	0	2	2
subtotal	**6**	**6**	**6**	**0**	**6**	**6**

7.4 Trophies for this Examination

Trophies are divided in three categories: “Known” models, “Surprise” models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For “Known” Models

1	1	3
LoLA	LoLa opt	LoLa opt inc
174 points	174 points	148 points

For “Surprise” Models

1	2	2	2
Marcie 24 points	LoLA 12 points	LoLa opt 12 points	LoLa opt inc 12 points

Global

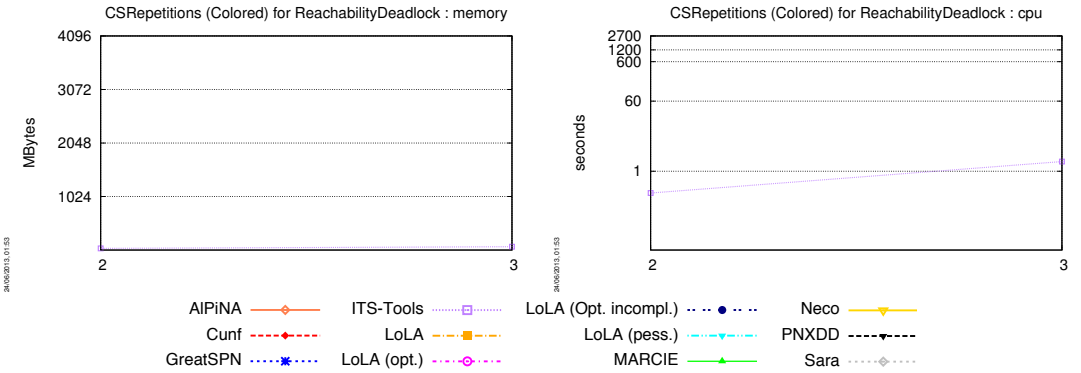
1	1	3
LoLA 198 points	LoLa opt 198 points	LoLa opt inc 172 points

8 The ReachabilityDeadlock Examination

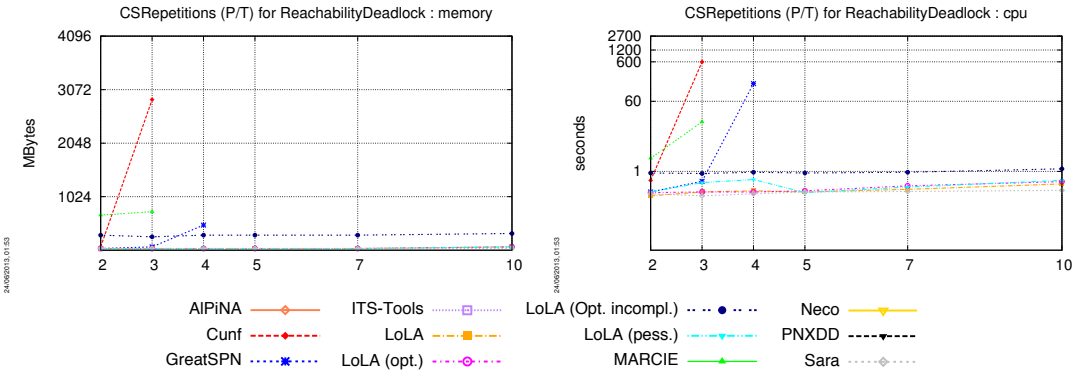
This examination deals with reachability properties dealing with transition deadlocks only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

8.1 Handling of Models by Tools

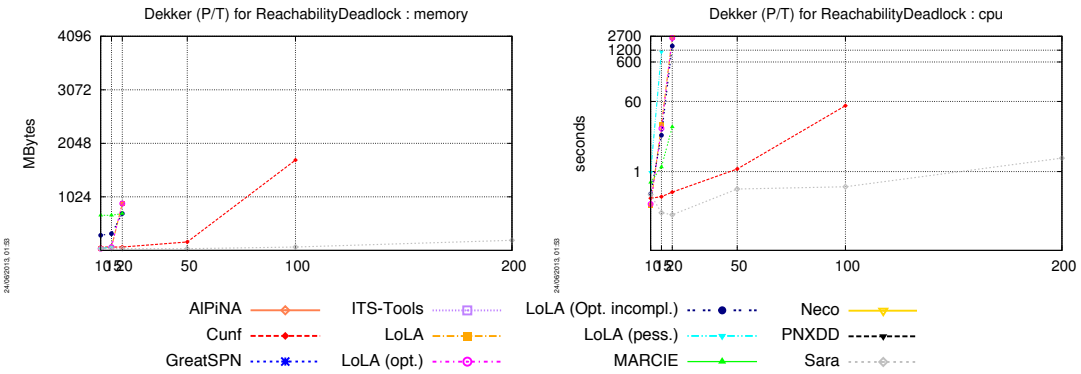
CSRepetitions (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



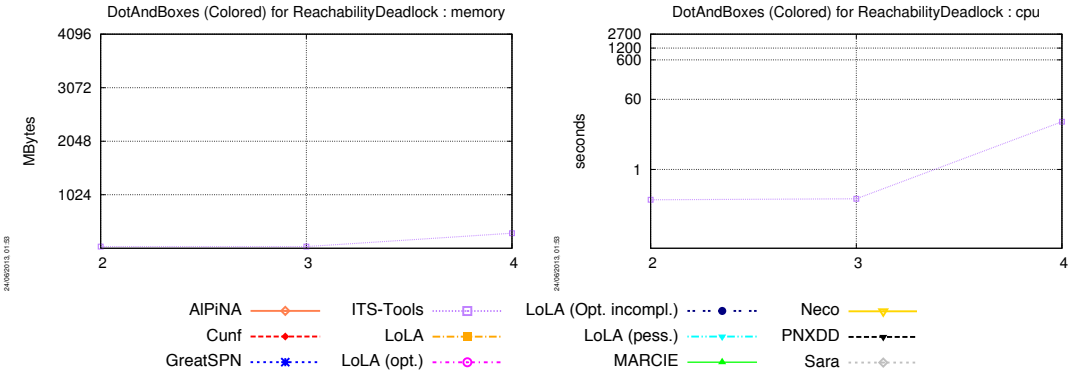
CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



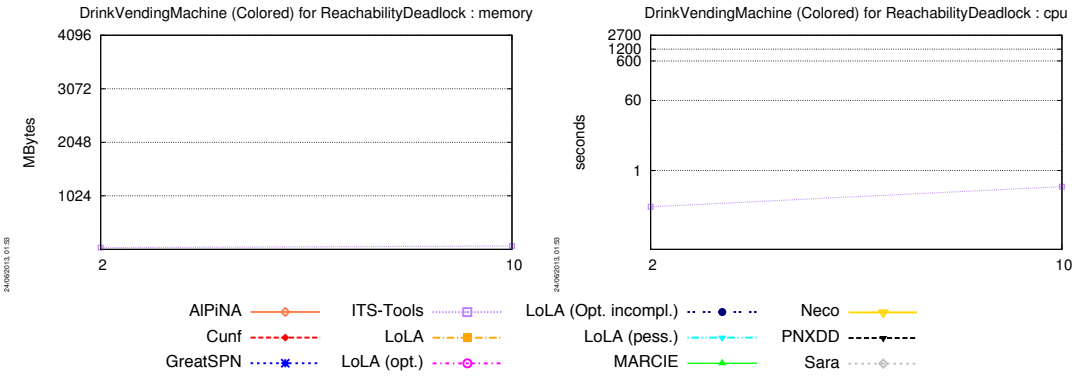
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



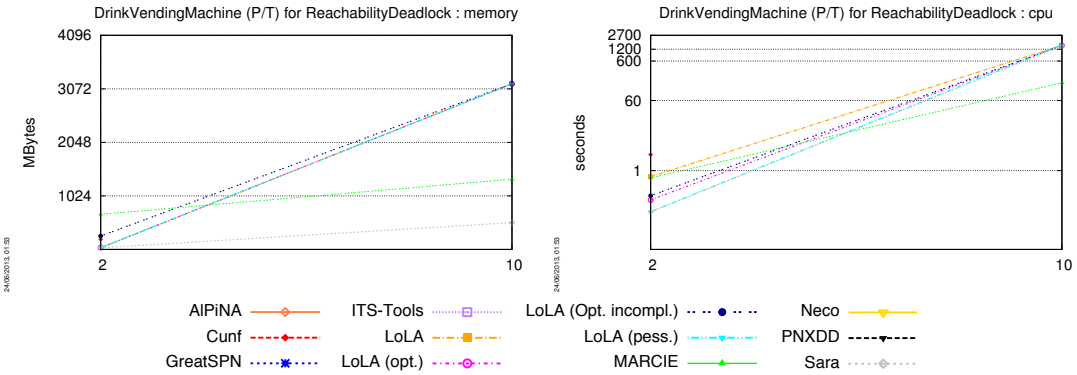
DotAndBoxes (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



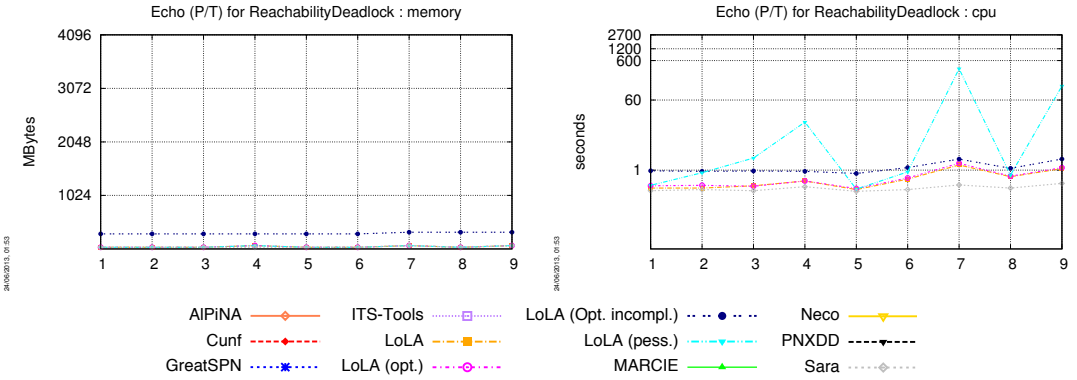
DrinkVendingMachine (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



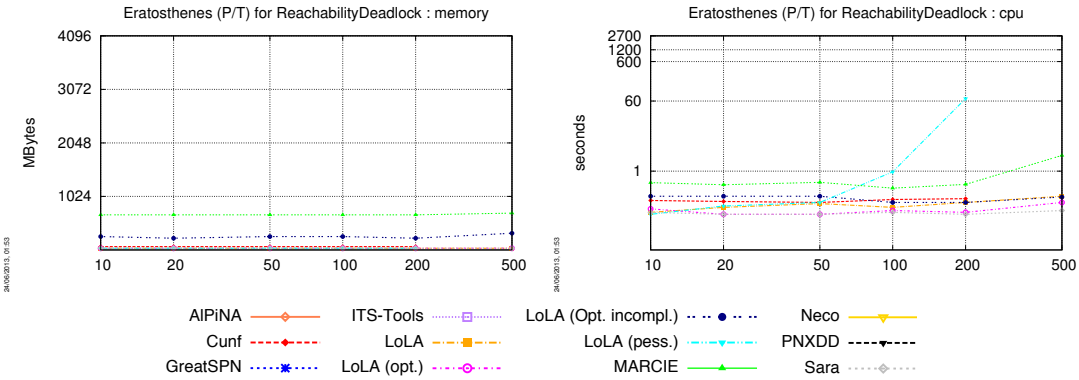
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



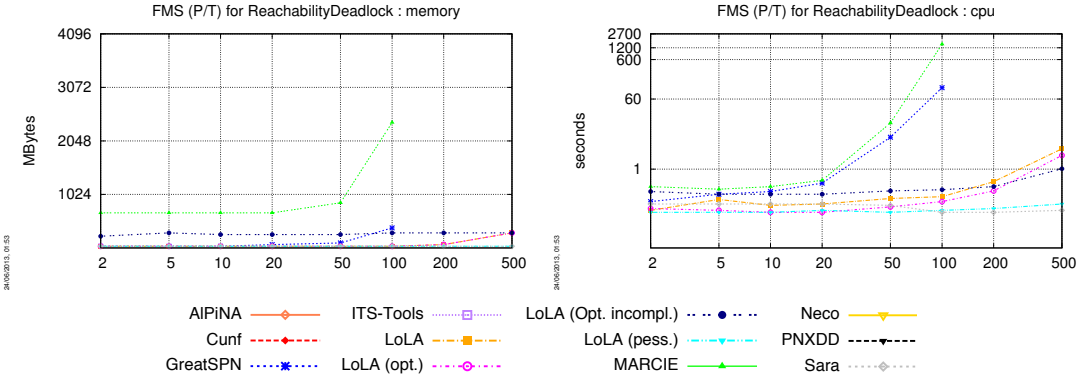
Echo (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



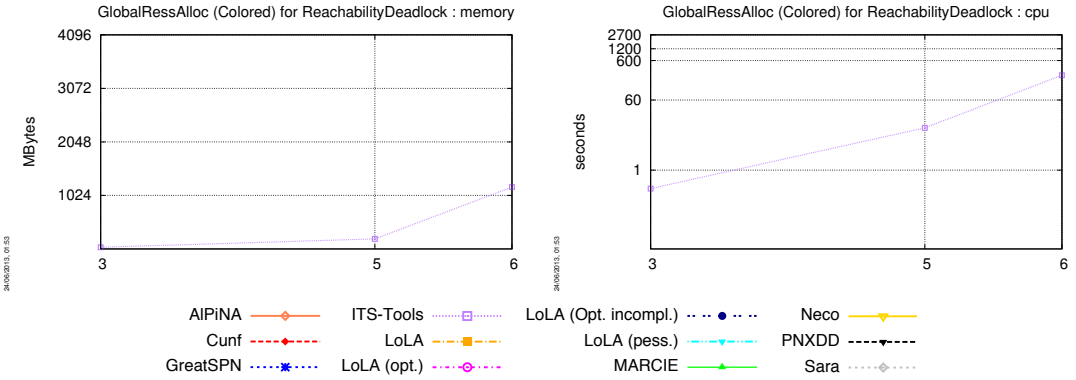
Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



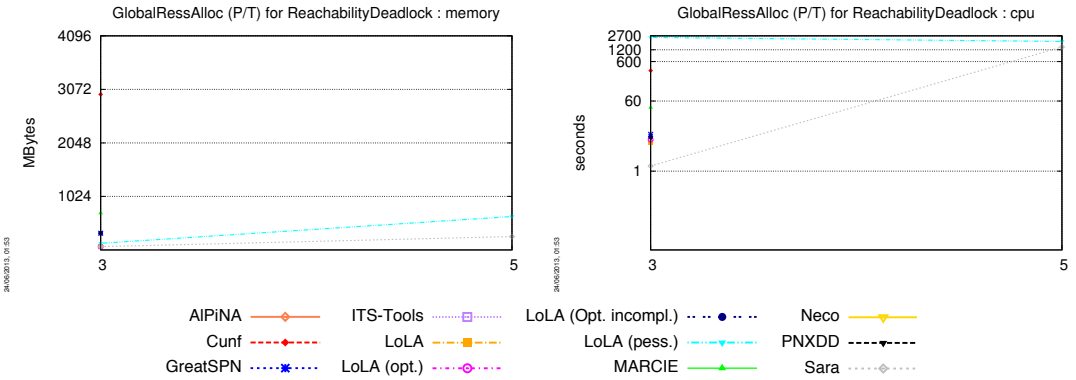
FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



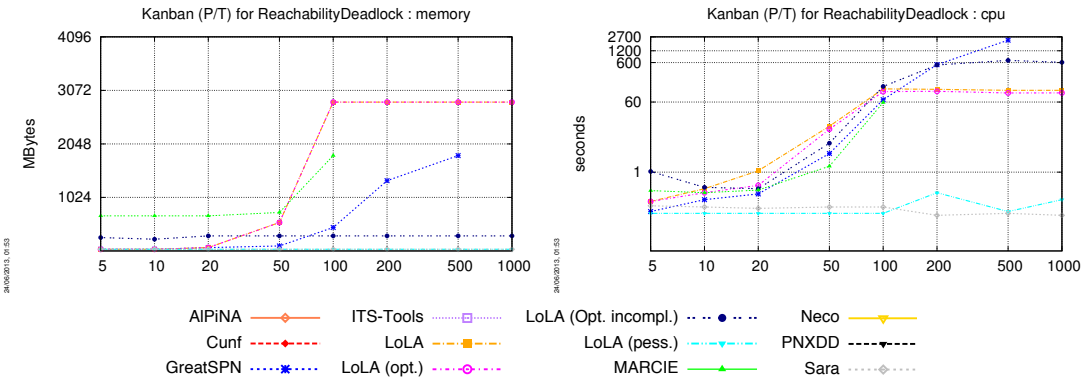
GlobalRessAlloc (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



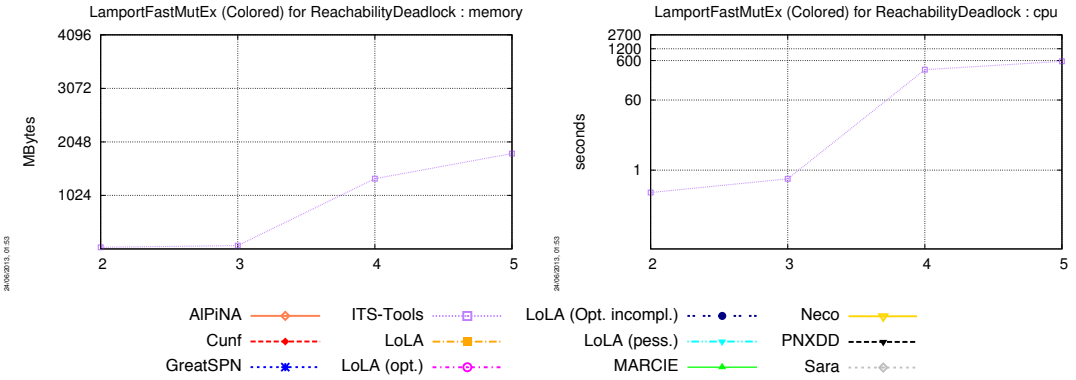
GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



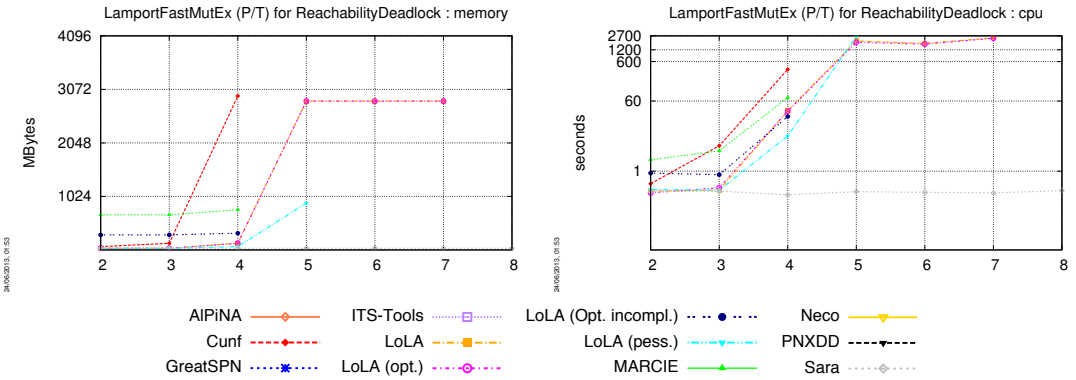
Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



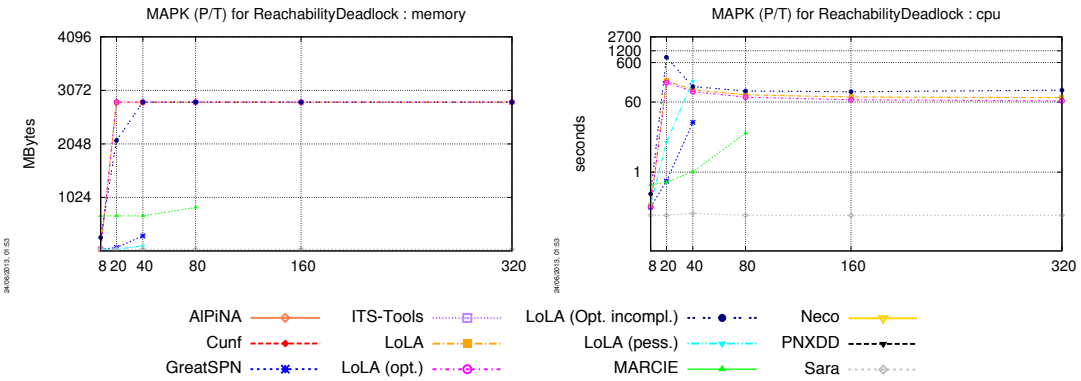
LamportFastMutEx (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



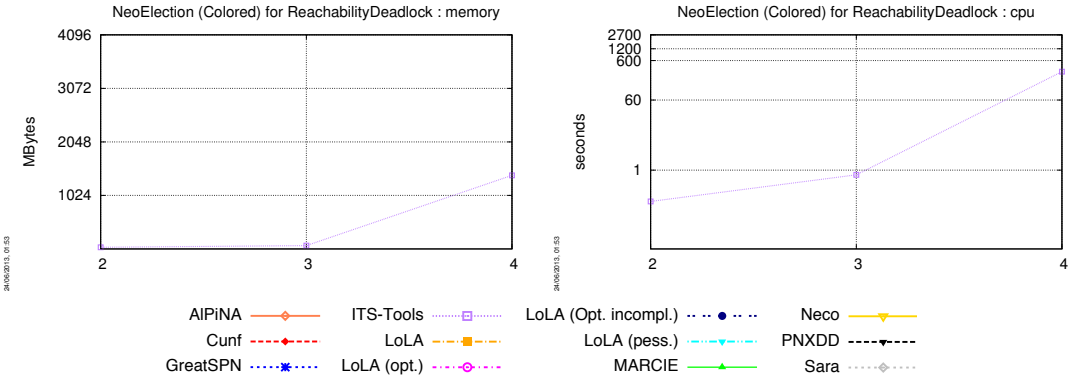
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



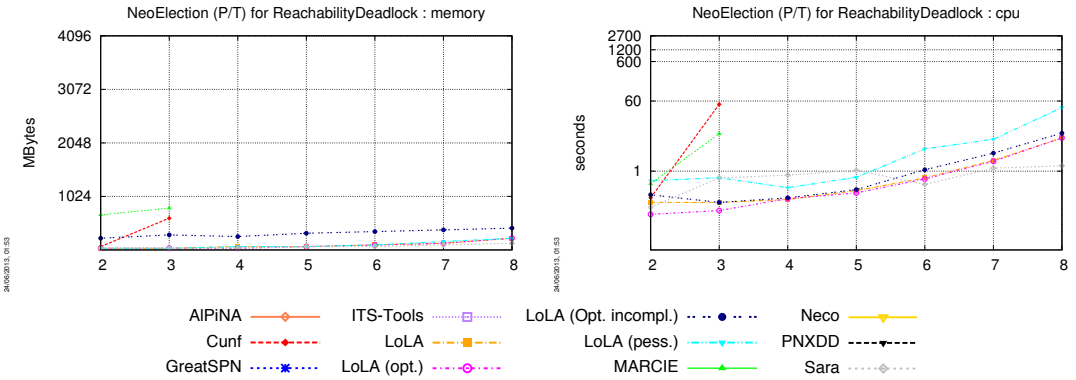
MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



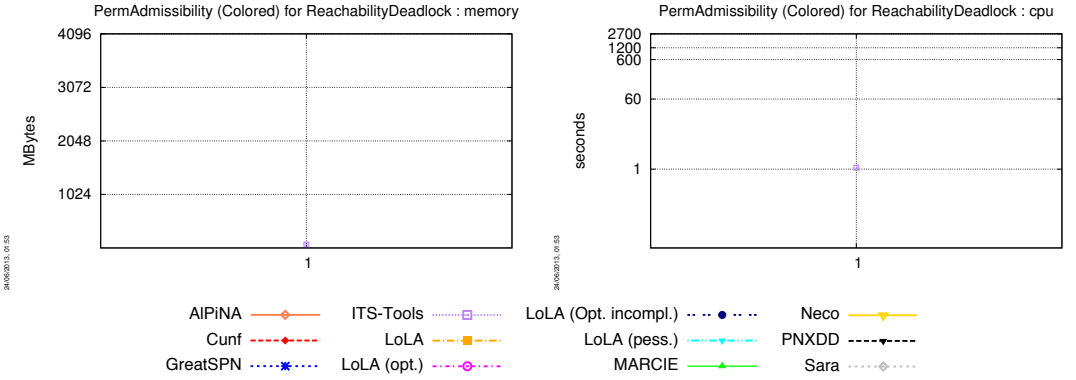
NeoElection (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



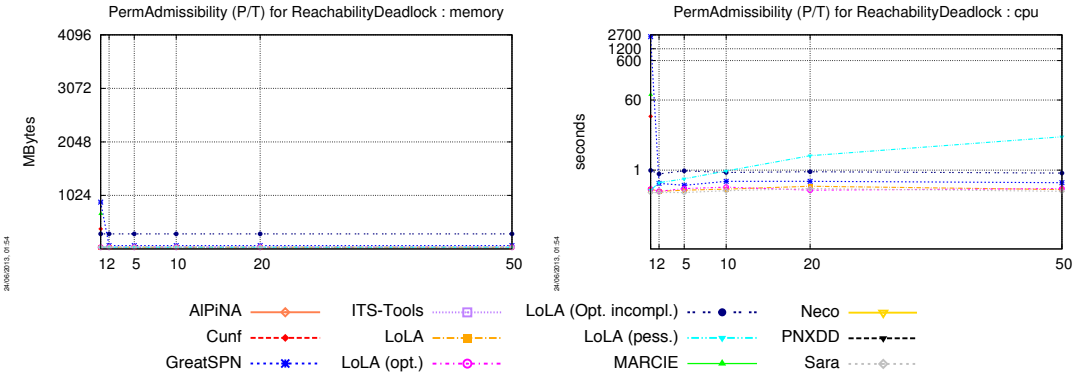
NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



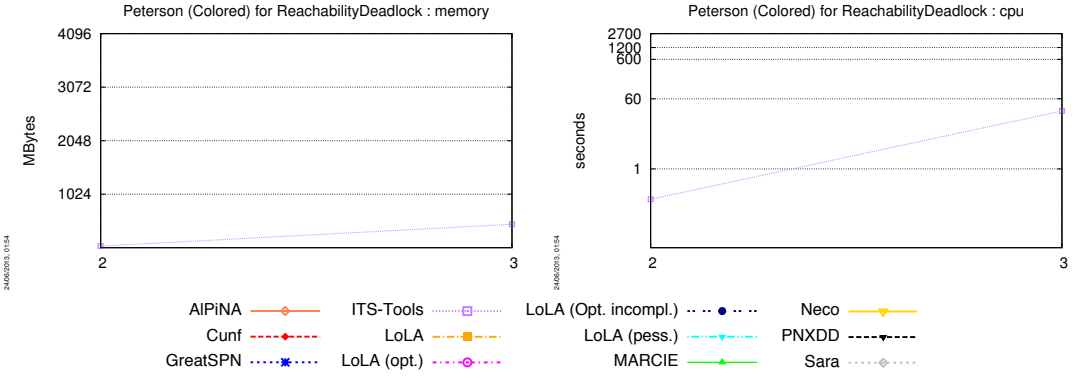
PermAdmissibility (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



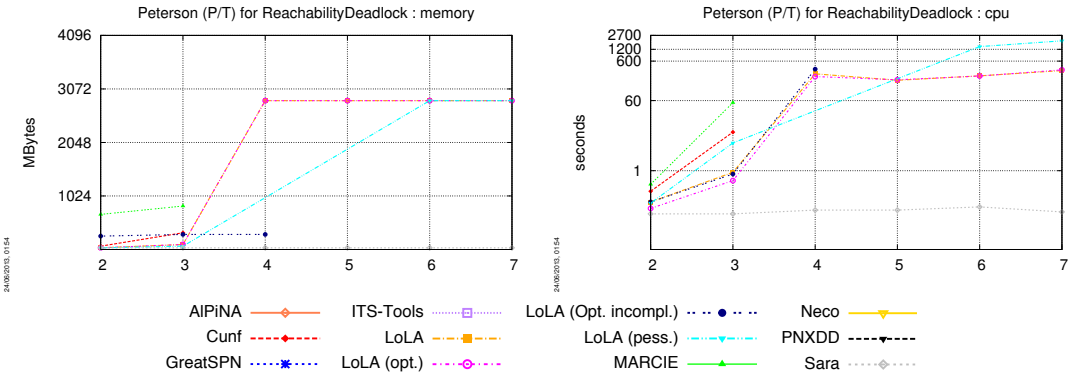
PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Peterson (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

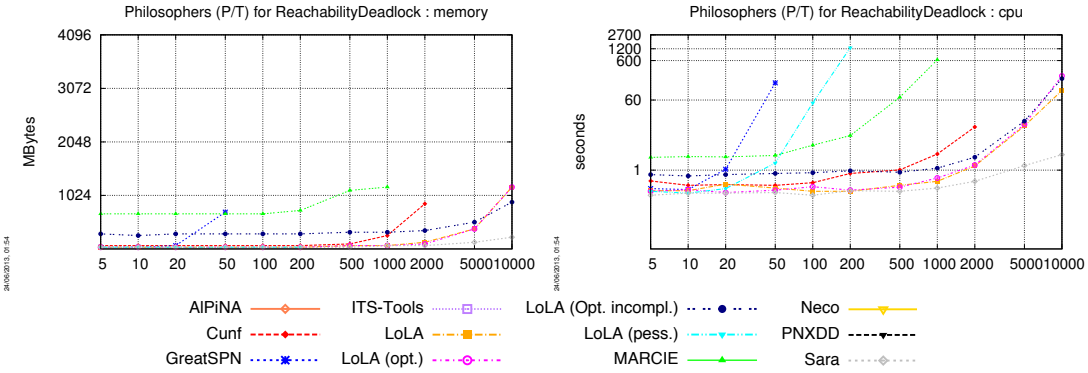


Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



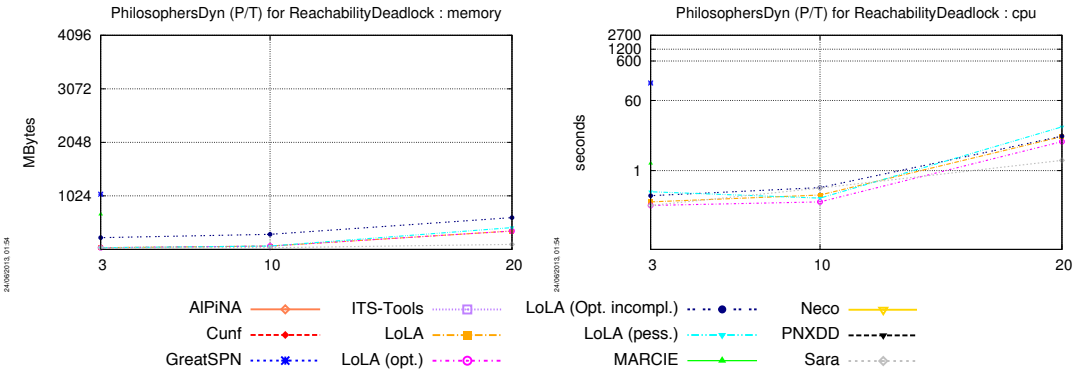
Philosophers (colored) No instance of this model could be computed for the **ReachabilityDeadlock** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



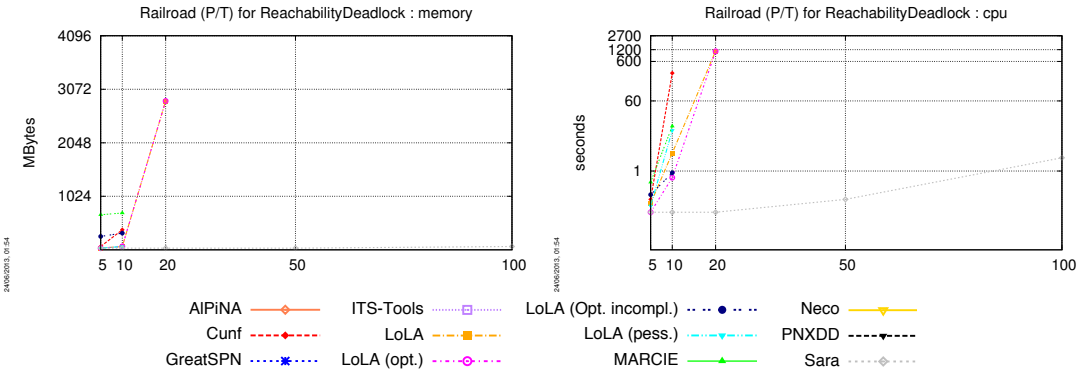
PhilosophersDyn (colored) No instance of this model could be computed for the **ReachabilityDeadlock** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

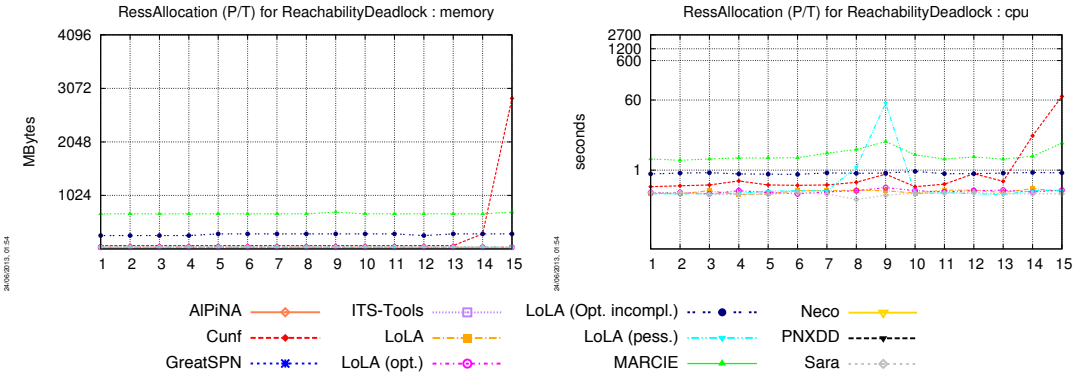


Planning (P/T) No instance of this model could be computed for the **ReachabilityDeadlock** examination.

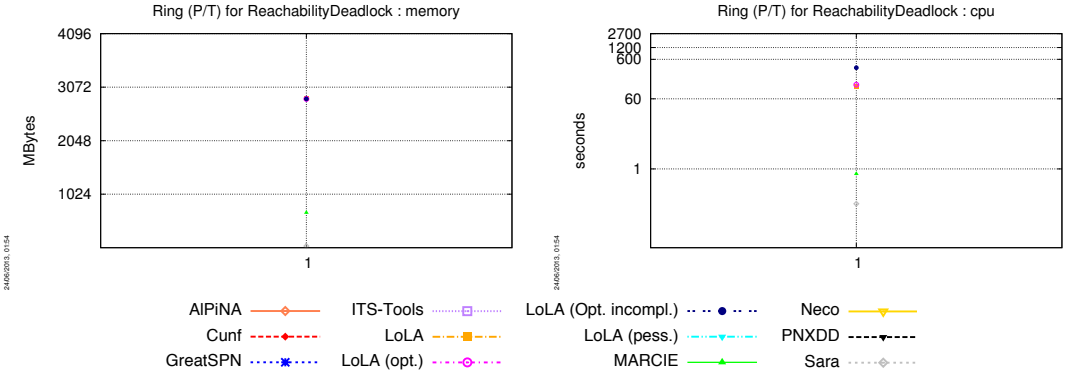
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



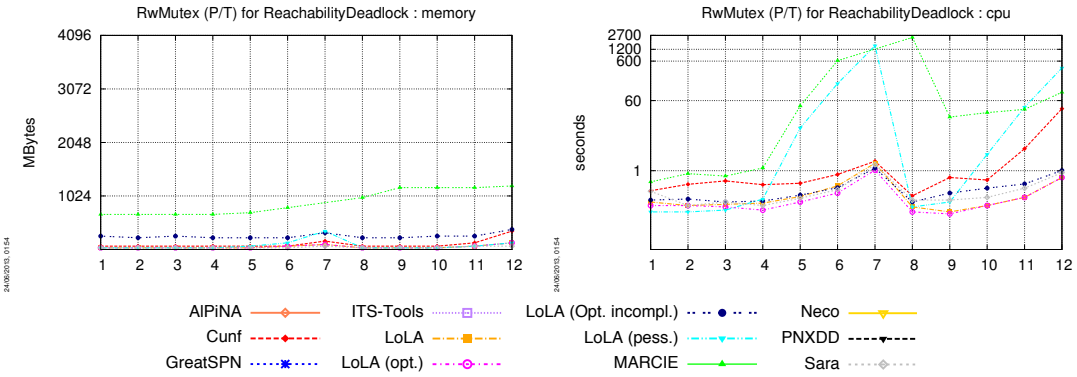
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

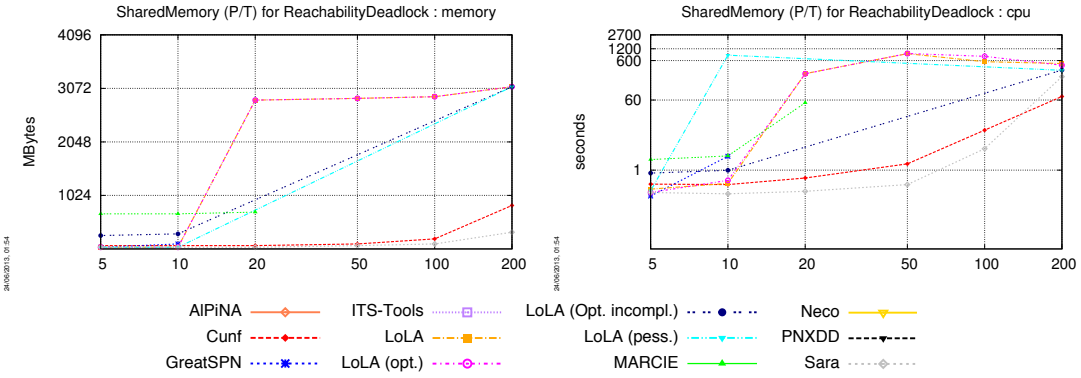


RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

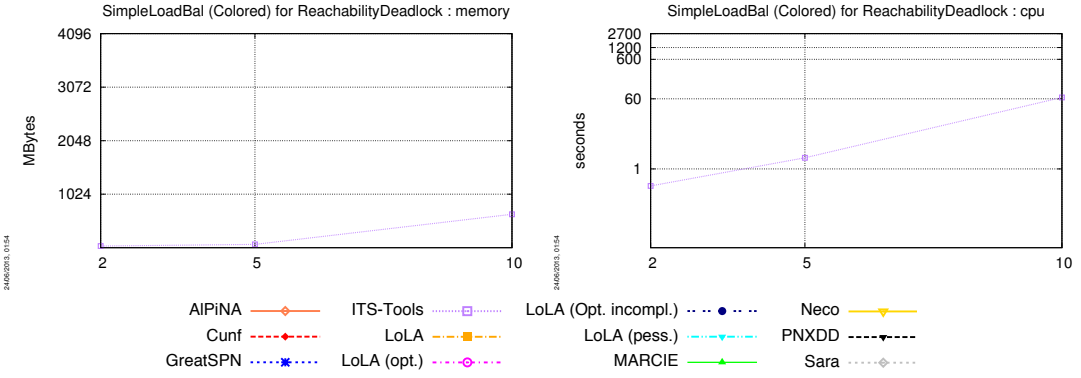


SharedMemory (colored) No instance of this model could be computed for the **ReachabilityDeadlock** examination.

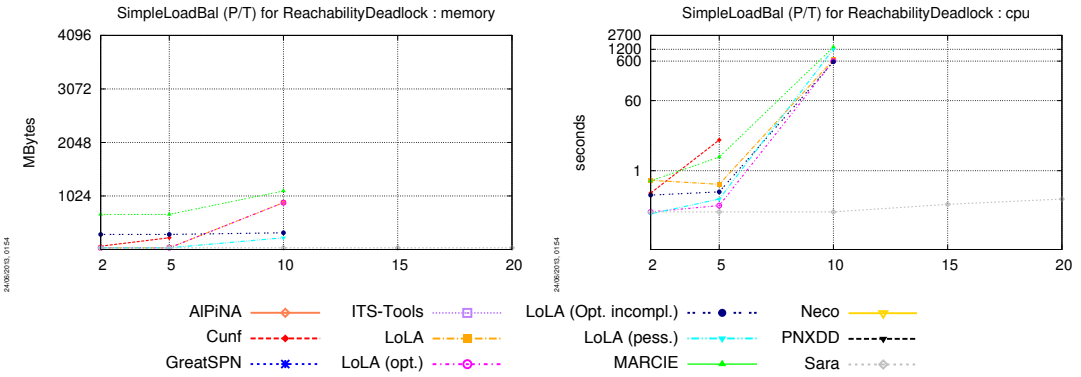
SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



SimpleLoadBal (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

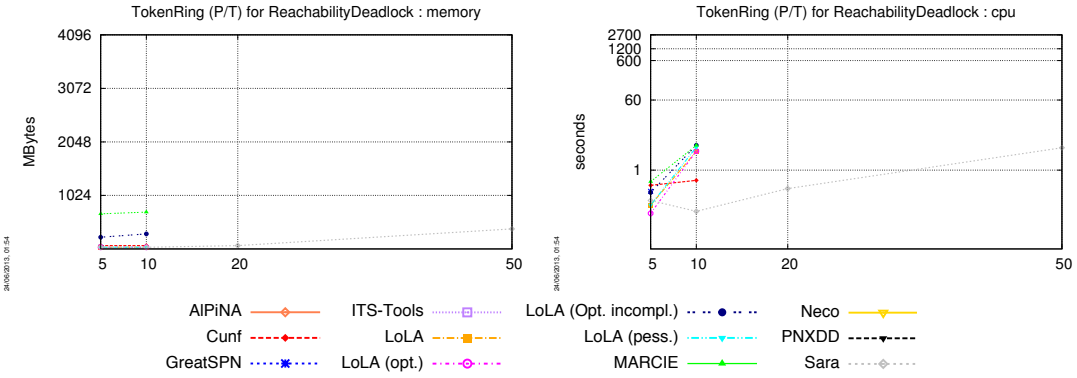


SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

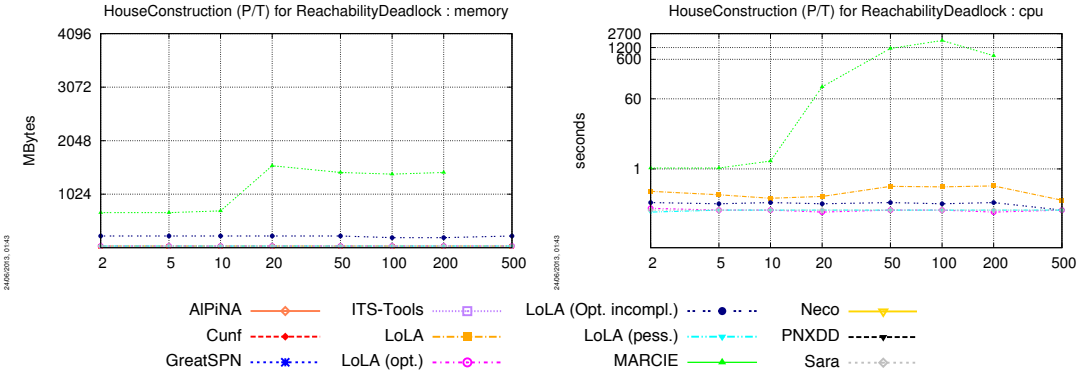


TokenRing (colored) No instance of this model could be computed for the **ReachabilityDeadlock** examination.

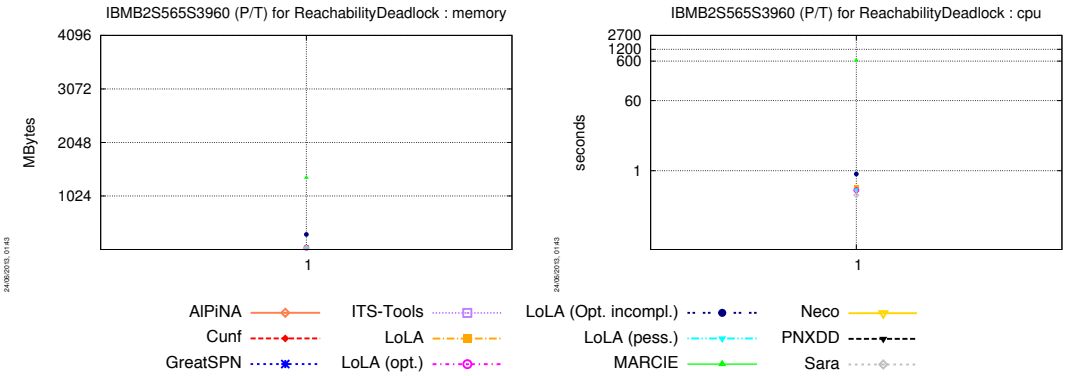
TokenRing (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

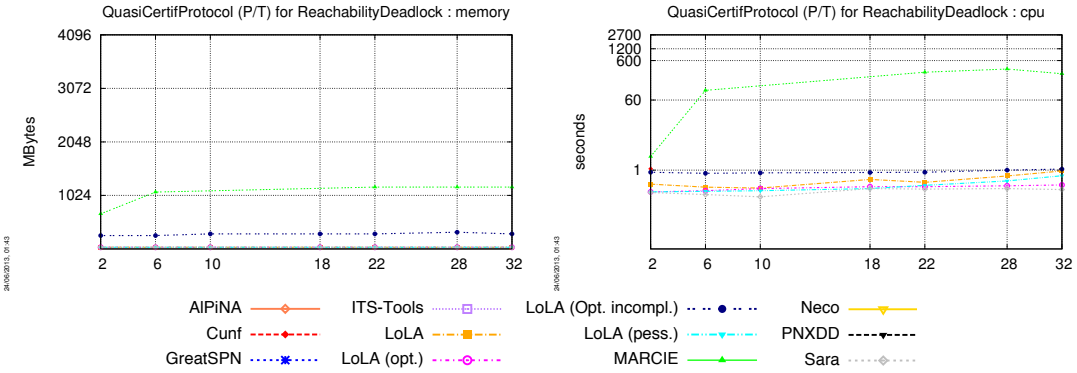


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

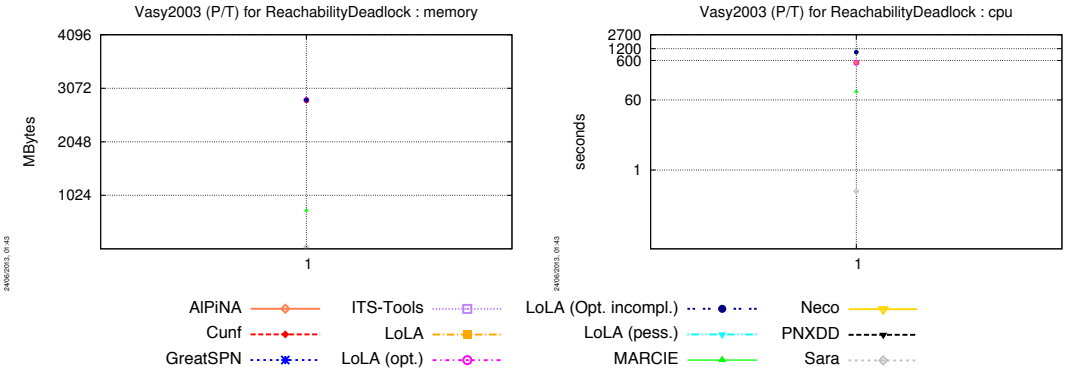


QuasiCertifProtocol (colored) No instance of this model could be computed for the **Reachability-Deadlock** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



8.2 Outputs for the ReachabilityDeadlock Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

	CSRepetitions (colored)								
Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	F	nc	nc	nc	nc	nc	nc
03	nc	nc	F	nc	nc	nc	nc	nc	nc
04	nc	nc	mp	nc	nc	nc	nc	nc	nc
05	nc	nc	mp	nc	nc	nc	nc	nc	nc
07	nc	nc	mp	nc	nc	nc	nc	nc	nc
10	nc	nc	mp	nc	nc	nc	nc	nc	nc

CSRepetitions (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	FF	FF	nc	FF	FF	FF	FF	FT	F-
03	F?	FF	nc	FF	FF	FF	FF	FT	F-
04	to	FF	nc	FF	FF	FF	FF	to	F-
05	to	to	nc	FF	FF	FF	FF	to	F-
07	to	mp	nc	FF	FF	FF	FF	to	F-
10	to	mp	nc	FF	FF	FF	FF	to	F-

Dekker (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	FT	nc	nc	FT	FT	F-	FT	FT	F-
015	FT	nc	nc	FT	FT	F-	FT	FT	F-
020	FT	nc	nc	FT	FT	F-	to	FT	F-
050	FT	nc	nc	to	to	to	to	to	F-
100	FT	nc	nc	to	to	to	to	to	F-
200	nc	nc	nc	to	nc	to	to	to	F-

DotAndBoxes (colored)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	F	nc	nc	nc	nc	nc	nc
3	nc	nc	F	nc	nc	nc	nc	nc	nc
4	nc	nc	F	nc	nc	nc	nc	nc	nc
5	nc	nc	mp	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (colored)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	F	nc	nc	nc	nc	nc	nc
10	nc	nc	F	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	FT	nc	nc	FT	FT	F-	FT	FT	F-
10	nc	nc	nc	F-	F-	F-	F-	FT	F-

Echo (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
d02r09	nc	nc	nc	FF	FF	FF	FF	to	F-
d02r11	nc	nc	nc	FF	FF	FF	FF	to	F-
d02r15	nc	nc	nc	FF	FF	FF	FF	to	F-
d02r19	nc	nc	nc	FF	FF	FF	FF	to	F-
d03r03	nc	nc	nc	FF	FF	FF	FF	to	F-
d03r05	nc	nc	nc	FF	FF	FF	FF	to	F-
d03r07	nc	nc	nc	FF	FF	FF	FF	to	F-
d04r03	nc	nc	nc	FF	FF	FF	FF	to	F-
d05r03	nc	nc	nc	FF	FF	FF	FF	to	F-

Eratosthenes (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	FF	nc	nc	FF	FF	FF	FF	FT	F-
020	FF	nc	nc	FF	FF	FF	FF	FT	F-
050	FF	nc	nc	FF	FF	FF	FF	FT	F-
100	FF	nc	nc	FF	FF	FF	FF	FT	F-
200	FF	nc	nc	FF	FF	FF	FF	FT	F-
500	nc	nc	nc	FF	FF	FF	to	FT	F-

FMS (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	nc	FT	nc	FT	FT	F-	FT	FT	F-
005	nc	FT	nc	FT	FT	F-	FT	FT	F-
010	nc	FT	nc	FT	FT	F-	FT	FT	F-
020	nc	FT	nc	FT	FT	F-	FT	FT	F-
050	nc	FT	nc	FT	FT	F-	FT	FT	F-
100	nc	FT	nc	FT	FT	F-	FT	FT	F-
200	nc	to	nc	FT	FT	F-	FT	to	F-
500	nc	to	nc	FT	FT	F-	FT	to	F-

GlobalRessAlloc (colored)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	F	nc	nc	nc	nc	nc	nc
05	nc	nc	F	nc	nc	nc	nc	nc	nc
06	nc	nc	F	nc	nc	nc	nc	nc	nc
07	nc	nc	mp	nc	nc	nc	nc	nc	nc
09	nc	nc	mp	nc	nc	nc	nc	nc	nc
10	nc	nc	mp	nc	nc	nc	nc	nc	nc
11	nc	nc	mp	nc	nc	nc	nc	nc	nc

GlobalRessAlloc (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	F?	FT	nc	FT	FT	F-	FT	FT	F-
05	nc	cc	nc	to	to	to	F-	to	F-

Kanban (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
0005	nc	FT	nc	FT	FT	F-	FT	FT	F-
0010	nc	FT	nc	FT	FT	F-	FT	FT	F-
0020	nc	FT	nc	FT	FT	F-	FT	FT	F-
0050	nc	FT	nc	FT	FT	F-	FT	FT	F-
0100	nc	FT	nc	F-	F-	F-	FT	FT	F-
0200	nc	T	nc	F-	F-	F-	FT	to	F-
0500	nc	T	nc	F-	F-	F-	FT	to	F-
1000	nc	to	nc	F-	F-	F-	FT	to	F-

LamportFastMutEx (colored)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	F	nc	nc	nc	nc	nc	nc
3	nc	nc	F	nc	nc	nc	nc	nc	nc
4	nc	nc	F	nc	nc	nc	nc	nc	nc
5	nc	nc	F	nc	nc	nc	nc	nc	nc
6	nc	nc	mp	nc	nc	nc	nc	nc	nc
7	nc	nc	mp	nc	nc	nc	nc	nc	nc
8	nc	nc	mp	nc	nc	nc	nc	nc	nc

LamportFastMutEx (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	FT	nc	nc	FT	FT	F-	FT	FT	F-
3	FT	nc	nc	FT	FT	F-	FT	FT	F-
4	F?	nc	nc	FT	FT	F-	FT	FT	F-
5	to	nc	nc	F-	F-	to	FT	to	F-
6	to	nc	nc	F-	F-	to	to	to	F-
7	to	nc	nc	F-	F-	to	to	to	F-
8	to	nc	nc	to	to	to	to	to	F-

MAPK (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
008	nc	FT	nc	FT	FT	F-	FT	FT	F-
020	nc	FT	nc	F-	F-	F-	FT	FT	F-
040	nc	FT	nc	F-	F-	F-	FT	FT	F-
080	nc	to	nc	F-	F-	F-	to	FT	F-
160	nc	to	nc	F-	F-	F-	to	to	F-
320	nc	to	nc	F-	F-	F-	to	to	F-

NeoElection (colored)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	F	nc	nc	nc	nc	nc	nc
3	nc	nc	F	nc	nc	nc	nc	nc	nc
4	nc	nc	F	nc	nc	nc	nc	nc	nc
5	nc	nc	mp	nc	nc	nc	nc	nc	nc
6	nc	nc	mp	nc	nc	nc	nc	nc	nc
7	nc	nc	mp	nc	nc	nc	nc	nc	nc
8	nc	nc	mp	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	FF	nc	nc	FF	FF	FF	FF	FT	F-

3	FF	nc	nc	FF	FF	FF	FF	FT	F-
4	nc	nc	nc	FF	FF	FF	FF	to	F-
5	nc	nc	nc	FF	FF	FF	FF	to	F-
6	nc	nc	nc	FF	FF	FF	FF	to	F-
7	nc	nc	nc	FF	FF	FF	FF	to	F-
8	nc	nc	nc	FF	FF	FF	FF	to	F-

PermAdmissibility (colored)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	nc	nc	F	nc	nc	nc	nc	nc	nc
02	nc	nc	mp	nc	nc	nc	nc	nc	nc
05	nc	nc	mp	nc	nc	nc	nc	nc	nc
10	nc	nc	mp	nc	nc	nc	nc	nc	nc
20	nc	nc	mp	nc	nc	nc	nc	nc	nc
50	nc	nc	mp	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	FF	FF	nc	FF	FF	FF	FF	FT	F-
02	nc	TF	nc	FF	FF	FF	FF	to	F-
05	nc	TF	nc	FF	FF	FF	FF	to	F-
10	nc	TF	nc	FF	FF	FF	FF	to	F-
20	nc	TF	nc	FF	FF	FF	FF	to	F-
50	nc	TF	nc	FF	FF	FF	FF	to	F-

Peterson (colored)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	F	nc	nc	nc	nc	nc	nc
3	nc	nc	F	nc	nc	nc	nc	nc	nc
4	nc	nc	mp	nc	nc	nc	nc	nc	nc
5	nc	nc	mp	nc	nc	nc	nc	nc	nc
6	nc	nc	mp	nc	nc	nc	nc	nc	nc
7	nc	nc	mp	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	FT	nc	nc	FT	FT	F-	FT	FT	F-
3	FT	nc	nc	FT	FT	F-	FT	FT	F-
4	nc	nc	nc	F-	F-	F-	to	to	F-
5	to	nc	nc	F-	F-	to	to	to	F-
6	to	nc	nc	F-	F-	to	F-	to	F-
7	to	nc	nc	F-	F-	to	F-	to	F-

Philosophers (colored)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc	nc	nc

Philosophers (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FF	FF	nf	FF	FF	FF	FF	FT	F-
000010	FF	FF	nf	FF	FF	FF	FF	FT	F-
000020	FF	FF	nf	FF	FF	FF	FF	FT	F-
000050	FF	FF	nf	FF	FF	FF	FF	FT	F-
000100	FF	to	nf	FF	FF	FF	FF	FT	F-

000200	FF	to	nf	FF	FF	FF	FF	FT	F-
000500	FF	to	nf	FF	FF	FF	to	FT	F-
001000	FF	mp	nf	FF	FF	FF	to	FT	F-
002000	FF	mp	nf	FF	FF	FF	to	to	F-
005000	nc	mp	nf	FF	FF	FF	to	to	F-
010000	nc	cc	nf	FF	FF	FF	to	to	F-

PhilosophersDyn (colored)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc	nc	nc	nc

PhilosophersDyn (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	to	FF	nc	FF	FF	FF	FF	FT	F-
10	nc	mp	nc	FF	FF	FF	FF	to	F-
20	to	mp	nc	FF	FF	FF	FF	to	F-

Planning (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
nf	nf	nf	nf	nf	nf	nf	nf	nf	

Railroad (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	FT	nc	nc	FT	FT	F-	FT	FT	F-
010	FT	nc	nc	FT	FT	F-	FT	FT	F-
020	to	nc	nc	F-	F-	to	to	to	F-
050	to	nc	nc	to	to	to	to	to	F-
100	nc	nc	nc	to	to	to	to	to	F-

RessAllocation (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
R002C002	FF	nc	nc	FF	FF	FF	FF	FT	F-
R003C002	FF	nc	nc	FF	FF	FF	FF	FT	F-
R003C003	FF	nc	nc	FF	FF	FF	FF	FT	F-
R003C005	FF	nc	nc	FF	FF	FF	FF	FT	F-
R003C010	FF	nc	nc	FF	FF	FF	FF	FT	F-
R003C015	FF	nc	nc	FF	FF	FF	FF	FT	F-
R003C020	FF	nc	nc	FF	FF	FF	FF	FT	F-
R003C050	FF	nc	nc	FF	FF	FF	FF	FT	F-
R003C100	FF	nc	nc	FF	FF	FF	FF	FT	F-
R005C002	FF	nc	nc	FF	FF	FF	FF	FT	F-
R010C002	FF	nc	nc	FF	FF	FF	FF	FT	F-
R015C002	FF	nc	nc	FF	FF	FF	FF	FT	F-
R020C002	FF	nc	nc	FF	FF	FF	FF	FT	F-
R050C002	FF	nc	nc	FF	FF	FF	FF	FT	F-
R100C002	F?	nc	nc	FF	FF	FF	FF	FT	F-

Ring (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nc	nc	nc	F-	F-	F-	to	FT	F-

RwMutex (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
r0010w0010	FT	nc	nc	FT	FT	F-	FT	FT	F-
r0010w0020	FT	nc	nc	FT	FT	F-	FT	FT	F-
r0010w0050	FT	nc	nc	FT	FT	F-	FT	FT	F-
r0010w0100	FT	nc	nc	FT	FT	F-	FT	FT	F-
r0010w0500	FT	nc	nc	FT	FT	F-	FT	FT	F-
r0010w1000	FT	nc	nc	FT	FT	F-	FT	FT	F-
r0010w2000	FT	nc	nc	FT	FT	F-	FT	to	F-
r0020w0010	FT	nc	nc	FT	FT	F-	FT	FT	F-
r0100w0010	FT	nc	nc	FT	FT	F-	FT	cc	F-
r0500w0010	FT	nc	nc	FT	FT	F-	FT	cc	F-

r1000w0010	FT	nc	nc	FT	FT	F-	FT	cc	F-
r2000w0010	FT	nc	nc	FT	FT	F-	FT	cc	F-

SharedMemory (colored)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc	nc	nc

SharedMemory (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FT	FT	nc	FT	FT	F-	FT	FT	F-
000010	FT	FT	nc	FT	FT	F-	FT	FT	F-
000020	FT	mp	nc	F-	F-	to	to	FT	F-
000050	FT	mp	nc	F-	F-	to	to	to	F-
000100	FT	mp	nc	F-	F-	to	to	to	F-
000200	FT	cc	nc	F-	F-	F-	F-	to	F-

SimpleLoadBal (colored)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	F	nc	nc	nc	nc	nc	nc
05	nc	nc	F	nc	nc	nc	nc	nc	nc
10	nc	nc	F	nc	nc	nc	nc	nc	nc
15	nc	nc	mp	nc	nc	nc	nc	nc	nc
20	nc	nc	mp	nc	nc	nc	nc	nc	nc

SimpleLoadBal (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	FT	nc	nc	FT	FT	F-	FT	FT	F-
05	FT	nc	nc	FT	FT	F-	FT	FT	F-
10	to	nc	nc	FT	FT	F-	FT	FT	F-
15	to	nc	nc	to	to	to	to	to	F-
20	to	nc	nc	to	to	to	to	to	F-

TokenRing (colored)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	nc	nc	nc	nc	nc	nc	nc	nc
010	nc	nc	nc	nc	nc	nc	nc	nc	nc
020	nc	nc	nc	nc	nc	nc	nc	nc	nc
050	nc	nc	nc	nc	nc	nc	nc	nc	nc
100	nc	nc	nc	nc	nc	nc	nc	nc	nc
200	nc	nc	nc	nc	nc	nc	nc	nc	nc
500	nc	nc	nc	nc	nc	nc	nc	nc	nc

TokenRing (P/T)

Instances	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	FT	FT	nc	FT	FT	F-	FT	FT	F-
010	FT	to	nc	FT	FT	F-	FT	FT	F-
020	nc	mp	nc	to	to	to	to	to	F-
050	nc	cc	nc	to	to	to	to	to	F-

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)

instances	Cunf	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

002	nc	FF	FF	FF	FF	FT	F-
005	nc	FF	FF	FF	FF	FT	F-
010	nc	FF	FF	FF	FF	FT	F-
020	nc	FF	FF	FF	FF	FT	F-
050	nc	FF	FF	FF	FF	cc	F-
100	nc	FF	FF	FF	FF	cc	F-
200	nc	FF	FF	FF	FF	cc	F-
500	nc	FF	FF	FF	FF	to	F-
IBMB2S565S3960 (P/T)							
instances	Cunf	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nc	FF	FF	FF	FF	FT	F-
QuasiCertifProtocol (colored)							
instances	Cunf	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)							
instances	Cunf	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	cc	FF	FF	FF	FF	FT	F-
06	nc	FF	FF	FF	FF	FT	F-
10	nc	FF	FF	FF	FF	to	F-
18	nc	FF	FF	FF	FF	to	F-
22	nc	FF	FF	FF	FF	cc	F-
28	nc	FF	FF	FF	FF	cc	F-
32	nc	FF	FF	FF	FF	cc	F-
Vasy2003 (P/T)							
instances	Cunf	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nc	F-	F-	F-	to	FT	F-

8.3 Score for the ReachabilityDeadlock Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination									
	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**98**	**48**	**52**	**216**	**216**	**202**	**185**	**116**	**251**
CSRepetitions (Colored)									
	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	0	0	0	0	0	0
instances	0	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0	0
subtotal	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Marcie	Sara
CSRepetitions (P/T)													
1st instance	1	1	0	1	1	1		1		1		1	1
instances	2	3	0	6	6	6		6		2		6	
max reached	0	0	0	2	2	2		2		0		2	
best	0	0	0	2	2	2		2		0		2	
subtotal	**3**	**4**	**0**	**11**	**11**	**11**		**11**		**3**		**11**	
Dekker (P/T)													
1st instance	1	0	0	1	1	1		1		1		1	1
instances	5	0	0	3	3	3		2		3		6	
max reached	0	0	0	0	0	0		0		0		2	
best	0	0	0	0	0	0		0		0		2	
subtotal	**6**	**0**	**0**	**4**	**4**	**4**		**3**		**4**		**11**	
DotAndBoxes (Colored)													
1st instance	0	0	1	0	0	0		0		0		0	0
instances	0	0	3	0	0	0		0		0		0	
max reached	0	0	0	0	0	0		0		0		0	
best	0	0	2	0	0	0		0		0		0	
subtotal	**0**	**0**	**6**	**0**	**0**	**0**		**0**		**0**		**0**	
DrinkVendingMachine (Colored)													
1st instance	0	0	1	0	0	0		0		0		0	0
instances	0	0	2	0	0	0		0		0		0	
max reached	0	0	2	0	0	0		0		0		0	
best	0	0	2	0	0	0		0		0		0	
subtotal	**0**	**0**	**7**	**0**	**0**	**0**		**0**		**0**		**0**	
DrinkVendingMachine (P/T)													
1st instance	1	0	0	1	1	1		1		1		1	1
instances	1	0	0	2	2	2		2		2		2	
max reached	0	0	0	2	2	2		2		2		2	
best	0	0	0	2	2	2		2		2		2	
subtotal	**2**	**0**	**0**	**7**	**7**	**7**		**7**		**7**		**7**	
Echo (P/T)													
1st instance	0	0	0	1	1	1		1		0		1	
instances	0	0	0	9	9	9		9		0		9	
max reached	0	0	0	2	2	2		2		0		2	
best	0	0	0	2	2	2		2		0		2	
subtotal	**0**	**0**	**0**	**14**	**14**	**14**		**14**		**0**		**14**	
Eratosthenes (P/T)													
1st instance	1	0	0	1	1	1		1		1		1	1
instances	5	0	0	6	6	6		5		6		6	
max reached	0	0	0	2	2	2		0		2		2	
best	0	0	0	2	2	2		0		2		2	
subtotal	**6**	**0**	**0**	**11**	**11**	**11**		**6**		**11**		**11**	
FMS (P/T)													
1st instance	0	1	0	1	1	1		1		1		1	1
instances	0	6	0	8	8	8		8		6		8	
max reached	0	0	0	2	2	2		2		0		2	
best	0	0	0	2	2	2		2		0		2	
subtotal	**0**	**7**	**0**	**13**	**13**	**13**		**13**		**7**		**13**	
GlobalRessAlloc (Colored)													
1st instance	0	0	1	0	0	0		0		0		0	0
instances	0	0	3	0	0	0		0		0		0	

max reached	0	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0	0
subtotal	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**

GlobalRessAlloc (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	0	1	1	1	1	1	1
instances	1	1	0	1	1	1	2	1	2
max reached	0	0	0	0	0	0	2	0	2
best	0	0	0	0	0	0	2	0	2
subtotal	**2**	**2**	**0**	**2**	**2**	**2**	**7**	**2**	**7**

Kanban (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	1	1	1	1	1	1
instances	0	7	0	8	8	8	8	5	8
max reached	0	0	0	2	2	2	2	0	2
best	0	0	0	2	2	2	2	0	2
subtotal	**0**	**8**	**0**	**13**	**13**	**13**	**13**	**6**	**13**

LamportFastMutEx (Colored)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	0	0	0	0	0	0
instances	0	0	4	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0	0
subtotal	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**

LamportFastMutEx (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	0	1	1	1	1	1	1
instances	3	0	0	6	6	3	4	3	7
max reached	0	0	0	0	0	0	0	0	2
best	0	0	0	0	0	0	0	0	2
subtotal	**4**	**0**	**0**	**7**	**7**	**4**	**5**	**4**	**12**

MAPK (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	1	1	1	1	1	1
instances	0	3	0	6	6	6	3	4	6
max reached	0	0	0	2	2	2	0	0	2
best	0	0	0	2	2	2	0	0	2
subtotal	**0**	**4**	**0**	**11**	**11**	**11**	**4**	**5**	**11**

NeoElection (Colored)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	0	0	0	0	0	0
instances	0	0	3	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0	0
subtotal	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	0	1	1	1	1	1	1
instances	2	0	0	7	7	7	7	2	7
max reached	0	0	0	2	2	2	2	0	2
best	0	0	0	2	2	2	2	0	2
subtotal	**3**	**0**	**0**	**12**	**12**	**12**	**12**	**3**	**12**

PermAdmissibility (Colored)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	0	0	0	0	0	0
instances	0	0	1	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0	0
subtotal	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**

PermAdmissibility (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	0	1	1	1	1	1	1
instances	1	6	0	6	6	6	6	1	6
max reached	0	2	0	2	2	2	2	0	2
best	0	2	0	2	2	2	2	0	2
subtotal	**2**	**11**	**0**	**11**	**11**	**11**	**11**	**2**	**11**

Peterson (Colored)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	0	0	0	0	0	0
instances	0	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0	0
subtotal	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	0	1	1	1	1	1	1
instances	2	0	0	6	6	3	4	2	6
max reached	0	0	0	2	2	0	2	0	2
best	0	0	0	2	2	0	2	0	2
subtotal	**3**	**0**	**0**	**11**	**11**	**4**	**9**	**3**	**11**

Philosophers (Colored)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Philosophers (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	0	1	1	1	1	1	1
instances	9	4	0	11	11	11	6	8	11
max reached	0	0	0	2	2	2	0	0	2
best	0	0	0	2	2	2	0	0	2
subtotal	**10**	**5**	**0**	**16**	**16**	**16**	**7**	**9**	**16**

PhilosophersDyn (Colored)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PhilosophersDyn (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	1	1	1	1	1	1
instances	0	1	0	3	3	3	3	1	3
max reached	0	0	0	2	2	2	2	0	2
best	0	0	0	2	2	2	2	0	2
subtotal	**0**	**2**	**0**	**8**	**8**	**8**	**8**	**2**	**8**

Planning (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Railroad (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	0	1	1	1	1	1	1
instances	2	0	0	3	3	2	2	2	5
max reached	0	0	0	0	0	0	0	0	2

best	0	0	0	0	0	0	0	0	2
subtotal	**3**	**0**	**0**	**4**	**4**	**3**	**3**	**3**	**10**

RessAllocation (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	0	1	1	1	1	1	1
instances	15	0	0	15	15	15	15	15	15
max reached	2	0	0	2	2	2	2	2	2
best	2	0	0	2	2	2	2	2	2
subtotal	**20**	**0**	**0**	**20**	**20**	**20**	**20**	**20**	**20**

Ring (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	1	1	1	0	1	1
instances	0	0	0	1	1	1	0	1	1
max reached	0	0	0	2	2	2	0	2	2
best	0	0	0	2	2	2	0	2	2
subtotal	**0**	**0**	**0**	**6**	**6**	**6**	**0**	**6**	**6**

RwMutex (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	0	1	1	1	1	1	1
instances	12	0	0	12	12	12	12	7	12
max reached	2	0	0	2	2	2	2	0	2
best	2	0	0	2	2	2	2	0	2
subtotal	**17**	**0**	**0**	**17**	**17**	**17**	**17**	**8**	**17**

SharedMemory (Colored)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

SharedMemory (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	0	1	1	1	1	1	1
instances	6	2	0	6	6	3	3	3	6
max reached	2	0	0	2	2	2	2	0	2
best	2	0	0	2	2	2	2	0	2
subtotal	**11**	**3**	**0**	**11**	**11**	**8**	**8**	**4**	**11**

SimpleLoadBal (Colored)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	0	0	0	0	0	0
instances	0	0	3	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0	0
subtotal	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**

SimpleLoadBal (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	0	1	1	1	1	1	1
instances	2	0	0	3	3	3	3	3	5
max reached	0	0	0	0	0	0	0	0	2
best	0	0	0	0	0	0	0	0	2
subtotal	**3**	**0**	**0**	**4**	**4**	**4**	**4**	**4**	**10**

TokenRing (Colored)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TokenRing (P/T)

	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

1st instance	1	1	0	1	1	1	1	1	1
instances	2	1	0	2	2	2	2	2	4
max reached	0	0	0	0	0	0	0	0	2
best	0	0	0	0	0	0	0	0	2
subtotal	**3**	**2**	**0**	**3**	**3**	**3**	**3**	**3**	**9**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination							
	Cunf	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**0**	**37**	**37**	**37**	**31**	**20**	**37**
HouseConstruction (P/T)							
	Cunf	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	8	8	8	8	4	8
max reached	0	2	2	2	2	0	2
best	0	2	2	2	2	0	2
subtotal	**0**	**13**	**13**	**13**	**13**	**5**	**13**
IBMB2S565S3960 (P/T)							
	Cunf	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	1	1	1	1	1	1
max reached	0	2	2	2	2	2	2
best	0	2	2	2	2	2	2
subtotal	**0**	**6**	**6**	**6**	**6**	**6**	**6**
QuasiCertifProtocol (Colored)							
	Cunf	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)							
	Cunf	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	7	7	7	7	2	7
max reached	0	2	2	2	2	0	2
best	0	2	2	2	2	0	2
subtotal	**0**	**12**	**12**	**12**	**12**	**3**	**12**
Vasy2003 (P/T)							
	Cunf	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	0	1	1
instances	0	1	1	1	0	1	1
max reached	0	2	2	2	0	2	2
best	0	2	2	2	0	2	2
subtotal	**0**	**6**	**6**	**6**	**0**	**6**	**6**

8.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models

1	2	2
Sara 251 points	LoLA 216 points	LoLa opt 216 points

For "Surprise" Models

1	1	1	1
Sara 37 points	LoLA 37 points	LoLa opt 37 points	LoLa opt inc 37 points

Global

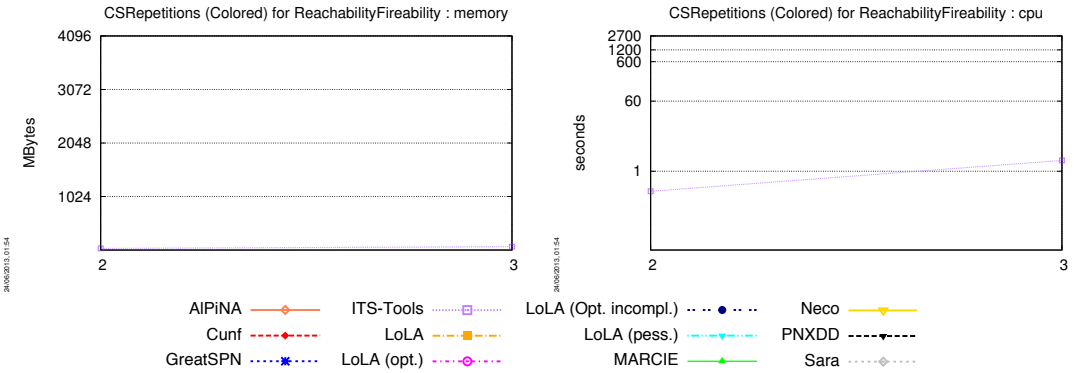
1	1	1
Sara 325 points	LoLA 290 points	LoLa opt 290 points

9 The ReachabilityFireability Examination

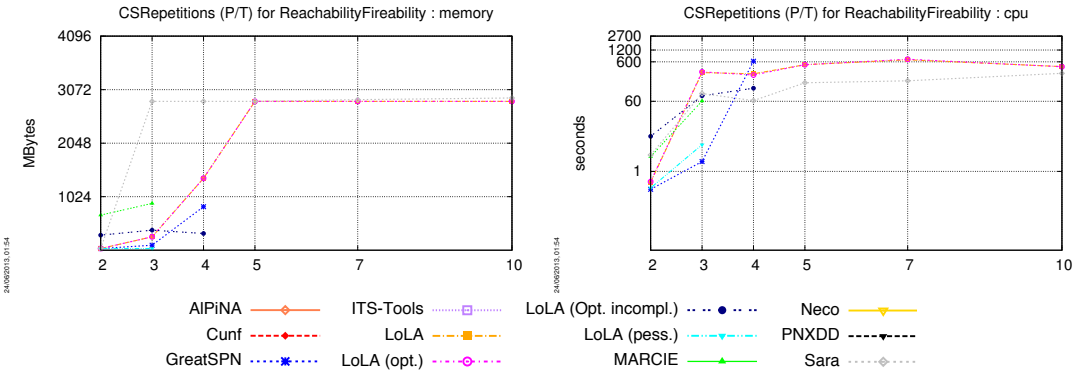
This examination deals with reachability properties dealing with transition fireability only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

9.1 Handling of Models by Tools

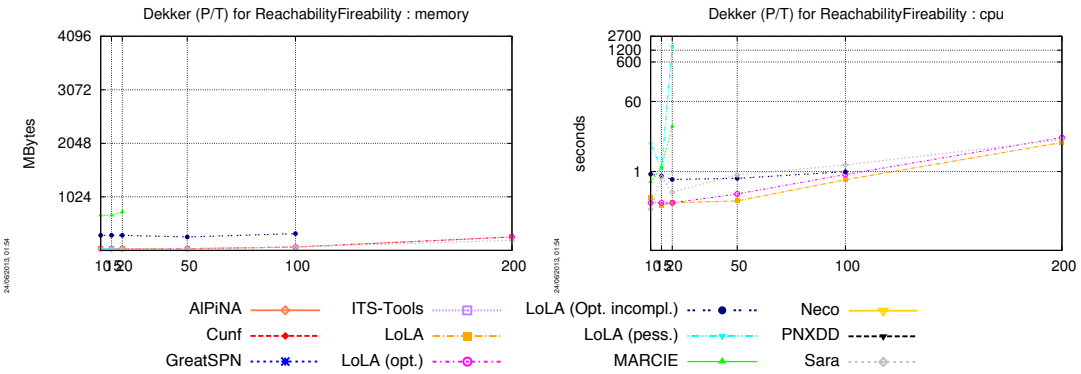
CSRepetitions (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



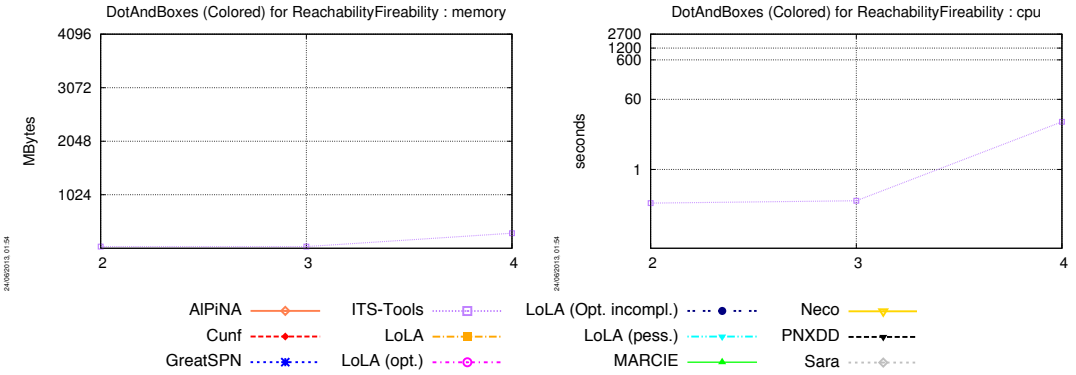
CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



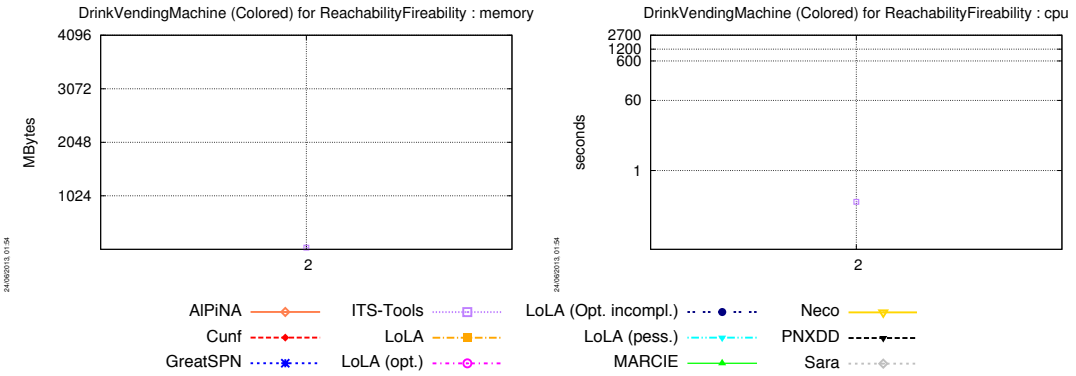
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



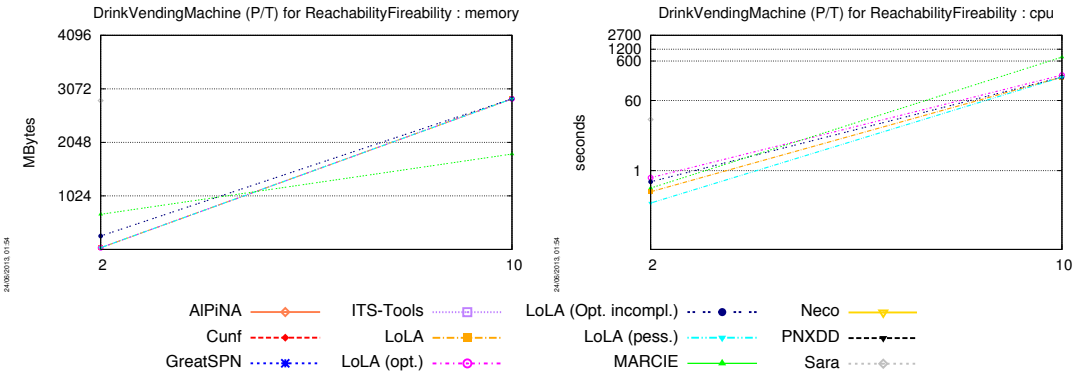
DotAndBoxes (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



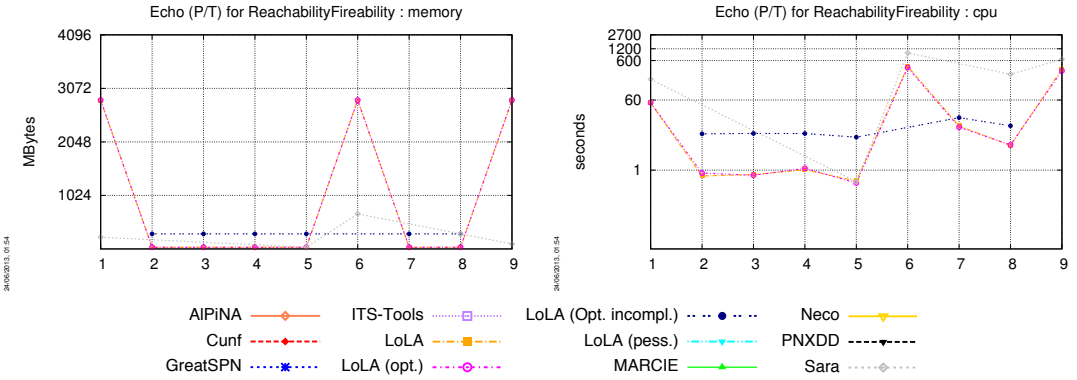
DrinkVendingMachine (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



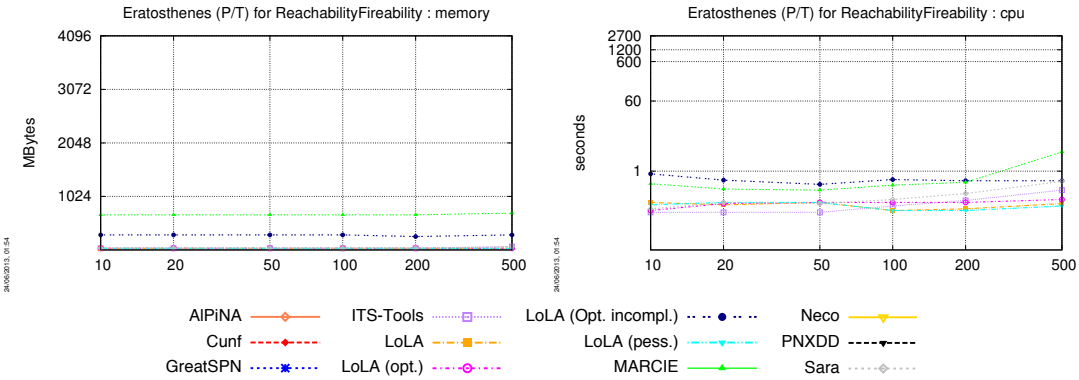
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



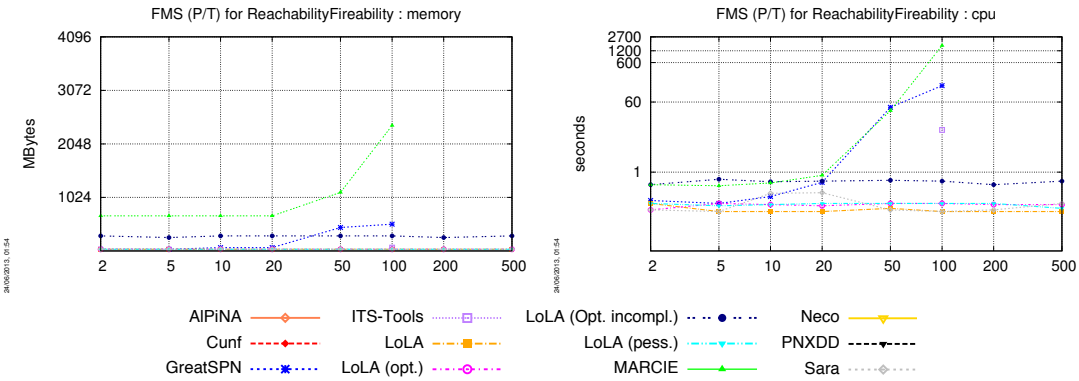
Echo (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



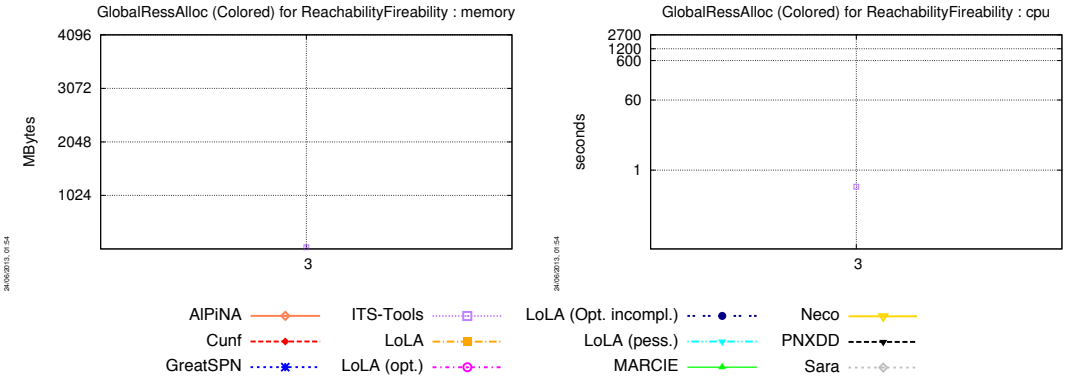
Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



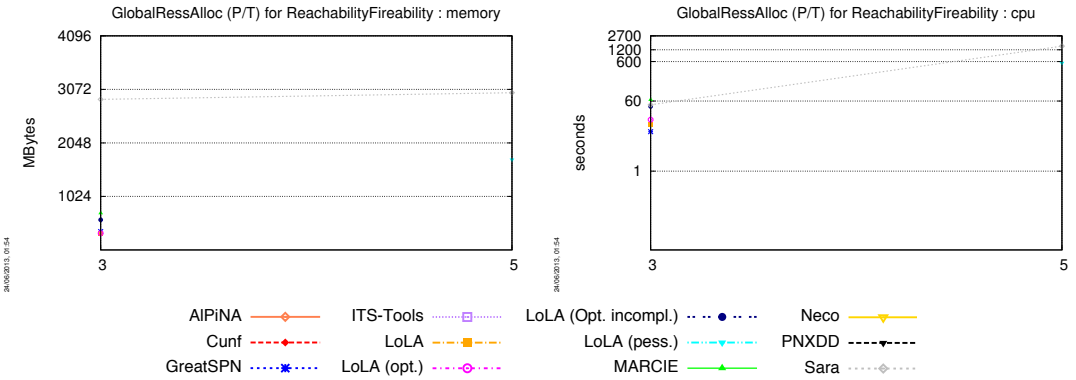
FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



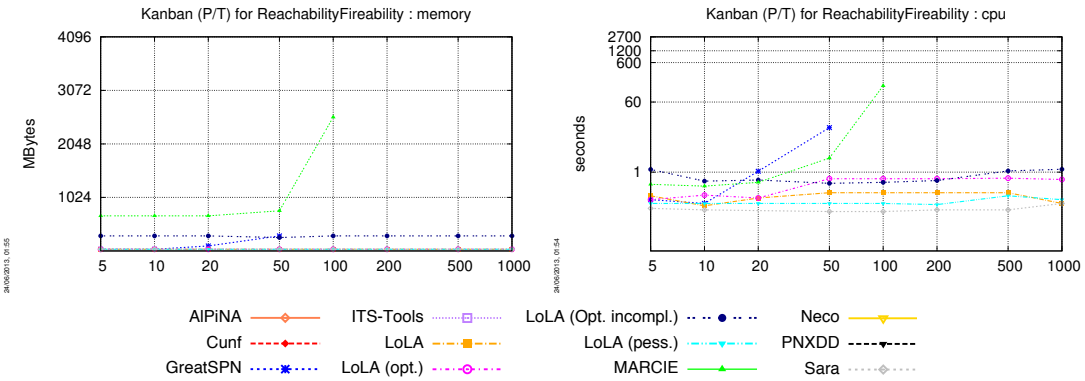
GlobalRessAlloc (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



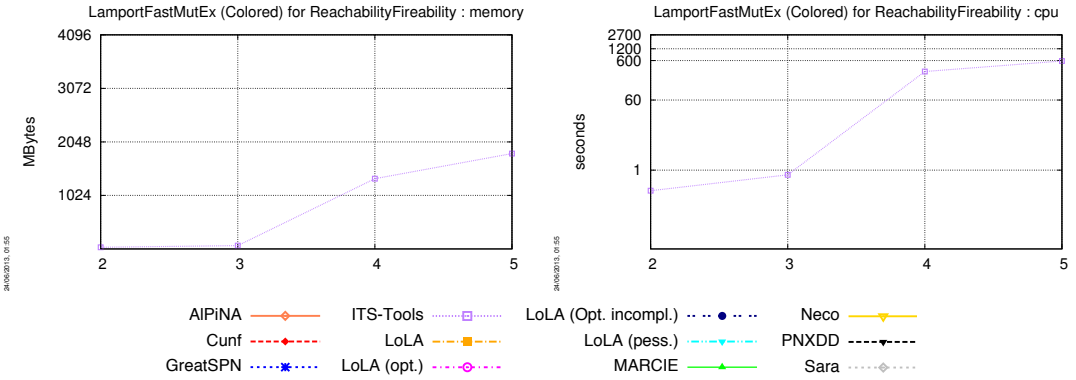
GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



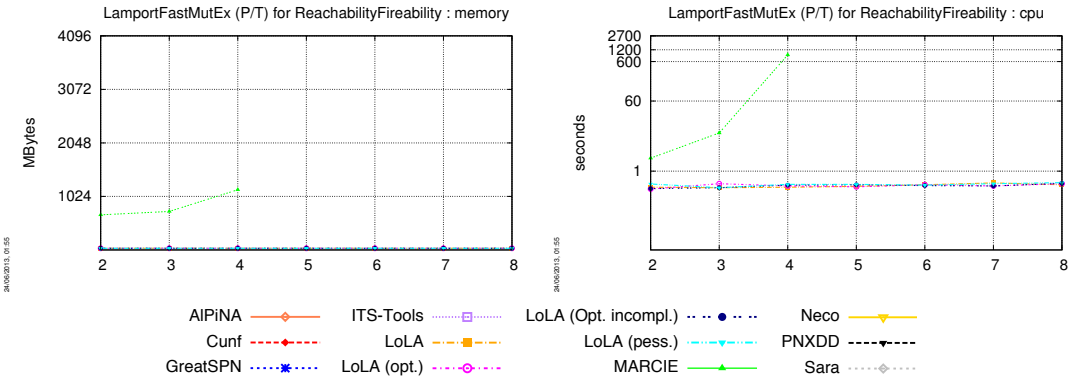
Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



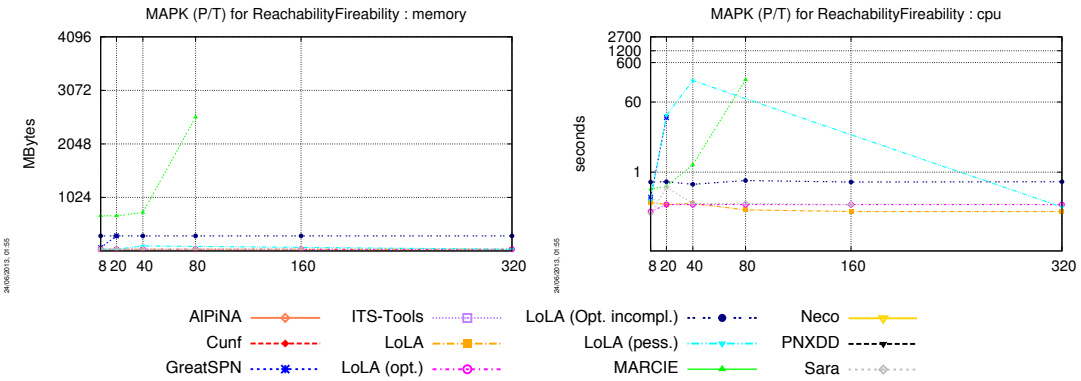
LamportFastMutEx (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



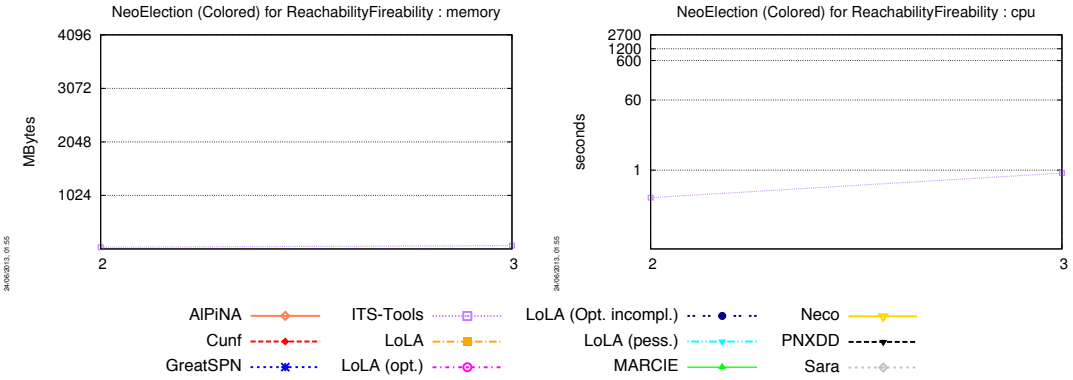
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



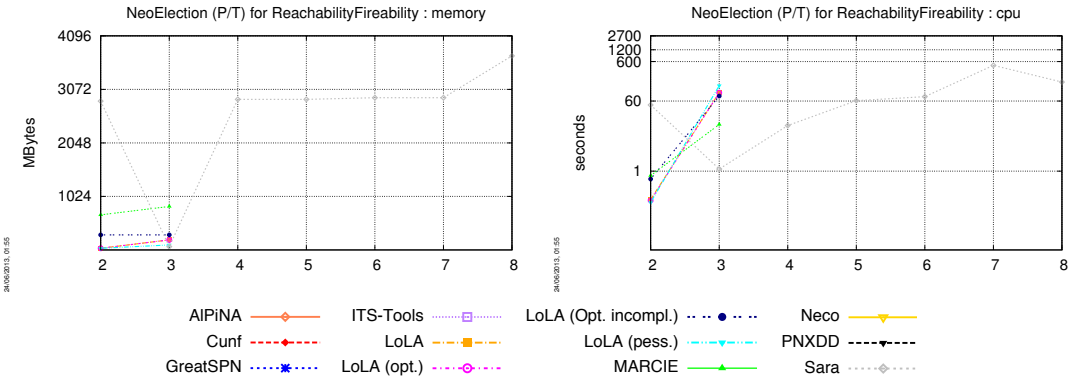
MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



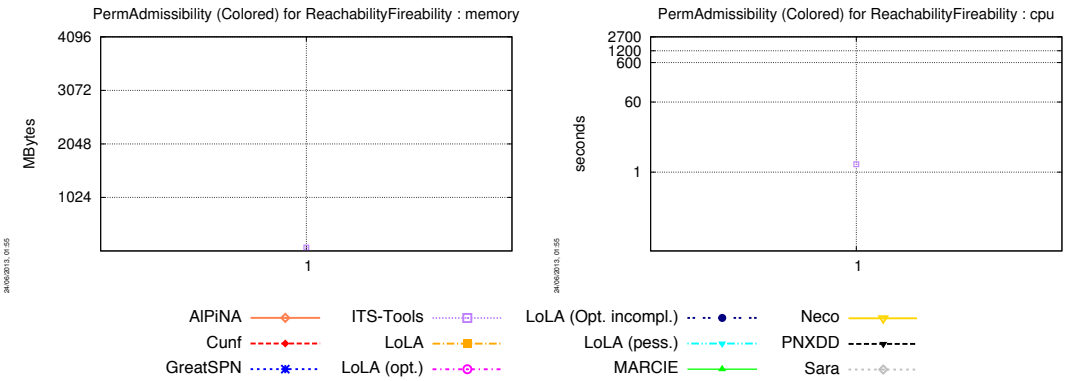
NeoElection (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



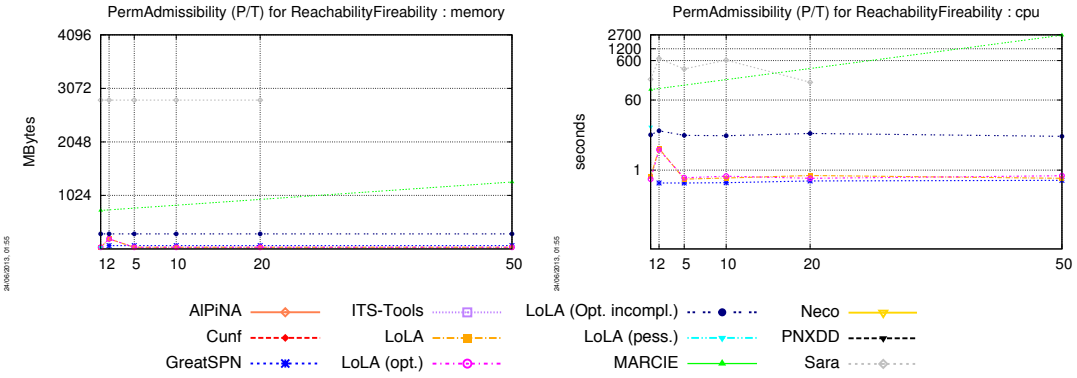
NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



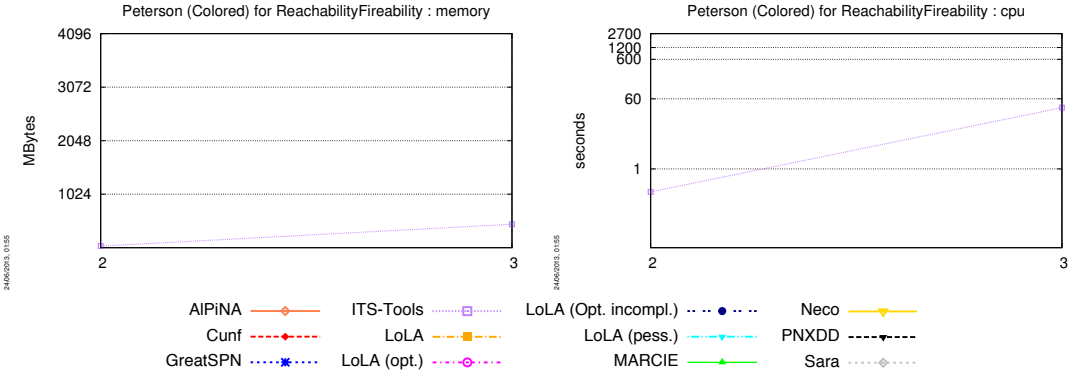
PermAdmissibility (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



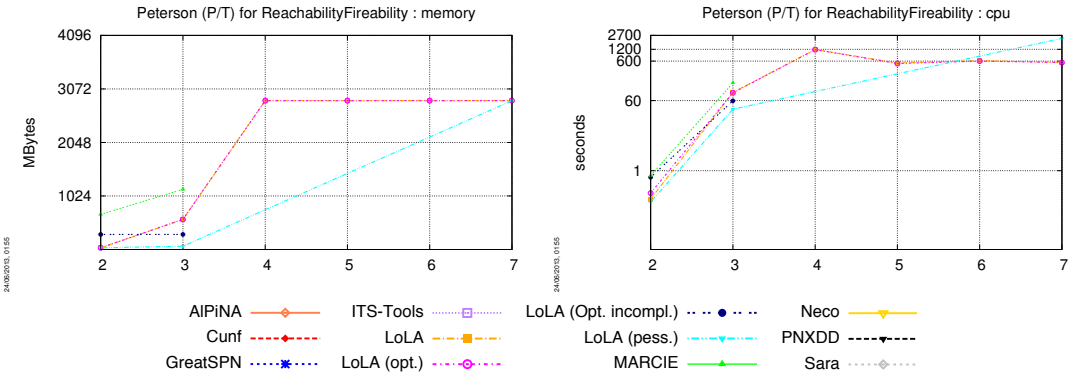
PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Peterson (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

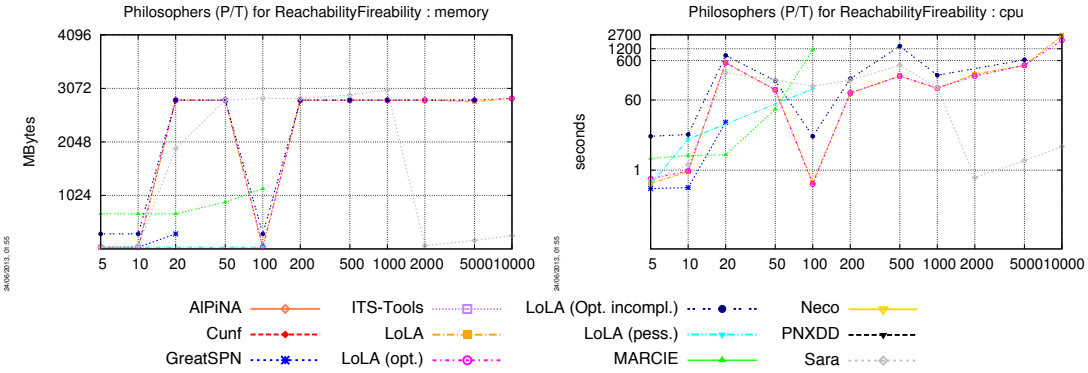


Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



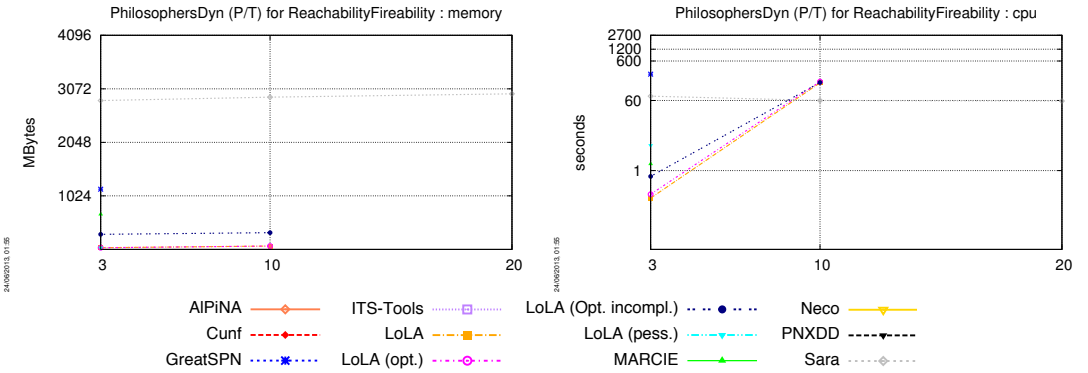
Philosophers (colored) No instance of this model could be computed for the **ReachabilityFireability** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



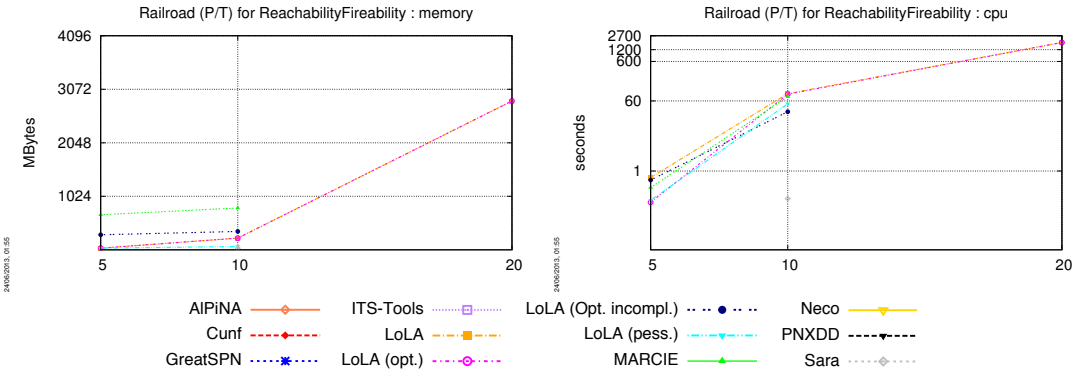
PhilosophersDyn (colored) No instance of this model could be computed for the **ReachabilityFireability** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

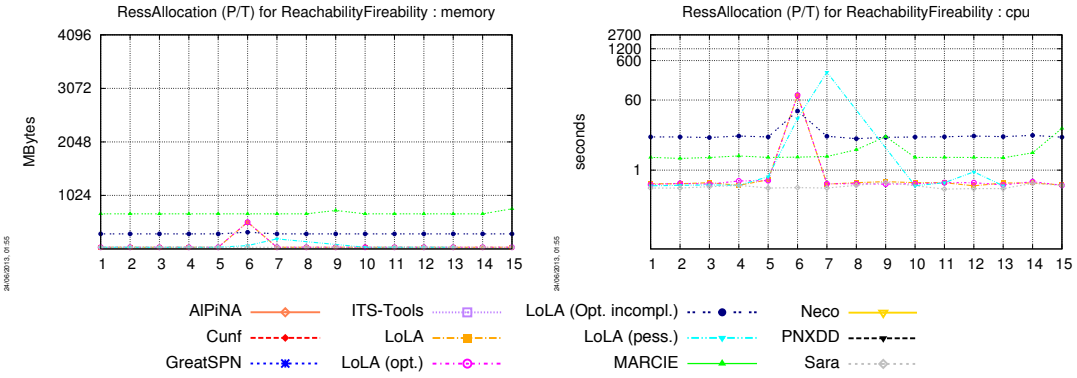


Planning (P/T) No instance of this model could be computed for the **ReachabilityFireability** examination.

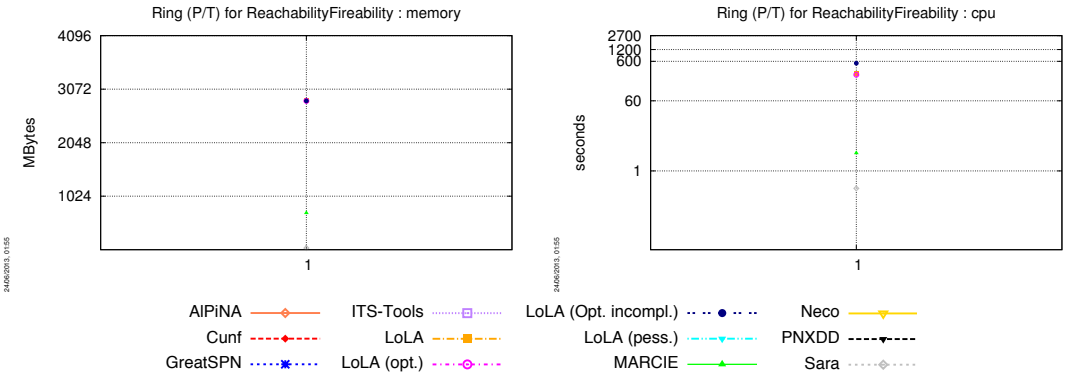
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



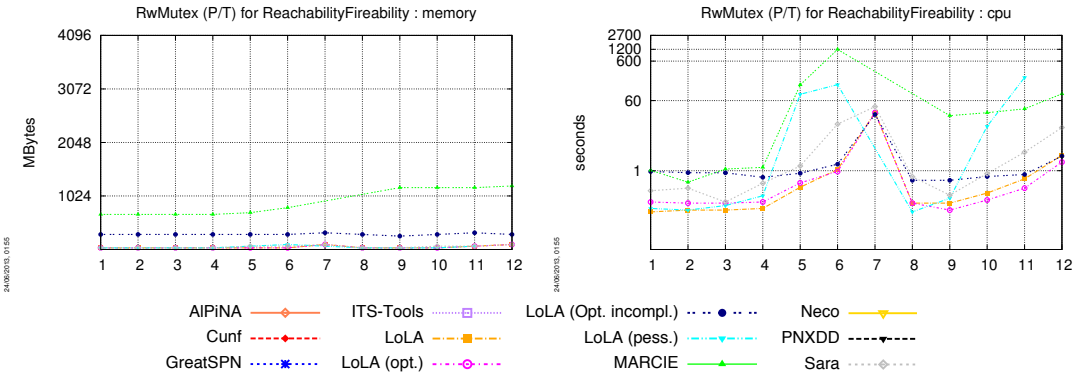
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

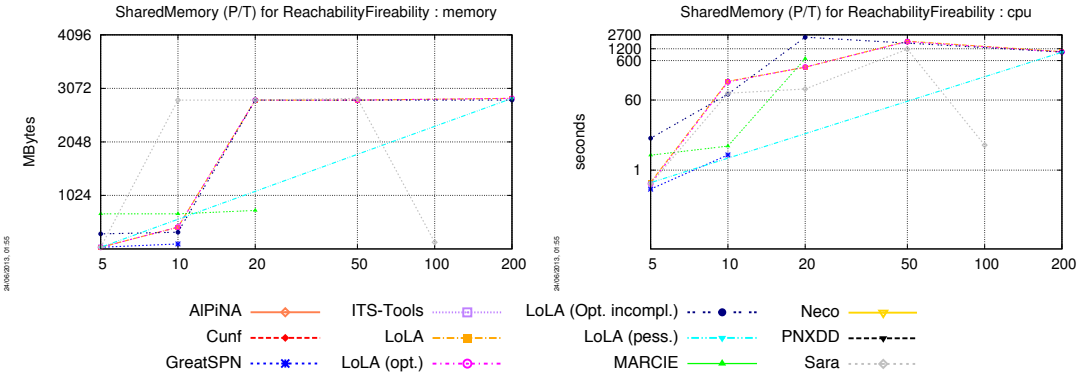


RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

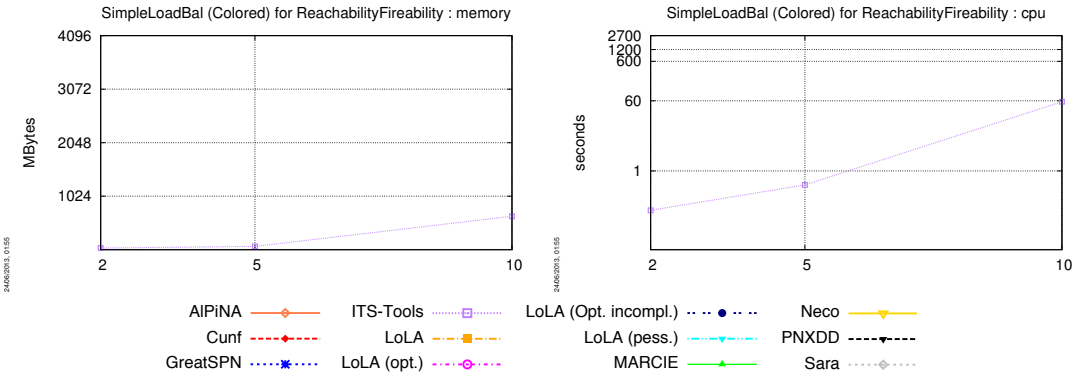


SharedMemory (colored) No instance of this model could be computed for the **ReachabilityFireability** examination.

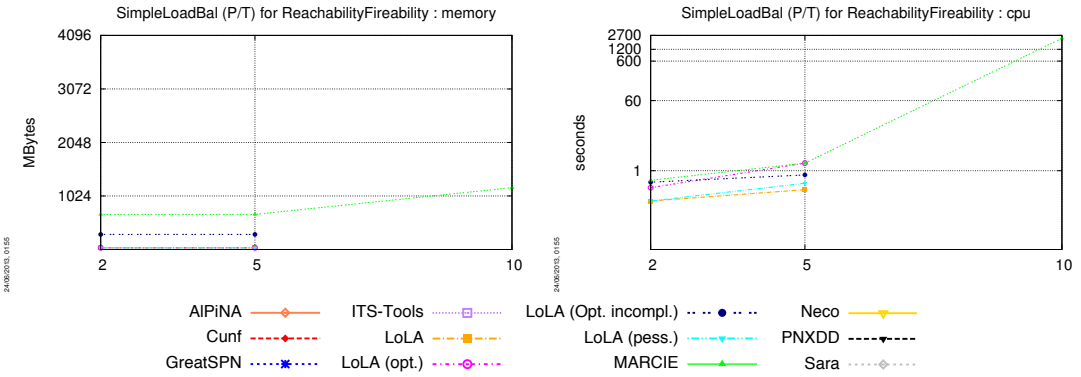
SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



SimpleLoadBal (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

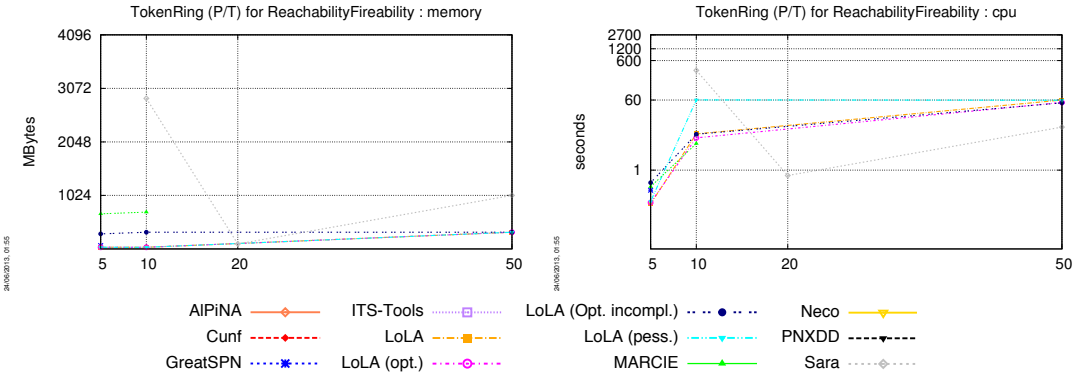


SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

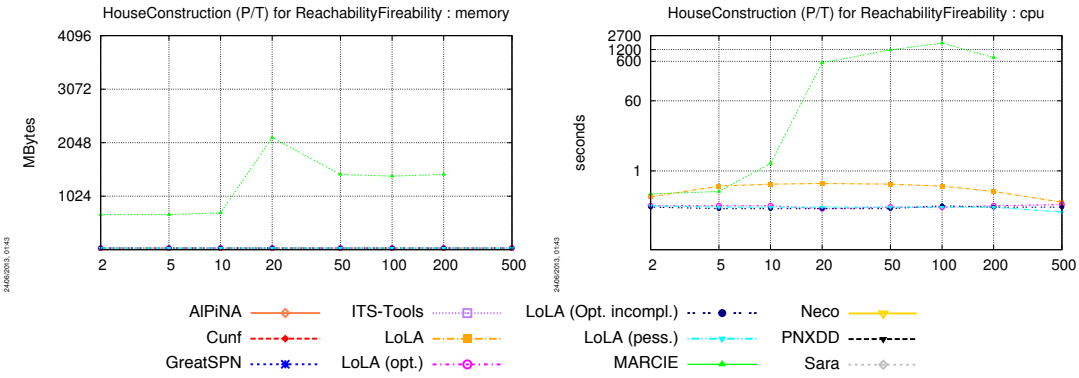


TokenRing (colored) No instance of this model could be computed for the **ReachabilityFireability** examination.

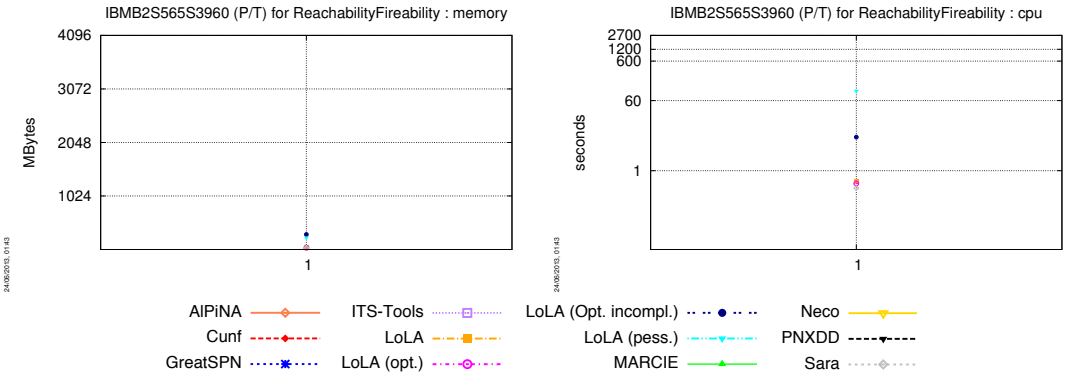
TokenRing (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

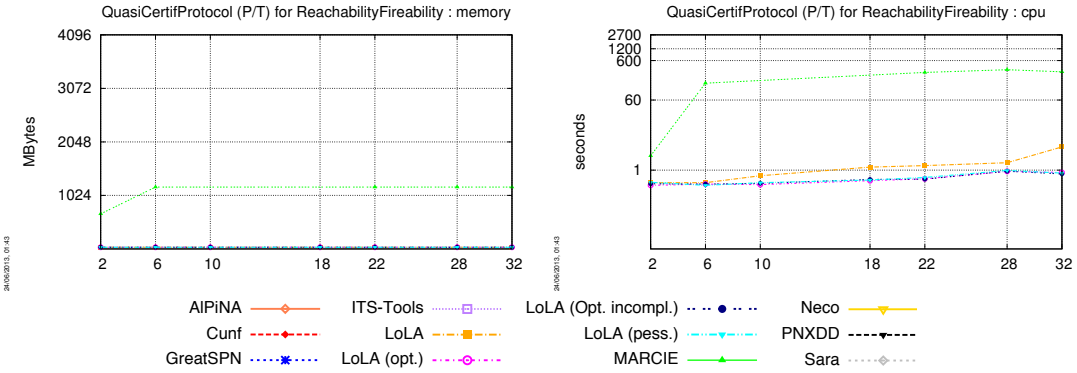


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

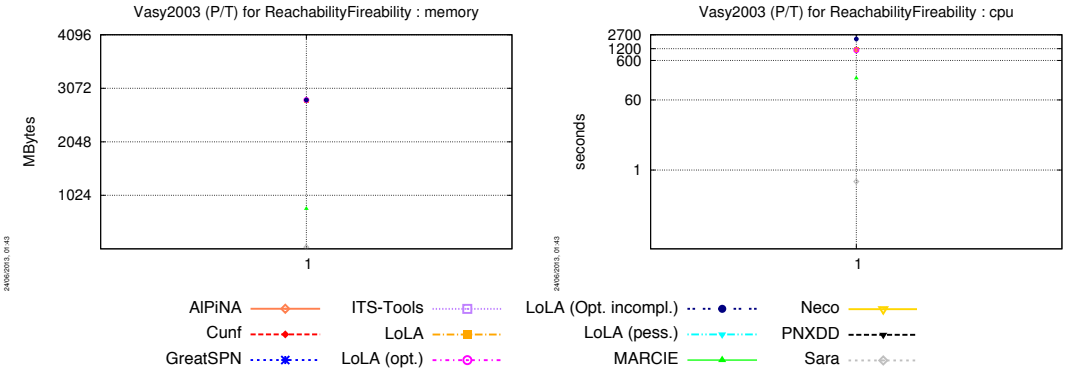


QuasiCertifProtocol (colored) No instance of this model could be computed for the **Reachability-Fireability** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



9.2 Outputs for the ReachabilityFireability Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLA opt	LoLA opt inc	LoLA pess	Marcie	Sara
02	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
03	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
04	nc	mp	nc	nc	nc	nc	nc	nc
05	nc	mp	nc	nc	nc	nc	nc	nc
07	nc	mp	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc

CSRepetitions (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	FFFFFFFF	nc	FFFFFFTF	FFFFFFTF	FFFFFF-F	cc	FFFFFFFF	FFFFFFFF
03	FFFFFFFF	nc	TFTFFFTF	TFTFFFTF	-F-FFF-F	TFTFFF-F	FFFFFFFF	TFTFF--
04	FFFFFTFF	nc	FFFFFFTF	FFFFFFTF	FFFFFF-F	to	to	FFFFF--
05	to	nc	FF-FFF-F	FF-FFF-F	to	to	to	TF-F--
07	mp	nc	FFFF-F-F	FFFF-F-F	to	to	to	FFFFF--
10	mp	nc	FFFFFF-F	FFFFFF-F	to	to	to	-F-F--

Dekker (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTFFFFF	FFFFFFFF	cc
015	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	cc
020	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	cc
050	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	cc
100	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	cc
200	nc	nc	FFFFFFFF	FFFFFFFF	nc	to	to	cc

DotAndBoxes (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFTTTF	nc	nc	nc	nc	nc	nc
3	nc	FFFFF	nc	nc	nc	nc	nc	nc
4	nc	F	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
10	nc	cc	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	FFTFFTTF	FFTFFTTF	FF-FF-F	FF-FF-F	FFFFFTFF	TFFF--T
10	nc	nc	cc	cc	cc	cc	FFFFFFFF	to

Echo (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
d02r09	nc	nc	FFFFFF-F	FFFFFF-F	to	to	to	FFFFFFFF
d02r11	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	to
d02r15	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	to
d02r19	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	to
d03r03	nc	nc	TFTFTFFF	TFTFTFFF	-F-F-FFF	to	to	TFFFTFFF
d03r05	nc	nc	-F-FFFFF	-F-FFFFF	to	to	to	FFFFFFFF
d03r07	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	to
d04r03	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	FFFFFFFF
d05r03	nc	nc	-F-F-F-F	-F-F-F-F	to	to	to	TFTFTFFF

Eratosthenes (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFTTFTTT
020	nc	FFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF
050	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFTTT
100	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFTTT
200	nc	FFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFTTTT
500	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFTTT

FMS (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFTF	FFFFFFFF	FFFFFFFF
005	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFF-FFF	FFFFFFFF	FFFFFFFF
010	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FF--	FFFFFFFF	FFFFFFFF
020	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF
050	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FFF-F	FFFFFFFF	FFFFFFFF
100	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	---FFF	FFFFFFFF	FFFFFFFF
200	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	---FTF	to	FFFFFFFF
500	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	TFTFFFFF	to	FFFFFFFF

GlobalRessAlloc (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	FFFF	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc	nc	nc

GlobalRessAlloc (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FFFFFFFF	nc	FFFFFFTF	FFFFFFTF	FFFFFF-F	to	FFFFFFFF	TTTT--
05	cc	nc	to	to	to	cc	to	cc

Kanban (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
0005	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FFFFF	FFFFFFFF	FFFFFFFF
0010	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	cc	FFFFFFFF	FFFFFFFF
0020	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFF--	FFFFFFFF	to
0050	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFF--	FFFFFFFF	FFFFFFFF
0100	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FF--	FFFFFFFF	FFFFFFFF
0200	mp	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	---F-F	to	FFFFFFFF
0500	mp	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FFFFF	to	FFFFFFFF
1000	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FF--	to	FFFFFFFF

LamportFastMutEx (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
4	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
5	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc
8	nc	mp	nc	nc	nc	nc	nc	nc

LamportFastMutEx (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	cc	cc	cc	cc	FFFFFFFF	cc
3	nc	nc	cc	cc	cc	cc	FFFFFFFF	cc
4	nc	nc	cc	cc	cc	cc	FFFFFFFF	cc
5	nc	nc	cc	cc	cc	cc	to	cc
6	nc	nc	cc	cc	cc	cc	to	cc
7	nc	nc	cc	cc	cc	cc	to	cc
8	nc	nc	cc	cc	cc	cc	to	cc

MAPK (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
008	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF
020	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-F-FFF	FFFFFFFF	FFFFFFFF
040	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFTF	FFFFFFFF	FFFFFFFF
080	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	FFFFFFFF	FFFFFFFF
160	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	FFFFFFFF
320	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to

NeoElection (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFTTT	nc	nc	nc	nc	nc	nc
3	nc	FFFFFTFF	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	TFTFTTTT	TFTFTTTT	-F-F--	TFTFTTTT	FFFFFTTT	TTTT--T

3	nc	nc	TFTFFTTF	TFTFFTTF	-F-FF-F	cc	FFFFFTFF	TTTTTTTT
4	nc	nc	to	to	to	to	to	-T-T-FFT
5	nc	nc	to	to	to	to	to	TTTTT--
6	nc	nc	to	to	to	to	to	-T-T--
7	nc	nc	to	to	to	to	to	TTTT--
8	nc	nc	to	to	to	to	to	----T

PermAdmissibility (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	nc	FFFFFTFT	nc	nc	nc	nc	nc	nc
02	nc	mp	nc	nc	nc	nc	nc	nc
05	nc	mp	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	nc	nc	nc	nc
50	nc	mp	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	to	nc	TFTFFFTF	TFTFFFTF	-F-FFF-F	TFTFFFTF	FFFFFTFT	TT--FFF
02	FFFFTTTT	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	FFFF--
05	FFFFTTTT	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	FFFF--
10	FFFFTTTT	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	FFFFF--
20	FFTTFTTT	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	FF-F--
50	FFFFFTTT	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	cc	to

Peterson (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
4	nc	mp	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	FFFFFTTT	FFFFFTTT	FFFFF--	---TTT	FFFFFFFF	to
3	nc	nc	FFFFTTTF	FFFFTTTF	FFFF--F	FFFFT--	FFFFFFFF	to
4	nc	nc	FF-F--	FF-F--	to	to	to	to
5	nc	nc	FFFFF--	FFFFF--	to	to	to	to
6	nc	nc	FFFFF--	FFFFF--	to	to	to	to
7	nc	nc	FF-FF-F	FF-FF-F	to	FF-FF--	to	to

Philosophers (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc	nc

Philosophers (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FTFFTFFF	nf	FFTFFFTF	FFTFFFTF	FF-FFF-F	FFTFFFTF	FFFFFFFF	TFFFFFFF
000010	FTFTFFFF	nf	FFFFTTTF	FFFFTTTF	FFFF--F	FFFFTTTF	FFFFFFFF	TFTF-FFF
000020	FTFTFFFT	nf	FFFF-F-F	FFFF-F-F	FFFF-F-F	to	FFFFFFFF	TFTFF--
000050	mp	nf	FF-FFFFF	FF-FFFFF	FF-FFFFF	to	FFFFFFFF	TF---
000100	mp	nf	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-F--

000200	mp	nf	FF-FFF-F	FF-FFF-F	FF-FFF-F	to	to	-F---
000500	to	nf	FF-FF--	FF-FF--	FF-FF--	to	to	-FFFF--
001000	mp	nf	FF-FFF-F	FF-FFF-F	FF-FFF-F	to	to	cc
002000	mp	nf	FFFFF--	FFFFF--	to	to	to	cc
005000	mp	nf	FFFFFF-F	FFFFFF-F	FFFFFF-F	to	to	cc
010000	cc	nf	FFFFF-F	FFFFF-F	to	to	to	cc

PhilosophersDyn (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc	nc	nc

PhilosophersDyn (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FFFFTTFT	nc	TFTFFFTF	TFTFFFTF	-F-FFF-F	TFTFFFTF	FFFFTTFT	TF---
10	mp	nc	TFTFFFTF	TFTFFFTF	-F-FFF-F	to	to	-T-T--
20	mp	nc	to	to	to	to	to	cc

Planning (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
nf	nf	nf	nf	nf	nf	nf	nf	

Railroad (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTFFF-F	FFFFFFFF	to
010	nc	nc	TFTFFFTF	TFTFFFTF	-F-FFF-F	--F--	FFFFFTFT	TTTTTFFF
020	nc	nc	-F-F-F-F	-F-F-F-F	to	to	to	to
050	nc	nc	to	to	to	to	to	to
100	nc	nc	to	to	to	to	to	to

RessAllocation (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
R002C002	nc	nc	TFTFFFTF	TFTFFFTF	-F-FFF-F	TFTFFFTF	FFFFFTFT	TFFFFFTF
R003C002	nc	nc	FFFFFFTF	FFFFFFTF	FFFFFF-F	---FTF	FFFFFTFT	FFFFFFTF
R003C003	nc	nc	TFTFFFTF	TFTFFFTF	-F-FFF-F	-F-FFFTF	FFFFFTFT	TFTFFFTF
R003C005	nc	nc	FFFFFFTF	FFFFFFTF	FFFFFF-F	FFFFFFTF	FFFFFTFF	FFFFFFFF
R003C010	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	-F-FFF-F	FFFFFFFF	TFTFFFFF
R003C015	nc	nc	FFFFFFTF	FFFFFFTF	FFFFFF-F	-F-FFF-F	FFFFFTFT	FFFFFFFF
R003C020	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFTF	FFFFFFFF	FFFFFFFF
R003C050	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	FFFFFFFF	FFFFFFFF
R003C100	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	FFFFFFFF	FFFFFFFF
R005C002	nc	nc	TFTFTFFF	TFTFTFFF	-F-F-FFF	TFTF-FTF	FFFFFFFF	to
R010C002	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	TFTFFFFF	FFFFFFFF	FFFFTFFF
R015C002	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTFFFFF	FFFFFFFF	TFFFFFFF
R020C002	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF
R050C002	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	to	FFFFFFFF	TFFFFFFF
R100C002	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	FFFFFFFF	FFFFFFFF

Ring (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nc	nc	-F-F-FFF	-F-F-FFF	-F-F-FFF	to	FFFFFFFF	TFTFTFFF

RwMutex (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
r0010w0010	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTFFFFF	FFFTFFFF	TFFFFFFF
r0010w0020	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTFFFFF	FFFFFFFF	TFFFTFTF
r0010w0050	nc	nc	TFTFTFFF	TFTFTFFF	-F-F-FFF	TFTFTFFF	FFFFTFFF	TFFFTFTF
r0010w0100	nc	nc	TFTFTFFF	TFTFTFFF	-F-F-FFF	cc	FFFFFFFT	TFTFTFTF
r0010w0500	nc	nc	TFTFFFTF	TFTFFFTF	-F-FFF-F	TFTFFFTF	FFFFFTFT	TFTFFFFF
r0010w1000	nc	nc	FFFFFFTF	FFFFFFTF	FFFFFF-F	FFFFFFTF	FFFTTTFT	FFTFTFFF
r0010w2000	nc	nc	TFTFTFTF	TFTFTFTF	-F-F-F-F	to	to	TFFFTFFF
r0020w0010	nc	nc	TFTFTFTF	TFTFTFTF	-F-F-F-F	-F-F-FTF	to	TFFFTFFF
r0100w0010	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	---F-F	cc	FFFFFFFF
r0500w0010	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFF--	cc	FFFFFFFF

r1000w0010	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	---FFF	cc	FFFFFFFF
r2000w0010	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	cc	FFFFFFFF

SharedMemory (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc	nc

SharedMemory (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FTFTFFFT	nc	FFFFTFTF	FFFFTFTF	FFFF-F-F	---F-F	FFFFFFFF	TFTFTTTT
000010	TTFFFFFF	nc	FFTFTFTF	FFTFTFTF	FF-F-F-F	to	FFFFFTFT	TFFFF--
000020	mp	nc	FFFFFF-F	FFFFFF-F	FFFFFF-F	to	FFFFFFFF	TFTFF--
000050	mp	nc	FFFFFF-F	FFFFFF-F	to	to	to	FFFFF--
000100	mp	nc	to	to	to	to	to	cc
000200	cc	nc	cc	cc	cc	cc	to	to

SimpleLoadBal (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
05	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
10	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
15	nc	mp	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	nc	nc	nc	nc

SimpleLoadBal (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	FFFFFFTF	FFFFFFTF	FFFFFF-F	FFFFFTTF	FFFFFFFF	to
05	nc	nc	FFFFFFTF	FFFFFFTF	FFFFFF-F	---FTF	FFFFFFFF	to
10	nc	nc	to	to	to	to	FFFFFFFF	to
15	nc	nc	to	to	to	to	to	to
20	nc	nc	to	to	to	to	to	to

TokenRing (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	nc	nc	nc	nc	nc	nc	nc
010	nc	nc	nc	nc	nc	nc	nc	nc
020	nc	nc	nc	nc	nc	nc	nc	nc
050	nc	nc	nc	nc	nc	nc	nc	nc
100	nc	nc	nc	nc	nc	nc	nc	nc
200	nc	nc	nc	nc	nc	nc	nc	nc
500	nc	nc	nc	nc	nc	nc	nc	nc

TokenRing (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	FTFTFTFF	nc	TFTFTTTF	TFTFTTTF	-F-F--F	-F-F--	FTFTFTFF	to
010	to	nc	TFTFTTTF	TFTFTTTF	-F-F--F	-F---	FTFFFTFF	cc
020	mp	nc	to	to	to	to	to	cc
050	cc	nc	cc	cc	cc	cc	to	cc

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)

instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

002	cc	cc	cc	cc	FFFFFFFF	cc
005	cc	cc	cc	cc	FFFFFFFF	cc
010	cc	cc	cc	cc	FFFFFFFF	cc
020	cc	cc	cc	cc	FFFFFFFF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	to	cc
IBMB2S565S3960 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-F--	to	cc
QuasiCertifProtocol (colored)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	cc	cc	cc	cc	FFFFFFFF	cc
06	cc	cc	cc	cc	FFFFFFFF	cc
10	cc	cc	cc	cc	to	cc
18	cc	cc	cc	cc	to	cc
22	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc
32	cc	cc	cc	cc	cc	cc
Vasy2003 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	--F-F-F	--F-F-F	--F-F-F	to	TTFFFTFF	-TFTFFF

9.3 Score for the ReachabilityFireability Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**44**	**59**	**200**	**200**	**161**	**106**	**120**	**151**
CSRepetitions (Colored)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
CSRepetitions (P/T)								
1st instance	1	0	1	1	1	1	1	1
instances	3	0	6	6	3	1	2	6
max reached	0	0	2	2	0	0	0	2
best	0	0	2	2	0	0	0	2
subtotal	**4**	**0**	**11**	**11**	**4**	**2**	**3**	**11**
Dekker (P/T)								
1st instance	0	0	1	1	1	1	1	0
instances	0	0	6	6	5	3	3	0
max reached	0	0	2	2	0	0	0	0
best	0	0	2	2	0	0	0	0
subtotal	**0**	**0**	**11**	**11**	**6**	**4**	**4**	**0**
DotAndBoxes (Colored)								
1st instance	0	1	0	0	0	0	0	0
instances	0	3	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (Colored)								
1st instance	0	1	0	0	0	0	0	0
instances	0	1	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (P/T)								
1st instance	0	0	1	1	1	1	1	1
instances	0	0	1	1	1	1	2	1
max reached	0	0	0	0	0	0	2	0
best	0	0	0	0	0	0	2	0
subtotal	**0**	**0**	**2**	**2**	**2**	**2**	**7**	**2**
Echo (P/T)								
1st instance	0	0	1	1	1	0	0	1
instances	0	0	9	9	6	0	0	5
max reached	0	0	2	2	0	0	0	2
best	0	0	2	2	0	0	0	2
subtotal	**0**	**0**	**14**	**14**	**7**	**0**	**0**	**10**
Eratosthenes (P/T)								
1st instance	0	1	1	1	1	1	1	1
instances	0	6	6	6	6	6	6	6
max reached	0	2	2	2	2	2	2	2
best	0	2	2	2	2	2	2	2
subtotal	**0**	**11**	**11**	**11**	**11**	**11**	**11**	**11**
FMS (P/T)								
1st instance	1	1	1	1	1	1	1	1
instances	6	1	8	8	8	8	6	8
max reached	0	0	2	2	2	2	0	2
best	0	0	2	2	2	2	0	2
subtotal	**7**	**2**	**13**	**13**	**13**	**13**	**7**	**13**
GlobalRessAlloc (Colored)								
1st instance	0	1	0	0	0	0	0	0
instances	0	1	0	0	0	0	0	0

max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**

GlobalRessAlloc (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	0	1	1
instances	1	0	1	1	1	0	1	1
max reached	0	0	0	0	0	0	0	0
best	2	0	2	2	2	0	2	2
subtotal	**4**	**0**	**4**	**4**	**4**	**0**	**4**	**4**

Kanban (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	4	0	8	8	8	7	5	7
max reached	0	0	2	2	2	2	0	2
best	0	0	2	2	2	2	0	2
subtotal	**5**	**0**	**13**	**13**	**13**	**12**	**6**	**12**

LamportFastMutEx (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	4	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**

LamportFastMutEx (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	1	0
instances	0	0	0	0	0	0	3	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**

MAPK (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	2	0	6	6	6	4	4	5
max reached	0	0	2	2	2	2	0	0
best	0	0	2	2	2	2	0	0
subtotal	**3**	**0**	**11**	**11**	**11**	**9**	**5**	**6**

NeoElection (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	2	2	2	1	2	7
max reached	0	0	0	0	0	0	0	2
best	0	0	0	0	0	0	0	2
subtotal	**0**	**0**	**3**	**3**	**3**	**2**	**3**	**12**

PermAdmissibility (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	1	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**

PermAdmissibility (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	5	0	6	6	6	1	1	5
max reached	2	0	2	2	2	0	0	0
best	2	0	2	2	2	0	0	0
subtotal	**10**	**0**	**11**	**11**	**11**	**2**	**2**	**6**

Peterson (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	6	6	2	3	2	0
max reached	0	0	2	2	0	2	0	0
best	0	0	2	2	0	2	0	0
subtotal	**0**	**0**	**11**	**11**	**3**	**8**	**3**	**0**

Philosophers (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Philosophers (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	3	0	11	11	9	3	5	7
max reached	0	0	2	2	0	0	0	0
best	0	0	2	2	0	0	0	0
subtotal	**4**	**0**	**16**	**16**	**10**	**4**	**6**	**8**

PhilosophersDyn (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PhilosophersDyn (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	1	0	2	2	2	1	1	2
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	0	0	2
subtotal	**2**	**0**	**5**	**5**	**5**	**2**	**2**	**5**

Planning (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Railroad (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	3	3	2	2	2	1
max reached	0	0	0	0	0	0	0	0

best	0	0	2	2	0	0	0	0
subtotal	**0**	**0**	**6**	**6**	**3**	**3**	**3**	**2**

RessAllocation (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	15	15	15	11	15	14
max reached	0	0	2	2	2	0	2	2
best	0	0	2	2	2	0	2	2
subtotal	**0**	**0**	**20**	**20**	**20**	**12**	**20**	**19**

Ring (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	0	1	1
instances	0	0	1	1	1	0	1	1
max reached	0	0	2	2	2	0	2	2
best	0	0	2	2	2	0	2	2
subtotal	**0**	**0**	**6**	**6**	**6**	**0**	**6**	**6**

RwMutex (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	12	12	12	9	6	12
max reached	0	0	2	2	2	0	0	2
best	0	0	2	2	2	0	0	2
subtotal	**0**	**0**	**17**	**17**	**17**	**10**	**7**	**17**

SharedMemory (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

SharedMemory (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	2	0	4	4	3	1	3	4
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	0	0	0	2
subtotal	**3**	**0**	**7**	**7**	**4**	**2**	**4**	**7**

SimpleLoadBal (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	3	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**

SimpleLoadBal (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	2	2	2	2	3	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	2	0
subtotal	**0**	**0**	**3**	**3**	**3**	**3**	**6**	**0**

TokenRing (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TokenRing (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

1st instance	1	0	1	1	1	1	1	0
instances	1	0	2	2	2	2	2	0
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	2	2	0
subtotal	**2**	**0**	**5**	**5**	**5**	**5**	**5**	**0**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**12**	**12**	**12**	**6**	**18**	**6**
HouseConstruction (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	4	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**7**	**0**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	0	0
instances	1	1	1	1	0	0
max reached	2	2	2	2	0	0
best	2	2	2	2	0	0
subtotal	**6**	**6**	**6**	**6**	**0**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**
Vasy2003 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	0	1	1
instances	1	1	1	0	1	1
max reached	2	2	2	0	2	2
best	2	2	2	0	2	2
subtotal	**6**	**6**	**6**	**0**	**6**	**6**

9.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models

1	1	3
LoLA 200 points	LoLa opt 200 points	LoLa opt inc 161 points

For "Surprise" Models

1	2	2	2	2
Marcie 18 points	ITS-Tools 12 points	LoLA 12 points	LoLa opt 12 points	LoLa opt inc 12 points

Global

1	1	3
LoLA 224 points	LoLa opt 224 points	LoLa opt inc 185 points

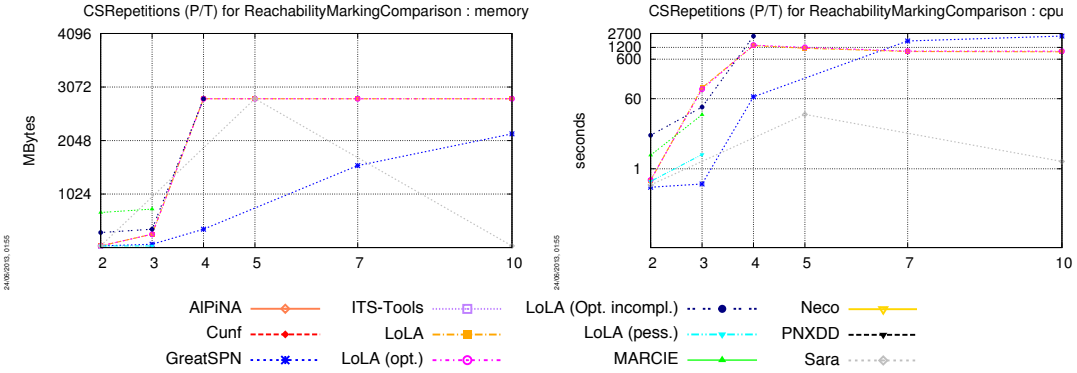
10 The ReachabilityMarkingComparison Examination

This examination deals with reachability properties dealing with marking comparison only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

10.1 Handling of Models by Tools

CSRepetitions (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

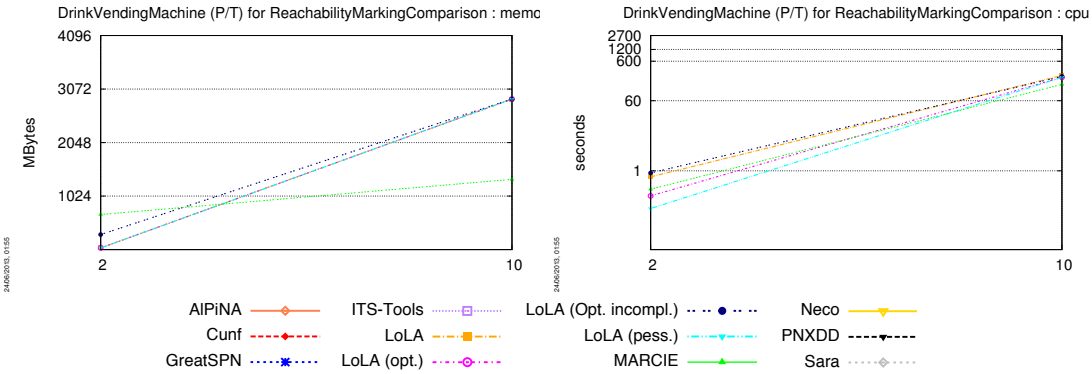


Dekker (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

DotAndBoxes (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

DrinkVendingMachine (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



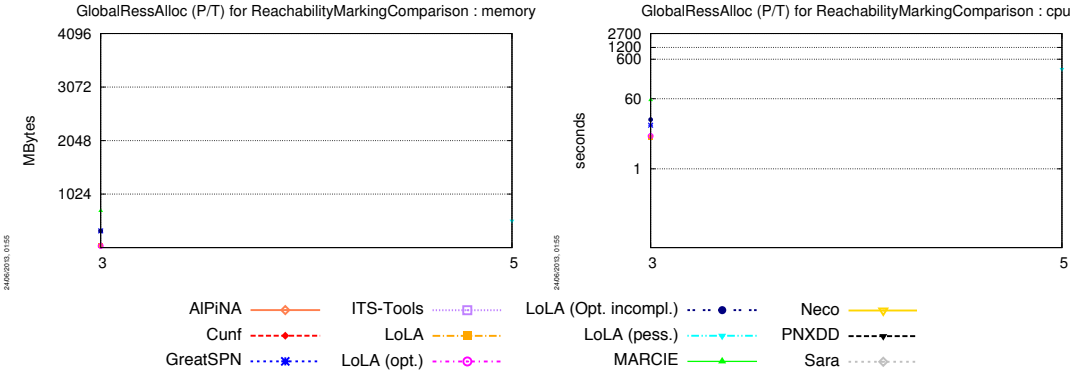
Echo (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

Eratosthenes (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

FMS (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

GlobalRessAlloc (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

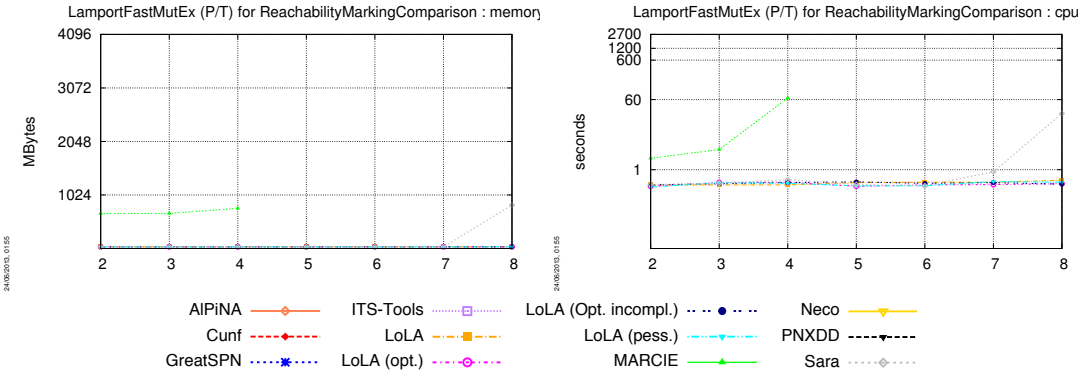
GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Kanban (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

LamportFastMutEx (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

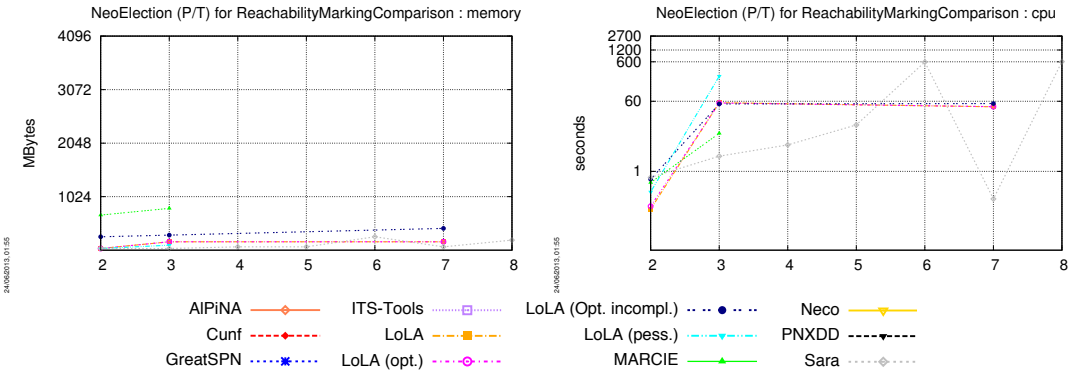
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



MAPK (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

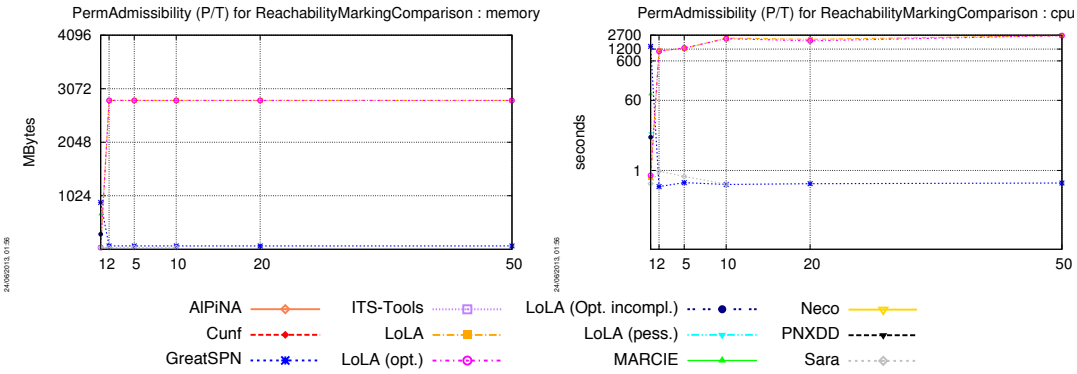
NeoElection (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



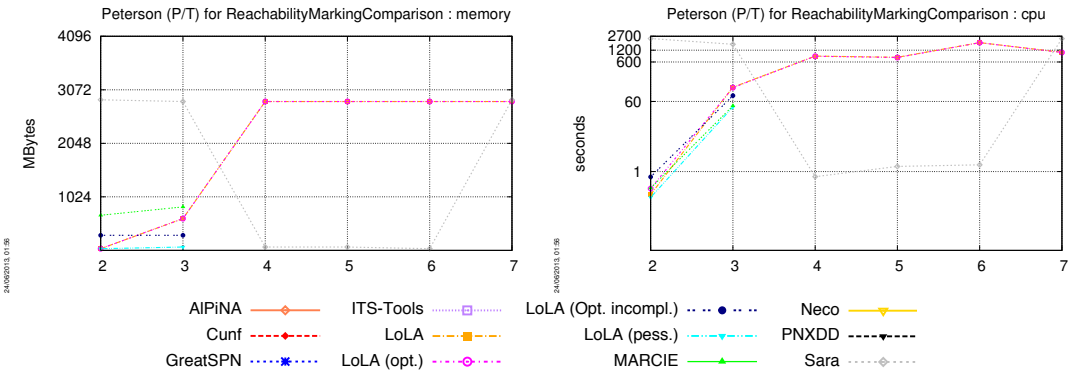
PermAdmissibility (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



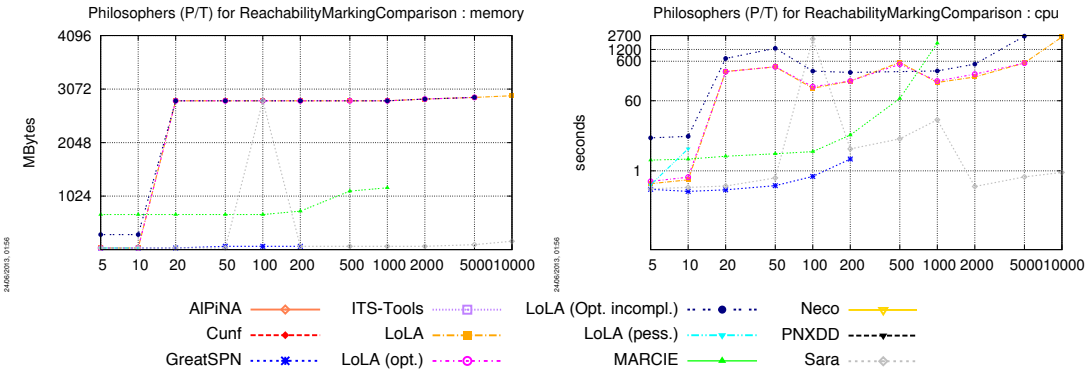
Peterson (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



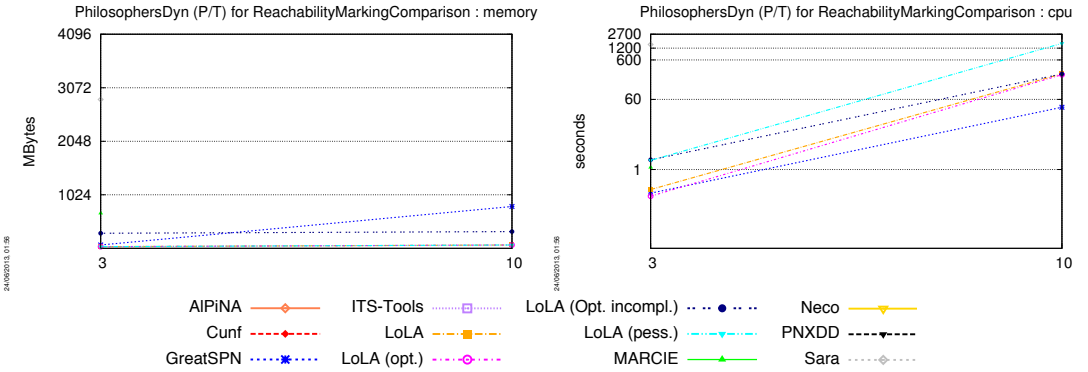
Philosophers (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



PhilosophersDyn (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Planning (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

Railroad (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

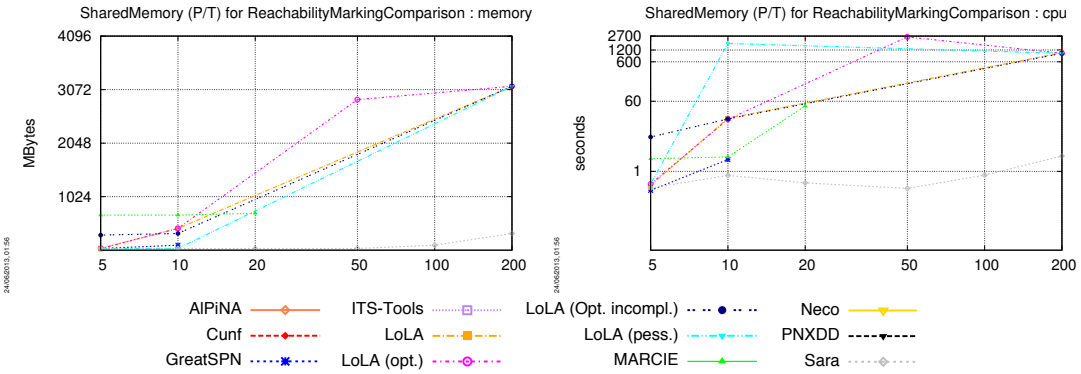
RessAllocation (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

Ring (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

RwMutex (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

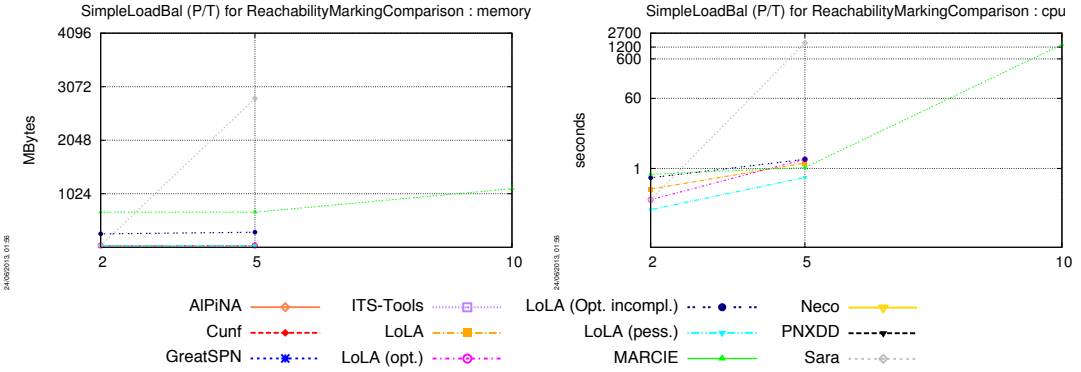
SharedMemory (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



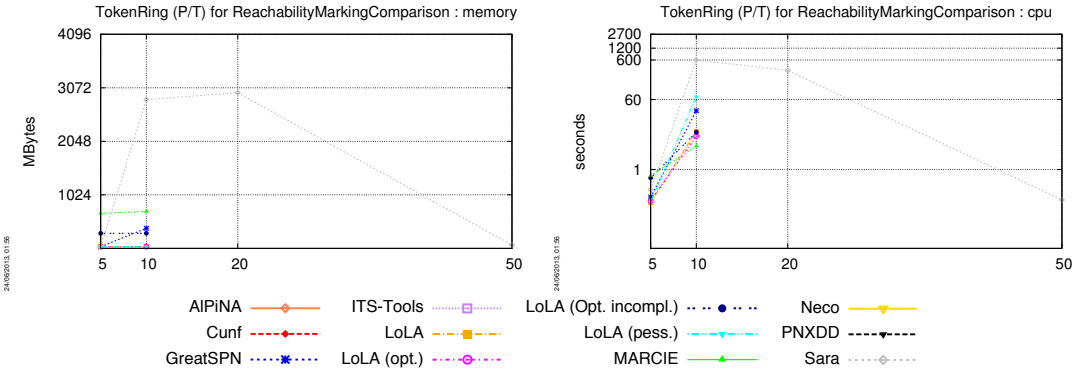
SimpleLoadBal (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



TokenRing (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

TokenRing (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

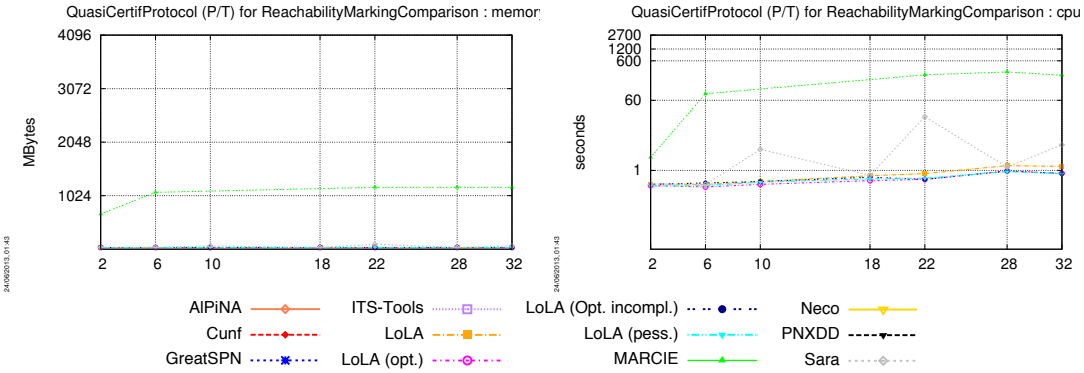


HouseConstruction (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

IBMB2S565S3960 (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

QuasiCertifProtocol (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

10.2 Outputs for the ReachabilityMarkingComparison Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
03	nc	nc	nc	nc	nc	nc	nc
04	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc

CSRepetitions (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	cc	FFFFFTFT	FFFFFTFT	FFFFF-F-	FFFFFTFT	FFFFTFFF	FFFFTTTT
03	cc	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTFFFFF	FFFTFFFF	to
04	cc	-FFFF--	-FFFF--	-FFFF--	to	to	to
05	to	FFFF-FF	FFFF-FF	to	to	to	FFFFTTT-
07	cc	FFFFF--	FFFFF--	to	to	to	to
10	cc	---FFF	---FFF	to	to	to	FFFFFFFF

Dekker (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nf	nf	nf	nf	nf	nf	nf
015	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf	nf

DotAndBoxes (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	TFFFFTFT	TFFFFTFT	-FFFF-F-	TFFFFTFT	FFFTTFFF	to
10	nc	cc	cc	cc	cc	FFFTFFFF	to

Echo (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
d02r09	nf	nf	nf	nf	nf	nf	nf
d02r11	nf	nf	nf	nf	nf	nf	nf
d02r15	nf	nf	nf	nf	nf	nf	nf
d02r19	nf	nf	nf	nf	nf	nf	nf
d03r03	nf	nf	nf	nf	nf	nf	nf
d03r05	nf	nf	nf	nf	nf	nf	nf
d03r07	nf	nf	nf	nf	nf	nf	nf
d04r03	nf	nf	nf	nf	nf	nf	nf
d05r03	nf	nf	nf	nf	nf	nf	nf

Eratosthenes (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf	nf

FMS (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	nf	nf	nf	nf	nf	nf	nf
005	nf	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf	nf

GlobalRessAlloc (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc	nc

GlobalRessAlloc (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	cc	TFFFTTFF	TFFFTTFF	-FFF-FF	to	FFFTFFFF	to
05	cc	to	to	to	---F-	to	to

Kanban (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
0005	nf	nf	nf	nf	nf	nf	nf
0010	nf	nf	nf	nf	nf	nf	nf
0020	nf	nf	nf	nf	nf	nf	nf
0050	nf	nf	nf	nf	nf	nf	nf
0100	nf	nf	nf	nf	nf	nf	nf
0200	nf	nf	nf	nf	nf	nf	nf
0500	nf	nf	nf	nf	nf	nf	nf
1000	nf	nf	nf	nf	nf	nf	nf

LamportFastMutEx (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc

LamportFastMutEx (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	cc	cc	cc	cc	FFFTFFFF	FFFFFFFF
3	nc	cc	cc	cc	cc	FFFTFFFF	FFFFFFFF
4	nc	cc	cc	cc	cc	FFFTFFFF	FFFFFFFF
5	nc	cc	cc	cc	cc	to	FFFFFFFF
6	nc	cc	cc	cc	cc	to	FFFFFFFF
7	nc	cc	cc	cc	cc	to	FFFFFFFF
8	nc	cc	cc	cc	cc	to	FFFFFFF-

MAPK (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
008	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
040	nf	nf	nf	nf	nf	nf	nf
080	nf	nf	nf	nf	nf	nf	nf
160	nf	nf	nf	nf	nf	nf	nf
320	nf	nf	nf	nf	nf	nf	nf

NeoElection (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	TTTTTFFF	TTTTTFFF	---FFF	TTTTTFFF	FFFFFFFF	TTTTTFFF

3	nc	TTTFFTTT	TTTFFTTT	--FF--	TTTFFTTT	FFFTTFFF	TTTTTFTF
4	nc	to	to	to	to	to	TTTTTTTT
5	nc	to	to	to	to	to	TTTTTTTT
6	nc	to	to	to	to	to	FFFFFFTF
7	nc	TTTTFTFT	TTTTFTFT	--F-F-	to	to	cc
8	nc	to	to	to	to	to	TTTTTTTT

PermAdmissibility (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	nc	nc	nc	nc	nc	nc	nc
02	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	?????FFF	TFTFTFFF	TFTFTFFF	-F-F-FFF	cc	FFFFFFFF	FFFFFFFF
02	cc	FFFFF-F-	FFFFF-F-	to	to	to	FFTTFFFF
05	?????FTT	-FFFFFF	-FFFFFF	to	to	to	FFFFTFFF
10	?????FFF	-F-F-FFF	-F-F-FFF	to	to	to	FFFFFFFF
20	?????TTT	-F-FF-F-	-F-FF-F-	to	to	to	to
50	cc	--F-FT	--F-FT	to	to	to	to

Peterson (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	TTTFTTTT	TTTFTTTT	--F--	TTTF-TTT	FFFTFFFF	FTTTT-T-
3	nc	TFFFFTTT	TFFFFTTT	-FFFF--	TFFFFTTT	FFFTTFFF	FTFF-TTT
4	nc	--FFFF	--FFFF	to	to	to	TTTT-FF-
5	nc	-F-FF-F-	-F-FF-F-	to	to	to	TTTTTTTT
6	nc	---F-	---F-	to	to	to	TTTTTFFF
7	nc	--FF-F-	--FF-F-	to	to	to	FTTT--

Philosophers (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc

Philosophers (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	cc	TTTTFFFF	TTTTFFFF	--FFFF	TTTTFFFF	FFFFTFFF	TTTTTFFF
000010	cc	TFFFFTFF	TFFFFTFF	-FFFF-FF	TFFFFTFF	FFFTFFFF	FFFFTTTF
000020	cc	-F-FFFFF	-F-FFFFF	-F-FFFFF	to	FFFFTFFF	FFFFTFFF
000050	cc	-F-FF-F-	-F-FF-F-	-F-FF-F-	to	FFFTFFFF	TTTTTFFF
000100	cc	FFFFF-F-	FFFFF-F-	FFFFF-F-	to	FFFTTFFF	FF--TTT

000200	cc	FFFFF-F-	FFFFF-F-	FFFFF-F-	to	FFFFFFFF	FFFFFTT-
000500	to	-F-F-F-	-F-F-F-	to	to	FFFFFFFF	FFFFFTTT
001000	mp	-F-FFFFF	-F-FFFFF	-F-FFFFF	to	FFFFFFFF	-T-T-F-
002000	mp	-FFFF-F-	-FFFF-F-	-FFFF-F-	to	to	cc
005000	mp	-F-FF-FF	-F-FF-FF	FFFFF-FF	to	to	cc
010000	cc	-F-FF-F-	to	to	to	to	cc

PhilosophersDyn (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc	nc

PhilosophersDyn (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	cc	TFTFFTFT	TFTFFTFT	-F-FF-F-	TFTFFTFT	FFFFFFFF	FFFF-FF-
10	cc	TFTFFTTT	TFTFFTTT	-F-FF--	TFTFFTTT	to	to
20	mp	to	to	to	to	to	to

Planning (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
nf	nf	nf	nf	nf	nf	nf	

Railroad (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nf	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf

RessAllocation (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
R002C002	nf	nf	nf	nf	nf	nf	nf
R003C002	nf	nf	nf	nf	nf	nf	nf
R003C003	nf	nf	nf	nf	nf	nf	nf
R003C005	nf	nf	nf	nf	nf	nf	nf
R003C010	nf	nf	nf	nf	nf	nf	nf
R003C015	nf	nf	nf	nf	nf	nf	nf
R003C020	nf	nf	nf	nf	nf	nf	nf
R003C050	nf	nf	nf	nf	nf	nf	nf
R003C100	nf	nf	nf	nf	nf	nf	nf
R005C002	nf	nf	nf	nf	nf	nf	nf
R010C002	nf	nf	nf	nf	nf	nf	nf
R015C002	nf	nf	nf	nf	nf	nf	nf
R020C002	nf	nf	nf	nf	nf	nf	nf
R050C002	nf	nf	nf	nf	nf	nf	nf
R100C002	nf	nf	nf	nf	nf	nf	nf

Ring (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nf	nf	nf	nf	nf	nf	nf

RwMutex (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
r0010w0010	nf	nf	nf	nf	nf	nf	nf
r0010w0020	nf	nf	nf	nf	nf	nf	nf
r0010w0050	nf	nf	nf	nf	nf	nf	nf
r0010w0100	nf	nf	nf	nf	nf	nf	nf
r0010w0500	nf	nf	nf	nf	nf	nf	nf
r0010w1000	nf	nf	nf	nf	nf	nf	nf
r0010w2000	nf	nf	nf	nf	nf	nf	nf
r0020w0010	nf	nf	nf	nf	nf	nf	nf
r0100w0010	nf	nf	nf	nf	nf	nf	nf
r0500w0010	nf	nf	nf	nf	nf	nf	nf

r1000w0010	nf	nf	nf	nf	nf	nf	nf
r2000w0010	nf	nf	nf	nf	nf	nf	nf

SharedMemory (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc

SharedMemory (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	cc	TFTFTTFF	TFTFTTFF	-F-F-FF	-F-F-F-	FFFFFFFT	FFFFFTTT
000010	cc	TFFFFFFT	TFFFFFFT	-FFFFFF-	-FFFFFF-	FFFTTFFF	FTFFTFFT
000020	mp	to	to	to	to	FFFFFFFF	FFFFFFFF
000050	mp	to	-FFFF-FF	to	to	to	cc
000100	mp	to	to	to	to	to	cc
000200	cc	cc	cc	cc	cc	to	cc

SimpleLoadBal (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc

SimpleLoadBal (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	TTTFFTFT	TTTFFTFT	--FF-F-	--FF-F-	FFFTTFFF	TTTTTFFF
05	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	TFTFFTFT	FFFFTFFF	FFFF-FF-
10	nc	to	to	to	to	FFFFFFFF	to
15	nc	to	to	to	to	to	to
20	nc	to	to	to	to	to	to

TokenRing (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	nc	nc	nc	nc	nc	nc
010	nc	nc	nc	nc	nc	nc	nc
020	nc	nc	nc	nc	nc	nc	nc
050	nc	nc	nc	nc	nc	nc	nc
100	nc	nc	nc	nc	nc	nc	nc
200	nc	nc	nc	nc	nc	nc	nc
500	nc	nc	nc	nc	nc	nc	nc

TokenRing (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	cc	TTTFTTFT	TTTFTTFT	--F-F-	TTTFTTFT	FFFTFFFF	TTTTTTTT
010	cc	TTTFTTFT	TTTFTTFT	--F-F-	TTTFTTFT	FFFTFFFF	FFF-FTTT
020	mp	to	to	to	to	to	FFF-FF-
050	cc	to	to	to	to	to	cc

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)

instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

002	nf	nf	nf	nf	nf	nf
005	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf
IBMB2S565S3960 (P/T)						
instances	LoLA	LoLa	opt LoLa opt inc	LoLa pess	Marcie	Sara
none	nf	nf	nf	nf	nf	nf
QuasiCertifProtocol (colored)						
instances	LoLA	LoLa	opt LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)						
instances	LoLA	LoLa	opt LoLa opt inc	LoLa pess	Marcie	Sara
02	cc	cc	cc	cc	FFFTFFFF	FFFFFFFF
06	cc	cc	cc	cc	FFFTFFFF	FFFFFFFF
10	cc	cc	cc	cc	to	FFFFFFFF
18	cc	cc	cc	cc	to	FFFFFFFF
22	cc	cc	cc	cc	cc	FFFFFFFF
28	cc	cc	cc	cc	cc	FFFFFFFF
32	cc	cc	cc	cc	cc	FFFFFFFF
Vasy2003 (P/T)						
instances	LoLA	LoLa	opt LoLa opt inc	LoLa pess	Marcie	Sara
none	nf	nf	nf	nf	nf	nf

10.3 Score for the ReachabilityMarkingComparison Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**5**	**71**	**69**	**41**	**34**	**48**	**71**
CSRepetitions (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

CSRepetitions (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	6	6	3	2	2	3
max reached	0	2	2	0	0	0	2
best	0	2	2	0	0	0	2
subtotal	**0**	**11**	**11**	**4**	**3**	**3**	**8**
Dekker (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DotAndBoxes (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	1	1	1	1	2	0
max reached	0	0	0	0	0	2	0
best	0	0	0	0	0	2	0
subtotal	**0**	**2**	**2**	**2**	**2**	**7**	**0**
Echo (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Eratosthenes (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
FMS (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GlobalRessAlloc (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0

max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GlobalRessAlloc (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	1	1	1	1	1	0
max reached	0	0	0	0	2	0	0
best	0	0	0	0	2	0	0
subtotal	**0**	**2**	**2**	**2**	**6**	**2**	**0**
Kanban (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
LamportFastMutEx (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
LamportFastMutEx (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	1	1
instances	0	0	0	0	0	3	7
max reached	0	0	0	0	0	0	2
best	0	0	0	0	0	0	2
subtotal	**0**	**0**	**0**	**0**	**0**	**4**	**12**
MAPK (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
NeoElection (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
NeoElection (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	3	3	3	2	2	6
max reached	0	0	0	0	0	0	2
best	0	0	0	0	0	0	2
subtotal	**0**	**4**	**4**	**4**	**3**	**3**	**11**
PermAdmissibility (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PermAdmissibility (P/T)							

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	0	1	1
instances	4	6	6	1	0	1	4
max reached	0	2	2	0	0	0	0
best	0	2	2	0	0	0	0
subtotal	**5**	**11**	**11**	**2**	**0**	**2**	**5**

Peterson (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	6	6	2	2	2	6
max reached	0	2	2	0	0	0	2
best	0	2	2	0	0	0	2
subtotal	**0**	**11**	**11**	**3**	**3**	**3**	**11**

Philosophers (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Philosophers (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	11	10	9	2	8	8
max reached	0	2	0	0	0	0	0
best	0	2	0	0	0	0	0
subtotal	**0**	**16**	**11**	**10**	**3**	**9**	**9**

PhilosophersDyn (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PhilosophersDyn (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	2	2	2	2	1	1
max reached	0	0	0	0	0	0	0
best	0	2	2	2	2	0	0
subtotal	**0**	**5**	**5**	**5**	**5**	**2**	**2**

Planning (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Railroad (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0

best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
RessAllocation (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Ring (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
RwMutex (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SharedMemory (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SharedMemory (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	2	3	2	2	3	3
max reached	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0
subtotal	**0**	**3**	**6**	**3**	**3**	**4**	**4**
SimpleLoadBal (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SimpleLoadBal (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	2	2	2	2	3	2
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	2	0
subtotal	**0**	**3**	**3**	**3**	**3**	**6**	**3**
TokenRing (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TokenRing (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

1st instance	0	1	1	1	1	1	1
instances	0	2	2	2	2	2	3
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	2
subtotal	**0**	**3**	**3**	**3**	**3**	**3**	**6**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**0**	**0**	**0**	**0**	**3**	**12**
HouseConstruction (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	1
instances	0	0	0	0	2	7
max reached	0	0	0	0	0	2
best	0	0	0	0	0	2
subtotal	**0**	**0**	**0**	**0**	**3**	**12**
Vasy2003 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

10.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models

1	1	3
Sara	LoLA	LoLa opt
71 points	71 points	69 points

For "Surprise" Models

1	2
Sara	Marcie
12 points	3 points

Global

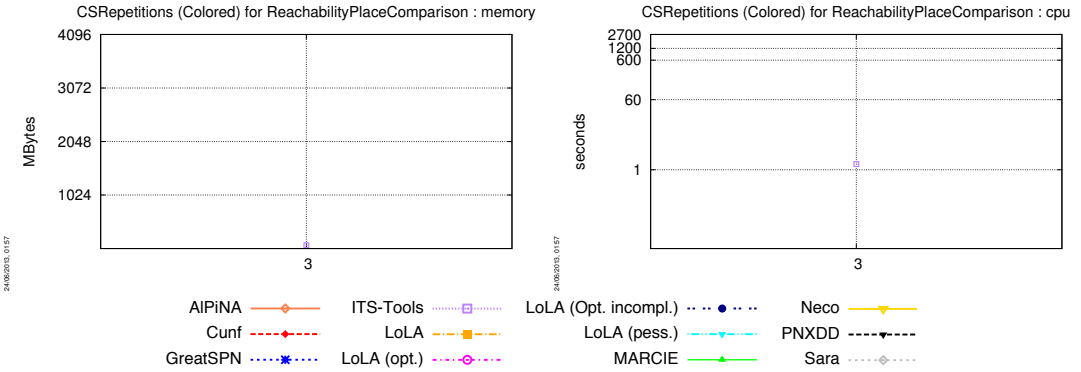
1	2	3
Sara	LoLA	LoLa opt
95 points	71 points	69 points

11 The ReachabilityPlaceComparison Examination

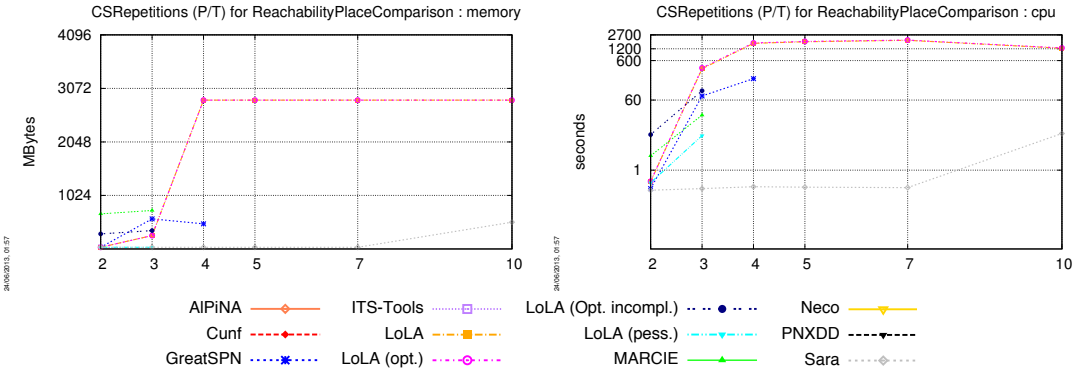
This examination deals with reachability properties dealing with the comparison of places marking only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

11.1 Handling of Models by Tools

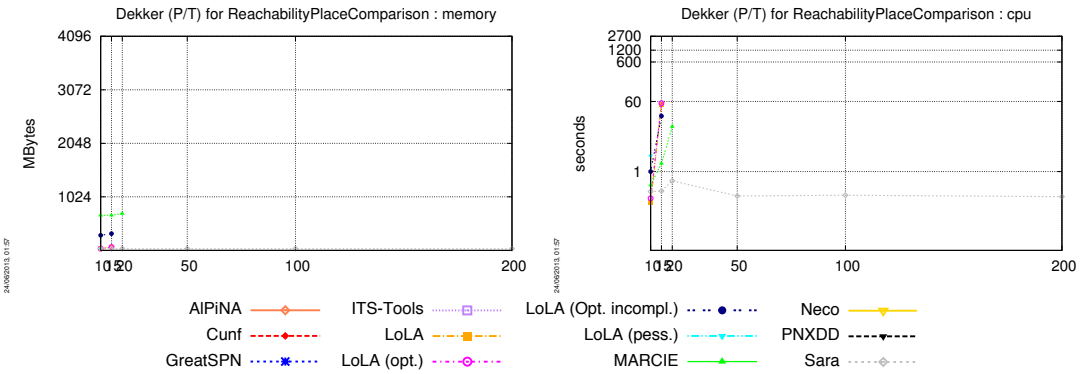
CSRepetitions (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



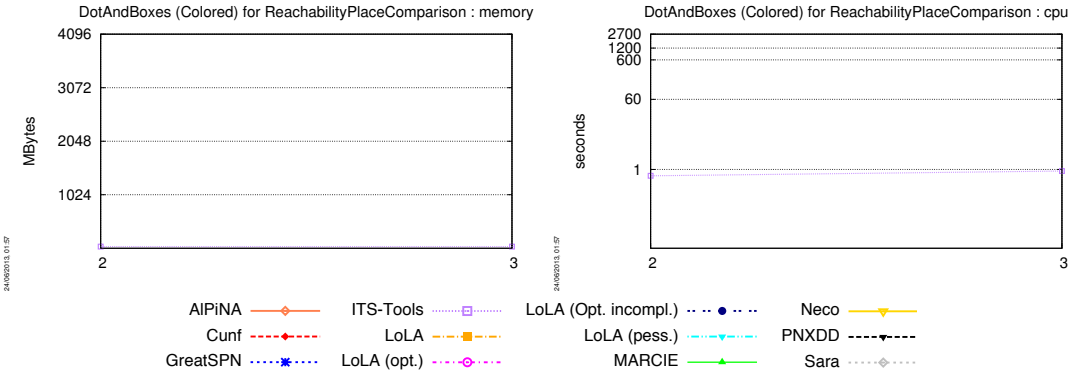
CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



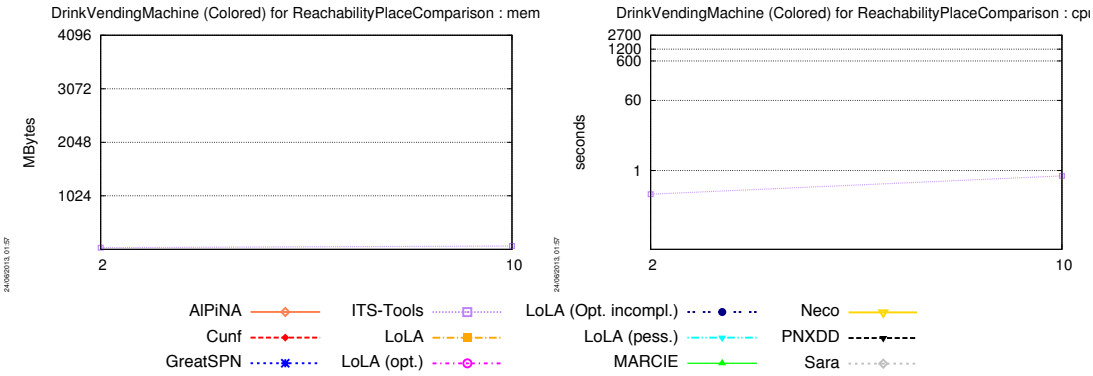
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



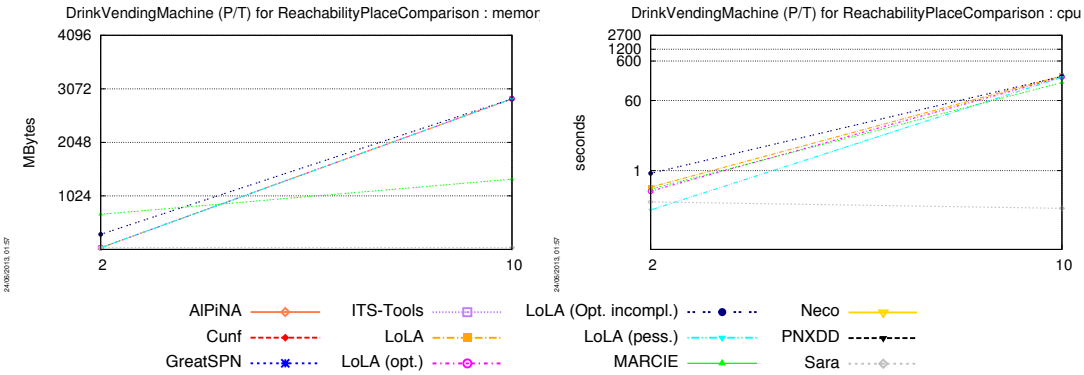
DotAndBoxes (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



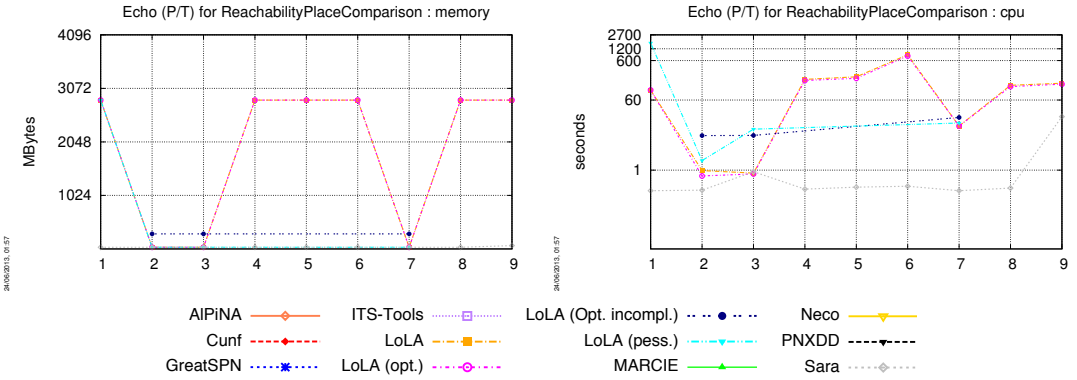
DrinkVendingMachine (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



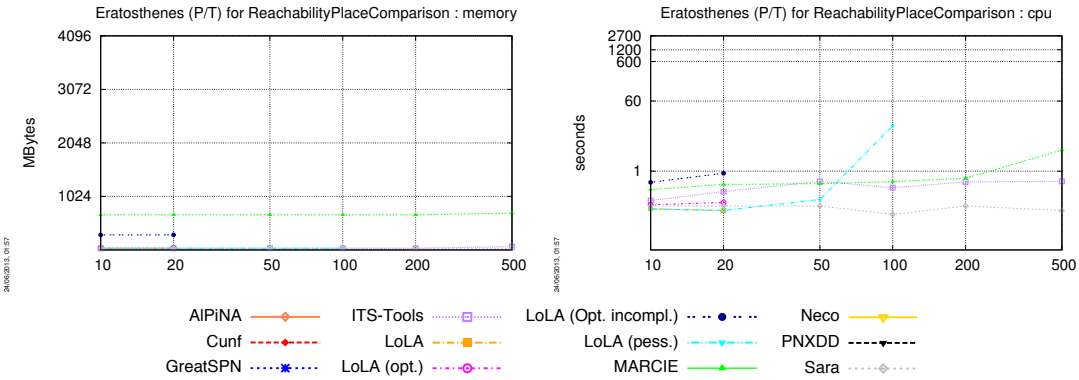
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



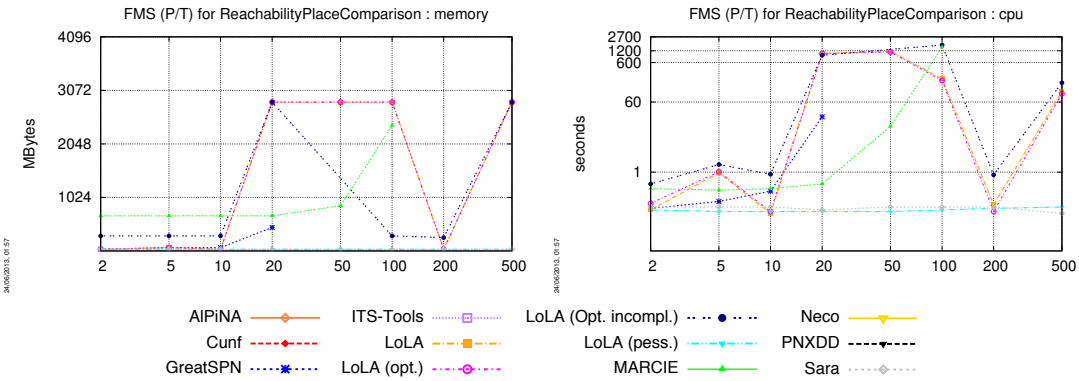
Echo (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



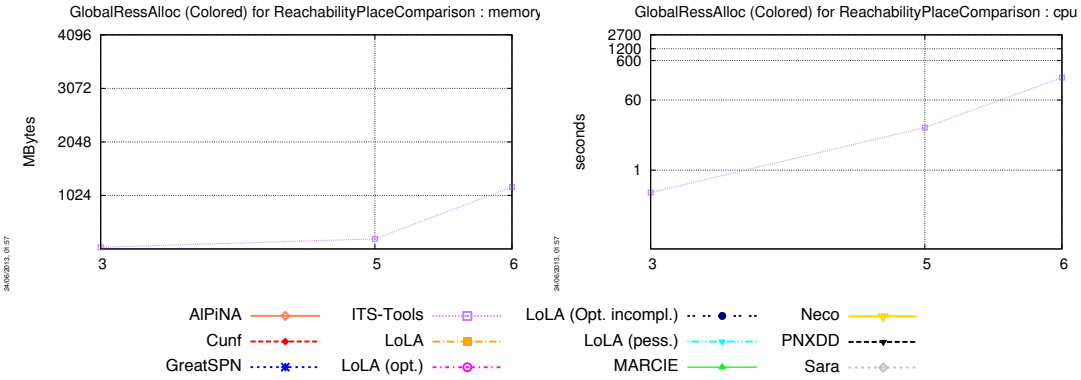
Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



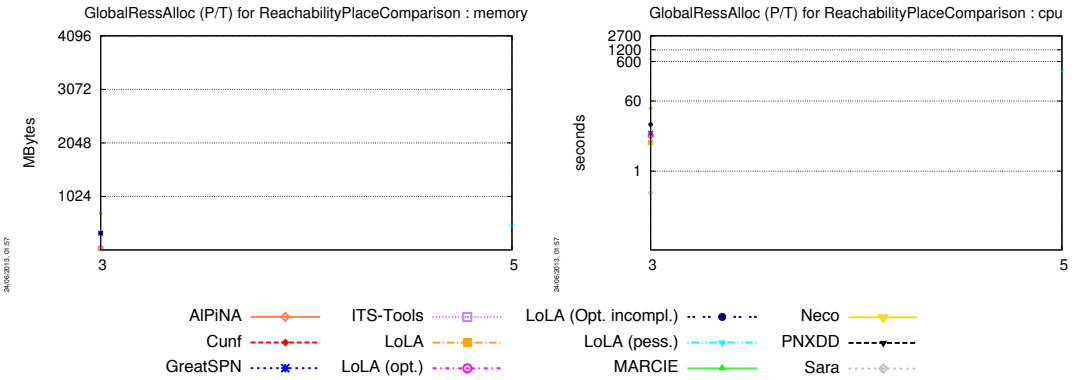
FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



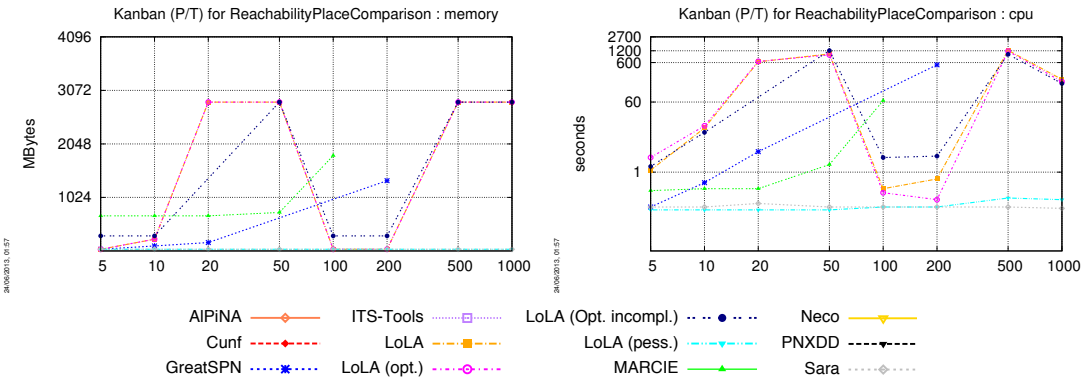
GlobalRessAlloc (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



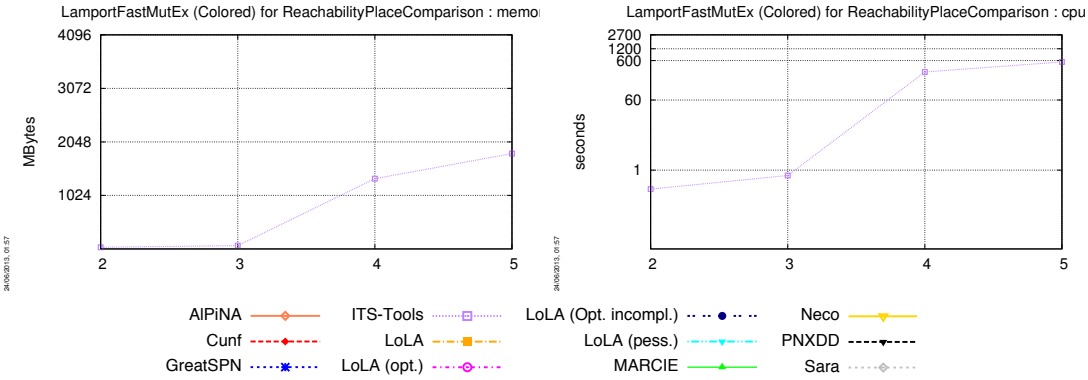
GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



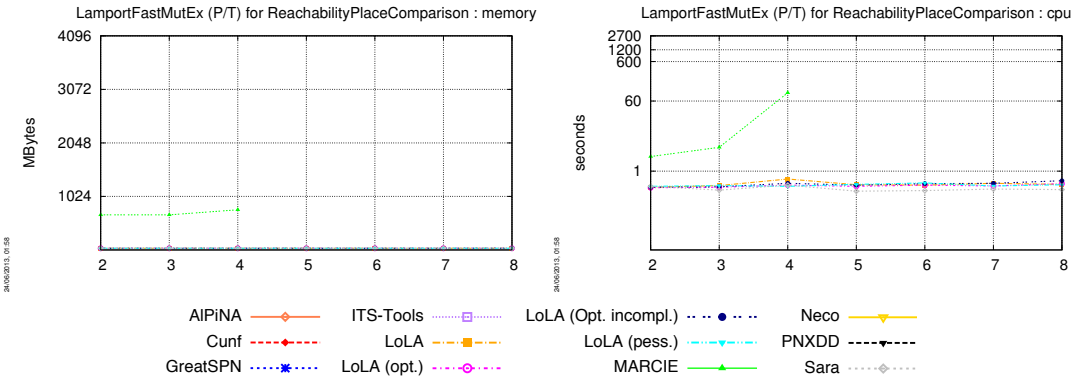
Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



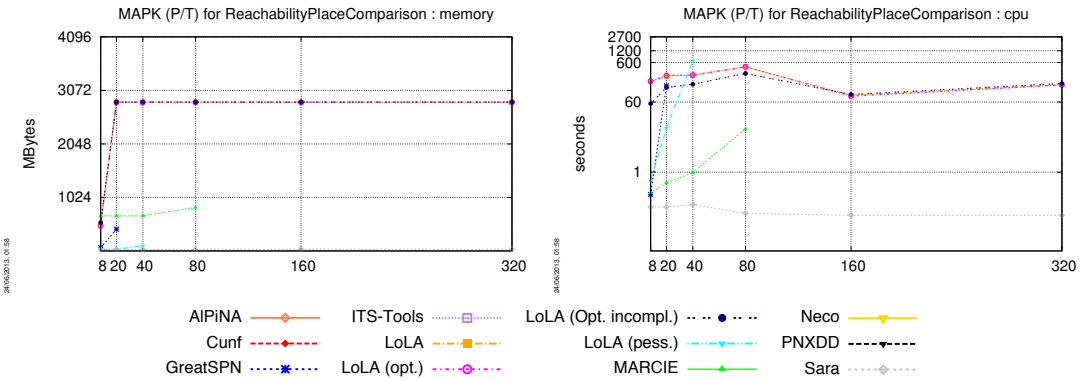
LamportFastMutEx (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



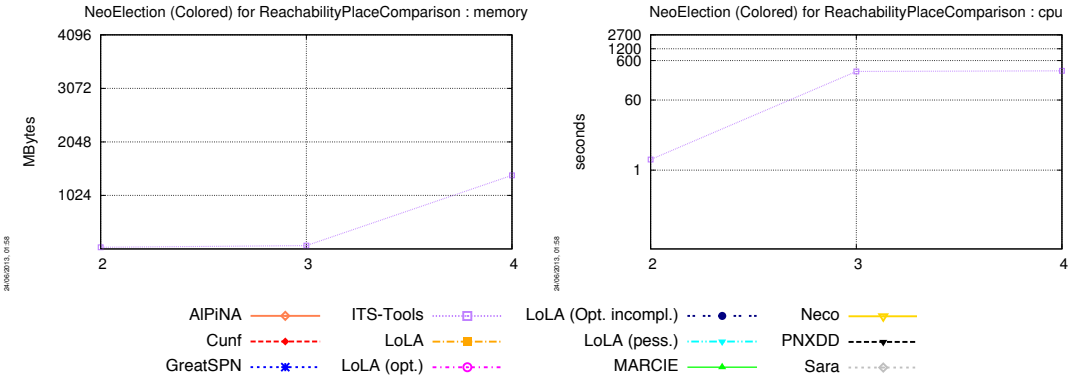
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



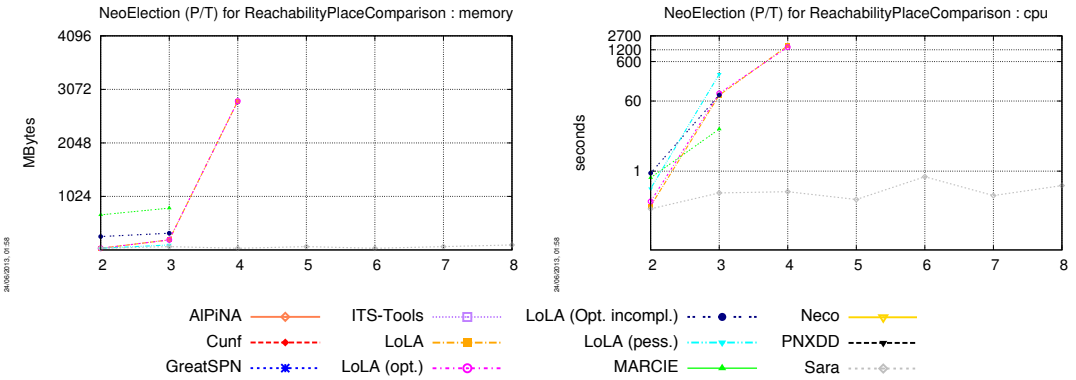
MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



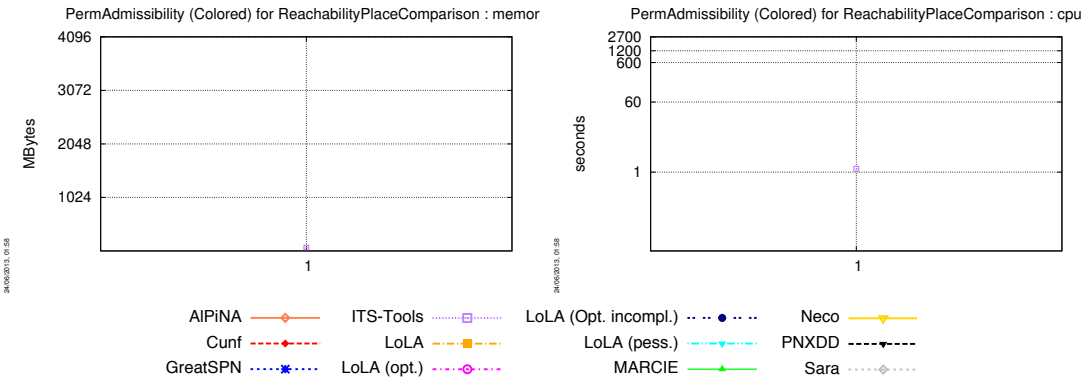
NeoElection (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



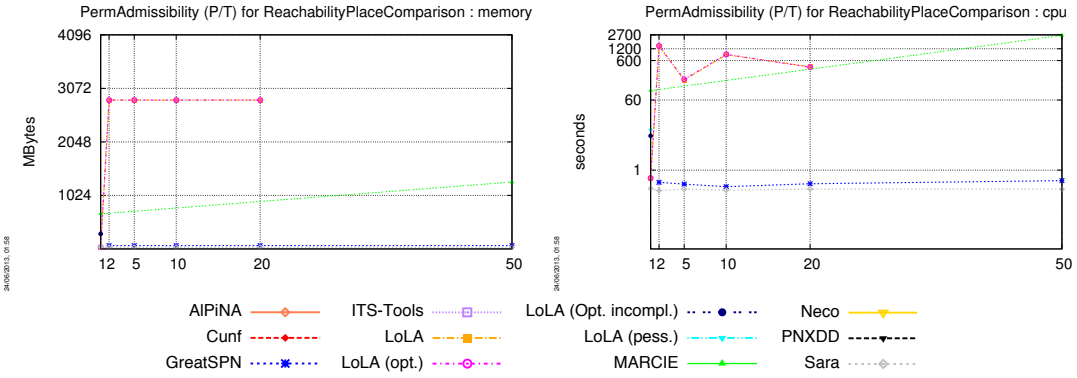
NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



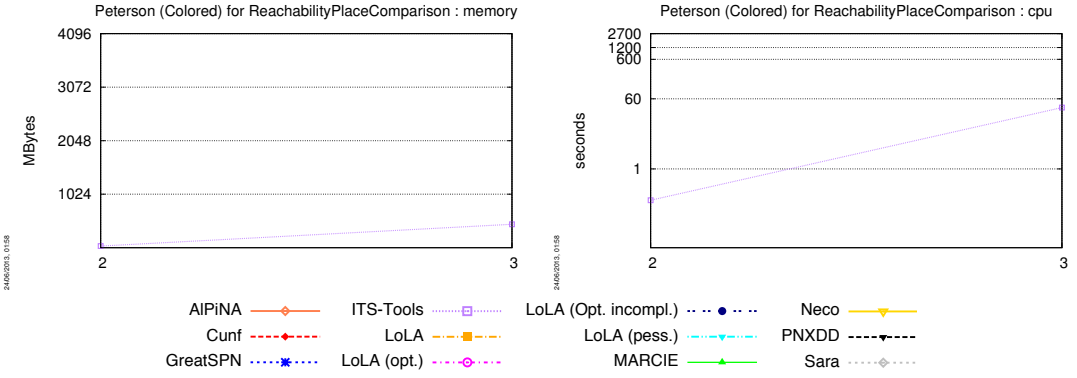
PermAdmissibility (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



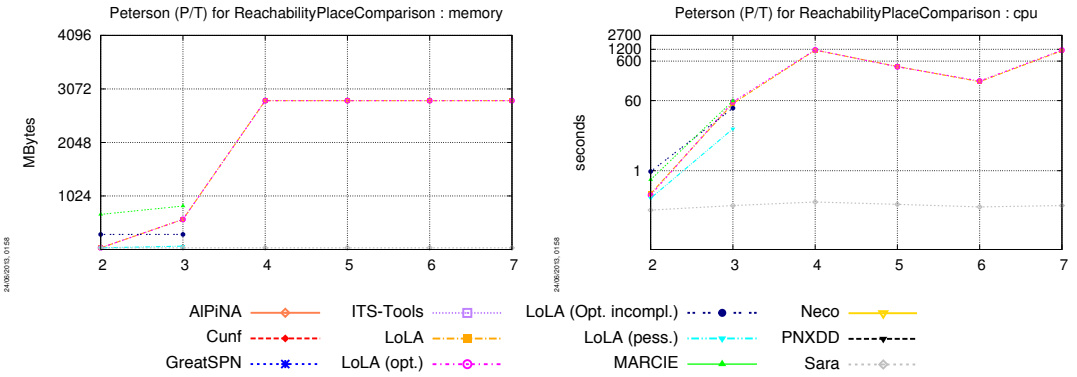
PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Peterson (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

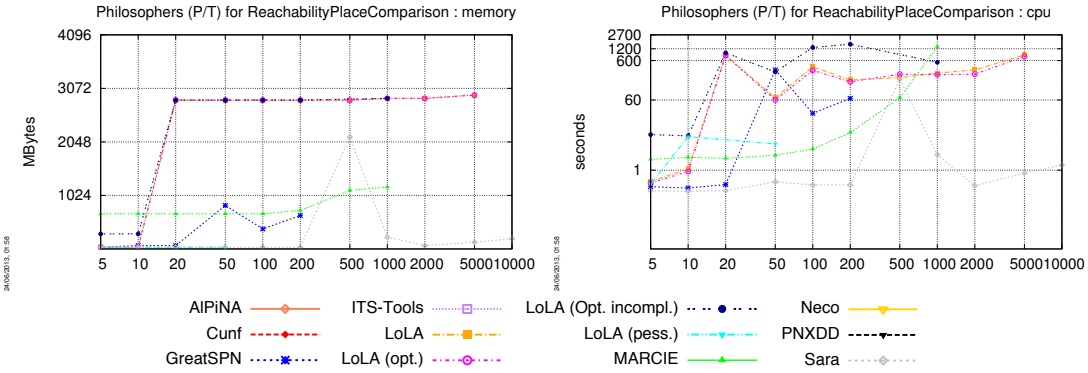


Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



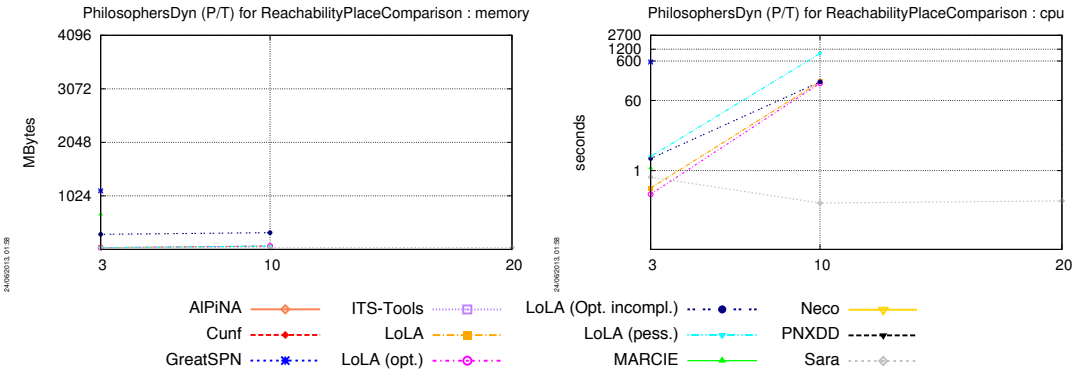
Philosophers (colored) No instance of this model could be computed for the **ReachabilityPlaceComparison** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



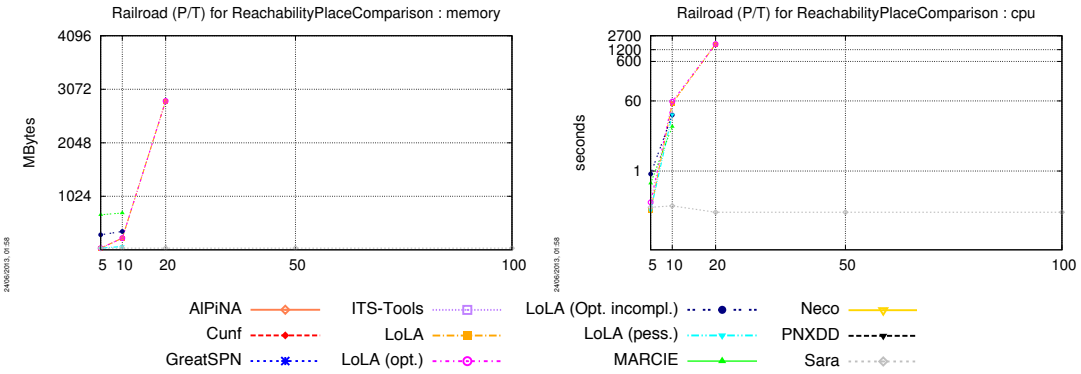
PhilosophersDyn (colored) No instance of this model could be computed for the **ReachabilityPlaceComparison** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

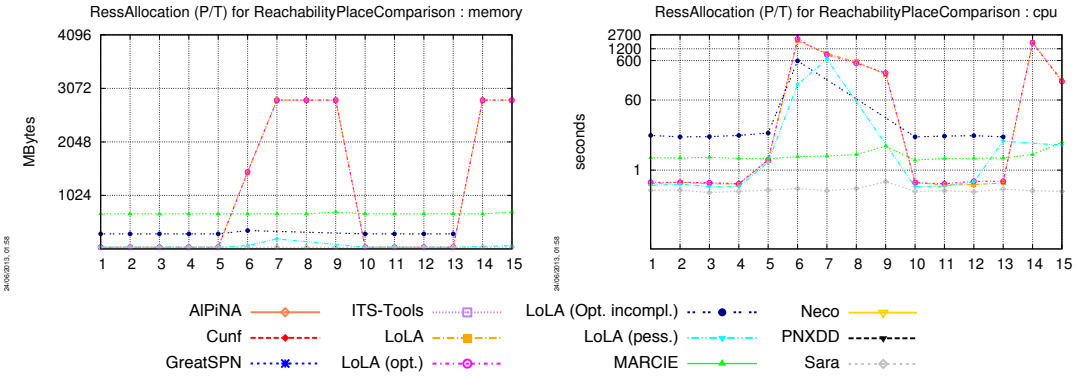


Planning (P/T) No instance of this model could be computed for the **ReachabilityPlaceComparison** examination.

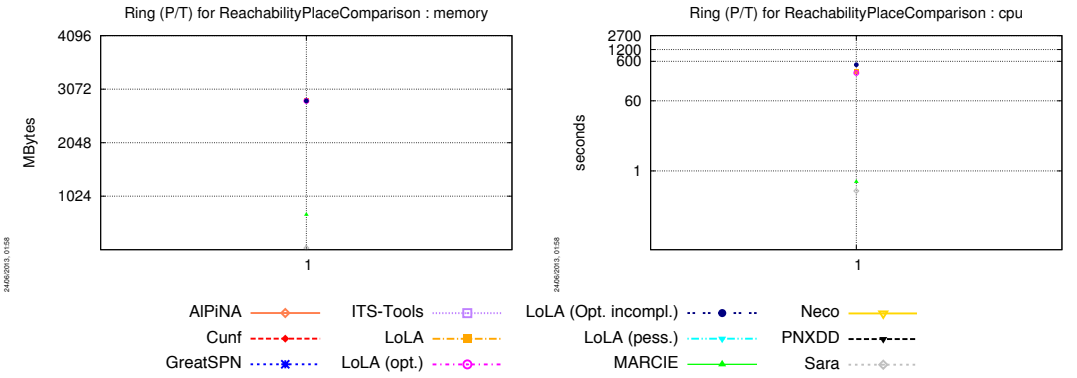
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



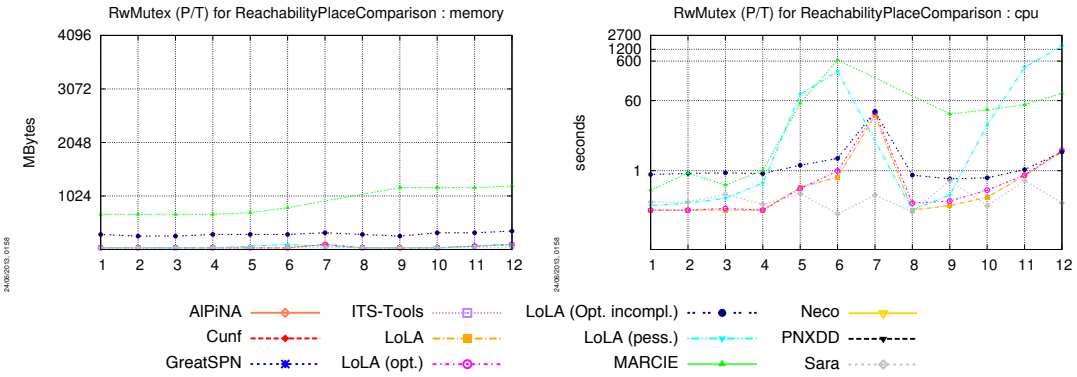
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

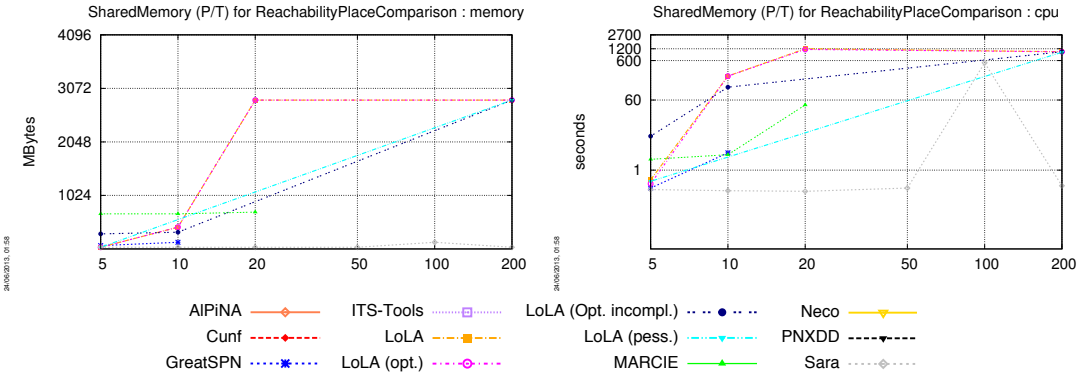


RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

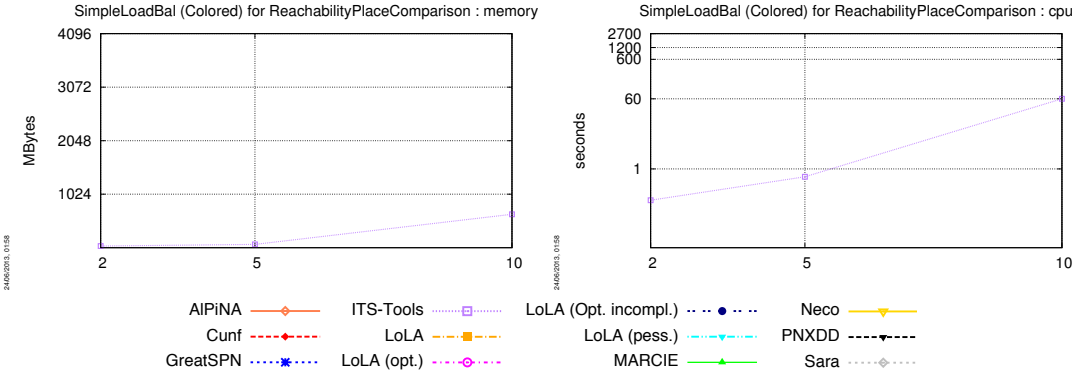


SharedMemory (colored) No instance of this model could be computed for the **ReachabilityPlaceComparison** examination.

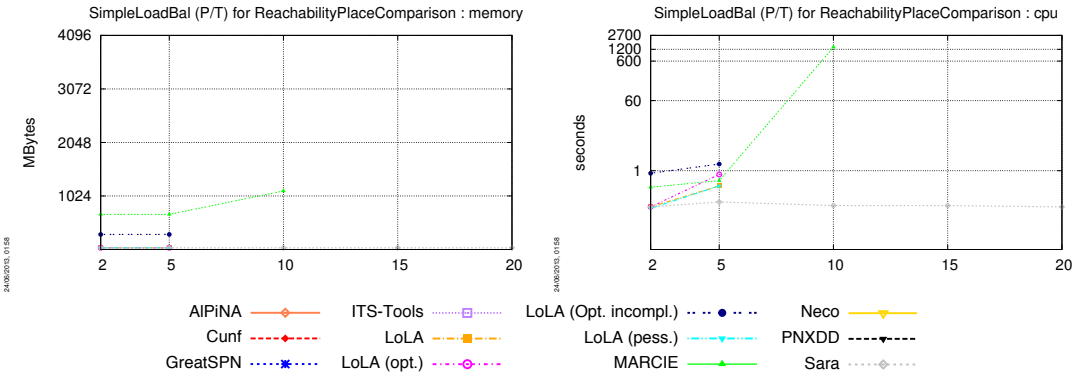
SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



SimpleLoadBal (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



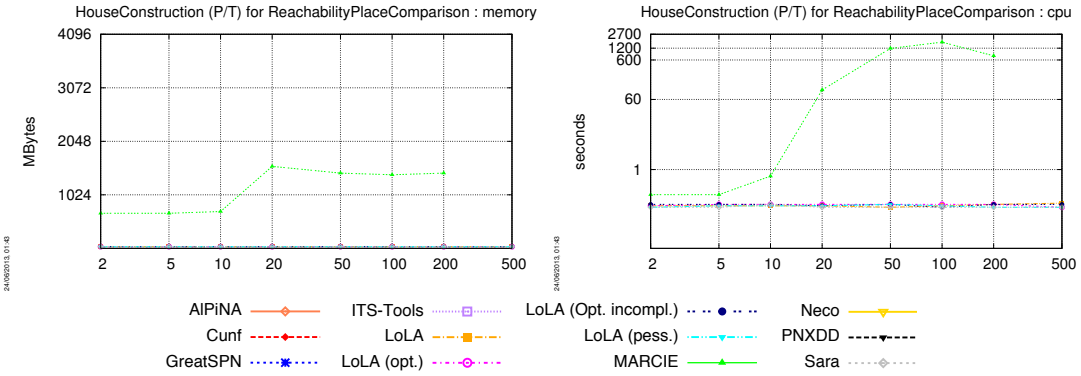
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



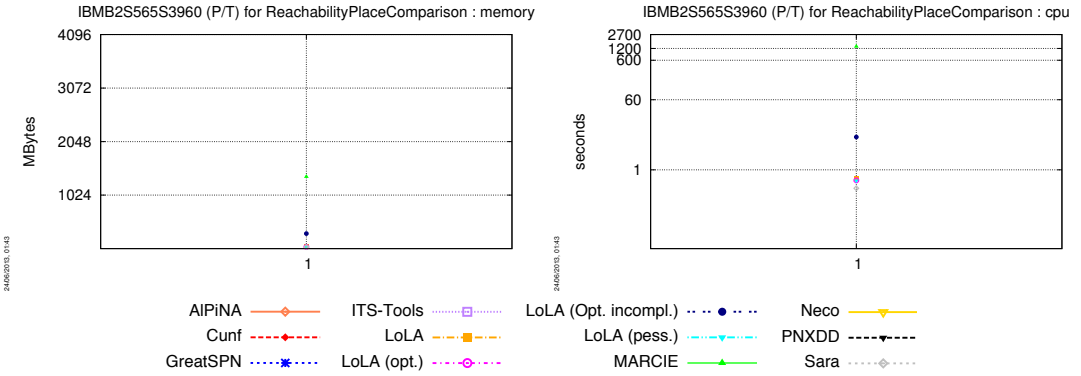
TokenRing (colored) No instance of this model could be computed for the **ReachabilityPlaceComparison** examination.

TokenRing (P/T) No instance of this model could be computed for the **ReachabilityPlaceComparison** examination.

HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

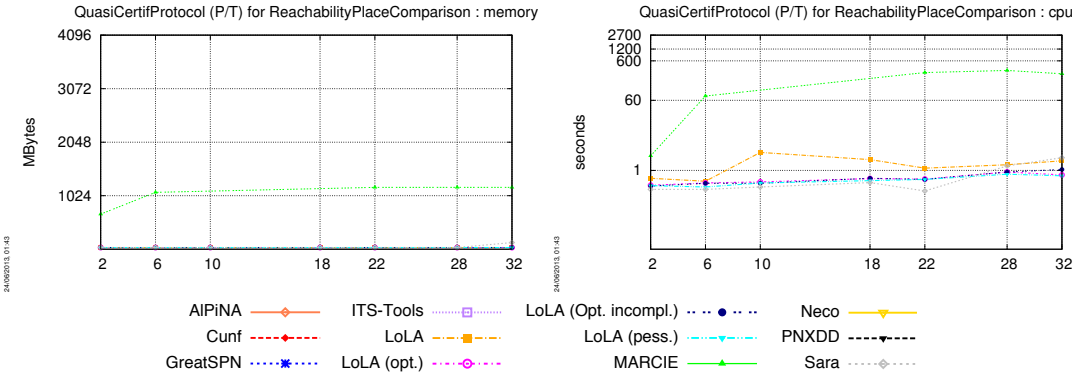


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

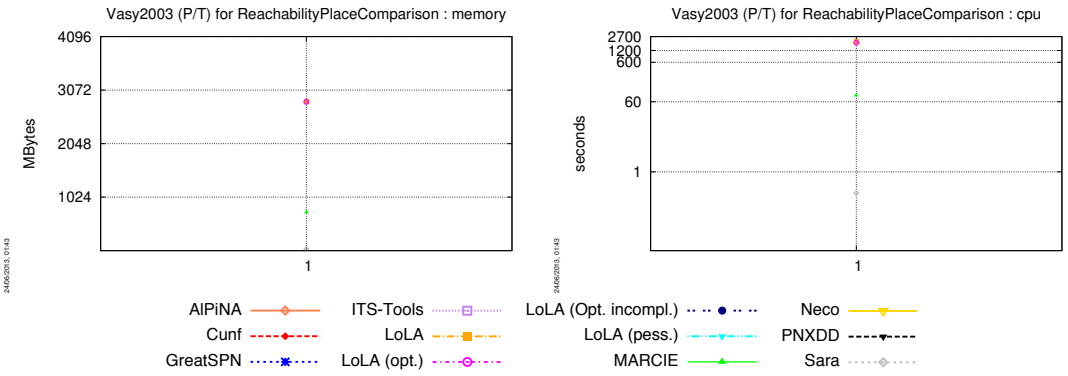


QuasiCertifProtocol (colored) No instance of this model could be computed for the **ReachabilityPlaceComparison** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



11.2 Outputs for the ReachabilityPlaceComparison Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc	nc
03	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
04	nc	mp	nc	nc	nc	nc	nc	nc
05	nc	mp	nc	nc	nc	nc	nc	nc
07	nc	mp	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc
CSRepetitions (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	FTFTFFFF	nc	TTTFFFFT	TTTFFFFT	--FFFF-	--FFFF-	FFFTTFFF	---TT-
03	FFFFFFFF	nc	TTTTFFFT	TTTTFFFT	--FFF-	TTTTFFFT	FFFFTFFF	---TT-
04	FFFTTFFF	nc	FFTFF--	FFTFF--	to	to	to	cc
05	to	nc	-FFFF--	-FFFF--	to	to	to	cc
07	mp	nc	--F--	--F--	to	to	to	cc
10	mp	nc	--FF-FF	--FF-FF	to	to	to	---T-
Dekker (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	FFFFFTFT	FFFFFFFF	cc
015	nc	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	to	FFFFFFFF	cc
020	nc	nc	to	to	to	to	FFFFTFFF	cc

050	nc	nc	to	to	to	to	to	cc
100	nc	nc	to	to	to	to	to	cc
200	nc	nc	nc	to	to	to	to	cc
DotAndBoxes (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFTFFF	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
4	nc	cc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
10	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	TTTTTTFT	TTTTTTFT	---F-	TTTTTTFT	FFFFFFFF	cc
10	nc	nc	cc	cc	cc	cc	FFFFTFFF	cc
Echo (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
d02r09	nc	nc	-F-FFFFF	-F-FFFFF	to	-F-FF--	to	cc
d02r11	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	cc
d02r15	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	----F	to	----T
d02r19	nc	nc	-FFFF--	-FFFF--	to	to	to	cc
d03r03	nc	nc	-F-FFFFF	-F-FFFFF	to	to	to	---TT-
d03r05	nc	nc	--F-FF	--F-FF	to	to	to	cc
d03r07	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	cc
d04r03	nc	nc	-FFFF-F-	-FFFF-F-	to	to	to	cc
d05r03	nc	nc	-F-FFFFF	-F-FFFFF	to	to	to	---TTT
Eratosthenes (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	FFFFFFFF	FFFFFTTT	FFFFFTTT	FFFFF--	FFTFFTTT	FFFTFFFF	cc
020	nc	FFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FF-FFFFF	FFFTTFFF	cc
050	nc	FFFF	to	to	to	TF-FTFF	FFFTFFFF	cc
100	nc	FFFFFFFF	to	to	to	TFFFTTF-	FFTTFFFF	cc
200	nc	FFFF	to	to	to	to	FFFFTFFF	---TTT
500	nc	FFFFFFFF	to	to	to	to	FFFTFFFF	cc
FMS (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	FFFFFFTF	nc	TTTTFFFF	TTTTFFFF	--FFFF	--FFF-	FFFFTFFF	----T
005	FFFFFFFF	nc	TTTTFTFT	TTTTFTFT	--F-F-	--F-F-	FFFFTFFF	cc
010	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFTFFF	cc
020	FFFFFFFF	nc	T-T-F-FF	T-T-F-FF	--F-FF	--F-FF	FFFFTFFF	cc
050	to	nc	---FF	---FF	to	----F	FFFFFFFT	cc
100	mp	cc	-F-FFFFF	-F-FFFFF	-F-FFFFF	-F-FF-FF	FFFFTFFF	----T
200	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	---FF-	to	cc
500	to	nc	-F-FFFFF	-F-FFFFF	-F-FFFFF	-F-FF-F-	to	cc
GlobalRessAlloc (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
05	nc	FTFTFFFF	nc	nc	nc	nc	nc	nc
06	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
07	nc	mp	nc	nc	nc	nc	nc	nc
09	nc	mp	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc
11	nc	mp	nc	nc	nc	nc	nc	nc
GlobalRessAlloc (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FFFFFFFF	nc	TFTFFTFF	TFTFFTFF	-F-FF-FF	to	FFFTFFFF	cc
05	cc	nc	to	to	to	cc	to	to
Kanban (P/T)								

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
0005	FFFFFFFF	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	--F--	FFFFTFFF	---TT-
0010	FFFFFFFF	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	-F-F--	FFTTTFFF	cc
0020	FFFFFFFF	nc	-F-FFFFF	-F-FFFFF	to	-F-FFFFF	FFFFFFFF	cc
0050	to	nc	--FF-F-	--FF-F-	--FF-F-	--FF--	FFFTTFFF	cc
0100	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	--F-F-	FFFFTFFF	cc
0200	TTTTT	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFF-FF	to	cc
0500	mp	nc	cc	cc	cc	cc	to	cc
1000	to	nc	-F-F-FFF	-F-F-FFF	-F-F-FFF	-F-F-FF-	to	cc

LamportFastMutEx (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
4	nc	FTFFFFFF	nc	nc	nc	nc	nc	nc
5	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc
8	nc	mp	nc	nc	nc	nc	nc	nc

LamportFastMutEx (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	cc	cc	cc	cc	FFFFFFFF	---TTT
3	nc	nc	cc	cc	cc	cc	FFFTFFFF	cc
4	nc	nc	cc	cc	cc	cc	FFFTTFFF	cc
5	nc	nc	cc	cc	cc	cc	to	cc
6	nc	nc	cc	cc	cc	cc	to	cc
7	nc	nc	cc	cc	cc	cc	to	cc
8	nc	nc	cc	cc	cc	cc	to	cc

MAPK (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
008	FFFTFFFF	nc	TTTFTTTT	TTTFTTTT	--F--	--F--	FFFTFFFF	cc
020	FFFFFFFF	nc	-FFFF-FF	-FFFF-FF	-FFFF-FF	-FFFF-FF	FFFTFFFT	cc
040	to	nc	-F-F-FFF	-F-F-FFF	-F-F-FFF	-F-F-FFF	FFFFFFFF	---TT-
080	to	nc	---FFF	---FFF	---FFF	to	FFFFFFFF	cc
160	to	nc	-F-FFFFF	-F-FFFFF	-F-FFFFF	to	to	cc
320	to	nc	-FFFFF-	-FFFFF-	-FFFFF-	to	to	----T

NeoElection (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
3	nc	FFFF	nc	nc	nc	nc	nc	nc
4	nc	FTFTFFTF	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc
8	nc	mp	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	TTTFFTTT	TTTFFTTT	--FF--	TTTFFTTT	FFFTTFFF	cc
3	nc	nc	TTTFFTTT	TTTFFTTT	--FF--	TTTFFTT-	FFFTTFFF	----T
4	nc	nc	-FFF-TFT	-FFF-TFT	to	to	to	cc
5	nc	nc	to	to	to	to	to	cc
6	nc	nc	to	to	to	to	to	cc
7	nc	nc	to	to	to	to	to	cc
8	nc	nc	to	to	to	to	to	cc

PermAdmissibility (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
02	nc	mp	nc	nc	nc	nc	nc	nc
05	nc	mp	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	nc	nc	nc	nc

50	nc	mp	nc	nc	nc	nc	nc	nc
PermAdmissibility (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	to	nc	FFFFFTTT	FFFFFTTT	FFFFF--	FFFFF--	FFFFFFFF	cc
02	?????FTT	nc	T-FFFFF	T-FFFFF	to	to	to	cc
05	TTTTT???	nc	FFFFF-F-	FFFFF-F-	to	to	to	cc
10	FTFTT???	nc	-F-FF-F-	-F-FF-F-	to	to	to	cc
20	FTFFTFTT	nc	-F-FFFFF	-F-FFFFF	to	to	to	cc
50	FFFTF???	nc	to	to	to	to	cc	cc
Peterson (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
4	nc	mp	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc
Peterson (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	TTTTTTFT	TTTTTTFT	---F-	TTTTT-F-	FFFFFFFF	---T-
3	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	-F-FFFFF	FFFFTFFF	cc
4	nc	nc	--F-FF	--F-FF	to	to	to	----T
5	nc	nc	FF-FF-FF	FF-FF-FF	to	to	to	cc
6	nc	nc	FFFFF-FF	FFFFF-FF	to	to	to	cc
7	nc	nc	-F-FF--	-F-FF--	to	to	to	cc
Philosophers (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc	nc
Philosophers (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FFFFFFFF	nf	TFTFTFFF	TFTFTFFF	-F-F-FFF	TFTFT--	FFFFFFFF	----T
000010	FFFTFFFF	nf	TTFFFTFF	TTFFFTFF	-FFF-FF	-FFFTFF	FFTTTFFF	cc
000020	FFFFFFFF	nf	--FFFF	--FFFF	--FFFF	to	FFFFTFFF	cc
000050	FFFFFFFF	nf	-FFFFFFF	-FFFFFFF	-FFFFFFF	FFFF-FFF	FFFTTFFF	cc
000100	FFFFFFFF	nf	-F-FF-F-	-F-FF-F-	-F-FF-F-	to	FFFFFFFF	cc
000200	FFFFFFFF	nf	-F-FFFFF	-F-FFFFF	-F-FFFFF	to	FFFFFFFF	cc
000500	to	nf	--FF-FF	--FF-FF	to	to	FFFTTFFF	cc
001000	mp	nf	-F-FF-F-	-F-FF-F-	-F-FF-F-	to	FFFTTFFF	cc
002000	mp	nf	-F-FF-F-	-F-FF-F-	to	to	to	cc
005000	mp	nf	-FFF-F-	-FFF-F-	to	to	to	cc
010000	cc	nf	to	to	to	to	to	cc
PhilosophersDyn (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc	nc	nc

PhilosophersDyn (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FFFFFFFF	nc	TTTTTFFF	TTTTTFFF	---FFF	TTTTTFFF	FFFFFFFF	cc
10	mp	nc	TFFFFTFT	TFFFFTFT	-FFFF-F-	TFFFFTFT	to	cc
20	mp	nc	to	to	to	to	to	cc

Planning (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
nf	nf	nf	nf	nf	nf	nf	nf	

Railroad (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFTTFFF	cc
010	nc	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	FFFFF--	FFFFTFFF	cc
020	nc	nc	-F-FF-F-	-F-FF-F-	to	to	to	cc
050	nc	nc	to	to	to	to	to	cc
100	nc	nc	to	to	to	to	to	cc

RessAllocation (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
R002C002	nc	nc	TTTTFTFF	TTTTFTFF	--F-FF	--F--	FFFFTFFF	cc
R003C002	nc	nc	TTTTFTFT	TTTTFTFT	--F-F-	TTTTFTFT	FFFFTFFF	---TTT
R003C003	nc	nc	TTTTTFFF	TTTTTFFF	---FFF	TTTTTFFF	FFFFFFFF	cc
R003C005	nc	nc	TFTFFTTF	TFTFFTTF	-F-FF-F	-F-FF-F	FFFFTFFT	cc
R003C010	nc	nc	TTTFTTFT	TTTFTTFT	--F-F-	--F-F-	FFFTFFFF	cc
R003C015	nc	nc	TTTTTFFF	TTTTTFFF	---FFF	---FFF	FFFFFFFT	cc
R003C020	nc	nc	FFFFF-F-	FFFFF-F-	to	FFFFFTFT	FFTTTFFF	cc
R003C050	nc	nc	-F-F-FFF	-F-F-FFF	to	to	FFFFFFFF	---TT-
R003C100	nc	nc	-F-FFFFF	-F-FFFFF	to	to	FFFFFFFF	---TTT
R005C002	nc	nc	FFFFFTFF	FFFFFTFF	FFFFF-FF	FFFFFTFF	FFFFFFFF	cc
R010C002	nc	nc	TFFFFFFF	TFFFFFFF	-FFFFFFF	TFFFFFFF	FFFTTFFF	cc
R015C002	nc	nc	TFFFFFFF	TFFFFFFF	-FFFFFFF	TFFFFFFF	FFFTFFFF	cc
R020C002	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	-F-FFFFF	FFFFTFFF	cc
R050C002	nc	nc	---F-	---F-	to	to	FFFFFFFF	cc
R100C002	nc	nc	FFFFF-F-	FFFFF-F-	to	FFFFFFFF	FFFTFFFF	cc

Ring (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nc	nc	-F-FF-FF	-F-FF-FF	-F-FF-FF	to	FFFFTFFT	----F

RwMutex (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
r0010w0010	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	---FFF	FFFFFFFF	cc
r0010w0020	nc	nc	FFFFFTTT	FFFFFTTT	FFFFF--	FF-F-TTT	FFFTFFFF	cc
r0010w0050	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	---FFF	FFFFFFFF	cc
r0010w0100	nc	nc	TTTTTTTT	TTTTTTTT	cc	cc	FFFFFFFF	cc
r0010w0500	nc	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	TFTFF-F-	FFFTTFFF	cc
r0010w1000	nc	nc	TFFFFFFF	TFFFFFFF	-FFFFFFF	TFFF-FFF	FFFTTFFF	cc
r0010w2000	nc	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	to	to	cc
r0020w0010	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FF-FFFF	to	cc
r0100w0010	nc	nc	TTTTTFFF	TTTTTFFF	---FFF	---F-	cc	cc
r0500w0010	nc	nc	TFFFTTFT	TFFFTTFT	-FFF-F-	-FFF-F-	cc	cc
r1000w0010	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	--F--	cc	cc
r2000w0010	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	cc	cc	cc

SharedMemory (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	cc	nc	nc	nc	nc	nc	nc
000010	nc	cc	nc	nc	nc	nc	nc	nc
000020	nc	cc	nc	nc	nc	nc	nc	nc
000050	nc	cc	nc	nc	nc	nc	nc	nc
000100	nc	cc	nc	nc	nc	nc	nc	nc
000200	nc	cc	nc	nc	nc	nc	nc	nc
000500	nc	cc	nc	nc	nc	nc	nc	nc
001000	nc	cc	nc	nc	nc	nc	nc	nc
002000	nc	cc	nc	nc	nc	nc	nc	nc

005000	nc	cc	nc	nc	nc	nc	nc	nc
010000	nc	cc	nc	nc	nc	nc	nc	nc
020000	nc	cc	nc	nc	nc	nc	nc	nc
050000	nc	cc	nc	nc	nc	nc	nc	nc
100000	nc	cc	nc	nc	nc	nc	nc	nc
SharedMemory (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FFFFFFFF	cc	TFFFFTFT	TFFFFTFT	-FFFF-F-	--FF-F-	FFFTTFFF	cc
000010	FFFFFFFF	cc	TTTTFTFT	TTTTFTFT	--F-F-	to	FFFFTFFF	cc
000020	mp	cc	-F-FF-FF	-F-FF-FF	to	to	FFFFFFFT	cc
000050	mp	cc	to	to	to	to	to	cc
000100	mp	cc	to	to	to	to	to	---TTT
000200	cc	cc	cc	cc	cc	cc	to	cc
SimpleLoadBal (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
05	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
10	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
15	nc	mp	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	nc	nc	nc	nc
SimpleLoadBal (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	TTTTTTFT	TTTTTTFT	---F-	TTTTT--	FFFFFFFF	cc
05	nc	nc	TFFFFFFF	TFFFFFFF	-FFFFFFF	TFFF-TFT	FFFTTFFF	---TTT
10	nc	nc	to	to	to	to	FFFFFFFF	cc
15	nc	nc	to	to	to	to	to	cc
20	nc	nc	to	to	to	to	to	cc
TokenRing (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nf	nf	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf	nf	nf
TokenRing (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nf	nf	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf	nf

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	cc	cc	cc	cc	FFFTTFFF	cc
005	cc	cc	cc	cc	FFFTTFFF	cc
010	cc	cc	cc	cc	FFFTFFFF	cc
020	cc	cc	cc	cc	FFFTFFFF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	to	cc
IBMB2S565S3960 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFTFFF	cc
QuasiCertifProtocol (colored)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	cc	cc	cc	cc	FFFFTFFF	cc
06	cc	cc	cc	cc	FFFTFFFF	cc
10	cc	cc	cc	cc	to	cc
18	cc	cc	cc	cc	to	cc
22	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	----T
32	cc	cc	cc	cc	cc	cc
Vasy2003 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	-F-F-F-	-F-F-F-	to	to	FFFFFFFF	cc

11.3 Score for the ReachabilityPlaceComparison Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**43**	**61**	**170**	**170**	**116**	**98**	**120**	**55**
CSRepetitions (Colored)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	1	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**
CSRepetitions (P/T)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	3	0	6	6	2	2	2	3
max reached	0	0	2	2	0	0	0	2
best	0	0	2	2	0	0	0	2
subtotal	**4**	**0**	**11**	**11**	**3**	**3**	**3**	**8**
Dekker (P/T)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	2	2	2	1	3	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	2	0
subtotal	**0**	**0**	**3**	**3**	**3**	**2**	**6**	**0**

DotAndBoxes (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

DrinkVendingMachine (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	2	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**

DrinkVendingMachine (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	1	1	1	1	2	0
max reached	0	0	0	0	0	0	2	0
best	0	0	0	0	0	0	2	0
subtotal	**0**	**0**	**2**	**2**	**2**	**2**	**7**	**0**

Echo (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	0	1
instances	0	0	9	9	3	4	0	3
max reached	0	0	2	2	0	0	0	2
best	0	0	2	2	0	0	0	2
subtotal	**0**	**0**	**14**	**14**	**4**	**5**	**0**	**8**

Eratosthenes (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1	1
instances	0	6	2	2	2	4	6	1
max reached	0	2	0	0	0	0	2	0
best	0	2	0	0	0	0	2	0
subtotal	**0**	**11**	**3**	**3**	**3**	**5**	**11**	**2**

FMS (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	4	0	8	8	7	8	6	2
max reached	0	0	2	2	2	2	0	0
best	0	0	2	2	2	2	0	0
subtotal	**5**	**0**	**13**	**13**	**12**	**13**	**7**	**3**

GlobalRessAlloc (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	3	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**

GlobalRessAlloc (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	0	1	0
instances	1	0	1	1	1	0	1	0
max reached	0	0	0	0	0	0	0	0
best	2	0	2	2	2	0	2	0
subtotal	**4**	**0**	**4**	**4**	**4**	**0**	**4**	**0**

Kanban (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	4	0	7	7	6	7	5	1

max reached	0	0	2	2	2	2	0	0
best	0	0	2	2	2	2	0	0
subtotal	**5**	**0**	**12**	**12**	**11**	**12**	**6**	**2**

LamportFastMutEx (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	4	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**

LamportFastMutEx (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	1	1
instances	0	0	0	0	0	0	3	1
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**2**

MAPK (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	2	0	6	6	6	3	4	2
max reached	0	0	2	2	2	0	0	2
best	0	0	2	2	2	0	0	2
subtotal	**3**	**0**	**11**	**11**	**11**	**4**	**5**	**7**

NeoElection (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	3	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	3	3	2	2	2	1
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	0	0	0	0
subtotal	**0**	**0**	**6**	**6**	**3**	**3**	**3**	**2**

PermAdmissibility (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	1	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**

PermAdmissibility (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	0
instances	5	0	5	5	1	1	1	0
max reached	2	0	0	0	0	0	0	0
best	2	0	0	0	0	0	0	0
subtotal	**10**	**0**	**6**	**6**	**2**	**2**	**2**	**0**

Peterson (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	6	6	2	2	2	2
max reached	0	0	2	2	0	0	0	0
best	0	0	2	2	0	0	0	0
subtotal	**0**	**0**	**11**	**11**	**3**	**3**	**3**	**3**

Philosophers (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Philosophers (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	6	0	10	10	7	3	8	1
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	0	0	0	0
subtotal	**7**	**0**	**13**	**13**	**8**	**4**	**9**	**2**

PhilosophersDyn (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PhilosophersDyn (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	0
instances	1	0	2	2	2	2	1	0
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	2	0	0
subtotal	**2**	**0**	**5**	**5**	**5**	**5**	**2**	**0**

Planning (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Railroad (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	3	3	2	2	2	0
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	0	0	0	0
subtotal	**0**	**0**	**6**	**6**	**3**	**3**	**3**	**0**

RessAllocation (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	15	15	10	12	15	3
max reached	0	0	2	2	0	2	2	0
best	0	0	2	2	0	2	2	0
subtotal	**0**	**0**	**20**	**20**	**11**	**17**	**20**	**4**

Ring (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	0	1	1
instances	0	0	1	1	1	0	1	1
max reached	0	0	2	2	2	0	2	2

best	0	0	2	2	2	0	2	2
subtotal	**0**	**0**	**6**	**6**	**6**	**0**	**6**	**6**

RwMutex (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	12	12	11	9	6	0
max reached	0	0	2	2	2	0	0	0
best	0	0	2	2	2	0	0	0
subtotal	**0**	**0**	**17**	**17**	**16**	**10**	**7**	**0**

SharedMemory (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

SharedMemory (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	2	0	3	3	2	1	3	1
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	2
subtotal	**3**	**0**	**4**	**4**	**3**	**2**	**4**	**4**

SimpleLoadBal (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	3	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**

SimpleLoadBal (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	2	2	2	2	3	1
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	2	0
subtotal	**0**	**0**	**3**	**3**	**3**	**3**	**6**	**2**

TokenRing (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TokenRing (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**12**	**12**	**6**	**6**	**22**	**4**

HouseConstruction (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

1st instance	0	0	0	0	1	0
instances	0	0	0	0	4	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**7**	**0**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa	opt LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	0
instances	1	1	1	1	1	0
max reached	2	2	2	2	2	0
best	2	2	2	2	2	0
subtotal	**6**	**6**	**6**	**6**	**6**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa	opt LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						
	LoLA	LoLa	opt LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	1
instances	0	0	0	0	2	1
max reached	0	0	0	0	0	0
best	0	0	0	0	0	2
subtotal	**0**	**0**	**0**	**0**	**3**	**4**
Vasy2003 (P/T)						
	LoLA	LoLa	opt LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	0	0	1	0
instances	1	1	0	0	1	0
max reached	2	2	0	0	2	0
best	2	2	0	0	2	0
subtotal	**6**	**6**	**0**	**0**	**6**	**0**

11.4 Trophies for this Examination

Trophies are divided in three categories: “Known” models, “Surprise” models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For “Known” Models

1	1	3	3
LoLA 170 points	LoLa opt 170 points	LoLa pess 120 points	Marcie 120 points

For “Surprise” Models

1	2	2
Marcie 22 points	LoLA 12 points	LoLa opt 12 points

Global

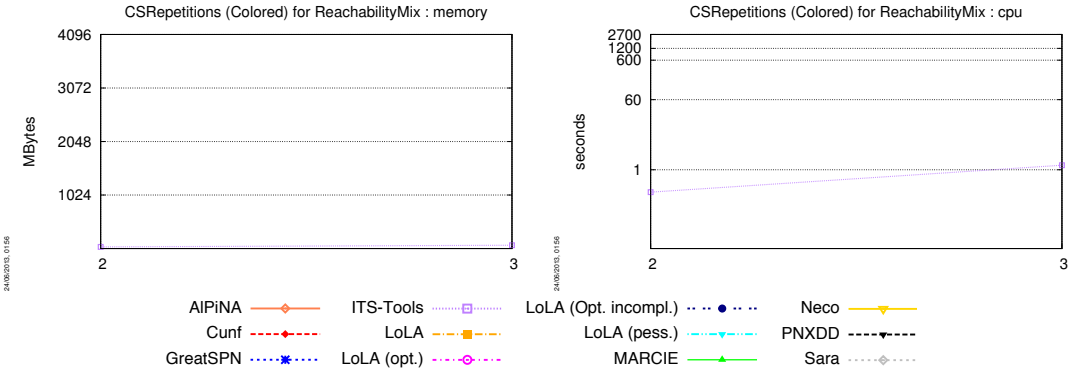
1	1	3
LoLA 194 points	LoLa opt 194 points	Marcie 164 points

12 The ReachabilityMix Examination

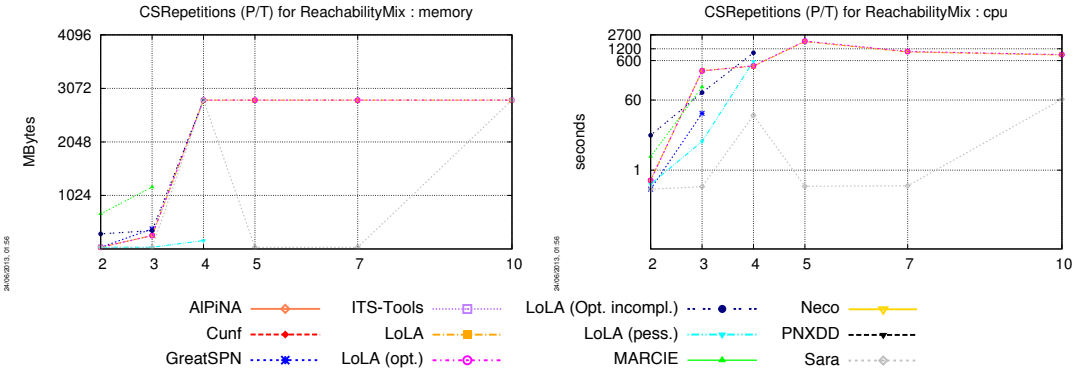
This examination deals with reachability properties dealing with all the previous type of atomic proposition. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

12.1 Handling of Models by Tools

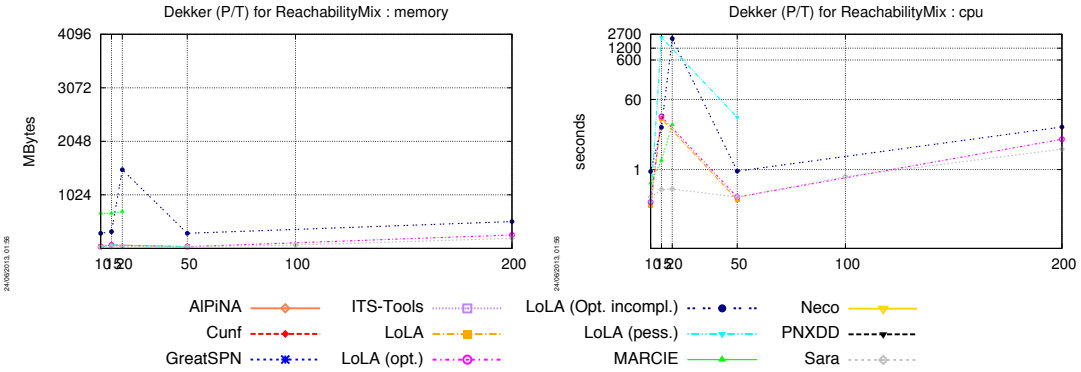
CSRepetitions (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



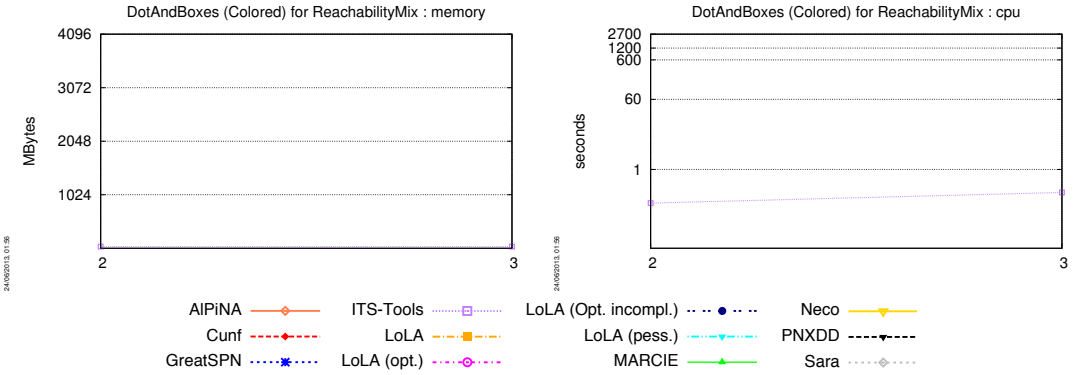
CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



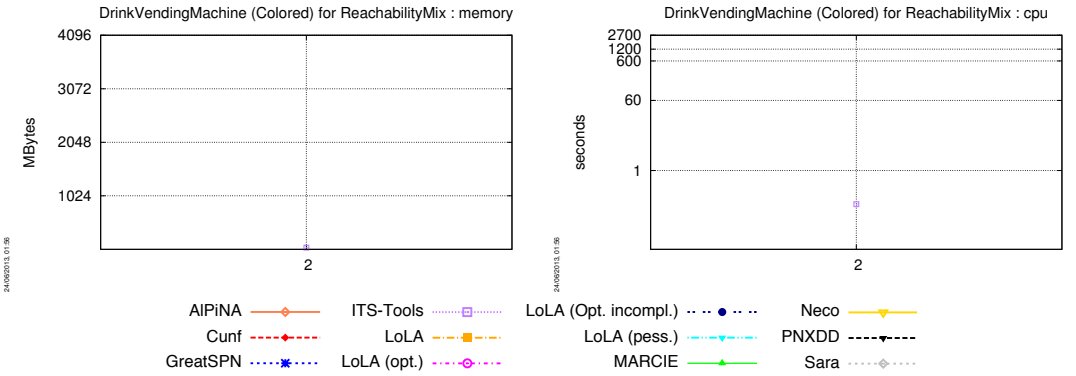
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



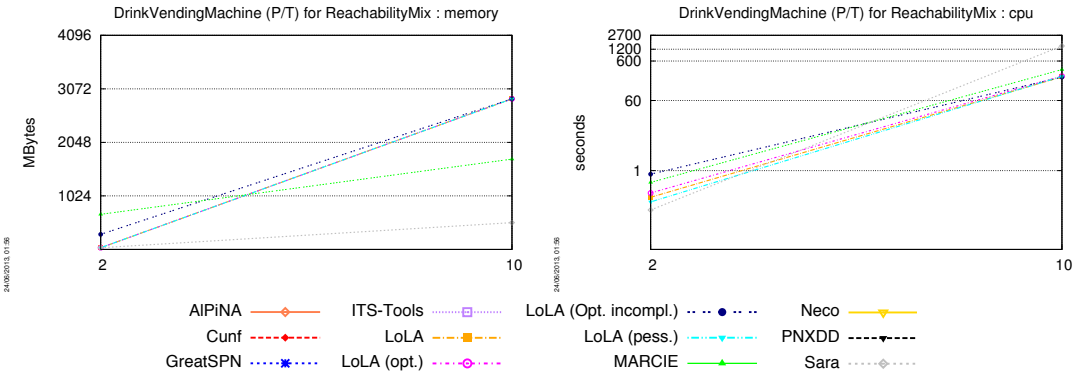
DotAndBoxes (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



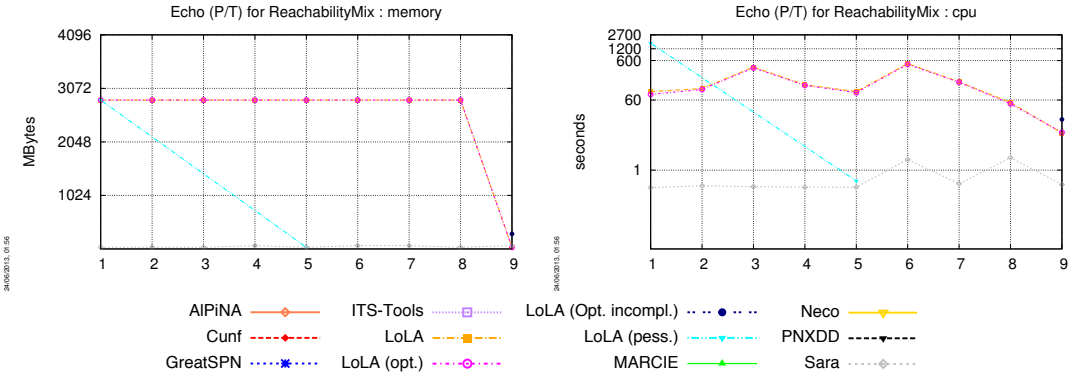
DrinkVendingMachine (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



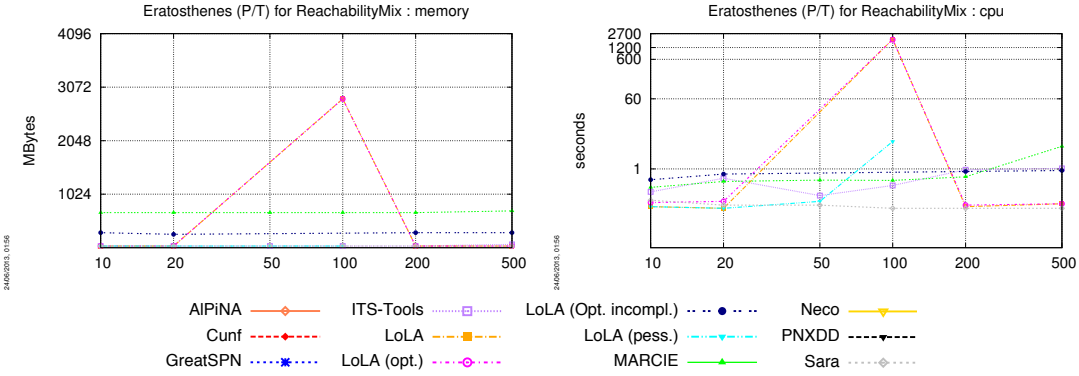
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



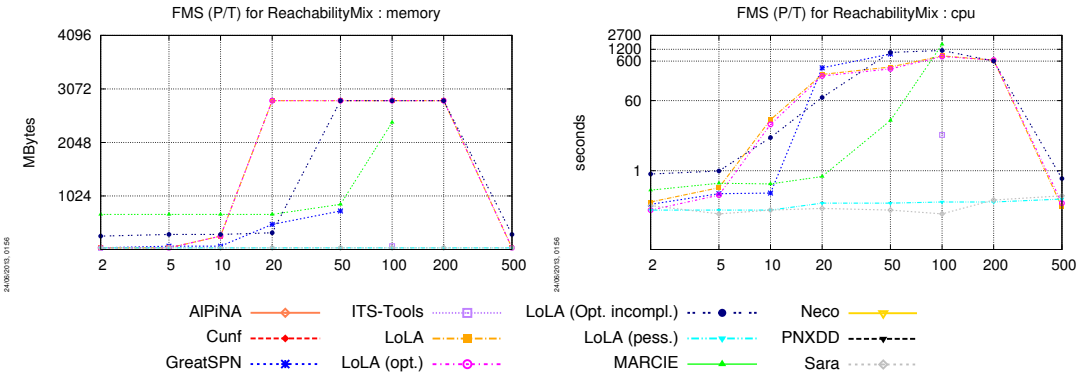
Echo (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

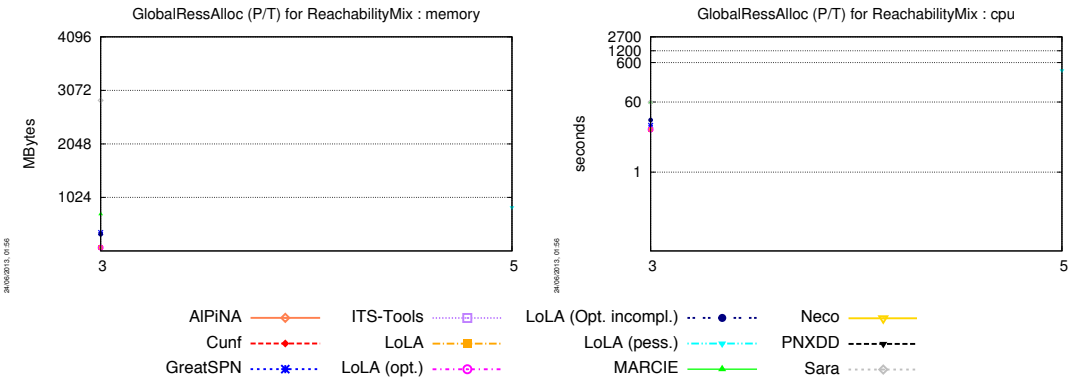


FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

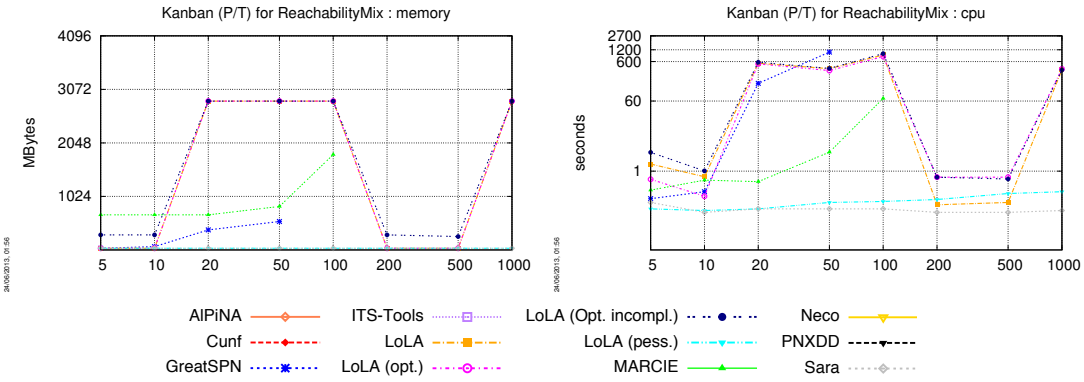


GlobalRessAlloc (colored) No instance of this model could be computed for the **ReachabilityMix** examination.

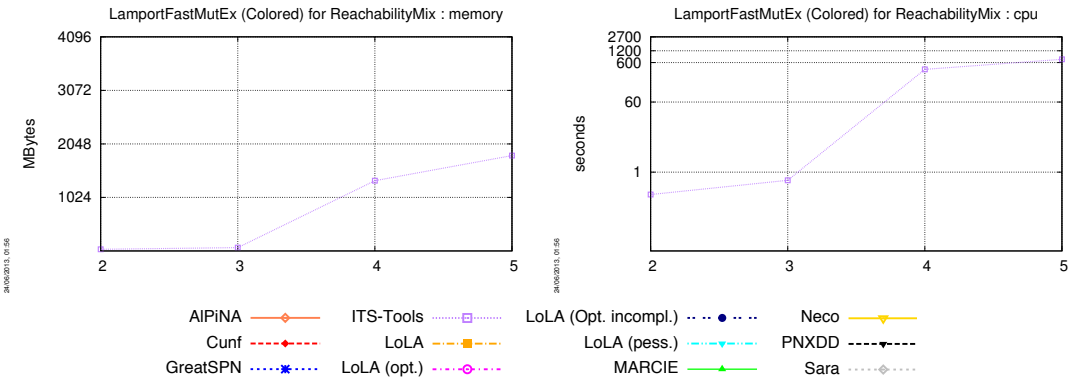
GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



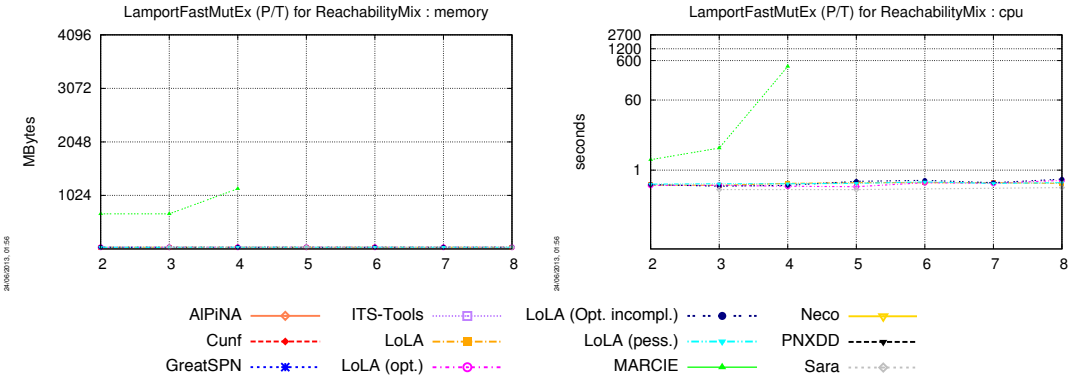
Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



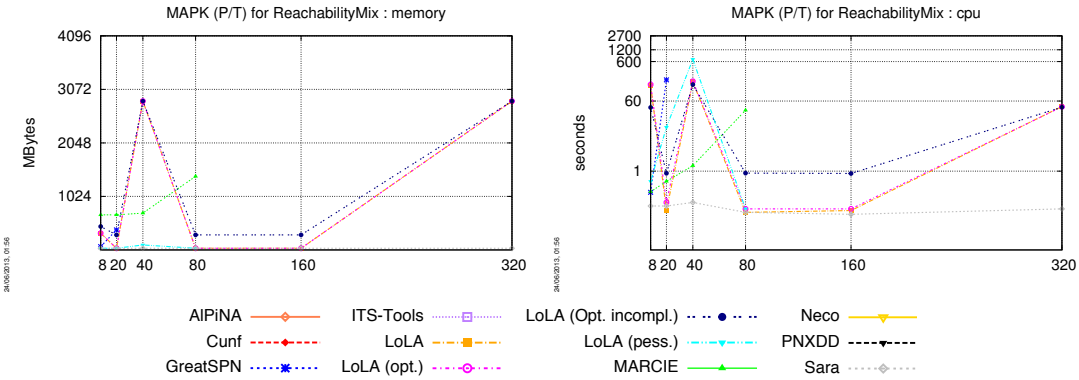
LamportFastMutEx (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



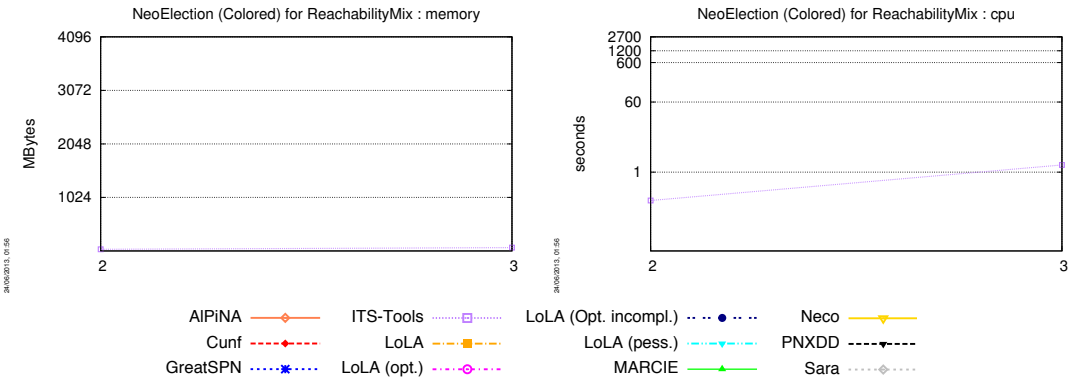
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



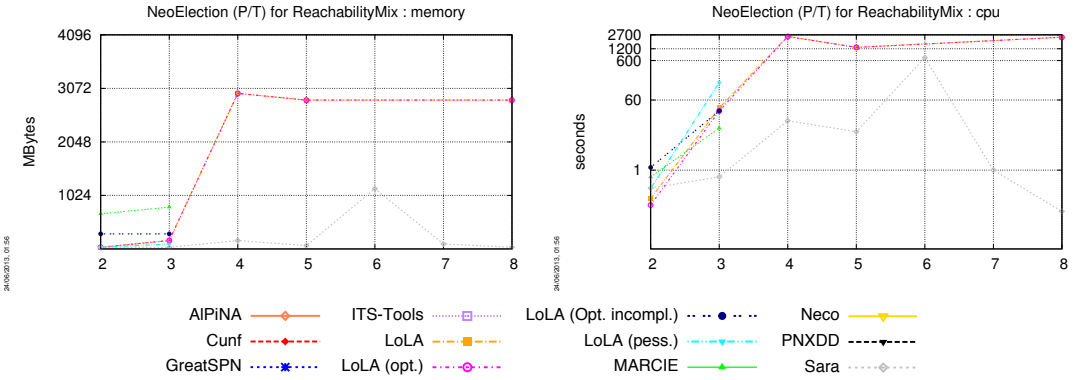
MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



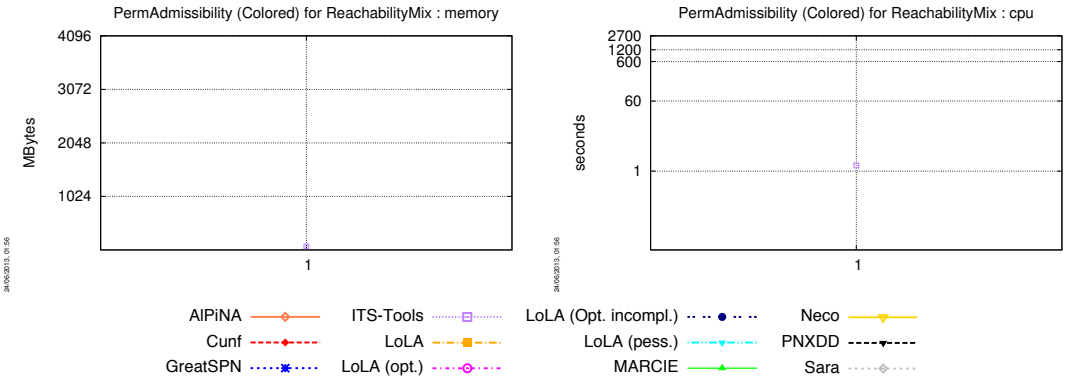
NeoElection (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



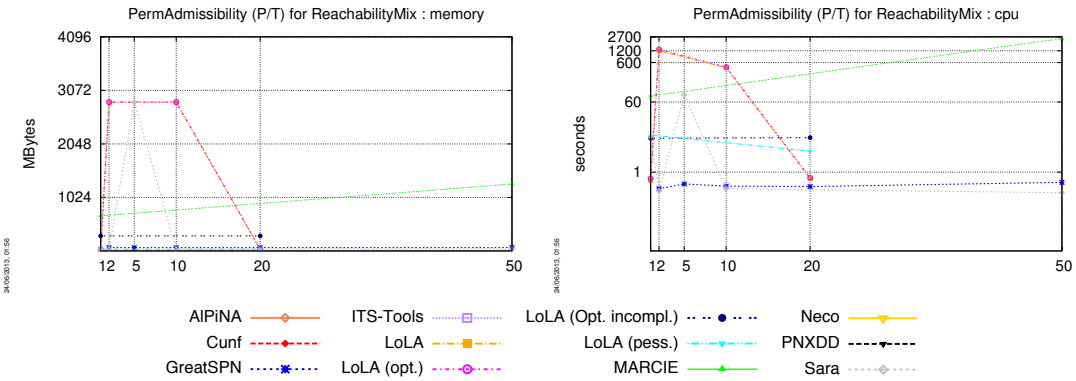
NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



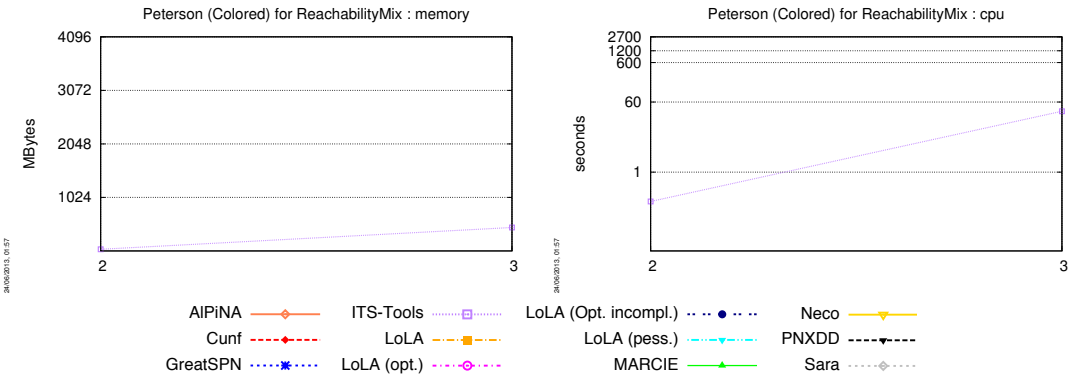
PermAdmissibility (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



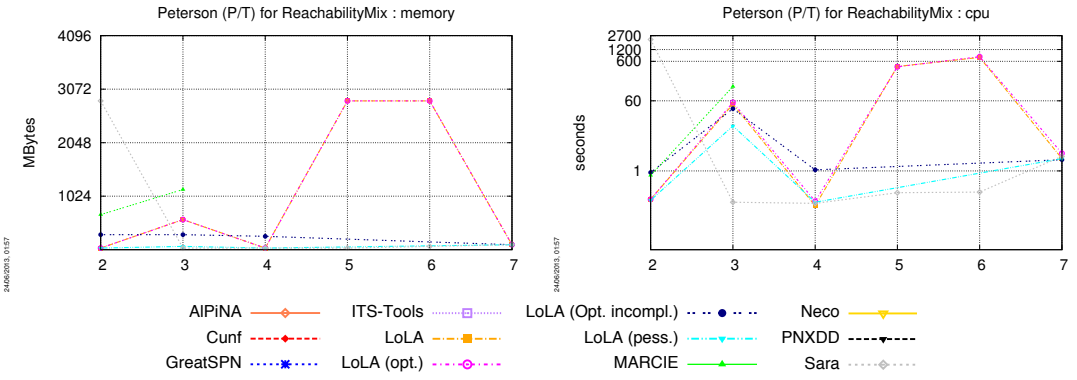
PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Peterson (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

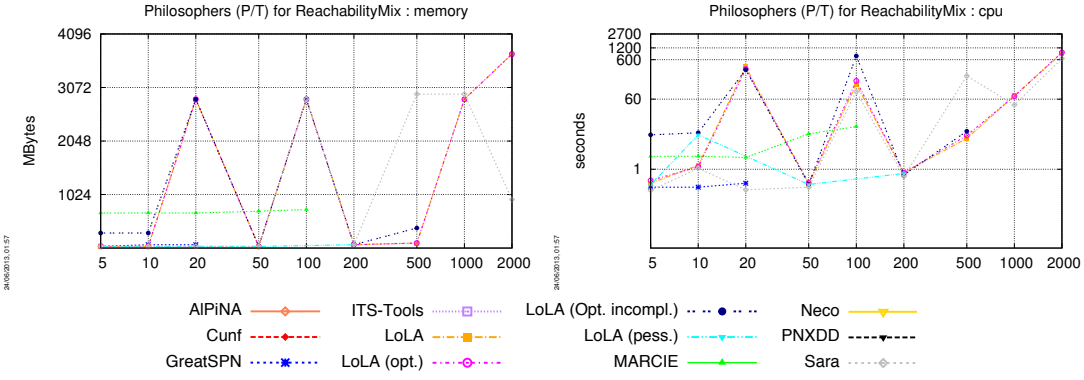


Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



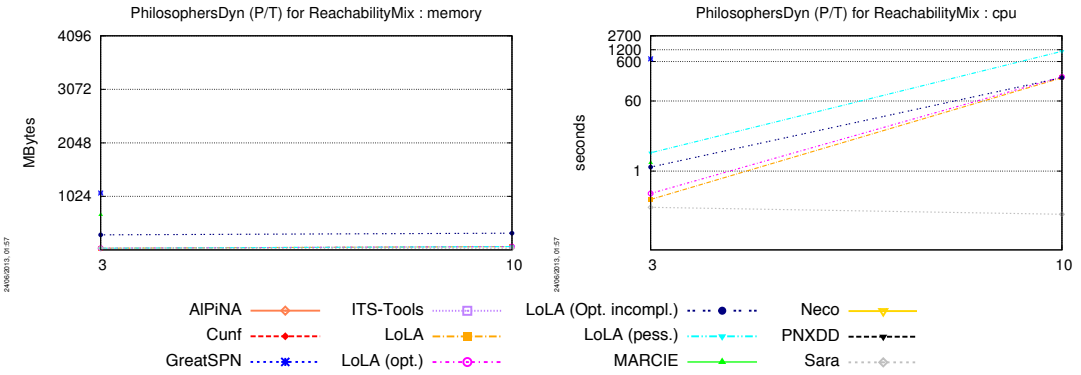
Philosophers (colored) No instance of this model could be computed for the **ReachabilityMix** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



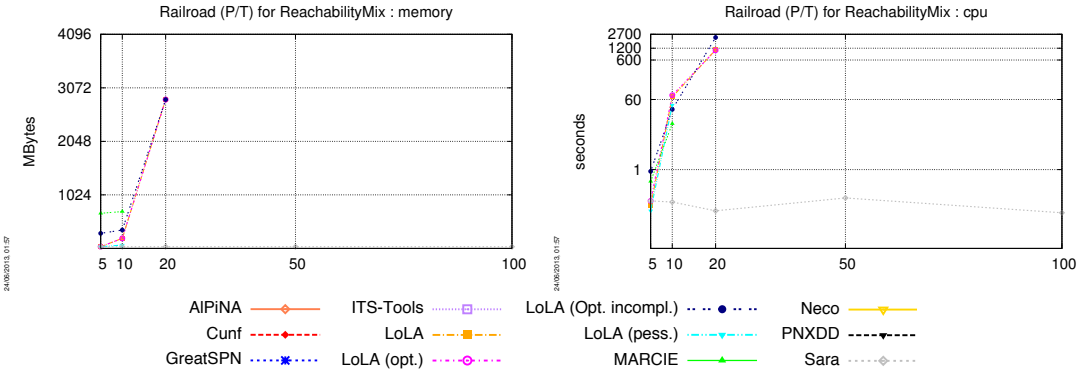
PhilosophersDyn (colored) No instance of this model could be computed for the **ReachabilityMix** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

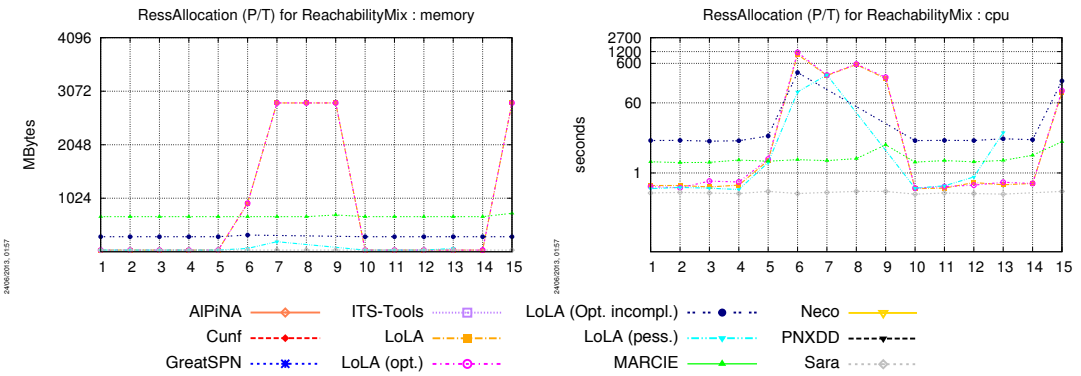


Planning (P/T) No instance of this model could be computed for the **ReachabilityMix** examination.

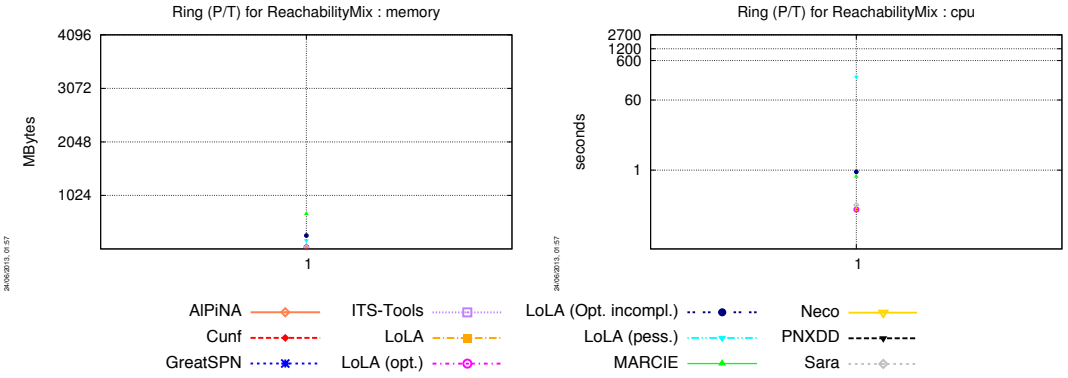
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



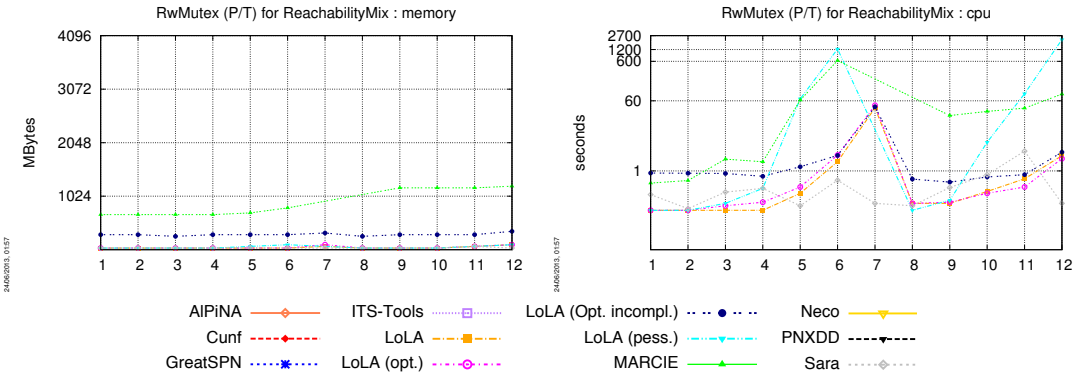
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

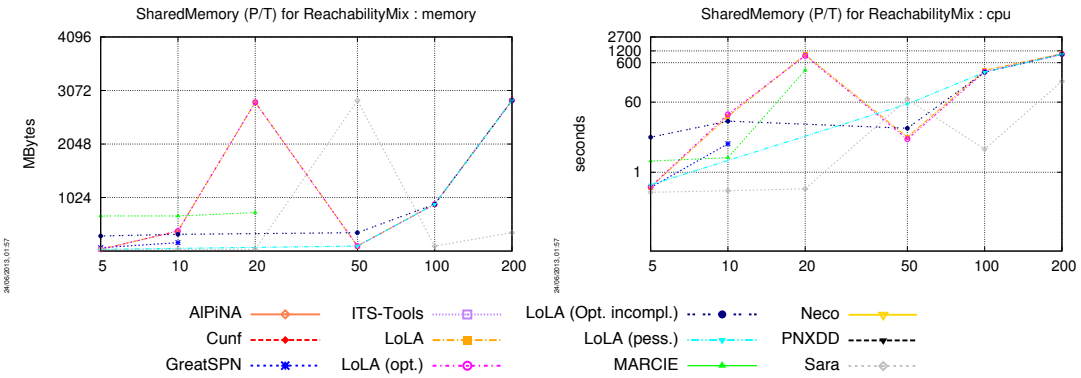


RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

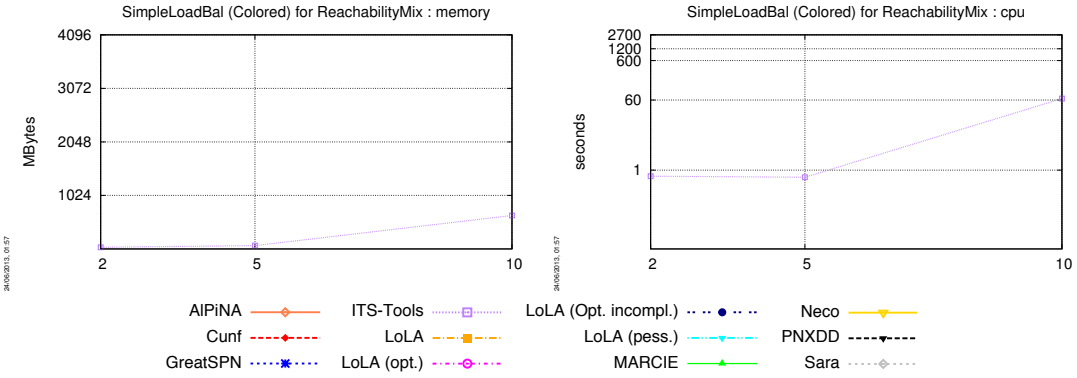


SharedMemory (colored) No instance of this model could be computed for the **ReachabilityMix** examination.

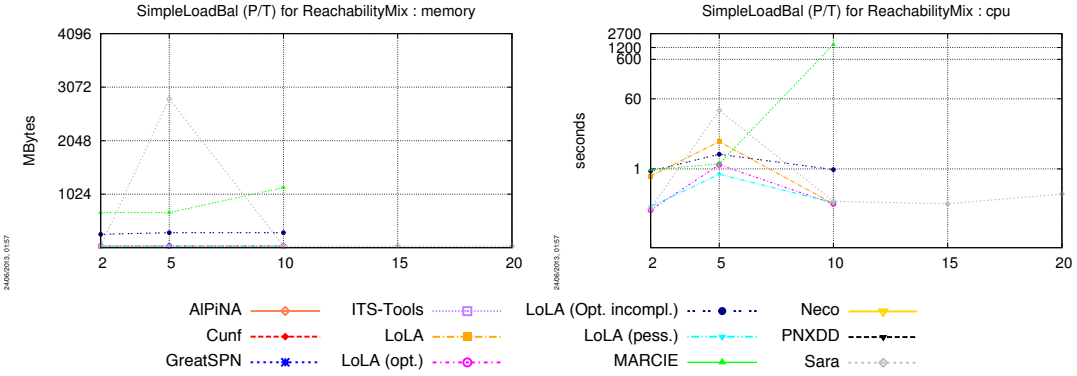
SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



SimpleLoadBal (colored) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

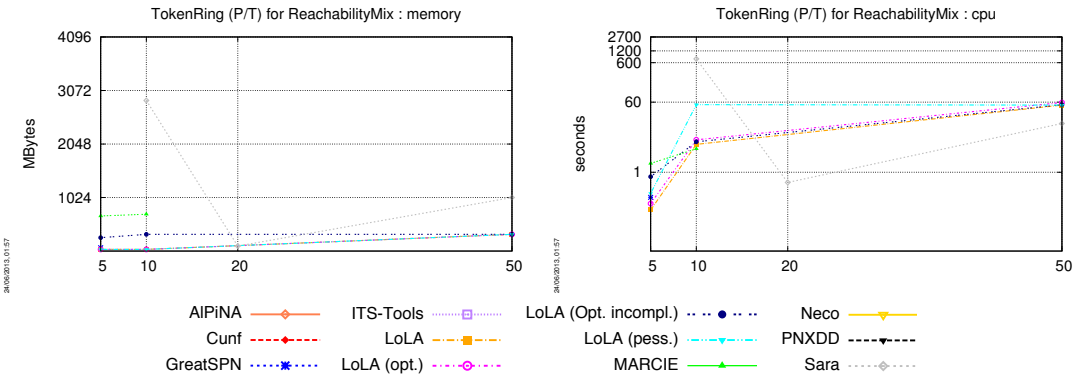


SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

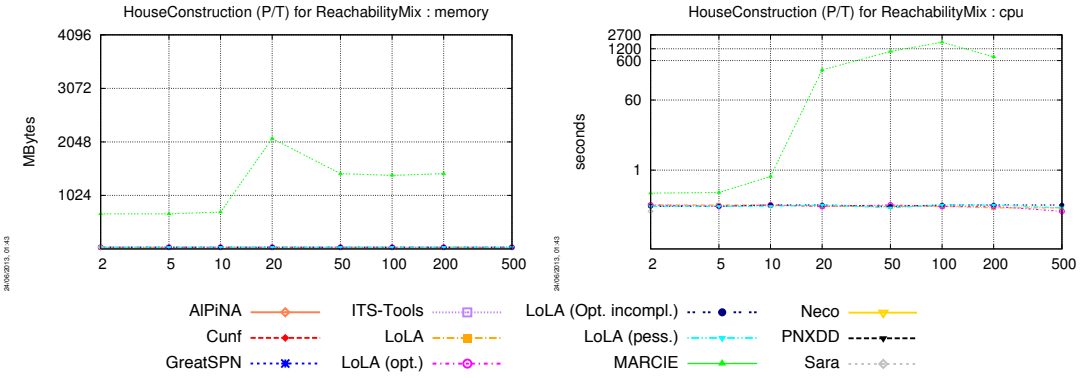


TokenRing (colored) No instance of this model could be computed for the **ReachabilityMix** examination.

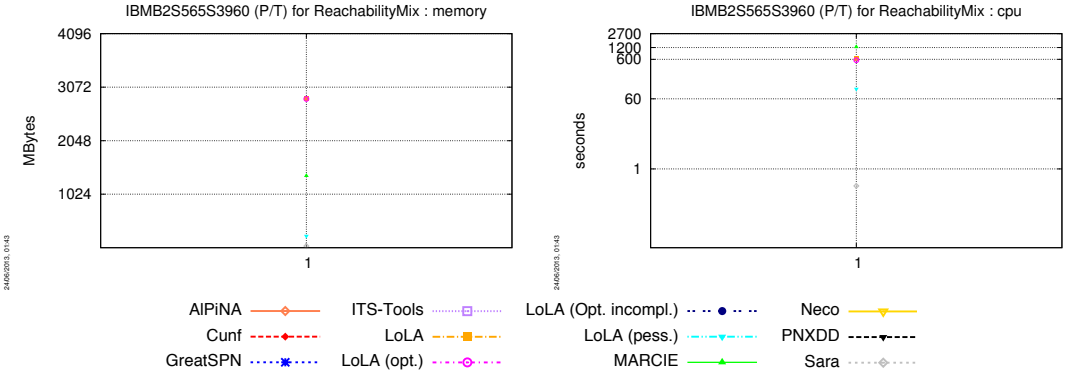
TokenRing (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

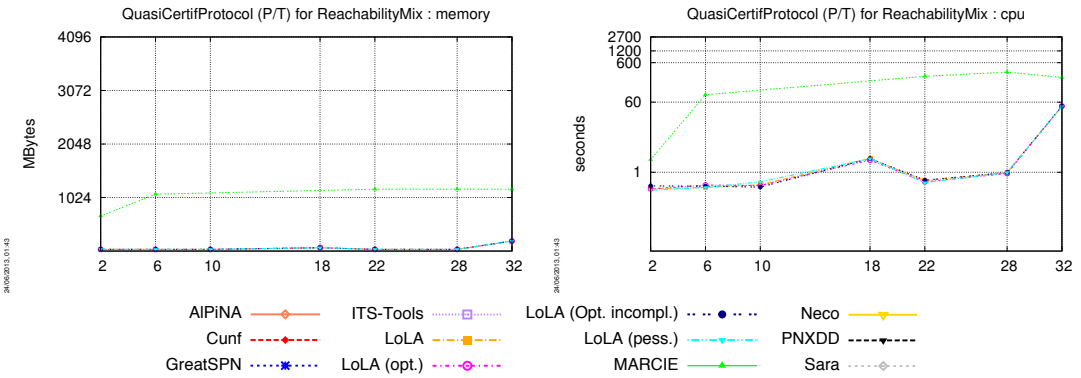


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

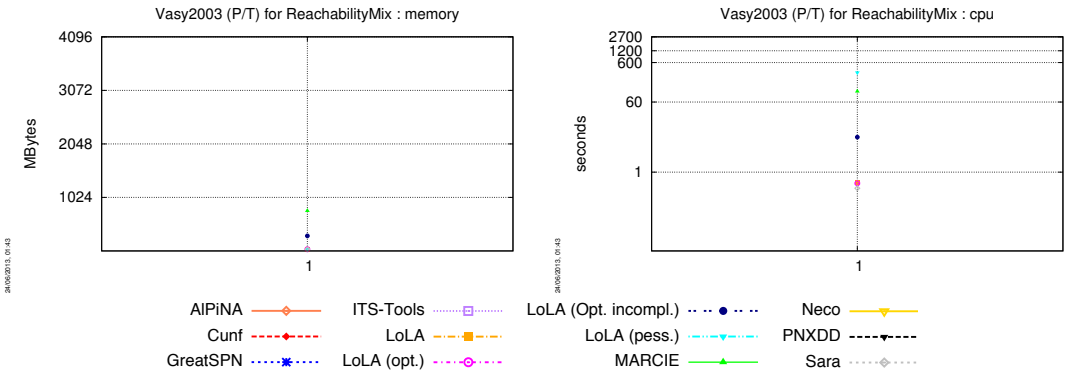


QuasiCertifProtocol (colored) No instance of this model could be computed for the **ReachabilityMix** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



12.2 Outputs for the ReachabilityMix Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
03	nc	FTFTFFFF	nc	nc	nc	nc	nc	nc
04	nc	mp	nc	nc	nc	nc	nc	nc
05	nc	mp	nc	nc	nc	nc	nc	nc
07	nc	mp	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc

CSRepetitions (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	FFFFFFFF	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	-F-FF--	FFFFFFFF	cc
03	FTFTFFFF	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	TFTFF--	FFFFTFFF	---T-
04	to	nc	FFFF-FFF	FFFF-FFF	FFFF-FFF	---F-	to	TFTF--T
05	to	nc	-F-FF-F-	-F-FF-F-	to	to	to	cc
07	mp	nc	-F-FF--	-F-FF--	to	to	to	cc
10	mp	nc	---F-	---F-	to	to	to	---TTT

Dekker (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFTFFFF	cc
015	nc	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	FFFFFTFT	FFFTFFFF	cc
020	nc	nc	to	to	--FFFFF	to	FFFTTFFF	cc
050	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	cc
100	nc	nc	to	to	to	to	to	cc
200	nc	nc	nc	FFFFFFFF	FFFFFFFF	to	to	cc

DotAndBoxes (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
3	nc	FFFFTF	nc	nc	nc	nc	nc	nc
4	nc	cc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
10	nc	cc	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	TFTFF-F-	FFFFFFFF	cc
10	nc	nc	cc	cc	cc	cc	FFFTFFFF	cc

Echo (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
d02r09	nc	nc	FFFFF-F-	FFFFF-F-	to	--F--	to	cc
d02r11	nc	nc	-F-FFFFF	-F-FFFFF	to	to	to	cc
d02r15	nc	nc	-F-FF-F-	-F-FF-F-	to	to	to	cc
d02r19	nc	nc	-FFFFFFF	-FFFFFFF	to	to	to	cc
d03r03	nc	nc	FFFFF-FF	FFFFF-FF	to	FFFFFFF-	to	----F
d03r05	nc	nc	FFFFF-F-	FFFFF-F-	to	to	to	---TTT
d03r07	nc	nc	-F-FFFFF	-F-FFFFF	to	to	to	cc
d04r03	nc	nc	-FFFFFFF	-FFFFFFF	to	to	to	---FF-
d05r03	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	cc

Eratosthenes (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	FFFFFFFF	FFFFFTFT	FFFFFTFT	FFFFF-F-	FFFFFTFT	FFFFFFFF	FFTTFTTT
020	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFF-F-	FFFFFFFF	cc
050	nc	FFFF	to	to	to	-F-FFFFF	FFTTTFFF	cc
100	nc	FFFFFFFF	-F-FFFFF	-F-FFFFF	to	-F-FFFFF	FFFFFFFF	---FFF
200	nc	FFFF	TFTFFFFF	TFTFFFFF	-F-FFFFF	to	FFFFFFFF	cc
500	nc	FFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	FFFFFFFF	cc

FMS (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFF-F-	FFFFFFFF	cc
005	FFFFFFFF	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	cc	FFFFFFFF	cc
010	FFFFFFFF	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	---FFF	FFFFFFFF	cc
020	FFFFFFFF	nc	TFFFFFFF	TFFFFFFF	-FFFFFFF	--F-F-	FFFTFFFF	cc
050	FFFFFFFF	nc	FFFFF-F-	FFFFF-F-	FFFFF-F-	FFFFF-F-	FFFTFFFF	cc
100	mp	F	---FFF	---FFF	---FFF	---F-	FFFFFFFF	---T-
200	to	nc	-F-FFFFF	-F-FFFFF	-F-FFFFF	cc	to	cc
500	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FF-F-	to	FFFFF-T-

GlobalRessAlloc (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc	nc	nc

GlobalRessAlloc (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FFFFFFFF	nc	TFTFTTFT	TFTFTTFT	-F-F-F-	to	FFFTFFFF	cc
05	cc	nc	to	to	to	-F-FF-F-	to	to

Kanban (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
0005	FFFFFFFF	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	FFFF-F-	FFFFFFFF	cc
0010	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FF--	FFFFFFFF	cc

0020	FFFFFFFF	nc	-F-FFFFF	-F-FFFFF	-F-FFFFF	---FFF	FFFFFFFF	---FFF
0050	FFFFFFFF	nc	FFFFF-F-	FFFFF-F-	FFFFF-F-	FFFFF-F-	FFFFFFFF	cc
0100	mp	nc	-F-FF--	-F-FF--	-F-FF--	cc	FFFFFFFF	cc
0200	mp	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FF-F-	to	---T-
0500	mp	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FF--	to	---T-
1000	to	nc	-F-FFFFF	-F-FFFFF	-F-FFFFF	--F-F-	to	---F-

LamportFastMutEx (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
4	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
5	nc	FTFTFFFF	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc
8	nc	mp	nc	nc	nc	nc	nc	nc

LamportFastMutEx (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	cc	cc	cc	cc	FFFFFFFF	cc
3	nc	nc	cc	cc	cc	cc	FFFTTFFF	cc
4	nc	nc	cc	cc	cc	cc	FFFTFFFF	cc
5	nc	nc	cc	cc	cc	cc	to	cc
6	nc	nc	cc	cc	cc	cc	to	cc
7	nc	nc	cc	cc	cc	cc	to	cc
8	nc	nc	cc	cc	cc	cc	to	cc

MAPK (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
008	FFFFFFFF	nc	TTTTTFFF	TTTTTFFF	---FFF	---FF	FFFFFFFF	----T
020	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FFFFF	FFFFFFFF	cc
040	to	nc	--FFFFF	--FFFFF	--FFFFF	--FF-F-	FFFTTFFF	---TTT
080	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFTFFF	cc
160	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	to	cc
320	to	nc	-FFFFFFF	-FFFFFFF	-FFFFFFF	to	to	---F-

NeoElection (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	TTTTTTFT	TTTTTTFT	---F-	TTTTTTFT	FFFFFFFF	---TTT
3	nc	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	TFTFFTFT	FFFFTFFF	cc
4	nc	nc	cc	cc	to	to	to	cc
5	nc	nc	-F-FFFFF	-F-FFFFF	to	to	to	---TTT
6	nc	nc	to	to	to	to	to	cc
7	nc	nc	to	to	to	to	to	cc
8	nc	nc	FFFFF-FF	FFFFF-FF	to	to	to	cc

PermAdmissibility (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
02	nc	mp	nc	nc	nc	nc	nc	nc
05	nc	mp	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	nc	nc	nc	nc
50	nc	mp	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

01	to	nc	TFTFFTFF	TFTFFTFF	-F-FF-FF	TFTFFTFF	FFFFFFFF	---TT-
02	?????FFF	nc	-F-FF-F-	-F-FF-F-	to	to	to	cc
05	FFFTTFTF	nc	to	to	to	to	to	---F-
10	FFFTTFFF	nc	-F-FFFFF	-F-FFFFF	to	to	to	cc
20	TTTTTFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFF-FFF	to	to
50	?????FTF	nc	to	to	to	to	cc	cc

Peterson (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
4	nc	mp	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	TFTTTTFF	TFTTTTFF	-F--FF	TFTT-F-	FFFTFFFF	-FFFF-T-
3	nc	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	-F-F-TFT	FFFFFFFF	cc
4	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	cc
5	nc	nc	-F-FF--	-F-FF--	to	to	to	cc
6	nc	nc	-F-FF-FF	-F-FF-FF	to	to	to	cc
7	nc	nc	cc	cc	cc	cc	to	cc

Philosophers (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc	nc

Philosophers (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FFFFFFFF	nf	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTFFFFF	FFFFFFFF	cc
000010	FTFTFFFF	nf	FFTFTTFT	FFTFTTFT	FF-F-F-	FFTFTTFT	FFFFFFFF	TF-FF--
000020	FTFTFFTF	nf	FFFFFFF-	FFFFFFF-	FFFFFFF-	to	FFFFFFFT	cc
000050	to	nf	cc	cc	cc	cc	FFFFTFFF	cc
000100	mp	nf	---F-	---F-	---F-	to	FFFFFFFF	cc
000200	mp	nf	cc	cc	cc	cc	to	cc
000500	to	nf	---FFF	---FFF	---FFF	to	to	---F-
001000	mp	nf	-F-FFFFF	-F-FFFFF	to	to	to	---T-
002000	mp	nf	---F-	---F-	to	to	to	cc
005000	mp	nf	to	to	to	to	to	to
010000	cc	nf	to	to	to	to	to	to

PhilosophersDyn (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc	nc	nc

PhilosophersDyn (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FFFFFFFF	nc	TFTFTFFF	TFTFTFFF	-F-F-FFF	TFTFTFFF	FFFTFFFF	cc

10	mp	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	TFTFFTFT	to	cc
20	mp	nc	to	to	to	to	to	to

Planning (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
nf	nf	nf	nf	nf	nf	nf	nf	

Railroad (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTFFFFF	FFFFFFFF	---TT-
010	nc	nc	TFTFTFFF	TFTFTFFF	-F-F-FFF	cc	FFFFFFFF	cc
020	nc	nc	-F-FFT-T	-F-FFT-T	-F-FF--	to	to	cc
050	nc	nc	to	to	to	to	to	cc
100	nc	nc	to	to	to	to	to	cc

RessAllocation (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
R002C002	nc	nc	TFFFTTFF	TFFFTTFF	-FFF-FF	TFFFT-FF	FFFTFFFF	cc
R003C002	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTFFFFF	FFFFFFFF	---T-
R003C003	nc	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	TFTFF-F-	FFFTTFFF	cc
R003C005	nc	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	TF-FFTFT	FFFFFFFF	cc
R003C010	nc	nc	TTTTTTFT	TTTTTTFT	---F-	---TFT	FFFFFFFF	---TFT
R003C015	nc	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	-F-FF-F-	FFFFFFFF	cc
R003C020	nc	nc	FFFFF-FF	FFFFF-FF	to	FFFFF-F	FFFTFFFF	cc
R003C050	nc	nc	--FFFF	--FFFF	to	to	FFFFTFFF	---T-
R003C100	nc	nc	FFFFF-F-	FFFFF-F-	to	to	FFFFFFFF	cc
R005C002	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	cc
R010C002	nc	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	TFTFTTFT	FFFFFFFF	cc
R015C002	nc	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	FFFFF-F-	FFFFTFFF	cc
R020C002	nc	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	FFFFFTFT	FFFTTFFF	cc
R050C002	nc	nc	TFTFTFFF	TFTFTFFF	-F-F-FFF	to	FFFFFFFF	to
R100C002	nc	nc	-FFFFFFF	-FFFFFFF	-FFFFFFF	to	FFFTFFFF	---T-

Ring (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	---FFF

RwMutex (P/T)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
r0010w0010	nc	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	TFTFF-F-	FFFFFFFF	cc
r0010w0020	nc	nc	TFTFTTFT	TFTFTTFT	-F-F-F-	TFTF-TFT	FFFFFFFF	---T-
r0010w0050	nc	nc	TTTTTTFT	TTTTTTFT	---F-	cc	FFFFFFFF	---TTT
r0010w0100	nc	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	cc	FFFFTFFF	---TTT
r0010w0500	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTF-FFF	FFFTFFFF	cc
r0010w1000	nc	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	TFTF-TFT	FFFFFFFF	cc
r0010w2000	nc	nc	TTTTFTFT	TTTTFTFT	--F-F-	to	to	cc
r0020w0010	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	cc	to	cc
r0100w0010	nc	nc	FFFFFTFF	FFFFFTFF	FFFFF-FF	-F-F--	cc	cc
r0500w0010	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	-F-FFFFF	cc	cc
r1000w0010	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFF-F-	cc	---T-
r2000w0010	nc	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	cc	cc	cc

SharedMemory (colored)

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc	nc	nc

050000	nc	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc	nc
SharedMemory (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FFFFFFFF	nc	FFFFFTFF	FFFFFTFF	FFFFF-FF	FF--F-	FFTTTFFF	cc
000010	FFFFFFFF	nc	FFFFFTFF	FFFFFTFF	FFFFF-FF	to	FFTTTFFF	----T
000020	mp	nc	FF-FF-F-	FF-FF-F-	to	to	FFFFFFFF	cc
000050	mp	nc	FFFFF--	FFFFF--	FFFFF--	-F-FF--	to	TFTF--
000100	mp	nc	cc	cc	cc	cc	to	cc
000200	cc	nc	cc	cc	cc	cc	to	cc
SimpleLoadBal (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
05	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
10	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc
15	nc	mp	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	nc	nc	nc	nc
SimpleLoadBal (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	TTTFTFFF	TTTFTFFF	--F-FFF	TTTFTTFT	FFFTFFFF	cc
05	nc	nc	FFTFTTFT	FFTFTTFT	FF-F-F-	FFTFT-F-	FFFFFFFF	---T-
10	nc	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	cc	FFFFTFFF	cc
15	nc	nc	to	to	to	to	to	cc
20	nc	nc	to	to	to	to	to	cc
TokenRing (colored)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	nc	nc	nc	nc	nc	nc	nc
010	nc	nc	nc	nc	nc	nc	nc	nc
020	nc	nc	nc	nc	nc	nc	nc	nc
050	nc	nc	nc	nc	nc	nc	nc	nc
100	nc	nc	nc	nc	nc	nc	nc	nc
200	nc	nc	nc	nc	nc	nc	nc	nc
500	nc	nc	nc	nc	nc	nc	nc	nc
TokenRing (P/T)								
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	FTFFFFTF	nc	TFTFTTFT	TFTFTTFT	-F-F-F-	-F-F-F-	FTFFTFTF	to
010	to	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	-F-F-F-	FTFTFFTF	cc
020	mp	nc	to	to	to	to	to	cc
050	cc	nc	cc	cc	cc	cc	to	cc

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	cc	cc	cc	cc	FFFFTFFT	cc
005	cc	cc	cc	cc	FFFFFFFF	cc
010	cc	cc	cc	cc	FFFFTFFF	cc
020	cc	cc	cc	cc	FFFTFFFF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	to	cc
IBMB2S565S3960 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	-FFFF-F-	-FFFF-F-	to	-FFFF--	FFFTFFFF	cc
QuasiCertifProtocol (colored)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc

18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	cc	cc	cc	cc	FFFFFFFF	cc
06	cc	cc	cc	cc	FFFFFFFF	cc
10	cc	cc	cc	cc	to	cc
18	cc	cc	cc	cc	to	cc
22	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc
32	cc	cc	cc	cc	cc	cc
Vasy2003 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFF-FFF	FFFFFFFF	cc

12.3 Score for the ReachabilityMix Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**40**	**54**	**184**	**189**	**154**	**111**	**118**	**80**
CSRepetitions (Colored)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**
CSRepetitions (P/T)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	2	0	6	6	3	3	2	3
max reached	0	0	2	2	0	0	0	2
best	0	0	2	2	0	0	0	2
subtotal	**3**	**0**	**11**	**11**	**4**	**4**	**3**	**8**
Dekker (P/T)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	3	4	5	3	3	0
max reached	0	0	0	2	2	0	0	0
best	0	0	0	2	2	0	0	0
subtotal	**0**	**0**	**4**	**9**	**10**	**4**	**4**	**0**
DotAndBoxes (Colored)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

DrinkVendingMachine (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	1	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**

DrinkVendingMachine (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	0
instances	0	0	1	1	1	1	2	0
max reached	0	0	0	0	0	0	2	0
best	0	0	0	0	0	0	2	0
subtotal	**0**	**0**	**2**	**2**	**2**	**2**	**7**	**0**

Echo (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	0	1
instances	0	0	9	9	1	2	0	3
max reached	0	0	2	2	2	0	0	0
best	0	0	2	2	2	0	0	0
subtotal	**0**	**0**	**14**	**14**	**6**	**3**	**0**	**4**

Eratosthenes (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1	1
instances	0	6	5	5	4	4	6	2
max reached	0	2	2	2	2	0	2	0
best	0	2	2	2	2	0	2	0
subtotal	**0**	**11**	**10**	**10**	**9**	**5**	**11**	**3**

FMS (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1	1
instances	5	1	8	8	8	6	6	2
max reached	0	0	2	2	2	2	0	2
best	0	0	2	2	2	2	0	2
subtotal	**6**	**2**	**13**	**13**	**13**	**11**	**7**	**7**

GlobalRessAlloc (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

GlobalRessAlloc (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	0
instances	1	0	1	1	1	1	1	0
max reached	0	0	0	0	0	2	0	0
best	0	0	0	0	0	2	0	0
subtotal	**2**	**0**	**2**	**2**	**2**	**6**	**2**	**0**

Kanban (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	4	0	8	8	8	7	5	4
max reached	0	0	2	2	2	2	0	2
best	0	0	2	2	2	2	0	2

subtotal	**5**	**0**	**13**	**13**	**13**	**12**	**6**	**9**
LamportFastMutEx (Colored)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	4	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**
LamportFastMutEx (P/T)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	1	0
instances	0	0	0	0	0	0	3	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**
MAPK (P/T)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	2	0	6	6	6	4	4	3
max reached	0	0	2	2	2	0	0	2
best	0	0	2	2	2	0	0	2
subtotal	**3**	**0**	**11**	**11**	**11**	**5**	**5**	**8**
NeoElection (Colored)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**
NeoElection (P/T)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	4	4	2	2	2	2
max reached	0	0	2	2	0	0	0	0
best	0	0	2	2	0	0	0	0
subtotal	**0**	**0**	**9**	**9**	**3**	**3**	**3**	**3**
PermAdmissibility (Colored)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	1	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**
PermAdmissibility (P/T)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	5	0	4	4	2	2	1	2
max reached	2	0	0	0	0	0	0	0
best	2	0	0	0	0	0	0	0
subtotal	**10**	**0**	**5**	**5**	**3**	**3**	**2**	**3**
Peterson (Colored)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**
Peterson (P/T)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1

instances	0	0	5	5	3	3	2	1
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	0	0	0	0
subtotal	**0**	**0**	**8**	**8**	**4**	**4**	**3**	**2**

Philosophers (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Philosophers (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	3	0	7	7	5	2	5	3
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	0	0	0	0
subtotal	**4**	**0**	**10**	**10**	**6**	**3**	**6**	**4**

PhilosophersDyn (Colored)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PhilosophersDyn (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	0
instances	1	0	2	2	2	2	1	0
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	2	0	0
subtotal	**2**	**0**	**5**	**5**	**5**	**5**	**2**	**0**

Planning (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Railroad (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	3	3	3	1	2	1
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	0	0	0
subtotal	**0**	**0**	**6**	**6**	**6**	**2**	**3**	**2**

RessAllocation (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	15	15	12	11	15	4
max reached	0	0	2	2	2	0	2	2
best	0	0	2	2	2	0	2	2
subtotal	**0**	**0**	**20**	**20**	**17**	**12**	**20**	**9**

Ring (P/T)

	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	1	1	1	1	1	1
max reached	0	0	2	2	2	2	2	2
best	0	0	2	2	2	2	2	2
subtotal	**0**	**0**	**6**	**6**	**6**	**6**	**6**	**6**

RwMutex (P/T)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	12	12	12	7	6	4
max reached	0	0	2	2	2	0	0	0
best	0	0	2	2	2	0	0	0
subtotal	**0**	**0**	**17**	**17**	**17**	**8**	**7**	**5**
SharedMemory (Colored)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SharedMemory (P/T)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	1
instances	2	0	4	4	3	2	3	2
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	2	0	2
subtotal	**3**	**0**	**7**	**7**	**6**	**5**	**4**	**5**
SimpleLoadBal (Colored)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	0	0	0	0	0	0
instances	0	3	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**
SimpleLoadBal (P/T)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	1	1	1	1	1	1
instances	0	0	3	3	3	2	3	1
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	0	2	0
subtotal	**0**	**0**	**6**	**6**	**6**	**3**	**6**	**2**
TokenRing (Colored)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TokenRing (P/T)								
	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	0	1	1	1	1	1	0
instances	1	0	2	2	2	2	2	0
max reached	0	0	0	0	0	0	0	0
best	0	0	2	2	2	2	2	0
subtotal	**2**	**0**	**5**	**5**	**5**	**5**	**5**	**0**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**12**	**12**	**6**	**12**	**24**	**0**
HouseConstruction (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	0

instances	0	0	0	0	4	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**7**	**0**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa	opt LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	0	1	1	0
instances	1	1	0	1	1	0
max reached	2	2	0	2	2	0
best	2	2	0	2	2	0
subtotal	**6**	**6**	**0**	**6**	**6**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa	opt LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						
	LoLA	LoLa	opt LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**
Vasy2003 (P/T)						
	LoLA	LoLa	opt LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	0
instances	1	1	1	1	1	0
max reached	2	2	2	2	2	0
best	2	2	2	2	2	0
subtotal	**6**	**6**	**6**	**6**	**6**	**0**

12.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models

1	2	3
LoLa opt	LoLA	LoLa opt inc
189 points	184 points	154 points

For "Surprise" Models

1	2	2	2
Marcie	LoLa opt	LoLA	LoLa opt inc
24 points	12 points	12 points	12 points

Global

1	2	3	3
`LoLa opt`	`LoLA`	`Marcie`	`LoLa opt inc`
213 points	208 points	166 points	166 points

Part IV

CTL-based Analysis

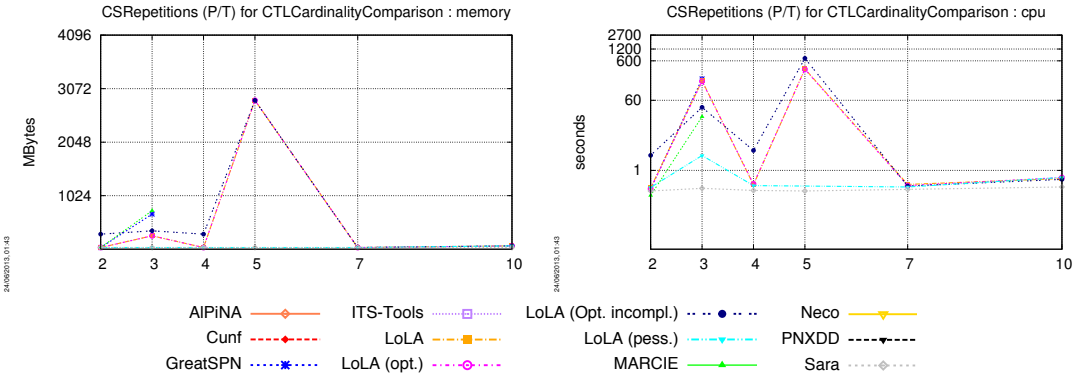
13 The CTLCardinalityComparison Examination

This examination deals with CTL properties dealing with checking cardinality of marking only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

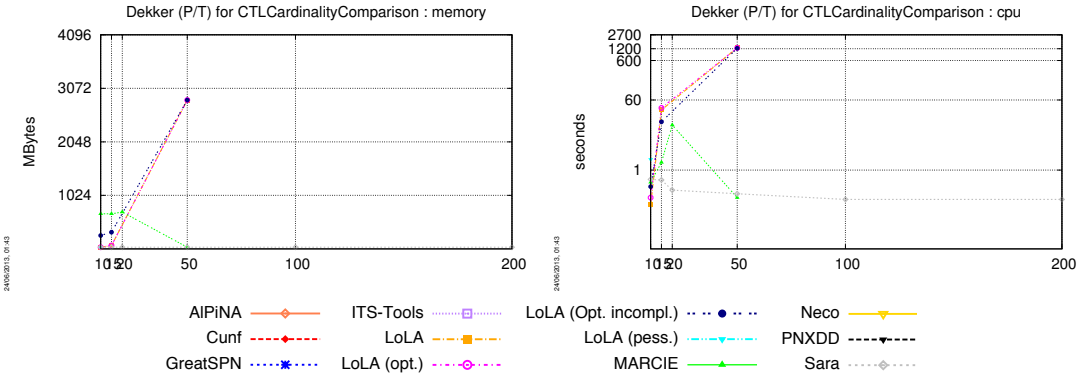
13.1 Handling of Models by Tools

CSRepetitions (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



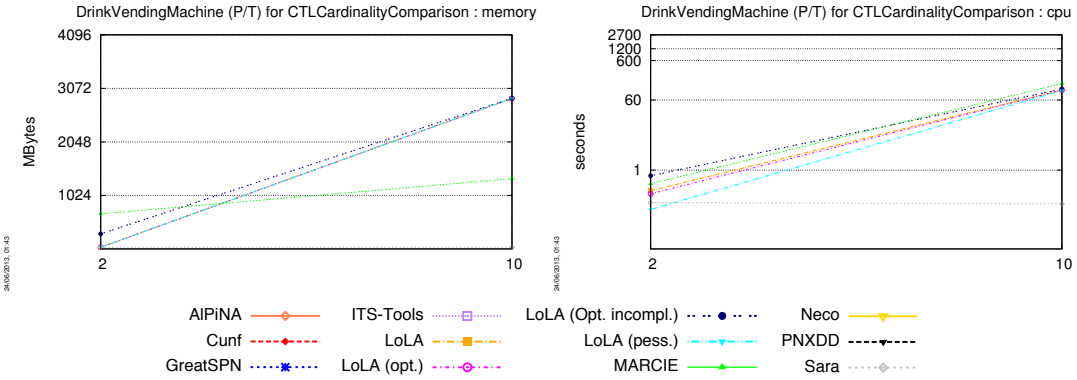
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



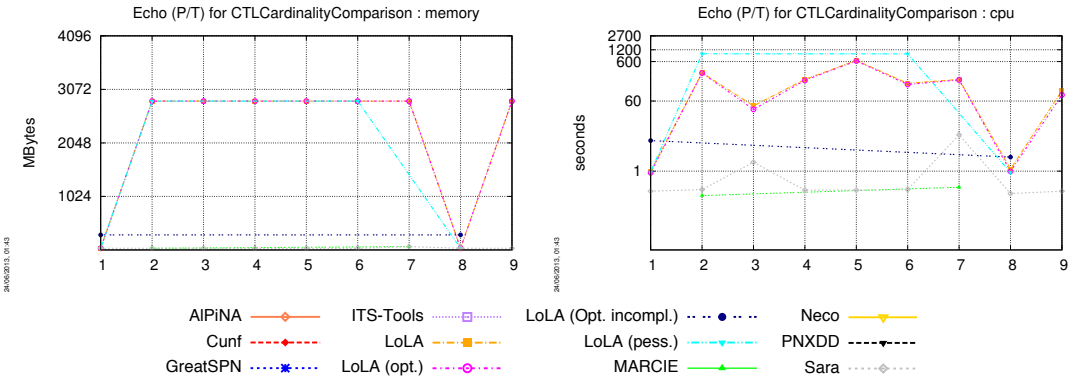
DotAndBoxes (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

DrinkVendingMachine (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

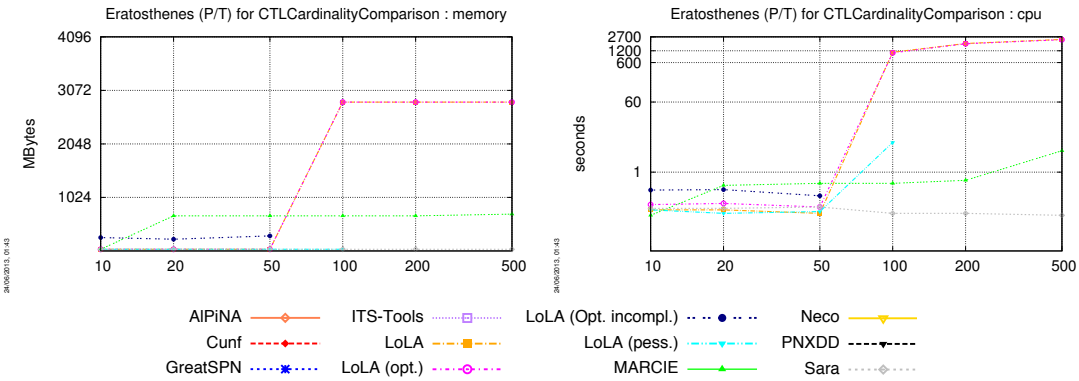
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



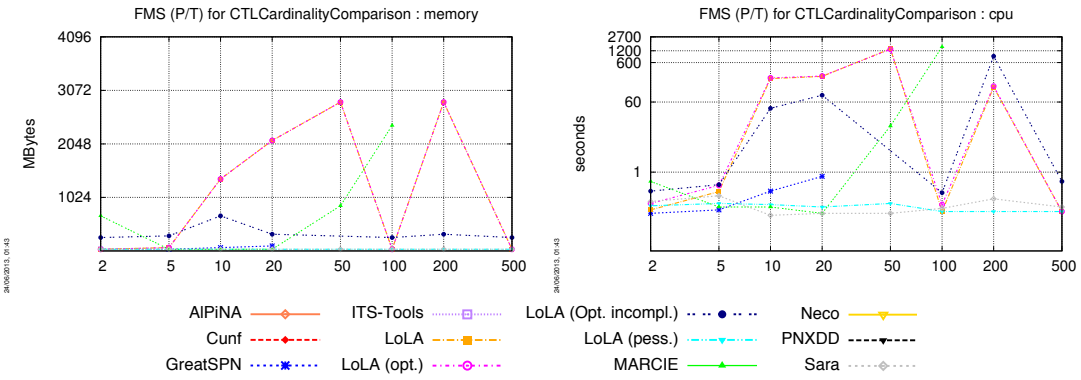
Echo (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

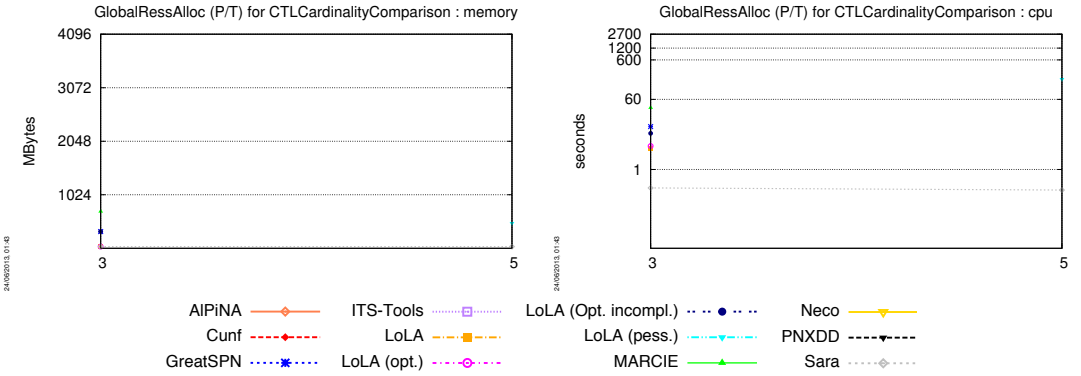


FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

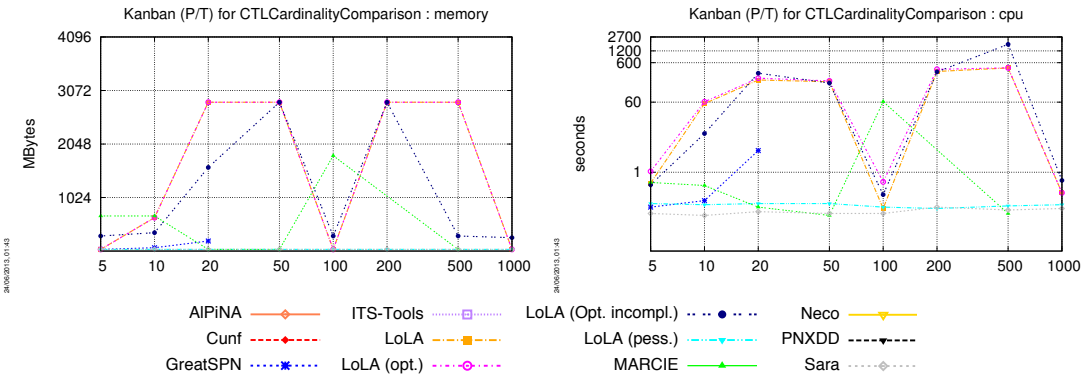


GlobalRessAlloc (colored) No instance of this model could be computed for the **CTLCardinality-Comparison** examination.

GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

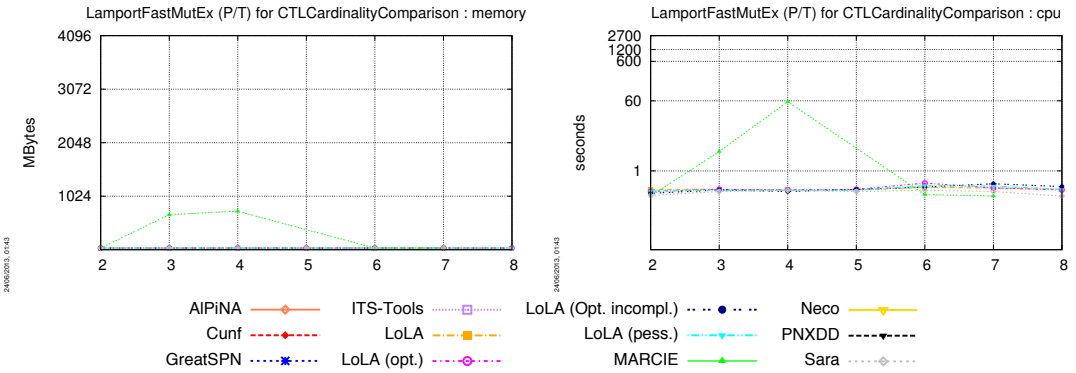


Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

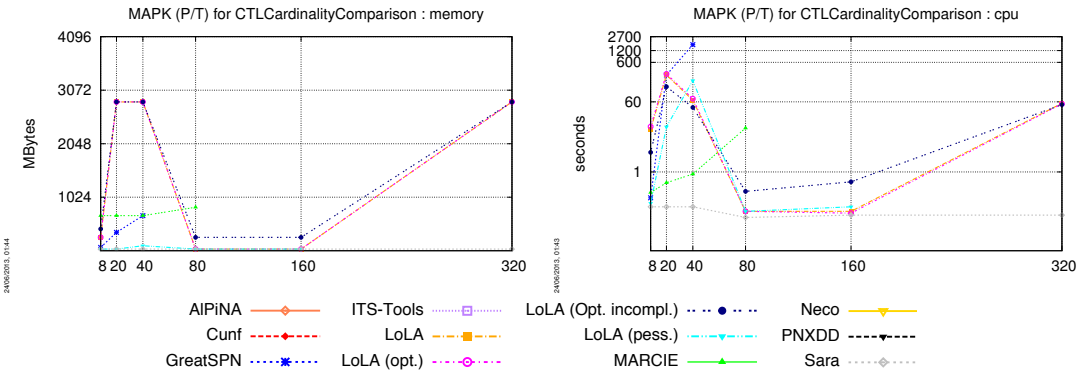


LamportFastMutEx (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

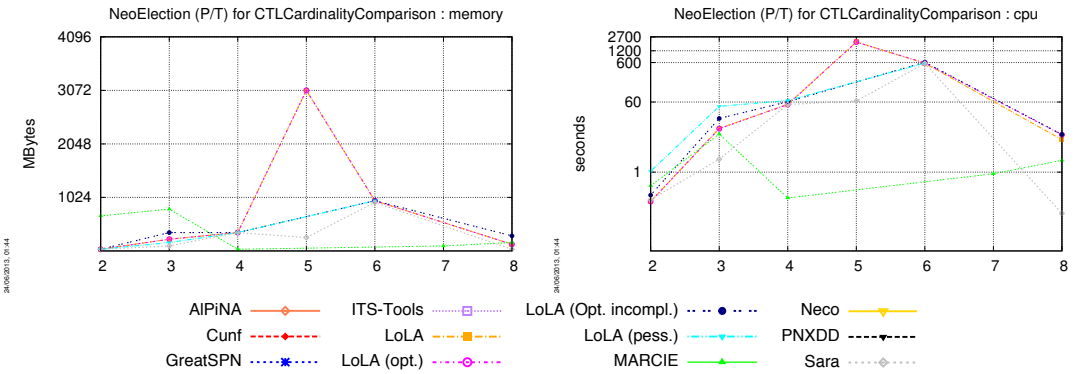


MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



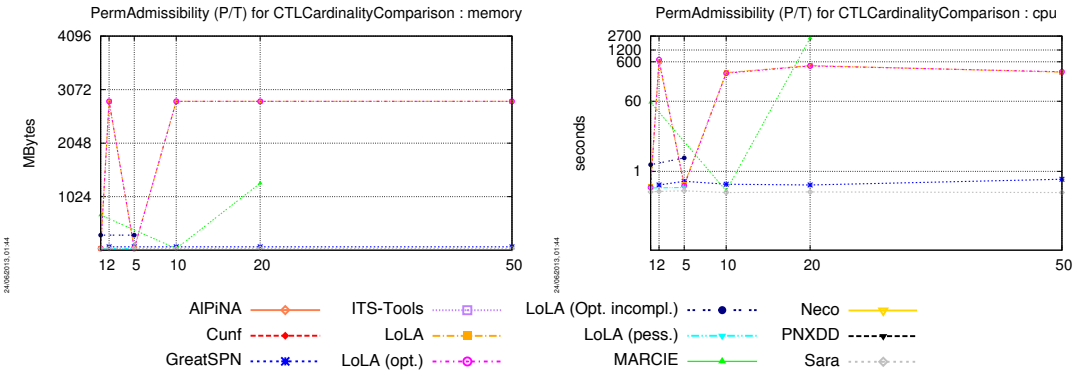
NeoElection (colored) No instance of this model could be computed for the **CTLCardinality-Comparison** examination.

NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



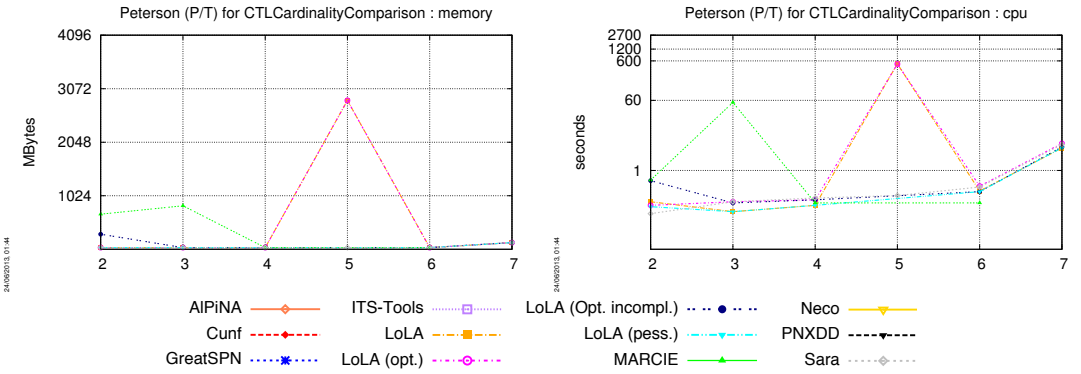
PermAdmissibility (colored) No instance of this model could be computed for the **CTLCardinality-Comparison** examination.

PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



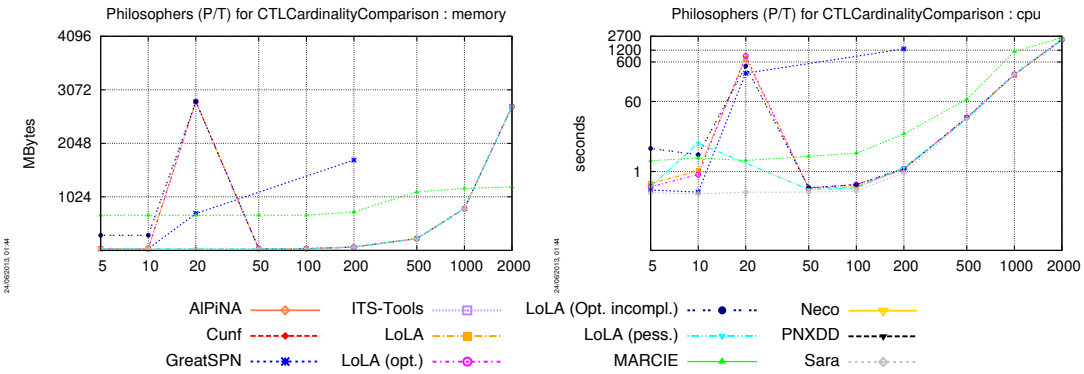
Peterson (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



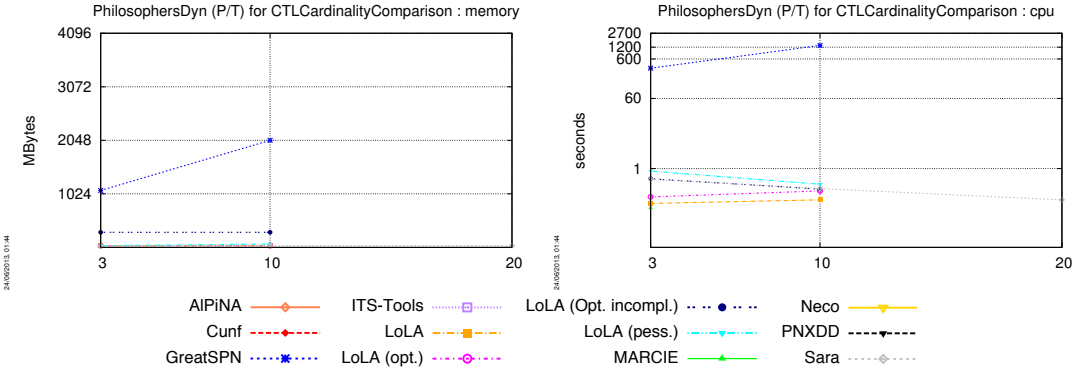
Philosophers (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



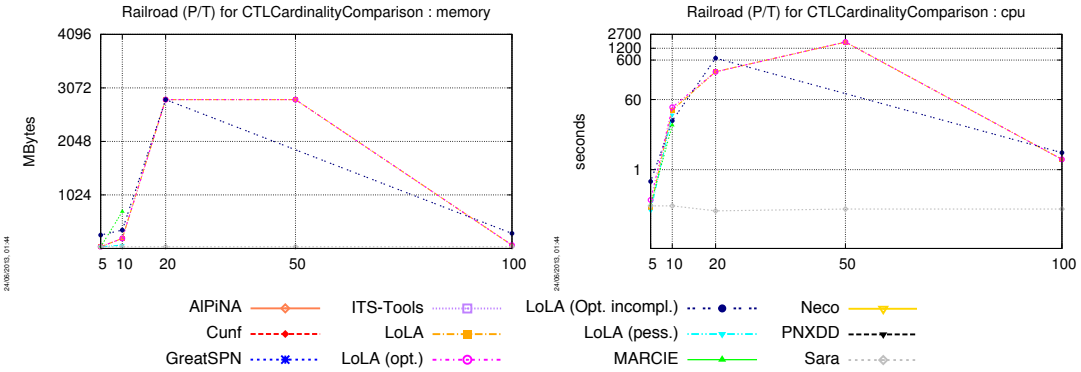
PhilosophersDyn (colored) No instance of this model could be computed for the **CTLCardinality-Comparison** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

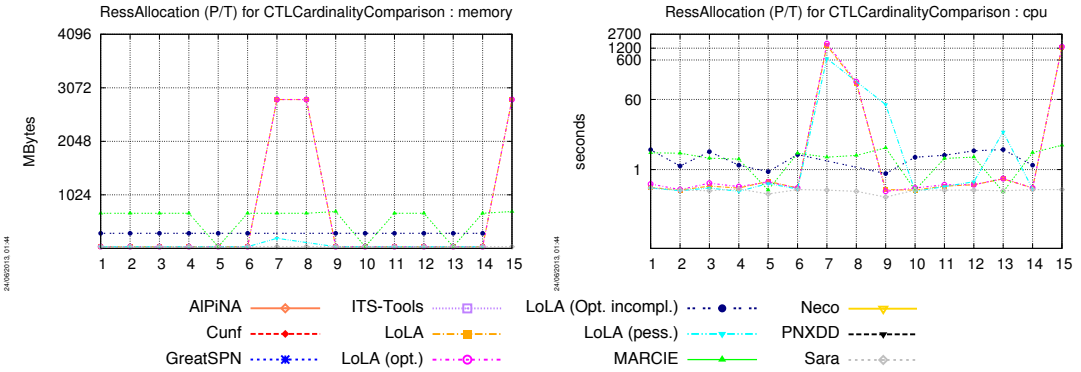


Planning (P/T) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

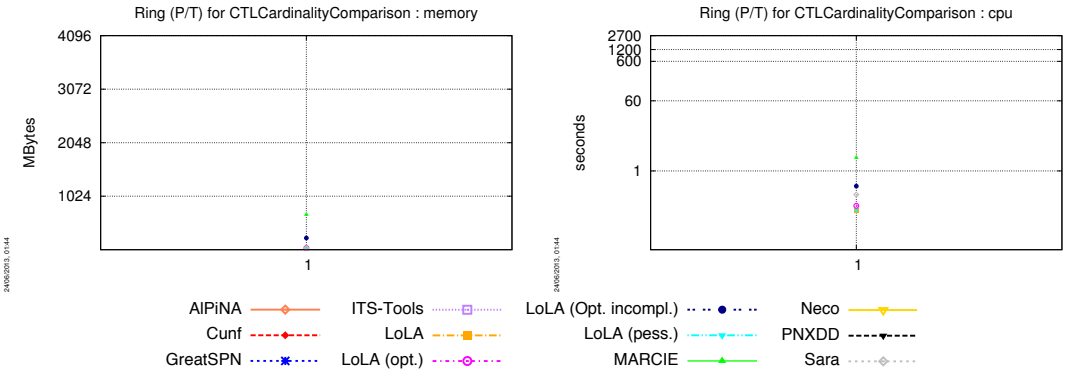
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



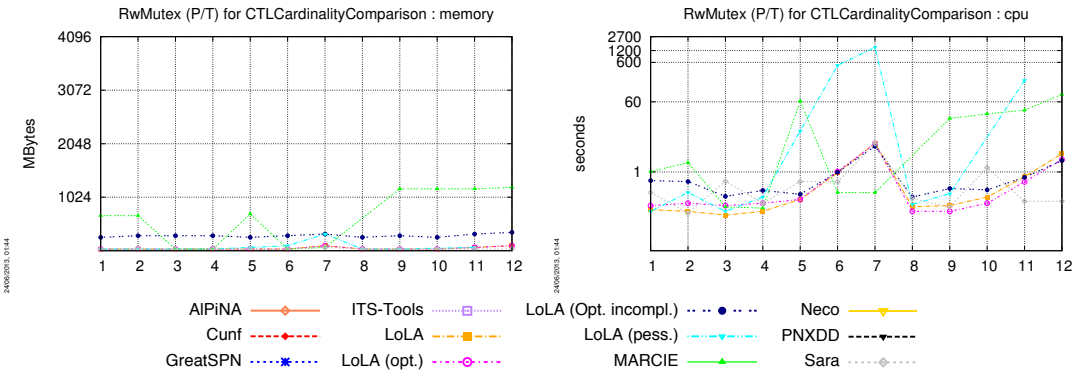
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

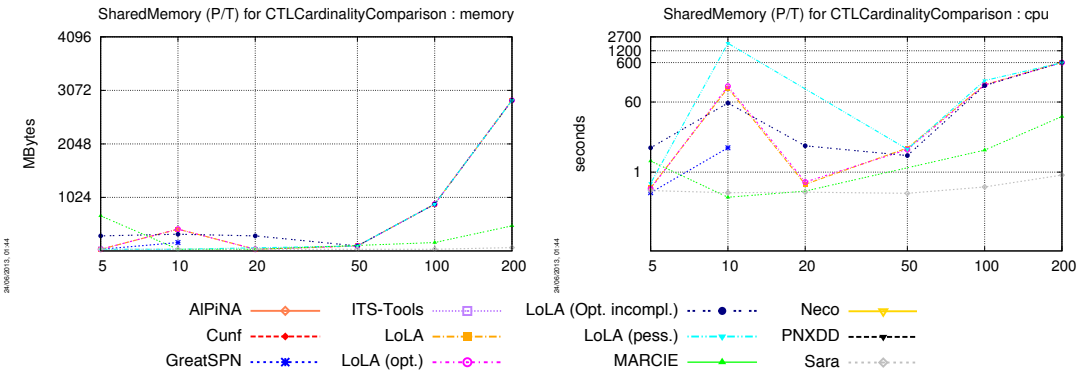


RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



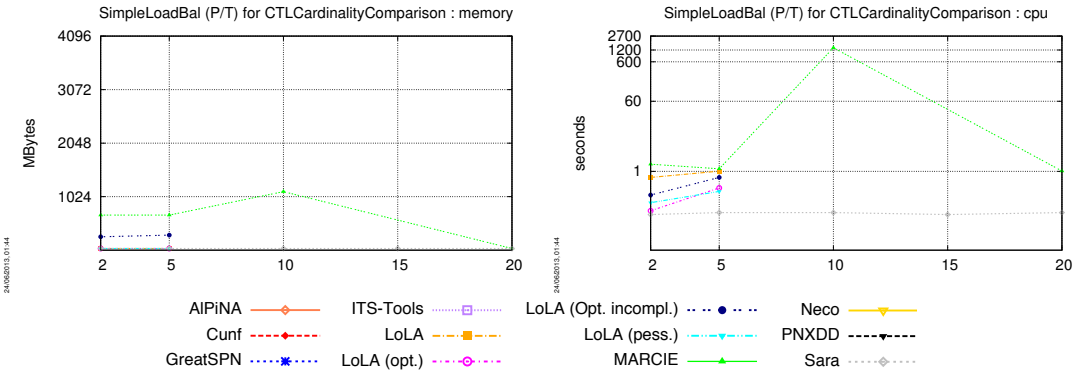
SharedMemory (colored) No instance of this model could be computed for the **CTLCardinality-Comparison** examination.

SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



SimpleLoadBal (colored) No instance of this model could be computed for the **CTLCardinality-Comparison** examination.

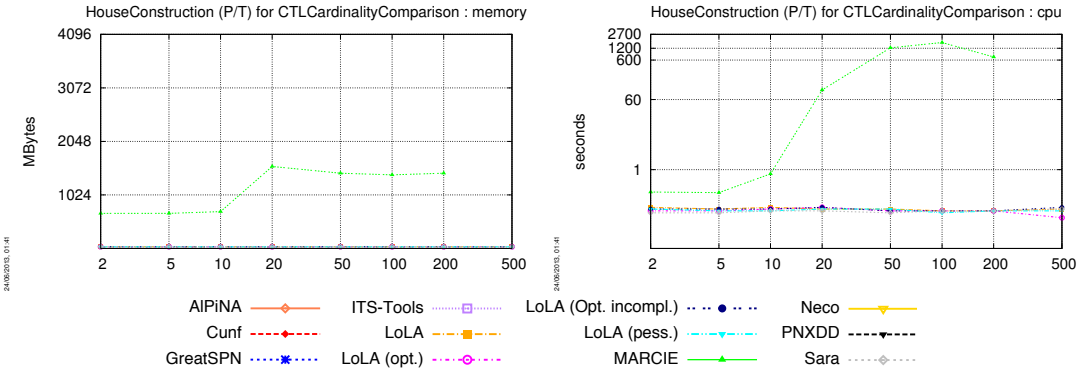
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



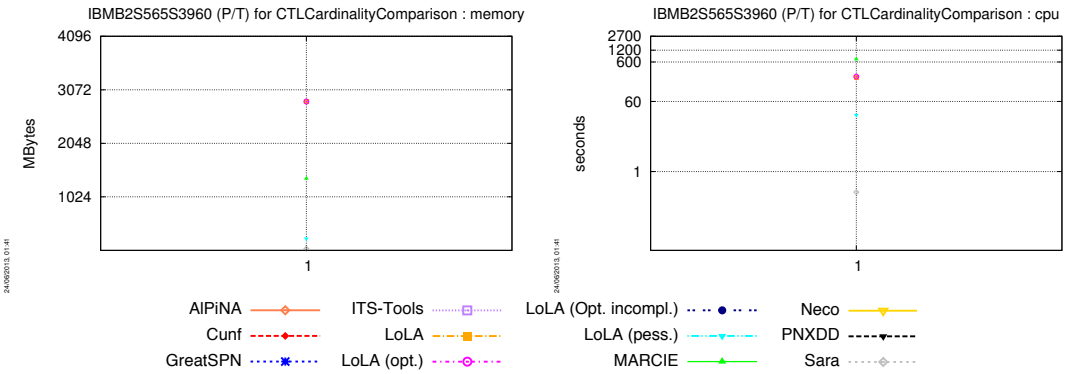
TokenRing (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

TokenRing (P/T) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

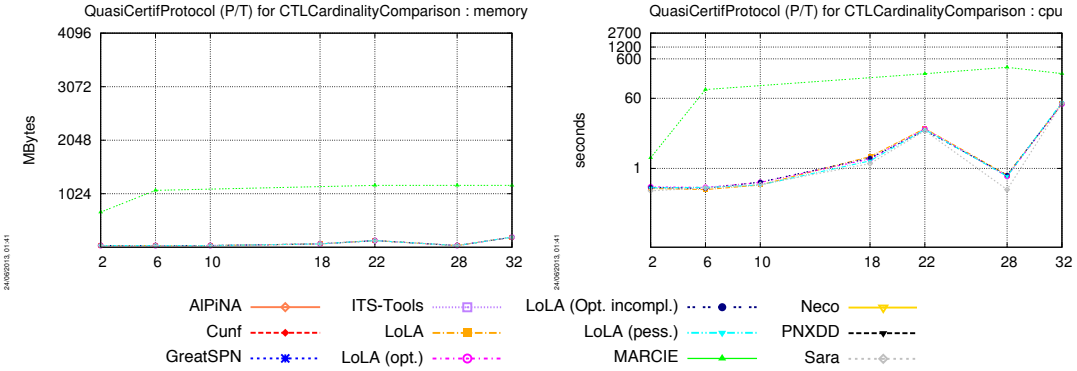


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

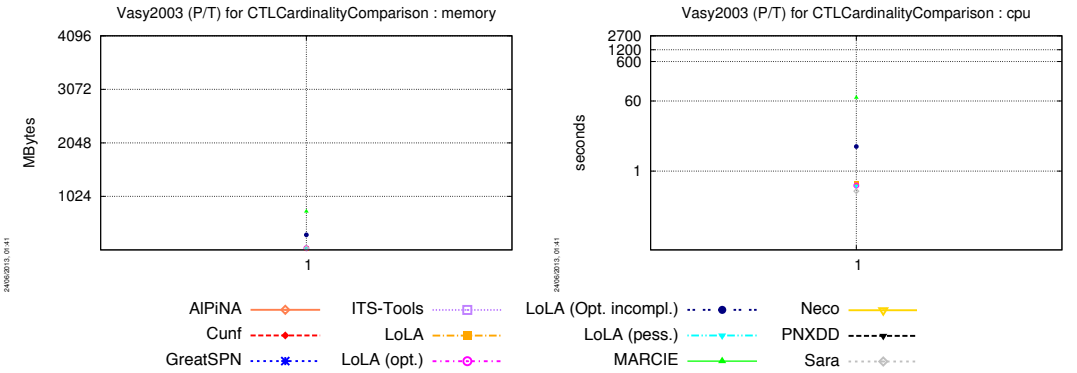


QuasiCertifProtocol (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



13.2 Outputs for the CTLCardinalityComparison Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
03	nc	nc	nc	nc	nc	nc	nc
04	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
CSRepetitions (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	FTTF?FTT	F-F-T-	F-F-T-	cc	F--T-	cc	cc
03	FTTTTTTF	TTF-T-	TTF-T-	-T--T-	TTF-T-	FFFFFFFF	cc
04	to	-FTF-F-	-FTF-F-	-FTF-F-	-FTF-F-	to	cc
05	to	cc	cc	cc	to	to	cc
07	mp	cc	cc	cc	cc	to	cc
10	mp	cc	cc	cc	cc	to	cc
Dekker (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	FT--T-	FT--T-	-T--T-	FT--T-	FFFFFFFF	cc
015	nc	-FT-TT	-FT-TT	---T-	to	FFFFFFFF	cc
020	nc	to	to	to	to	FFFFTFFF	cc
050	nc	-F--F-	-F--F-	-F--F-	to	cc	cc
100	nc	to	to	to	to	to	cc
200	nc	to	to	to	to	to	cc
DotAndBoxes (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	FTFTTT-F	FTFTTT-F	FT-TTT-F	TFFTTF-T	FFFTTFFF	cc
10	nc	cc	cc	cc	cc	FFFFFFFF	cc
Echo (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
d02r09	nc	FTFF-TF	FTFF-TF	FTFF-TF	FTFF-TF	to	cc
d02r11	nc	-T--F-	-T--F-	to	-T--F-	cc	cc
d02r15	nc	---FTT	---FTT	to	to	to	---TF-
d02r19	nc	---TT	---TT	to	to	to	cc
d03r03	nc	---T-	---T-	to	to	to	cc
d03r05	nc	FFFF-TT	FFFF-TT	to	FFFF--	to	cc
d03r07	nc	--T-FTT	--T-FTT	to	to	cc	---TF-
d04r03	nc	--F-F-	--F-F-	--F-F-	--F-F-	to	cc
d05r03	nc	---FF-	---FF-	to	to	to	cc
Eratosthenes (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	TFF--T-	TFF--T-	-F--T-	-F--T-	cc	cc
020	nc	FTT---	FTT---	FTT---	FT---	FFFTFFFF	cc
050	nc	---T-	---T-	---T-	---F-	FFFTFFFF	cc
100	nc	-T-F-F-	-T-F-F-	to	-T---	FFFTFFFF	cc
200	nc	-F---	-F---	to	to	FFFTFFFF	cc
500	nc	-F---F	-F---F	to	to	FFFFFFFF	cc
FMS (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	FTTTFFFF	-F-FFF	-F-FFF	---FFF	---FFF	FFFFFFFF	cc

005	FTTT?FTF	-TF-F-F	-TF-F-F	-T--F-F	---F-F	cc	cc
010	FTFF?TTT	-F-F-T-	-F-F-T-	--F-T-	--F-T-	cc	---F-
020	TTFT?FTF	F-T--F	F-T--F	----F	----F	cc	cc
050	to	---T-	---T-	to	---T-	FFFFFFFF	cc
100	to	-T-F-T	-T-F-T	-T-F-T	----T	FFFTFFFF	cc
200	to	F---F-	F---F-	F---F-	F----	to	cc
500	to	-TFTT-T	-TFTT-T	-TFTT-T	-TFT--	to	cc

GlobalRessAlloc (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc	nc

GlobalRessAlloc (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FFFTFFFF	TT-T--	TT-T--	--T--	to	FFFTFFFF	cc
05	cc	to	to	to	cc	to	cc

Kanban (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
0005	TFTTTFFF	FFTT-F-	FFTT-F-	-FTT-F-	-FTT--	FFFTTFFF	cc
0010	FFFTFTTF	-F-T-F-	-F-T-F-	-F-T--	-F-T--	FFFFFFFF	cc
0020	FFFF?FTF	-FFF-T-	-FFF-T-	-FFF-T-	--F--	cc	cc
0050	to	--F-TFT	--F-TFT	--F-TFT	--F-TFT	cc	cc
0100	to	--TFT-	--TFT-	--TFT-	--TFT-	FFFFTFFF	cc
0200	mp	--F-FT	--F-FT	--F-FT	---F-	to	cc
0500	mp	----T	----T	----T	cc	cc	cc
1000	to	--T-FTF	--T-FTF	--T-FTF	--T--	to	cc

LamportFastMutEx (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc

LamportFastMutEx (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	cc	cc	cc	cc	cc	cc
3	nc	cc	cc	cc	cc	FFFFFFFF	cc
4	nc	cc	cc	cc	cc	FFFFTFFF	cc
5	nc	cc	cc	cc	cc	to	cc
6	nc	cc	cc	cc	cc	cc	cc
7	nc	cc	cc	cc	cc	cc	cc
8	nc	cc	cc	cc	cc	to	cc

MAPK (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
008	FTTTTTTT	-TT-FT-	-TT-FT-	-TT-T-	-TT-T-	FFTTTFFT	cc
020	TTFFFFFT	--F-FT	--F-FT	--F-FT	---FT	FFFFTFFF	cc
040	TTTTTFFF	cc	cc	cc	cc	FFFFFFFF	cc
080	to	-F-F--	-F-F--	-F-F--	-F-F--	FFFFTFFF	cc
160	to	-FFF-TF-	-FFF-TF-	-FFF-TF-	-FFF-TF-	to	cc
320	to	-T-T-F-	-T-T-F-	-T-T-F-	to	to	cc

NeoElection (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc

4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	cc	cc	cc	cc	FFFTFFFF	cc
3	nc	----T	----T	cc	cc	FFTTFFFF	cc
4	nc	cc	cc	cc	cc	cc	cc
5	nc	cc	cc	to	to	to	cc
6	nc	cc	cc	cc	cc	to	cc
7	nc	to	to	to	to	cc	to
8	nc	-F---	-F---	cc	to	cc	cc

PermAdmissibility (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	nc	nc	nc	nc	nc	nc	nc
02	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	to	-T--T-	-T--T-	-T--T-	-T--T-	FFFTTFFF	cc
02	TTFFFTTT	--T--	--T--	to	to	to	cc
05	FTFTTTTF	-T--FF	-T--FF	-T--FF	-T--FF	to	cc
10	FFTT?FFF	--T-FT-	--T-FT-	to	to	cc	cc
20	FTFTFTFT	cc	cc	to	to	cc	cc
50	TFTTTFFF	T-TF--	T-TF--	to	to	to	cc

Peterson (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	-TF-TT-	-TF-TT-	--F-T-	-TF-TT-	FFFFFFFF	cc
3	nc	cc	cc	cc	cc	FFFTFFFF	cc
4	nc	cc	cc	cc	cc	cc	cc
5	nc	--F--	--F--	to	to	to	cc
6	nc	cc	cc	cc	cc	cc	cc
7	nc	cc	cc	cc	cc	to	cc

Philosophers (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc

100000	nc	nc	nc	nc	nc	nc	nc
Philosophers (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	TTTTTTTF	F-F-TTF	F-F-TTF	---TTF	F-F-TTF	FFFFTFFF	cc
000010	TTTTTFTF	-F-F-T-	-F-F-T-	cc	-F-F-T-	FFFFTFFF	cc
000020	TTFTFTTF	---TTF	---TTF	---TTF	to	FFFTFFFT	cc
000050	to	cc	cc	cc	cc	FFFTFFFF	cc
000100	mp	cc	cc	cc	cc	FFFFFFFF	cc
000200	FTFF	cc	cc	cc	cc	FFFTTFFF	cc
000500	to	cc	cc	cc	cc	FFFTFFFF	cc
001000	mp	cc	cc	cc	cc	FFFTFFFF	cc
002000	mp	cc	cc	cc	cc	FFFFFFFF	cc
005000	mp	to	to	to	to	to	to
010000	cc	to	to	to	to	to	to
PhilosophersDyn (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc	nc
PhilosophersDyn (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FTFT?FFT	T--FFT	T--FFT	---FFT	T--FFT	cc	cc
10	T	-T--TF	-T--TF	-T--TF	-T--TF	to	cc
20	mp	to	to	to	to	to	cc
Planning (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
nf	nf	nf	nf	nf	nf	nf	
Railroad (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	--F-FF	--F-FF	--F-FF	--F-FF	cc	cc
010	nc	T-TT--T	T-TT--T	--T--T	T-TT--T	FFFFFFFF	cc
020	nc	-T-T-TTT	-T-T-TTT	-T-T-TTT	to	to	cc
050	nc	T-FF-T-	T-FF-T-	to	to	to	cc
100	nc	---FF	---FF	---FF	to	to	cc
RessAllocation (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
R002C002	nc	-TT-F-F	-TT-F-F	-T--F-F	-TT--F	FFFFTFFF	cc
R003C002	nc	--T-F-	--T-F-	--T-F-	---F-	FFFFFFFF	---T-
R003C003	nc	-T-T-F-T	-T-T-F-T	-T-T-F-T	-T-T-F-T	FFFTTFFF	cc
R003C005	nc	-F--F-	-F--F-	-F---	-F---	FFFFTFFF	cc
R003C010	nc	---T-	---T-	cc	cc	cc	cc
R003C015	nc	--F-FT-	--F-FT-	--F-FT-	--F-FT-	FFFFFFFF	cc
R003C020	nc	--T-T-T	--T-T-T	to	--T-T-T	FFFTFFFF	cc
R003C050	nc	-FF-T-	-FF-T-	to	to	FFTTTFFF	cc
R003C100	nc	--T--	--T--	--T--	--T--	FFFFFFFF	cc
R005C002	nc	--T-T-T	--T-T-T	--T-T-T	--T-T-T	cc	cc
R010C002	nc	F--F-T	F--F-T	----T	F--F-T	FFFTTFFT	cc
R015C002	nc	T-F-F-F	T-F-F-F	-F-F-F	T-F-F-F	FFTTFFFF	cc
R020C002	nc	TF-F-F-	TF-F-F-	---F-	TF-F-F-	cc	cc
R050C002	nc	F---T-	F---T-	F---T-	F---T-	FFFFFFFF	cc
R100C002	nc	---TF	---TF	to	to	FFFFFFFT	cc
Ring (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nc	-T--FT	-T--FT	-T--FT	---FT	FFFTTFFF	---T-
RwMutex (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
r0010w0010	nc	FT-T-FTT	FT-T-FTT	FT-T-T-	-T-T-T-	FFFFFFFF	cc
r0010w0020	nc	-FFTF-T	-FFTF-T	--FT-T	--FTF-	FFFFFFFF	cc

r0010w0050	nc	TF--T-	TF--T-	-F---	TF--T-	cc	cc
r0010w0100	nc	T-T-TT-	T-T-TT-	---TT-	cc	cc	---FF-
r0010w0500	nc	--F-F-	--F-F-	--F-F-	--F-F-	FFFFFFFF	cc
r0010w1000	nc	-F--TF	-F--TF	---T-	-F--TF	cc	cc
r0010w2000	nc	F-F-T-	F-F-T-	--F-T-	F-F-T-	cc	---F-
r0020w0010	nc	-F--FT-	-F--FT-	-F--FT-	-F--T-	to	cc
r0100w0010	nc	-TF-TTF	-TF-TTF	---T-	cc	cc	cc
r0500w0010	nc	-T--TTF	-T--TTF	-T--TTF	to	cc	---TTF
r1000w0010	nc	-F-F-F-F	-F-F-F-F	cc	cc	cc	cc
r2000w0010	nc	FFFT-F-	FFFT-F-	-F-T--	to	cc	cc

SharedMemory (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc

SharedMemory (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FTTFTFFF	T-FT-FF-	T-FT-FF-	---F-	cc	FFFFTFFF	cc
000010	FFFF?FTF	---T-T	---T-T	cc	cc	cc	cc
000020	mp	T-TT-TFT	T-TT-TFT	T-TT-TFT	to	cc	cc
000050	mp	cc	cc	cc	cc	to	cc
000100	mp	cc	cc	cc	cc	cc	cc
000200	cc	cc	cc	cc	cc	cc	cc

SimpleLoadBal (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc

SimpleLoadBal (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	-T--TF	-T--TF	---T-	-T--TF	FFFFFFFF	cc
05	nc	-F--TF-	-F--TF-	-F--F-	-F---	FFFFTFFF	cc
10	nc	to	to	to	to	FFFFFFFF	cc
15	nc	to	to	to	to	to	cc
20	nc	to	to	to	to	cc	cc

TokenRing (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nf	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf	nf

TokenRing (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nf	nf	nf	nf	nf	nf	nf

010	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	cc	cc	cc	cc	FFFFTFFF	cc
005	cc	cc	cc	cc	FFFTFFFF	cc
010	cc	cc	cc	cc	FFFFTFFF	cc
020	cc	cc	cc	cc	FFFTFFFF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	to	---FFF
IBMB2S565S3960 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	---TT-	---TT-	to	---T-	FFFTFFFF	cc
QuasiCertifProtocol (colored)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	cc	cc	cc	cc	FFFTFFFF	cc
06	cc	cc	cc	cc	FFFTFFFF	cc
10	cc	cc	cc	cc	to	cc
18	cc	cc	cc	cc	to	cc
22	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc
32	cc	cc	cc	cc	cc	cc
Vasy2003 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	FTT-F-T	FTT-F-T	FTT-F-T	FTT-F-T	FFFFTFFF	cc

13.3 Score for the CTLCardinalityComparison Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination						
GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

Total Score	**43**	**172**	**172**	**123**	**96**	**102**	**17**
CSRepetitions (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
CSRepetitions (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	0
instances	2	3	3	2	3	1	0
max reached	0	0	0	0	0	0	0
best	0	2	2	2	2	0	0
subtotal	**3**	**6**	**6**	**5**	**6**	**2**	**0**
Dekker (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	3	3	3	1	3	0
max reached	0	0	0	0	0	0	0
best	0	2	2	2	0	0	0
subtotal	**0**	**6**	**6**	**6**	**2**	**4**	**0**
DotAndBoxes (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	1	1	1	1	2	0
max reached	0	0	0	0	0	2	0
best	0	0	0	0	0	2	0
subtotal	**0**	**2**	**2**	**2**	**2**	**7**	**0**
Echo (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	0	1
instances	0	9	9	2	4	0	2
max reached	0	2	2	0	0	0	0
best	0	2	2	0	0	0	0
subtotal	**0**	**14**	**14**	**3**	**5**	**0**	**3**
Eratosthenes (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	6	6	3	4	5	0
max reached	0	2	2	0	0	2	0
best	0	2	2	0	0	2	0
subtotal	**0**	**11**	**11**	**4**	**5**	**10**	**0**
FMS (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1

instances	4	8	8	7	8	3	1
max reached	0	2	2	2	2	0	0
best	0	2	2	2	2	0	0
subtotal	**5**	**13**	**13**	**12**	**13**	**4**	**2**

GlobalRessAlloc (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

GlobalRessAlloc (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	0	1	0
instances	1	1	1	1	0	1	0
max reached	0	0	0	0	0	0	0
best	2	2	2	2	0	2	0
subtotal	**4**	**4**	**4**	**4**	**0**	**4**	**0**

Kanban (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	0
instances	3	8	8	8	7	3	0
max reached	0	2	2	2	2	0	0
best	0	2	2	2	2	0	0
subtotal	**4**	**13**	**13**	**13**	**12**	**4**	**0**

LamportFastMutEx (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

LamportFastMutEx (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	1	0
instances	0	0	0	0	0	2	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**0**	**5**	**0**

MAPK (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	0
instances	3	5	5	5	4	4	0
max reached	0	2	2	2	0	0	0
best	0	2	2	2	0	0	0
subtotal	**4**	**10**	**10**	**10**	**5**	**5**	**0**

NeoElection (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	0	0	1	0
instances	0	2	2	0	0	2	0
max reached	0	2	2	0	0	0	0
best	0	2	2	0	0	0	0
subtotal	**0**	**7**	**7**	**0**	**0**	**3**	**0**

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
PermAdmissibility (Colored)							
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PermAdmissibility (P/T)							
1st instance	1	1	1	1	1	1	0
instances	5	5	5	2	2	1	0
max reached	2	2	2	0	0	0	0
best	2	2	2	0	0	0	0
subtotal	**10**	**10**	**10**	**3**	**3**	**2**	**0**
Peterson (Colored)							
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Peterson (P/T)							
1st instance	0	1	1	1	1	1	0
instances	0	2	2	1	1	2	0
max reached	0	0	0	0	0	0	0
best	0	2	2	0	0	0	0
subtotal	**0**	**5**	**5**	**2**	**2**	**3**	**0**
Philosophers (Colored)							
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Philosophers (P/T)							
1st instance	1	1	1	1	1	1	0
instances	4	3	3	2	2	9	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	2	0
subtotal	**5**	**4**	**4**	**3**	**3**	**12**	**0**
PhilosophersDyn (Colored)							
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PhilosophersDyn (P/T)							
1st instance	1	1	1	1	1	0	0
instances	2	2	2	2	2	0	0
max reached	0	0	0	0	0	0	0
best	2	2	2	2	2	0	0
subtotal	**5**	**5**	**5**	**5**	**5**	**0**	**0**
Planning (P/T)							
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0

max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Railroad (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	5	5	4	2	1	0
max reached	0	2	2	2	0	0	0
best	0	2	2	2	0	0	0
subtotal	**0**	**10**	**10**	**9**	**3**	**2**	**0**
RessAllocation (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	15	15	11	12	12	1
max reached	0	2	2	0	0	2	0
best	0	2	2	0	0	2	0
subtotal	**0**	**20**	**20**	**12**	**13**	**17**	**2**
Ring (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	1	1	1	1	1	1
max reached	0	2	2	2	2	2	2
best	0	2	2	2	2	2	2
subtotal	**0**	**6**	**6**	**6**	**6**	**6**	**6**
RwMutex (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	12	12	11	7	3	3
max reached	0	2	2	2	0	0	0
best	0	2	2	2	0	0	0
subtotal	**0**	**17**	**17**	**16**	**8**	**4**	**4**
SharedMemory (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SharedMemory (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	0	1	0
instances	2	3	3	2	0	1	0
max reached	0	0	0	0	0	0	0
best	0	2	2	2	0	0	0
subtotal	**3**	**6**	**6**	**5**	**0**	**2**	**0**
SimpleLoadBal (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SimpleLoadBal (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	2	2	2	2	3	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	2	0
subtotal	**0**	**3**	**3**	**3**	**3**	**6**	**0**
TokenRing (Colored)							

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TokenRing (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**12**	**12**	**6**	**12**	**22**	**6**
HouseConstruction (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	1
instances	0	0	0	0	4	1
max reached	0	0	0	0	0	2
best	0	0	0	0	0	2
subtotal	**0**	**0**	**0**	**0**	**5**	**6**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	0	1	1	0
instances	1	1	0	1	1	0
max reached	2	2	0	2	2	0
best	2	2	0	2	2	0
subtotal	**6**	**6**	**0**	**6**	**6**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**
Vasy2003 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	0
instances	1	1	1	1	1	0
max reached	2	2	2	2	2	0
best	2	2	2	2	2	0
subtotal	**6**	**6**	**6**	**6**	**6**	**0**

13.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models

1	1	3
LoLA	LoLa opt	Marcie
172 points	172 points	102 points

For "Surprise" Models

1	2	2
Marcie	LoLA	LoLa opt
22 points	12 points	12 points

Global

1	1	3
LoLA	LoLa opt	Marcie
196 points	196 points	146 points

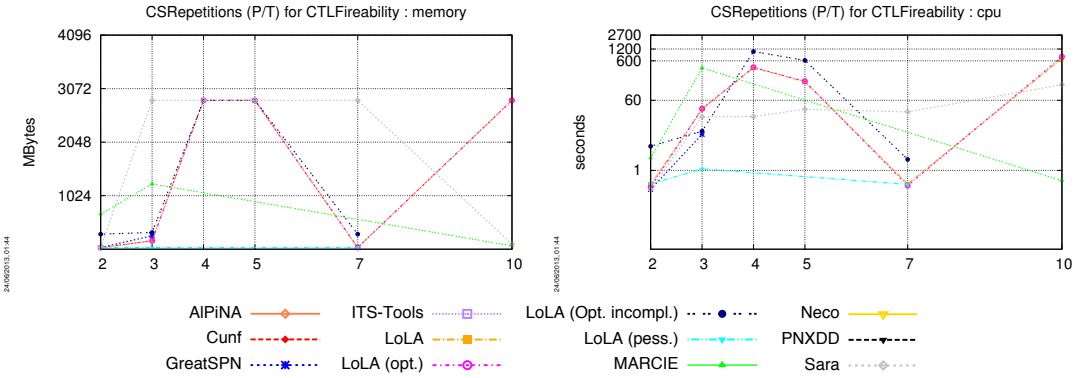
14 The CTLFireability Examination

This examination deals with CTL properties dealing with transition fireability only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

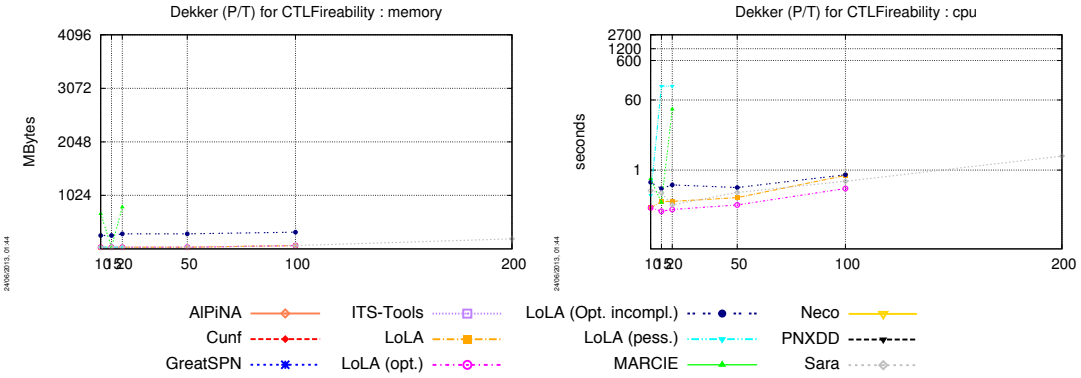
14.1 Handling of Models by Tools

CSRepetitions (colored) No instance of this model could be computed for the **CTLFireability** examination.

CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



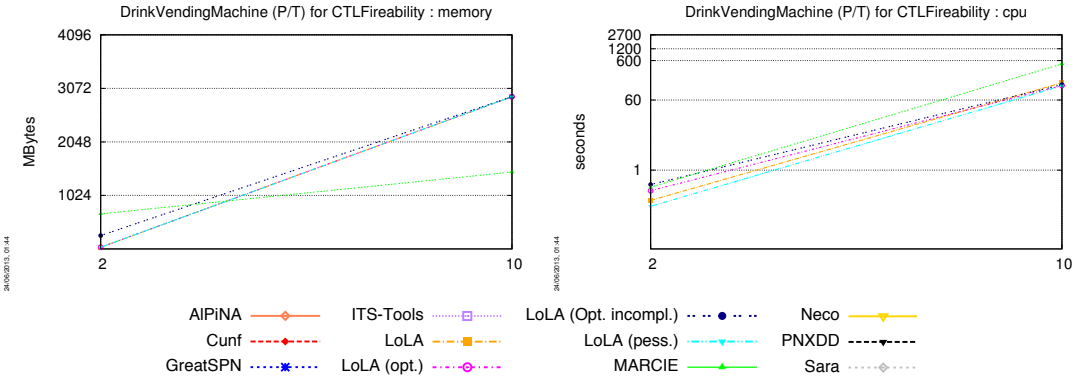
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



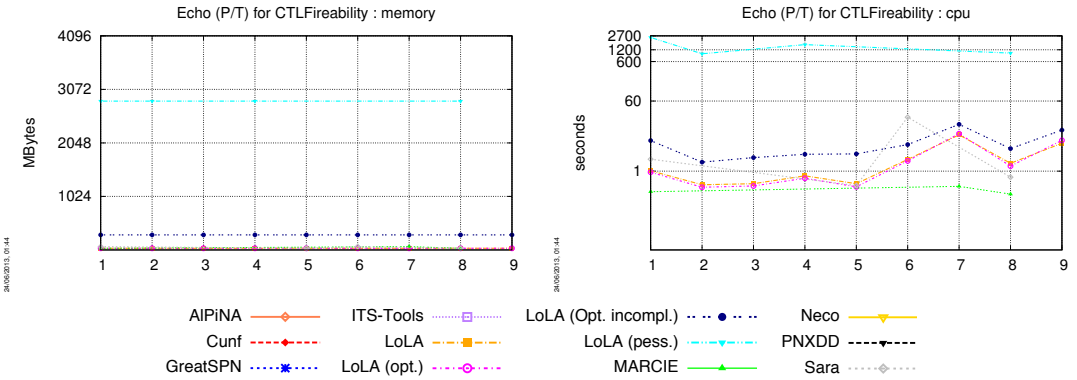
DotAndBoxes (colored) No instance of this model could be computed for the **CTLFireability** examination.

DrinkVendingMachine (colored) No instance of this model could be computed for the **CTLFireability** examination.

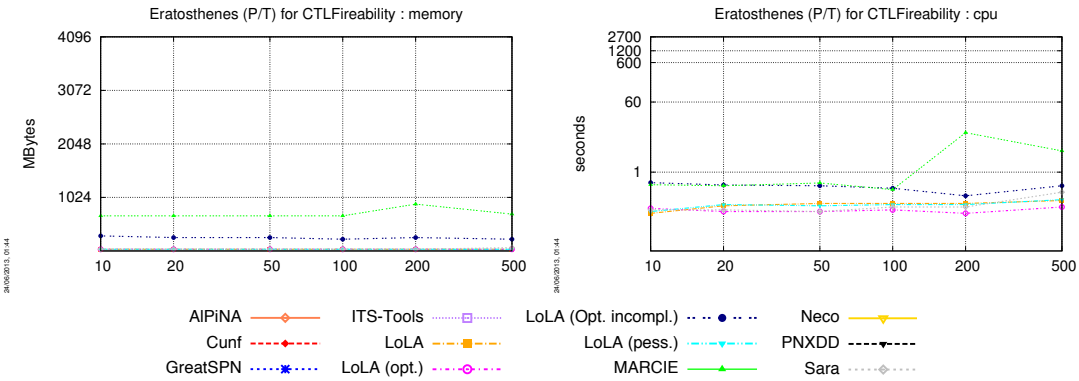
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



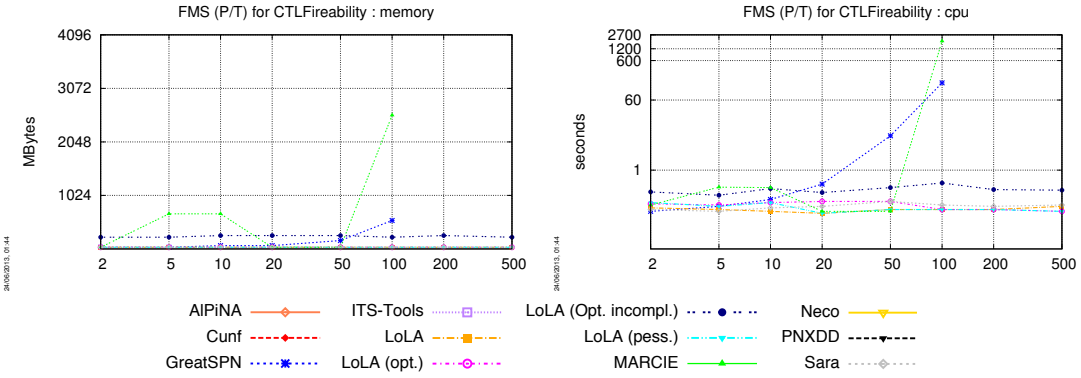
Echo (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

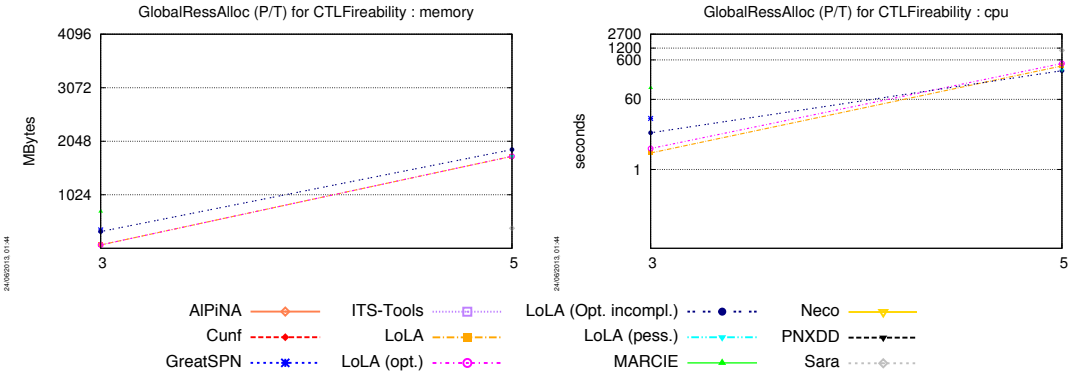


FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

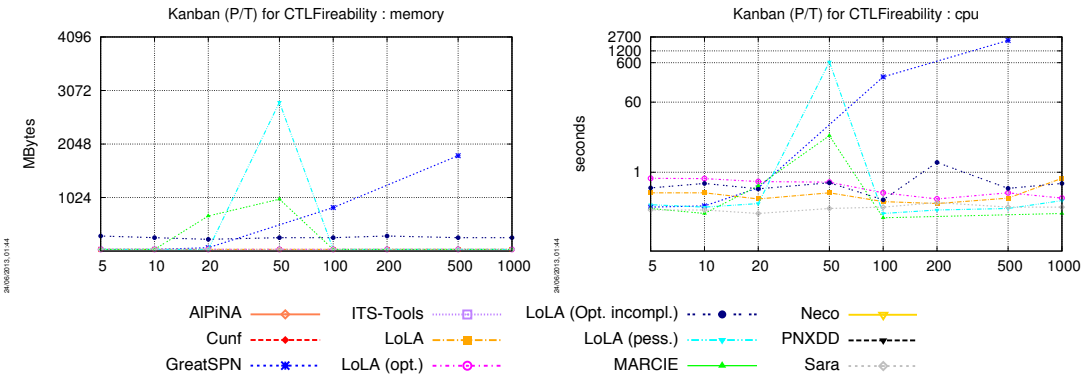


GlobalRessAlloc (colored) No instance of this model could be computed for the **CTLFireability** examination.

GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

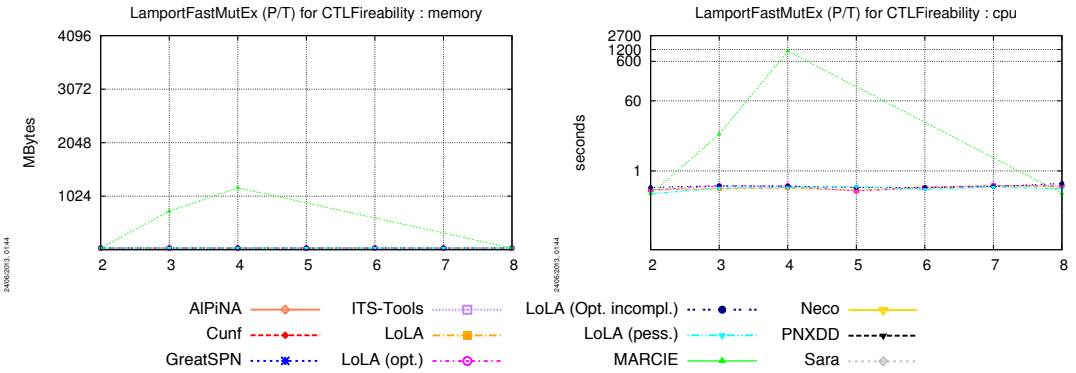


Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

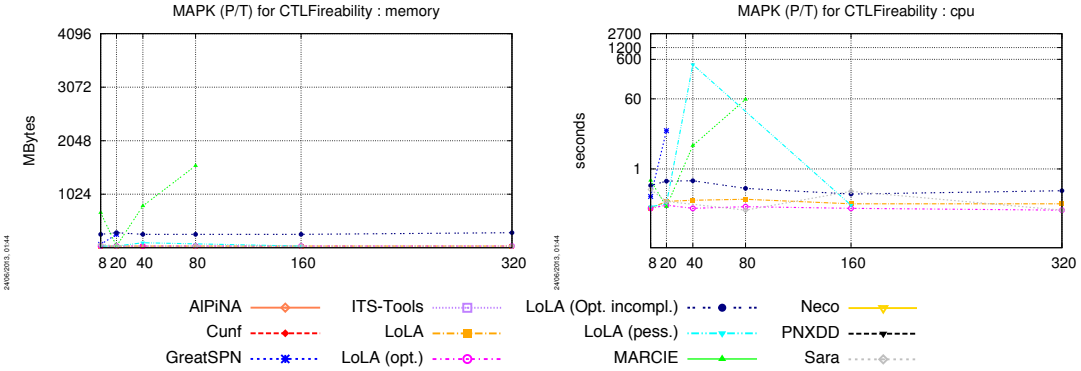


LamportFastMutEx (colored) No instance of this model could be computed for the **CTLFireability** examination.

LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

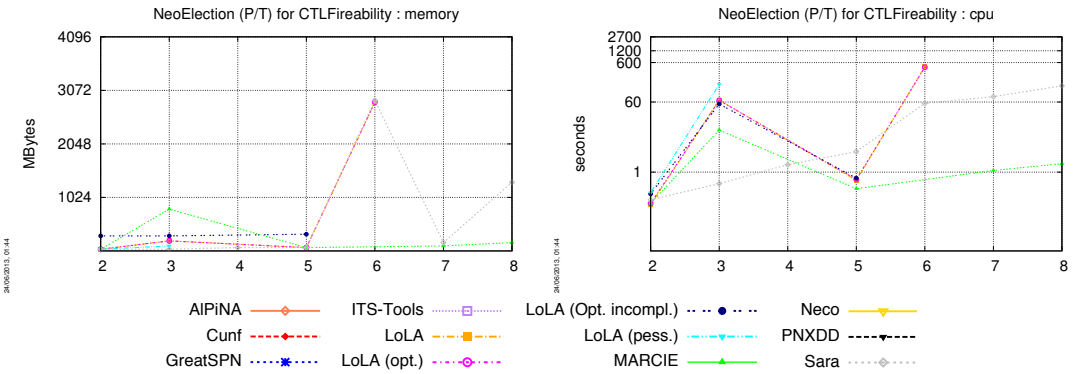


MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



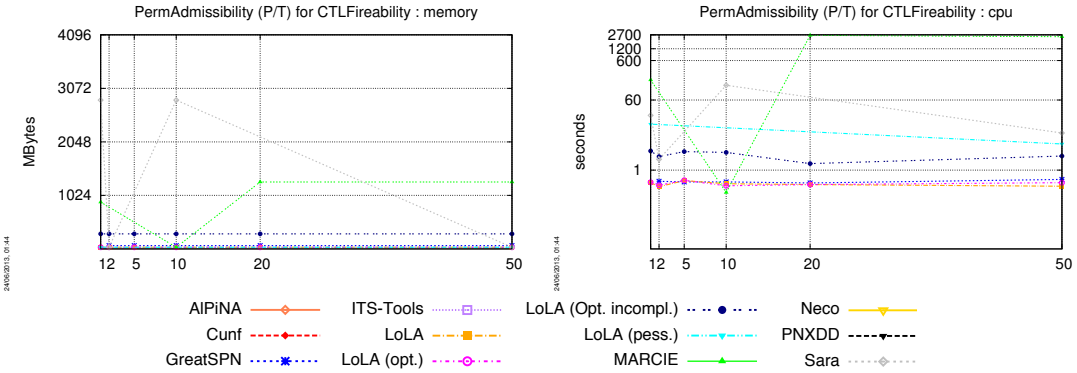
NeoElection (colored) No instance of this model could be computed for the **CTLFireability** examination.

NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



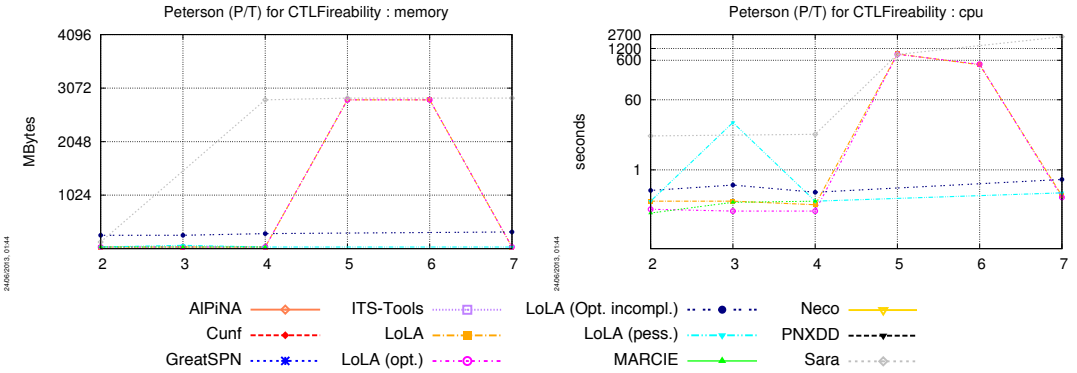
PermAdmissibility (colored) No instance of this model could be computed for the **CTLFireability** examination.

PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



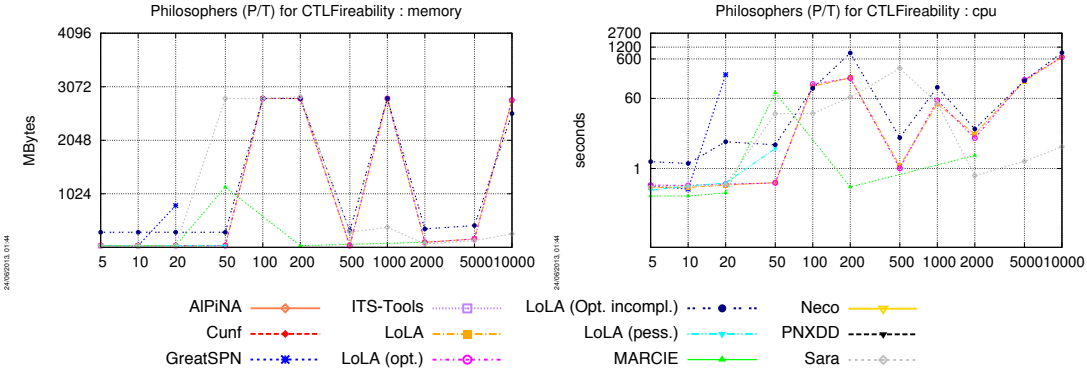
Peterson (colored) No instance of this model could be computed for the **CTLFireability** examination.

Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



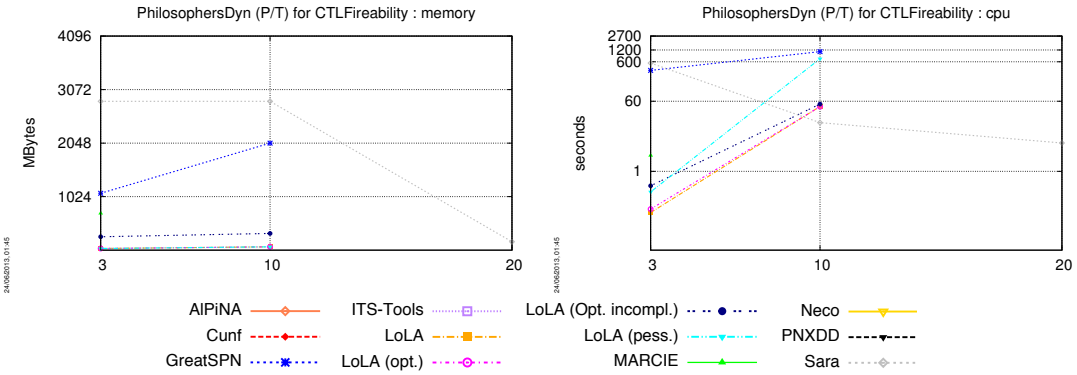
Philosophers (colored) No instance of this model could be computed for the **CTLFireability** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



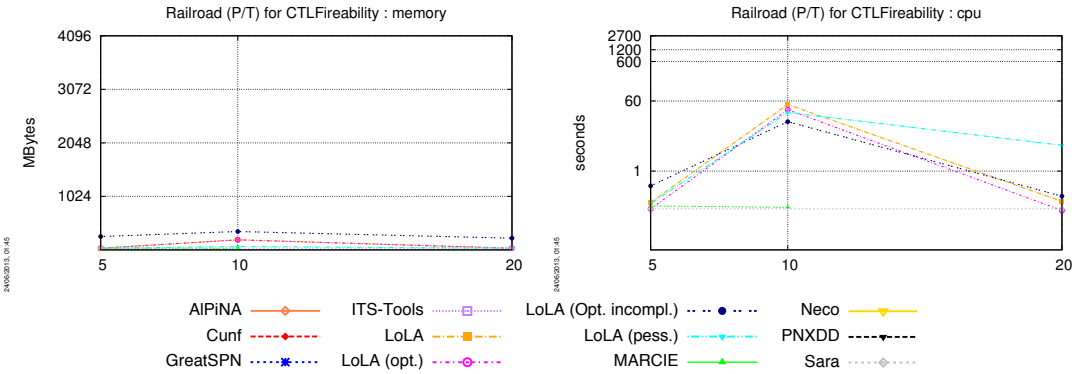
PhilosophersDyn (colored) No instance of this model could be computed for the **CTLFireability** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

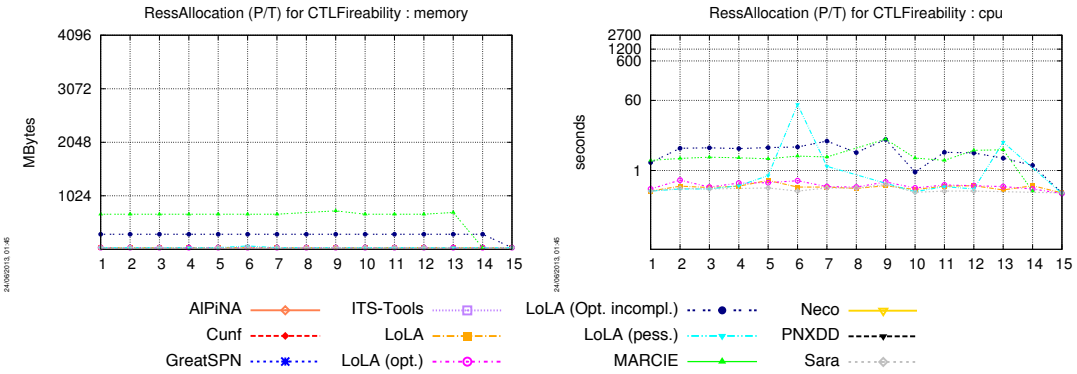


Planning (P/T) No instance of this model could be computed for the **CTLFireability** examination.

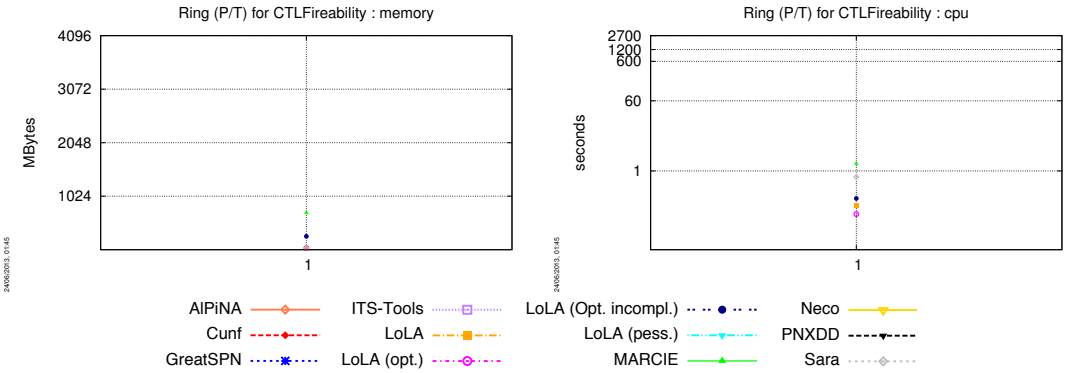
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



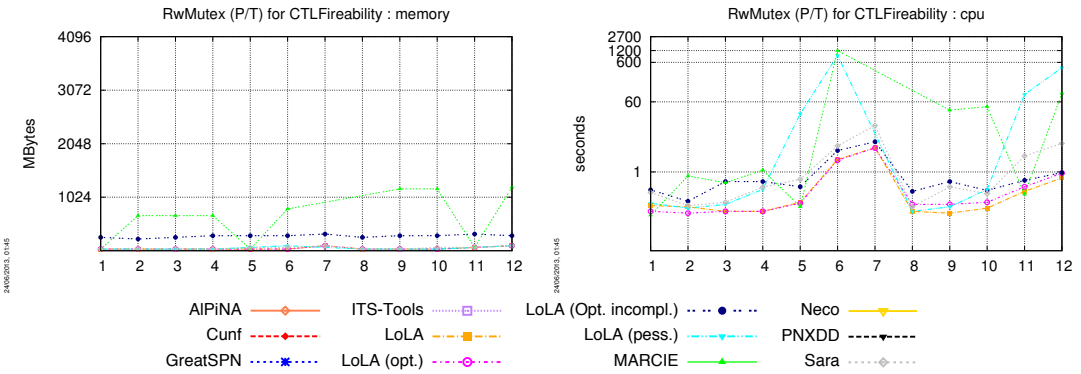
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

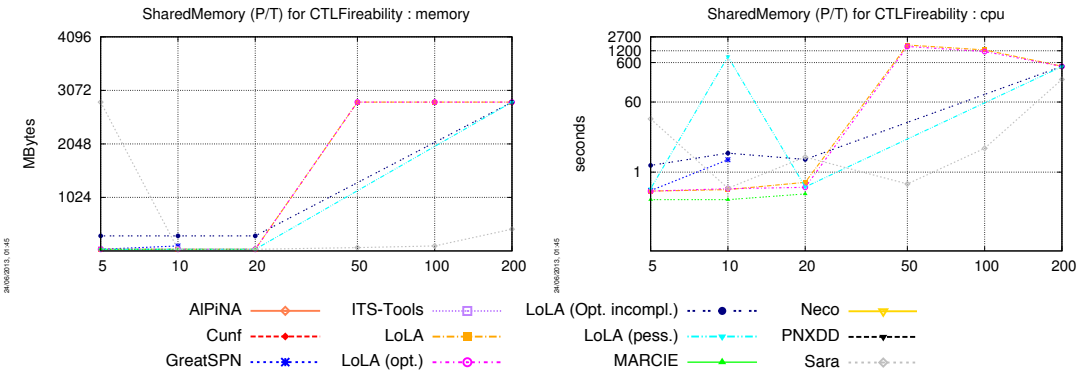


RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



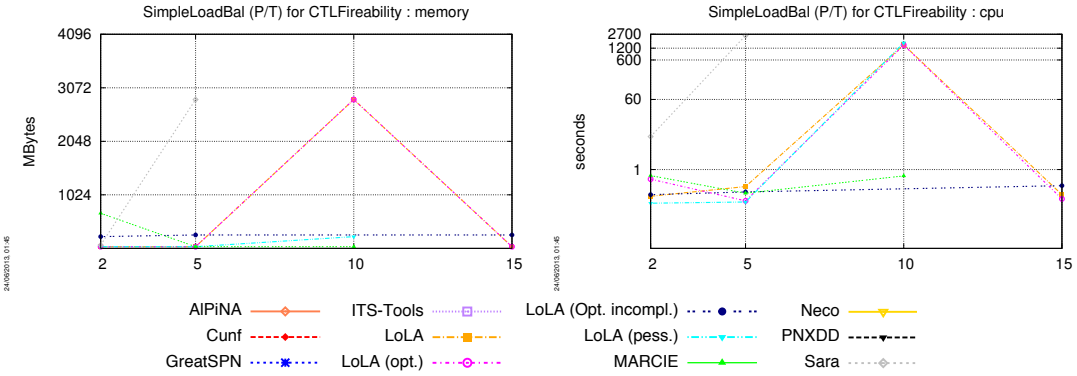
SharedMemory (colored) No instance of this model could be computed for the **CTLFireability** examination.

SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



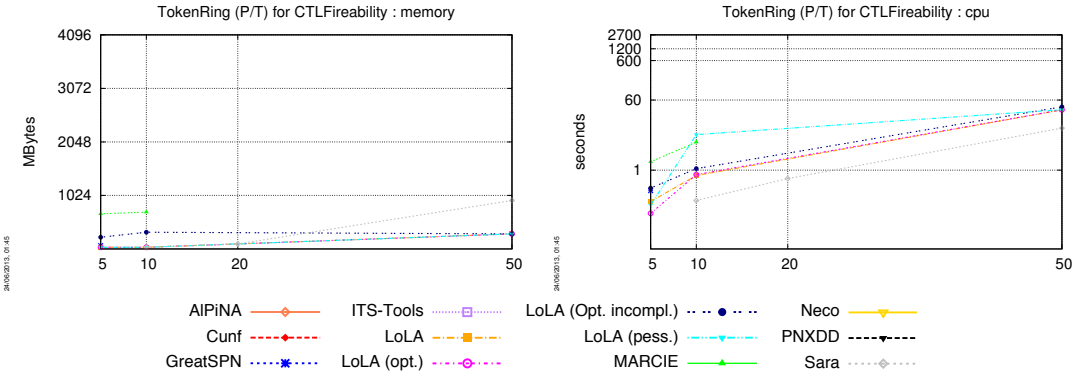
SimpleLoadBal (colored) No instance of this model could be computed for the **CTLFireability** examination.

SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

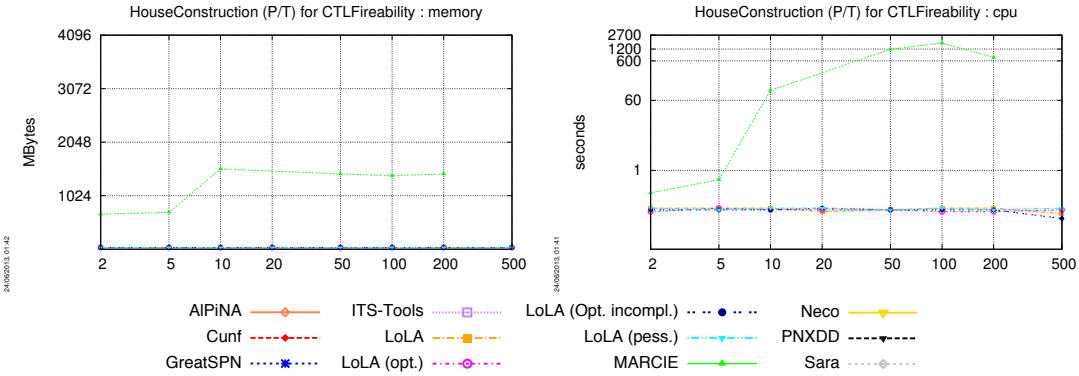


TokenRing (colored) No instance of this model could be computed for the **CTLFireability** examination.

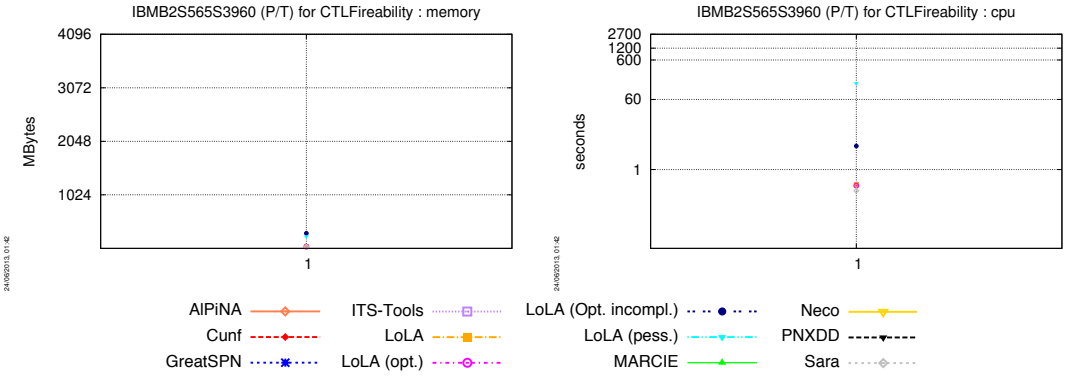
TokenRing (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

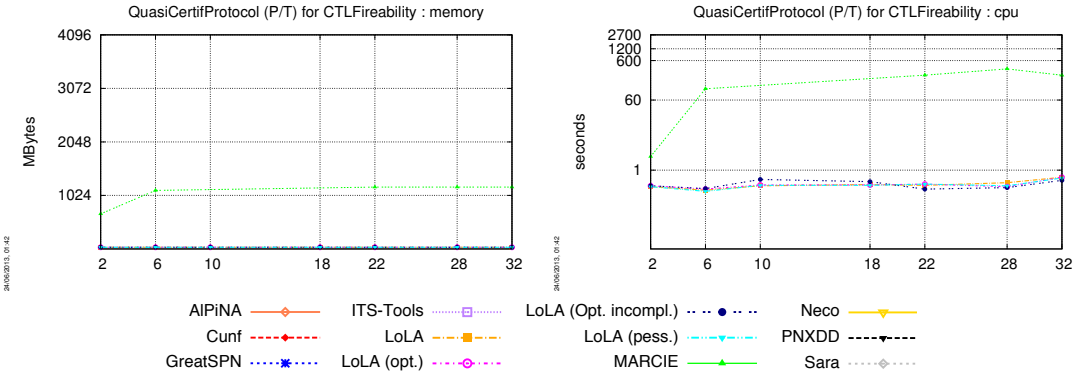


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

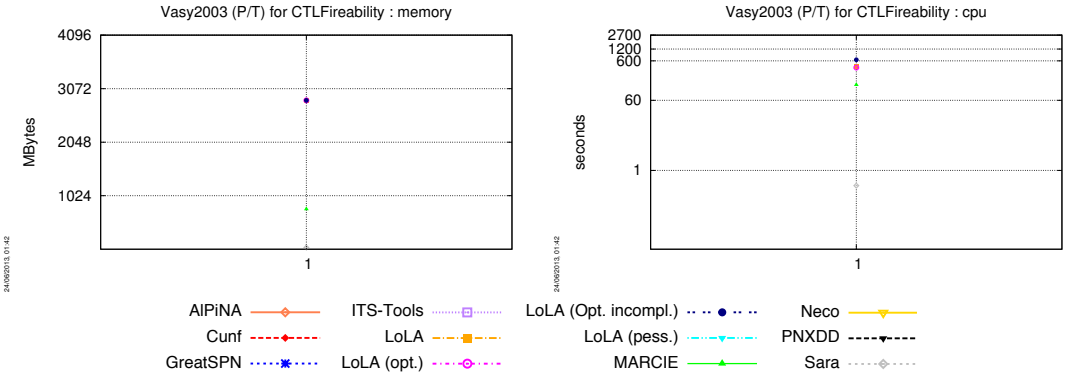


QuasiCertifProtocol (colored) No instance of this model could be computed for the **CTLFireability** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



14.2 Outputs for the CTLFireability Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
03	nc	nc	nc	nc	nc	nc	nc
04	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
CSRepetitions (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	FTFTTFFF	FTFT-F-	FTFT-F-	FTFT-F-	-T-T-F-	FTFTTFFF	TTTT-F-
03	FTTTTTTT	-F--TT	-F--TT	---TT	-F--TT	FTTTTTTT	---TF
04	to	-T-FF-	-T-FF-	-T-FF-	to	to	-F-TF-
05	to	-F--T-	-F--T-	-F--T-	to	to	-F--T-
07	mp	F-F--	F-F--	F-F--	cc	to	--F--
10	mp	-F--T-	-F--T-	to	to	cc	-F--T-
Dekker (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	F-T-T-F	F-T-T-F	F-T-T-F	F-T-T-F	FFFTTTFF	cc
015	nc	T---T-	T---T-	T---T-	T---T-	cc	cc
020	nc	-F-T-F-	-F-T-F-	-F-T-F-	-F-T-F-	FFFTTFFF	cc
050	nc	-TT-F-F	-TT-F-F	-TT-F-F	to	to	cc
100	nc	-TT-TFT	-TT-TFT	-TT-TFT	to	to	cc
200	nc	to	to	to	to	to	cc
DotAndBoxes (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	-FF--T	-FF--T	-FF--	-FF--T	FFFFTFTF	to
10	nc	cc	cc	cc	cc	FFFTF	to
Echo (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

d02r09	nc	FFTT-TF-	FFTT-TF-	FFTT-TF-	cc	cc	FFTTFTF-
d02r11	nc	-TT--	-TT--	-TT--	--T--	to	to
d02r15	nc	-FT-F-	-FT-F-	-FT-F-	to	to	to
d02r19	nc	--T-F-F	--T-F-F	--T-F-F	--T--	to	to
d03r03	nc	T-TT--T	T-TT--T	T-TT--T	to	to	T-TT--T
d03r05	nc	TF-T-T-	TF-T-T-	TF-T-T-	to	to	TF-T-T-
d03r07	nc	FTT-T-T	FTT-T-T	FTT-T-T	to	cc	to
d04r03	nc	FT-T--	FT-T--	FT-T--	-T-T--	cc	FT-T--
d05r03	nc	FTTT-T-	FTTT-T-	FTTT-T-	to	to	to

Eratosthenes (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	-F-TF-F	-F-TF-F	-F-TF-F	-F-TF-F	FTFTTFFF	-T-TF-F
020	nc	F-FF-T-	F-FF-T-	F-FF-T-	F-FF-T-	FFFFFTTF	F-TT-T-
050	nc	-FT-T-T	-FT-T-T	-FT-T-T	-FT-T-T	FFTTFTFT	-FT-T-T
100	nc	FFT--TT	FFT--TT	FFT--TT	FFT--TT	FFTTFTTT	FFT--TT
200	nc	-F-T-T-	-F-T-T-	-F-T-T-	-F-T-T-	TFFTTTFF	-F-F-T-
500	nc	FFF-F-T	FFF-F-T	FFF-F-T	FFF-F-T	FFFTFFTT	FFF-TF-T

FMS (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	FTFT?FFF	-TFT--	-TFT--	-TFT--	-TTT--	cc	-TFTF--
005	FTTTFFFT	-T---T	-T---T	-T---T	-T---	FTFTTFTT	-T---T
010	FFTFTTTT	F-TF-T-T	F-TF-T-T	F-TF-T-T	cc	FFTFFTTT	F-TFFT-T
020	FTFT?TTF	-T--TT-	-T--TT-	-T--TT-	-T--TT-	cc	-T--TT-
050	TTFT?FFF	T-T-FF-	T-T-FF-	T-T-FF-	--T-F-	cc	T-T-FF-
100	FFFTFTTF	FF-T--F	FF-T--F	FF-T--F	-F-T--T	FFFTFFFF	FF-T--F
200	to	T-F--	T-F--	T-F--	--F--	to	T-FT--
500	to	-F--F-	-F--F-	-F--F-	---F-	to	-F--F-

GlobalRessAlloc (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc	nc

GlobalRessAlloc (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	TFTFTFTF	T-FF-FT-	T-FF-FT-	T-F-FT-	to	TTTFTFTF	to
05	cc	cc	cc	cc	cc	to	cc

Kanban (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
0005	FFTT?TFT	-FT-TFT	-FT-TFT	-FT-TFT	-F---	cc	-FT-TFT
0010	FFFT?FFF	FF--FF-	FF--FF-	FF--FF-	FF---	cc	FF-TFF-
0020	FTFTTFFF	FT-T-F-	FT-T-F-	FT-T-F-	---F-	FTFTFFTF	FT-T-F-
0050	to	-FF-TF-	-FF-TF-	-FF-TF-	cc	FFFFFTFT	-FF-FTF-
0100	FFTT?FFF	-T---	-T---	-T---	cc	cc	-T---
0200	mp	FF-F-TT	FF-F-TT	FF-F-TT	-F-F--	to	FF-FF-TT
0500	FFF	-TTF--	-TTF--	-TTF--	cc	to	-TTF--
1000	to	FT--TF-	FT--TF-	FT--TF-	FT---	cc	FT--TF-

LamportFastMutEx (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc

LamportFastMutEx (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	cc	cc	cc	cc	cc	cc
3	nc	cc	cc	cc	cc	FFFTTFFF	cc
4	nc	cc	cc	cc	cc	FFTTTFTF	cc
5	nc	cc	cc	cc	cc	to	cc
6	nc	cc	cc	cc	cc	to	cc
7	nc	cc	cc	cc	cc	to	cc
8	nc	cc	cc	cc	cc	cc	cc

MAPK (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
008	FFFTFFFF	-F-F-F	-F-F-F	-F-F-F	-F-F-F	FFFTFFFF	-F-FF-F
020	FTTT?FTF	-TT--T-	-TT--T-	-TT--T-	-TT--T-	cc	-TT-T-T-
040	to	TFFT-F-	TFFT-F-	TFFT-F-	FFTT-F-	TFFTFFFF	to
080	to	-FT--FT	-FT--FT	-FT--FT	to	FFTFTFFT	-FT--FT
160	to	---TF	---TF	---TF	---TF	to	---TF
320	to	T--F-F	T--F-F	T--F-F	to	to	T--F-F

NeoElection (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	-FF-T-	-FF-T-	--F-T-	-FF-T-	cc	-FTF-F-
3	nc	T-F-TFF	T-F-TFF	---F-	T-F-TFF	FFFFFFFF	T-F-TTF
4	nc	to	to	to	to	to	-FT-T--
5	nc	-T--F-	-T--F-	-T--F-	to	cc	-F--T-
6	nc	-T--TT-	-T--TT-	to	to	to	-F--FF-
7	nc	to	to	to	to	cc	-F-TT-F
8	nc	to	to	to	to	cc	---FT

PermAdmissibility (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	nc	nc	nc	nc	nc	nc	nc
02	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	to	F-FT-T	F-FT-T	--F--	F-FT-T	FFTFFFTF	F--T-T
02	FFFTFFFF	FF--F-	FF--F-	FF--F-	to	to	FF--F-
05	FTFFTFTF	T-F-F-T	T-F-F-T	T-F-F-T	to	to	to
10	FTFT?FFF	F-T-TF-	F-T-TF-	F-T-TF-	to	cc	F-T-TF-
20	FFFFFFTF	T-F---	T-F---	T-F---	to	cc	to
50	FFTFTTFF	-T-T-T-	-T-T-T-	-T-T-T-	-T-T-T-	cc	-T-T-T-

Peterson (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

2	nc	-TTF-T-	-TTF-T-	-T-F-T-	-T-F-T-	cc	-TFF-T-
3	nc	-F--F-F	-F--F-F	-F--F-F	-F--T-T	cc	to
4	nc	---F-	---F-	---F-	---F-	cc	---T-
5	nc	cc	cc	to	to	to	F-F---
6	nc	T-F-FT-	T-F-FT-	to	to	to	to
7	nc	-T-FT-	-T-FT-	-T-FT-	-T-FT-	to	cc

Philosophers (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc

Philosophers (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FTTF?FTF	-T--T-	-T--T-	-T--T-	-T--T-	cc	-F-T-T-
000010	TTTT?TTT	-TT--	-TT--	-TT--	-TT--	cc	-FTF--
000020	FTTF?TTF	FT-F-TTF	FT-F-TTF	FT-F-TTF	FT-F-TTF	cc	TT-F-FTT
000050	mp	-TFF-FF	-TFF-FF	-TFF-FF	-TFF-FF	FTFFFFFF	-TTF-FT
000100	mp	-FF-F-	-FF-F-	-FF-F-	to	to	-F---
000200	mp	F--T-F	F--T-F	F--T-F	to	cc	cc
000500	to	FFTT-FT-	FFTT-FT-	FFTT-FT-	to	to	-F-T-T-
001000	mp	-F--FT-	-F--FT-	-F--FT-	to	to	cc
002000	mp	F-TT-T-	F-TT-T-	F-TT-T-	to	cc	cc
005000	mp	TT-F-TF	TT-F-TF	TT-F-TF	to	to	cc
010000	cc	---F-	---F-	---F-	to	to	cc

PhilosophersDyn (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc	nc

PhilosophersDyn (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	TTFFFFFF	TT--F-	TT--F-	TT--F-	TT--F-	TTFTFFFT	-T--T-
10	FFF	--T-T-	--T-T-	--T--	--T-T-	to	---T-
20	mp	to	to	to	to	to	cc

Planning (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
nf	nf	nf	nf	nf	nf	nf	

Railroad (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	-TF--T	-TF--T	-TF--	-TF--T	cc	-TF--F
010	nc	FFF-F-T	FFF-F-T	-F--F-T	cc	cc	to
020	nc	--F-T-	--F-T-	--F-T-	cc	to	--F-T-
050	nc	to	to	to	to	to	to
100	nc	to	to	to	to	to	to

RessAllocation (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
R002C002	nc	---F-T	---F-T	cc	---F-T	FTFTTFTF	---F-F
R003C002	nc	T-FT-TT-	T-FT-TT-	--T-T-	---TT-	FFTTFFTF	T-TTTTT-

R003C003	nc	T-FT-F-F	T-FT-F-F	T-FT-F-F	T-FT-F-F	TTFTTFTF	T-FTTF-F
R003C005	nc	-TFF-F-F	-TFF-F-F	-T-F--	-T-F-F-F	FTFFTFFF	to
R003C010	nc	T-T-TFT	T-T-TFT	---TFT	T-T-TFT	FFFFFTFT	T-T-FTFT
R003C015	nc	TTF-TF-	TTF-TF-	TTF-TF-	FTT-TF-	TTFTTTFT	TTF-TF-
R003C020	nc	FFTT-TFT	FFTT-TFT	FFTT-TFT	FFTT-TFT	FFTTFTFT	FFTT-TFT
R003C050	nc	FT-T-T-	FT-T-T-	FT-T-T-	to	to	FT-TTT-
R003C100	nc	FFTFTFT-	FFTFTFT-	FFTFTFT-	to	FFTFTFTF	FFTFTFT-
R005C002	nc	---F-	---F-	---F-	---F-	FFFTTFFF	--T-F-
R010C002	nc	F-TT--F	F-TT--F	--T--F	F-TT--F	FTFTFFFF	F-FT--F
R015C002	nc	-FF-F-T	-FF-F-T	-FF-F-T	-FF-F-T	FFFFTFFT	-FF-TF-T
R020C002	nc	T---FF	T---FF	---FF	T---FT	FFFFFFFF	to
R050C002	nc	F-F---	F-F---	cc	to	cc	to
R100C002	nc	cc	cc	cc	cc	to	--T--

Ring (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nc	-T---T	-T---T	-T---T	to	FTFFFFFT	-T---F

RwMutex (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
r0010w0010	nc	-TTF-TF	-TTF-TF	-TTF-T-	-T-F-TF	cc	-TTF-TF
r0010w0020	nc	----T	----T	cc	----T	TTFTTFTF	----F
r0010w0050	nc	T-FF-T-F	T-FF-T-F	--F-T-F	T-FF-T-F	FTTFFTFF	T-FF-T-F
r0010w0100	nc	FF-F-FF	FF-F-FF	-F-F-F-	cc	FFFFFFFT	FF-FT-FT
r0010w0500	nc	F---F-	F---F-	---F-	F---F-	cc	F---F-
r0010w1000	nc	T-T-FF-T	T-T-FF-T	cc	T-T-FF-T	FTFTTFFF	T-T-TF-T
r0010w2000	nc	F-F-F-	F-F-F-	--F-F-	to	to	F-FT-F-
r0020w0010	nc	T-T--	T-T--	T-T--	T-T--	to	T-T--
r0100w0010	nc	-TFT-TT-	-TFT-TT-	-TFT-TT-	-T-T-T-	cc	-TFTTTT-
r0500w0010	nc	-F-T--	-F-T--	-F-T--	-F-T--	cc	-F-TT--
r1000w0010	nc	F-T-FTT	F-T-FTT	F-T-FTT	---T-	cc	F-T-FTT
r2000w0010	nc	---FTT	---FTT	---FTT	cc	cc	--TFTT

SharedMemory (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc

SharedMemory (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FTFT?TTT	-T--F	-T--F	cc	cc	cc	-T---
000010	FTFT?TTT	-TFF-F-	-TFF-F-	-TFF-F-	-T-F--	cc	-TTF-T-
000020	mp	-F-F-F-	-F-F-F-	-F-F-F-	-F-F-F-	cc	-F-FT-F-
000050	mp	TTT---	TTT---	to	to	to	cc
000100	mp	-F---T	-F---T	to	to	to	cc
000200	cc	cc	cc	cc	cc	to	cc

SimpleLoadBal (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc	nc

20	nc	nc	nc	nc	nc	nc	nc
SimpleLoadBal (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	--F-F-	--F-F-	--F-F-	--F--	FFFFTFTT	--F-F-
05	nc	TF--F-	TF--F-	TF--F-	-F--F-	cc	F--T-
10	nc	FT-F--	FT-F--	to	FT-F--F	cc	to
15	nc	FT-T-FT	FT-T-FT	FT-T-FT	to	to	to
20	nc	to	to	to	to	to	to
TokenRing (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	nc	nc	nc	nc	nc	nc
010	nc	nc	nc	nc	nc	nc	nc
020	nc	nc	nc	nc	nc	nc	nc
050	nc	nc	nc	nc	nc	nc	nc
100	nc	nc	nc	nc	nc	nc	nc
200	nc	nc	nc	nc	nc	nc	nc
500	nc	nc	nc	nc	nc	nc	nc
TokenRing (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	FTTFTFTF	-T--FT	-T--FT	-T--F-	-T--F-	FTTFTFTF	to
010	to	---T-	---T-	cc	cc	FTFTTFTF	cc
020	mp	to	to	to	to	to	cc
050	cc	cc	cc	cc	cc	to	cc

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	cc	cc	cc	cc	TFTFFFFT	cc
005	cc	cc	cc	cc	FFFFFFFF	cc
010	cc	cc	cc	cc	FFTFFFTF	cc
020	cc	cc	cc	cc	to	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	to	cc
IBMB2S565S3960 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	F-FT-F-F	F-FT-F-F	F-FT-F-F	T-TT-T-T	to	cc
QuasiCertifProtocol (colored)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	cc	cc	cc	cc	FFTTFFFT	cc
06	cc	cc	cc	cc	FFFTFTTF	cc
10	cc	cc	cc	cc	to	cc
18	cc	cc	cc	cc	to	cc
22	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc
32	cc	cc	cc	cc	cc	cc
Vasy2003 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	-T---	-T---	-T---	to	FTFTTFFF	-TT-T--

14.3 Score for the CTLFireability Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**47**	**198**	**198**	**178**	**113**	**83**	**152**
CSRepetitions (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
CSRepetitions (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	2	6	6	5	2	2	6
max reached	0	2	2	0	0	0	2
best	0	2	2	0	0	0	2
subtotal	**3**	**11**	**11**	**6**	**3**	**3**	**11**
Dekker (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	5	5	5	3	2	0
max reached	0	0	0	0	0	0	0
best	0	2	2	2	0	0	0
subtotal	**0**	**8**	**8**	**8**	**4**	**3**	**0**
DotAndBoxes (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	1	1	1	1	2	0
max reached	0	0	0	0	0	2	0
best	0	0	0	0	0	2	0

subtotal	**0**	**2**	**2**	**2**	**2**	**7**	**0**
Echo (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	0	1
instances	0	9	9	9	3	0	4
max reached	0	2	2	2	0	0	0
best	0	2	2	2	0	0	0
subtotal	**0**	**14**	**14**	**14**	**4**	**0**	**5**
Eratosthenes (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	6	6	6	6	6	6
max reached	0	2	2	2	2	2	2
best	0	2	2	2	2	2	2
subtotal	**0**	**11**	**11**	**11**	**11**	**11**	**11**
FMS (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	6	8	8	8	7	3	8
max reached	0	2	2	2	2	0	2
best	0	2	2	2	2	0	2
subtotal	**7**	**13**	**13**	**13**	**12**	**4**	**13**
GlobalRessAlloc (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GlobalRessAlloc (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	0	1	0
instances	1	1	1	1	0	1	0
max reached	0	0	0	0	0	0	0
best	2	2	2	2	0	2	0
subtotal	**4**	**4**	**4**	**4**	**0**	**4**	**0**
Kanban (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	5	8	8	8	5	2	8
max reached	0	2	2	2	2	0	2
best	0	2	2	2	2	0	2
subtotal	**6**	**13**	**13**	**13**	**10**	**3**	**13**
LamportFastMutEx (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
LamportFastMutEx (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	1	0
instances	0	0	0	0	0	2	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**0**	**5**	**0**
MAPK (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1

instances	2	6	6	6	4	3	5
max reached	0	2	2	2	0	0	2
best	0	2	2	2	0	0	2
subtotal	**3**	**11**	**11**	**11**	**5**	**4**	**10**

NeoElection (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	4	4	3	2	1	7
max reached	0	0	0	0	0	0	2
best	0	0	0	0	0	0	2
subtotal	**0**	**5**	**5**	**4**	**3**	**2**	**12**

PermAdmissibility (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PermAdmissibility (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	5	6	6	6	2	1	4
max reached	2	2	2	2	2	0	2
best	2	2	2	2	2	0	2
subtotal	**10**	**11**	**11**	**11**	**7**	**2**	**9**

Peterson (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	0	1
instances	0	5	5	4	4	0	3
max reached	0	2	2	2	2	0	0
best	0	2	2	2	2	0	0
subtotal	**0**	**10**	**10**	**9**	**9**	**0**	**4**

Philosophers (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Philosophers (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	3	11	11	11	4	1	6
max reached	0	2	2	2	0	0	0
best	0	2	2	2	0	0	0
subtotal	**4**	**16**	**16**	**16**	**5**	**2**	**7**

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
PhilosophersDyn (Colored)							
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PhilosophersDyn (P/T)							
1st instance	1	1	1	1	1	1	1
instances	2	2	2	2	2	1	2
max reached	0	0	0	0	0	0	0
best	2	2	2	2	2	0	2
subtotal	**5**	**5**	**5**	**5**	**5**	**2**	**5**
Planning (P/T)							
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Railroad (P/T)							
1st instance	0	1	1	1	1	0	1
instances	0	3	3	3	1	0	2
max reached	0	0	0	0	0	0	0
best	0	2	2	2	0	0	2
subtotal	**0**	**6**	**6**	**6**	**2**	**0**	**5**
RessAllocation (P/T)							
1st instance	0	1	1	1	1	1	1
instances	0	14	14	12	11	12	12
max reached	0	0	0	0	0	0	2
best	0	0	0	0	0	0	2
subtotal	**0**	**15**	**15**	**13**	**12**	**13**	**17**
Ring (P/T)							
1st instance	0	1	1	1	0	1	1
instances	0	1	1	1	0	1	1
max reached	0	2	2	2	0	2	2
best	0	2	2	2	0	2	2
subtotal	**0**	**6**	**6**	**6**	**0**	**6**	**6**
RwMutex (P/T)							
1st instance	0	1	1	1	1	1	1
instances	0	12	12	10	9	4	12
max reached	0	2	2	2	0	0	2
best	0	2	2	2	0	0	2
subtotal	**0**	**17**	**17**	**15**	**10**	**5**	**17**
SharedMemory (Colored)							
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SharedMemory (P/T)							
1st instance	1	1	1	1	1	0	1
instances	2	5	5	2	2	0	3

max reached	0	0	0	0	0	0	0
best	0	2	2	0	0	0	0
subtotal	**3**	**8**	**8**	**3**	**3**	**0**	**4**
SimpleLoadBal (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SimpleLoadBal (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	4	4	3	3	1	2
max reached	0	0	0	0	0	0	0
best	0	2	2	2	0	0	0
subtotal	**0**	**7**	**7**	**6**	**4**	**2**	**3**
TokenRing (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TokenRing (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	0
instances	1	2	2	1	1	2	0
max reached	0	0	0	0	0	0	0
best	0	2	2	0	0	2	0
subtotal	**2**	**5**	**5**	**2**	**2**	**5**	**0**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

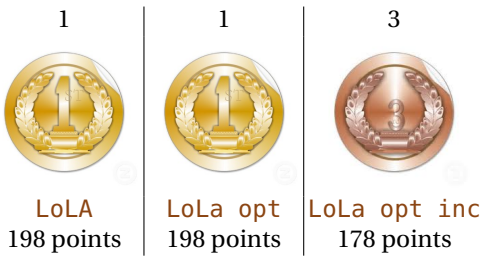
Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**12**	**12**	**12**	**6**	**17**	**6**
HouseConstruction (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	0	0
instances	1	1	1	1	0	0
max reached	2	2	2	2	0	0
best	2	2	2	2	0	0
subtotal	**6**	**6**	**6**	**6**	**0**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**
Vasy2003 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	0	1	1
instances	1	1	1	0	1	1
max reached	2	2	2	0	2	2
best	2	2	2	0	2	2
subtotal	**6**	**6**	**6**	**0**	**6**	**6**

14.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models



For "Surprise" Models

Global

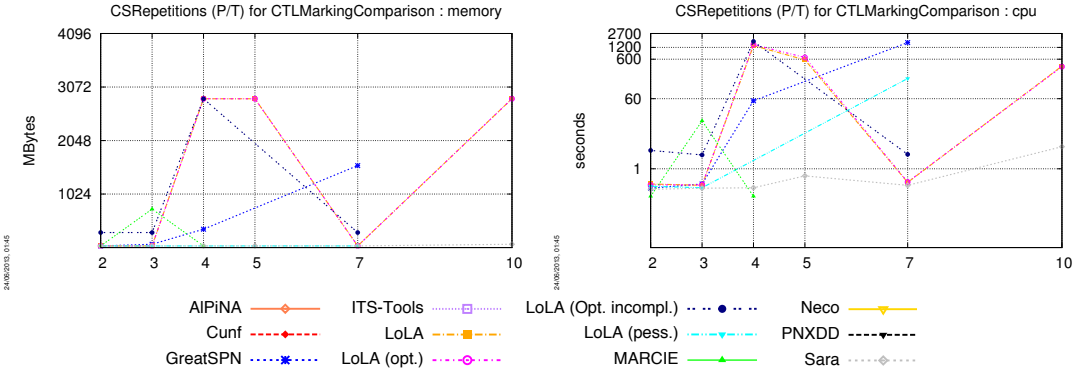
15 The CTLMarkingComparison Examination

This examination deals with CTL properties dealing with marking comparison only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

15.1 Handling of Models by Tools

CSRepetitions (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

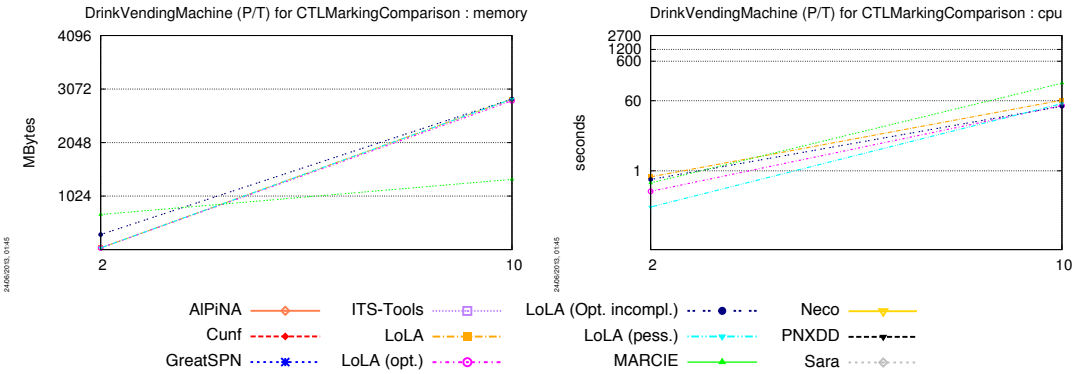


Dekker (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

DotAndBoxes (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

DrinkVendingMachine (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



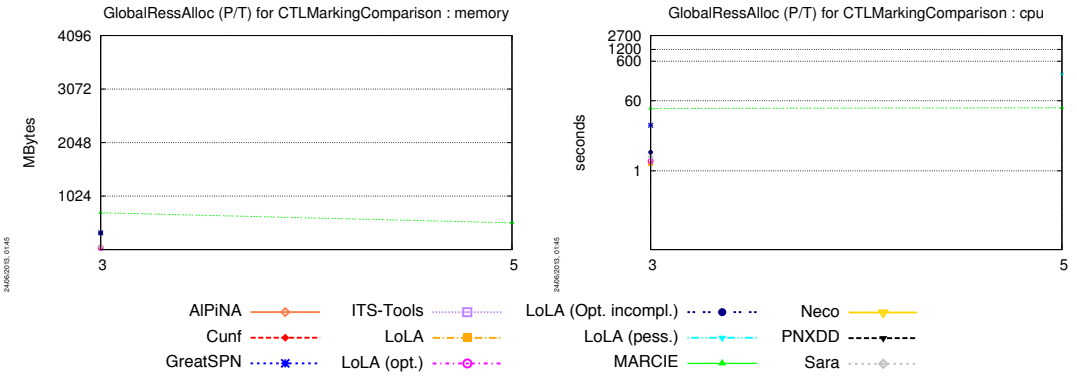
Echo (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

Eratosthenes (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

FMS (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

GlobalRessAlloc (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

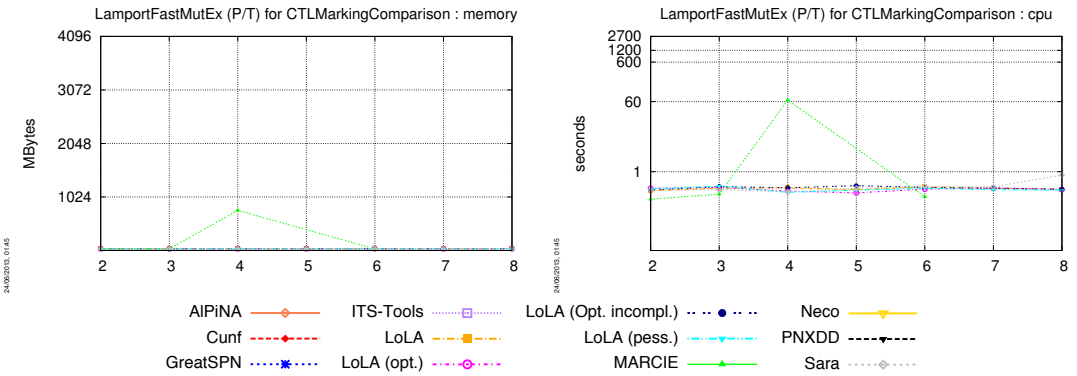
GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Kanban (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

LamportFastMutEx (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

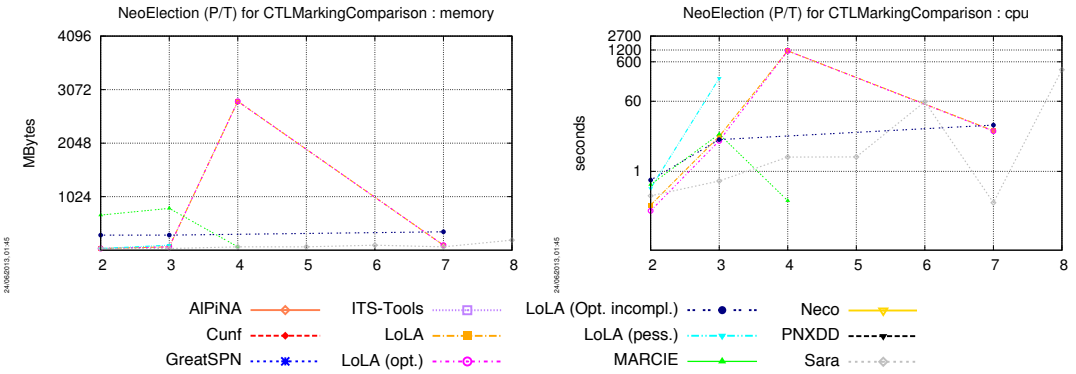
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



MAPK (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

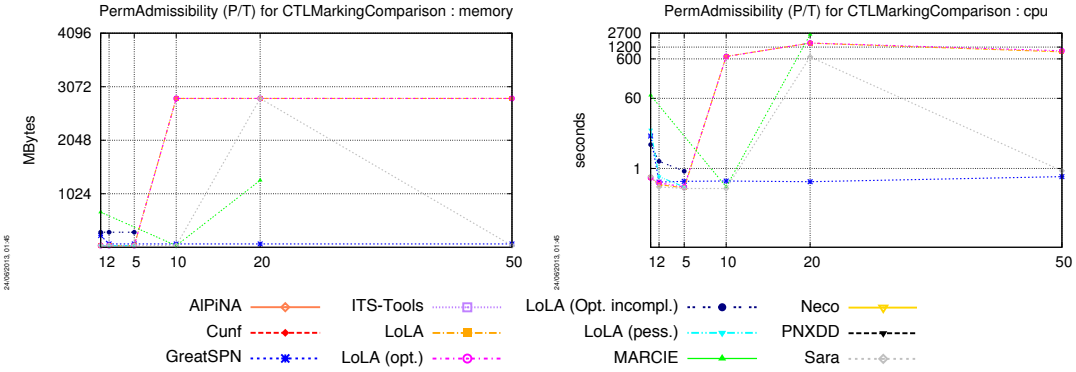
NeoElection (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



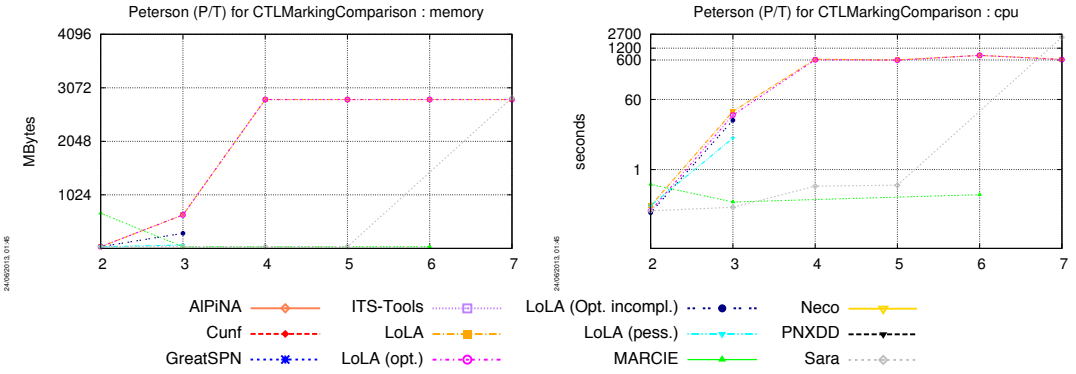
PermAdmissibility (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



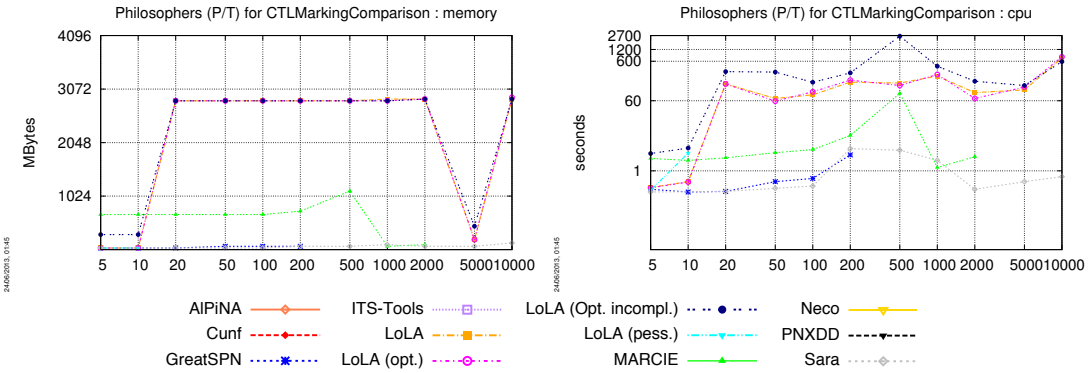
Peterson (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



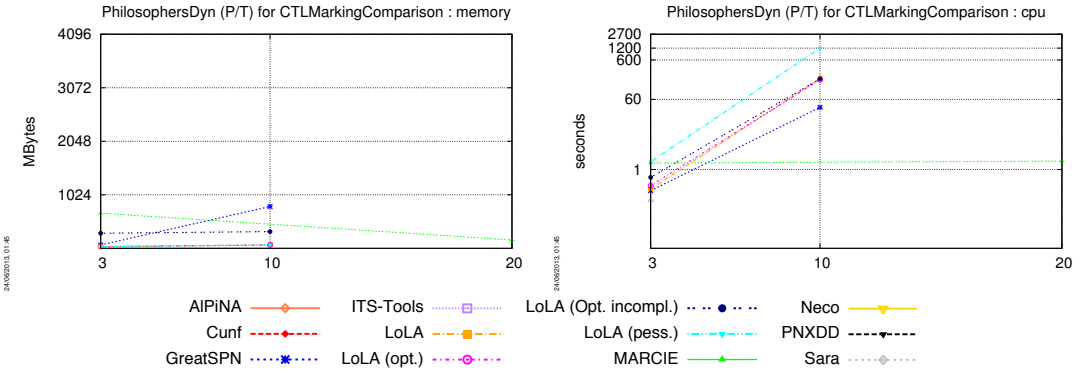
Philosophers (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



PhilosophersDyn (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Planning (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

Railroad (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

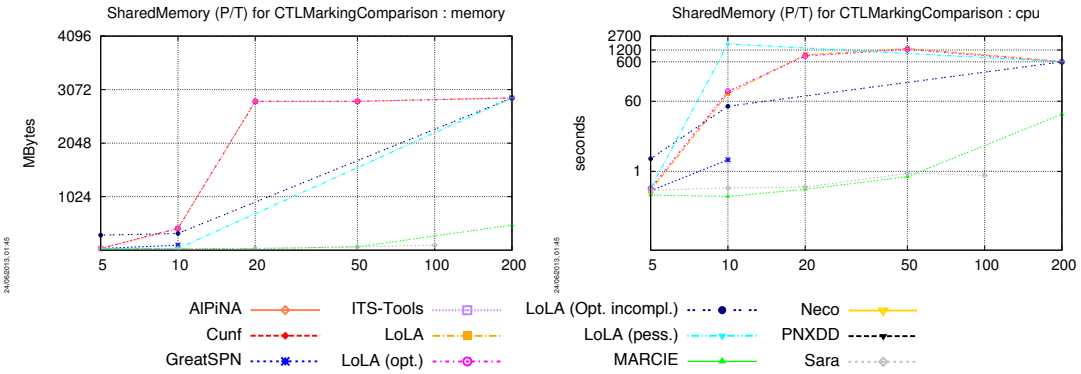
RessAllocation (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

Ring (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

RwMutex (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

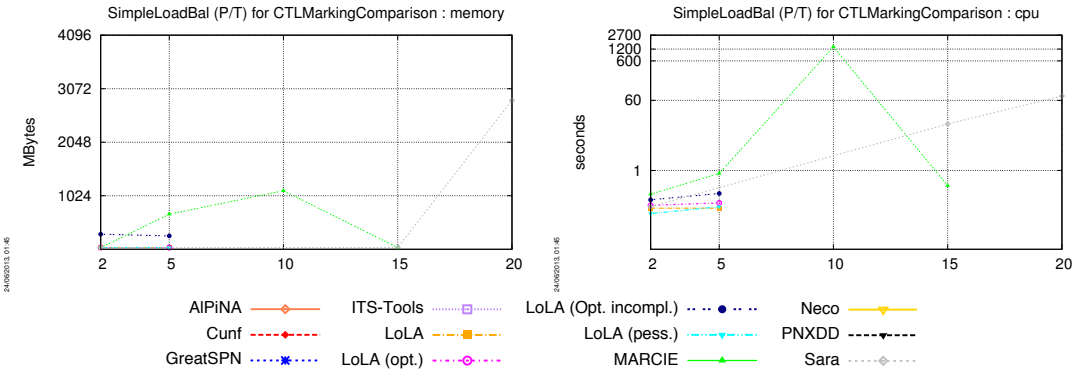
SharedMemory (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



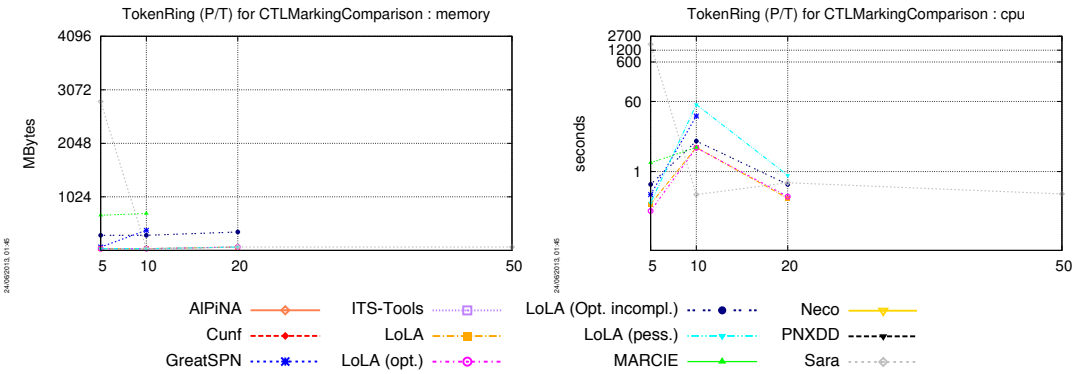
SimpleLoadBal (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



TokenRing (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

TokenRing (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

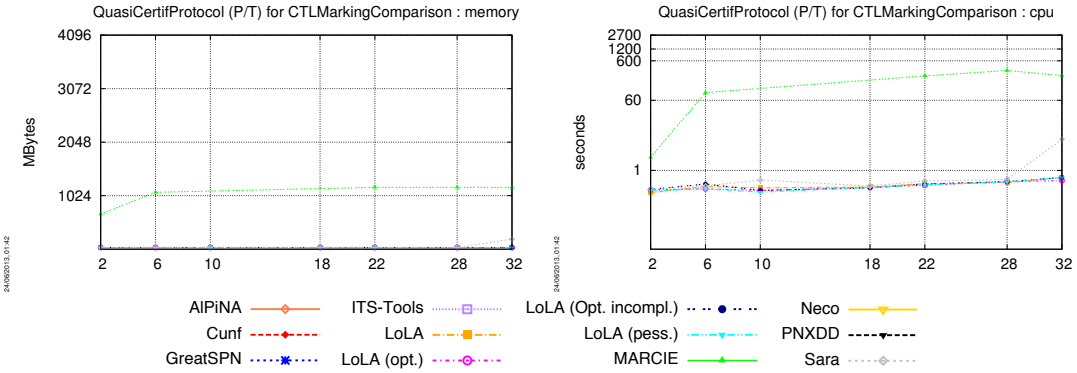


HouseConstruction (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

IBMB2S565S3960 (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

QuasiCertifProtocol (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

15.2 Outputs for the CTLMarkingComparison Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
03	nc	nc	nc	nc	nc	nc	nc
04	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc

CSRepetitions (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	cc	-F-F-TF-	-F-F-TF-	-F-F-F-	-F-F-TF-	cc	-F-F-TT-
03	cc	-F-T-T-	-F-T-T-	-F-T-T-	-F-T-T-	FFFTTFFF	-F-F-T-
04	cc	cc	cc	cc	to	cc	-FT-T-
05	to	TT--T-	TT--T-	to	to	to	TT--TFF
07	cc	-T-T--F	-T-T--F	-T-T--F	cc	to	-T-T--F
10	mp	---TT-	---TT-	to	to	to	--TTTT-

Dekker (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nf	nf	nf	nf	nf	nf	nf
015	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf	nf

DotAndBoxes (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	-TT-TFF	-TT-TFF	--T-FF	-TT-FF	FFFFTFFF	to
10	nc	cc	cc	cc	cc	FFFFFFFF	to

Echo (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
d02r09	nf	nf	nf	nf	nf	nf	nf
d02r11	nf	nf	nf	nf	nf	nf	nf
d02r15	nf	nf	nf	nf	nf	nf	nf
d02r19	nf	nf	nf	nf	nf	nf	nf
d03r03	nf	nf	nf	nf	nf	nf	nf
d03r05	nf	nf	nf	nf	nf	nf	nf
d03r07	nf	nf	nf	nf	nf	nf	nf
d04r03	nf	nf	nf	nf	nf	nf	nf
d05r03	nf	nf	nf	nf	nf	nf	nf

Eratosthenes (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf	nf

FMS (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	nf	nf	nf	nf	nf	nf	nf
005	nf	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf	nf

GlobalRessAlloc (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc	nc
GlobalRessAlloc (P/T)							
Instances	**GreatSPN**	**LoLA**	**LoLa opt**	**LoLa opt inc**	**LoLa pess**	**Marcie**	**Sara**
03	cc	FT---	FT---	-T---	to	FFFFFFFT	F----
05	cc	to	to	to	-T---	cc	to
Kanban (P/T)							
Instances	**GreatSPN**	**LoLA**	**LoLa opt**	**LoLa opt inc**	**LoLa pess**	**Marcie**	**Sara**
0005	nf	nf	nf	nf	nf	nf	nf
0010	nf	nf	nf	nf	nf	nf	nf
0020	nf	nf	nf	nf	nf	nf	nf
0050	nf	nf	nf	nf	nf	nf	nf
0100	nf	nf	nf	nf	nf	nf	nf
0200	nf	nf	nf	nf	nf	nf	nf
0500	nf	nf	nf	nf	nf	nf	nf
1000	nf	nf	nf	nf	nf	nf	nf
LamportFastMutEx (colored)							
Instances	**GreatSPN**	**LoLA**	**LoLa opt**	**LoLa opt inc**	**LoLa pess**	**Marcie**	**Sara**
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc
LamportFastMutEx (P/T)							
Instances	**GreatSPN**	**LoLA**	**LoLa opt**	**LoLa opt inc**	**LoLa pess**	**Marcie**	**Sara**
2	nc	cc	cc	cc	cc	cc	FF-FF-T
3	nc	cc	cc	cc	cc	cc	-FT-TFT
4	nc	cc	cc	cc	cc	FFFFTFFF	-TT-FT-
5	nc	cc	cc	cc	cc	to	T-TT-F-
6	nc	cc	cc	cc	cc	cc	-T--TFT
7	nc	cc	cc	cc	cc	to	T-T-T-T
8	nc	cc	cc	cc	cc	to	-T--TT
MAPK (P/T)							
Instances	**GreatSPN**	**LoLA**	**LoLa opt**	**LoLa opt inc**	**LoLa pess**	**Marcie**	**Sara**
008	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
040	nf	nf	nf	nf	nf	nf	nf
080	nf	nf	nf	nf	nf	nf	nf
160	nf	nf	nf	nf	nf	nf	nf
320	nf	nf	nf	nf	nf	nf	nf
NeoElection (colored)							
Instances	**GreatSPN**	**LoLA**	**LoLa opt**	**LoLa opt inc**	**LoLa pess**	**Marcie**	**Sara**
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc
NeoElection (P/T)							
Instances	**GreatSPN**	**LoLA**	**LoLa opt**	**LoLa opt inc**	**LoLa pess**	**Marcie**	**Sara**
2	nc	-T-TT-F-	-T-TT-F-	--TT-F-	-T-TT-F-	FFFTTFFF	-T-FF-F-

3	nc	TTFF-F-	TTFF-F-	cc	TTFF-F-	FFFFFFFF	TTFF-F-
4	nc	-F---T	-F---T	to	to	cc	-TT--TF
5	nc	to	to	to	to	to	FF--TT-
6	nc	to	to	to	to	to	FT-FFT-F
7	nc	-F--TF	-F--TF	cc	to	to	cc
8	nc	to	to	to	to	to	-T-F--F

PermAdmissibility (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	nc	nc	nc	nc	nc	nc	nc
02	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	cc	-T-TFT-F	-T-TFT-F	--T--F	-T-TFT-F	FFFTFFFF	-T-FFF-T
02	?????TFF	-T-T--	-T-T--	-T-T--	-T-T--	to	-T-T--
05	FTTTFTTT	-T---	-T---	-T---	-T---	to	-T---
10	TFTT????	---T-	---T-	to	to	cc	---TF
20	cc	-F---F	-F---F	to	to	cc	FF---F
50	FTTFT???	--T-F-	--T-F-	to	to	to	T-T-FT

Peterson (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	cc	cc	cc	cc	FFFFFFFF	cc
3	nc	FT---	FT---	-T---	FT---	cc	FF---
4	nc	---T-	---T-	to	to	to	-TFFTF-
5	nc	--F--	--F--	to	to	to	F-T-F-F
6	nc	cc	cc	to	to	cc	to
7	nc	cc	cc	to	to	to	-T-T-F

Philosophers (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc

Philosophers (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	?????FFF	FFFT--	FFFT--	FFFT--	FFFT--	FFFTFFFF	FFTF--
000010	cc	--F-FTT	--F-FTT	--F-T-	--F-FTT	FFFTTFFF	to
000020	cc	-F---	-F---	-F---	to	FFFFTFFF	-FF-T--
000050	cc	--T-FF-	--T-FF-	--T-FF-	to	FFFFFFFF	F-T-FF-
000100	cc	--F--	--F--	--F--	to	FFTTFFFF	--T-F-

000200	cc	--T--	--T--	--T--	to	FFTTTFFF	T-F--F
000500	to	--T-T-	--T-T-	--T-T-	to	FFFFTFFF	-TT-FF
001000	mp	---F-	---F-	---F-	to	cc	-T--F-
002000	mp	--T-T-	--T-T-	--T-T-	to	cc	cc
005000	mp	-T-F-F-T	-T-F-F-T	-T-F-F-T	to	to	cc
010000	cc	-T---	-T---	-T---	to	to	cc

PhilosophersDyn (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc	nc

PhilosophersDyn (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	cc	F-F-TFF	F-F-TFF	---F-	F-F-TFF	FFFTTFFF	-T-TTF
10	cc	T--FTT	T--FTT	cc	T--FTT	to	to
20	mp	to	to	to	to	cc	to

Planning (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
nf	nf	nf	nf	nf	nf	nf	

Railroad (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nf	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf

RessAllocation (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
R002C002	nf	nf	nf	nf	nf	nf	nf
R003C002	nf	nf	nf	nf	nf	nf	nf
R003C003	nf	nf	nf	nf	nf	nf	nf
R003C005	nf	nf	nf	nf	nf	nf	nf
R003C010	nf	nf	nf	nf	nf	nf	nf
R003C015	nf	nf	nf	nf	nf	nf	nf
R003C020	nf	nf	nf	nf	nf	nf	nf
R003C050	nf	nf	nf	nf	nf	nf	nf
R003C100	nf	nf	nf	nf	nf	nf	nf
R005C002	nf	nf	nf	nf	nf	nf	nf
R010C002	nf	nf	nf	nf	nf	nf	nf
R015C002	nf	nf	nf	nf	nf	nf	nf
R020C002	nf	nf	nf	nf	nf	nf	nf
R050C002	nf	nf	nf	nf	nf	nf	nf
R100C002	nf	nf	nf	nf	nf	nf	nf

Ring (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nf	nf	nf	nf	nf	nf	nf

RwMutex (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
r0010w0010	nf	nf	nf	nf	nf	nf	nf
r0010w0020	nf	nf	nf	nf	nf	nf	nf
r0010w0050	nf	nf	nf	nf	nf	nf	nf
r0010w0100	nf	nf	nf	nf	nf	nf	nf
r0010w0500	nf	nf	nf	nf	nf	nf	nf
r0010w1000	nf	nf	nf	nf	nf	nf	nf
r0010w2000	nf	nf	nf	nf	nf	nf	nf
r0020w0010	nf	nf	nf	nf	nf	nf	nf
r0100w0010	nf	nf	nf	nf	nf	nf	nf
r0500w0010	nf	nf	nf	nf	nf	nf	nf

r1000w0010	nf	nf	nf	nf	nf	nf	nf
r2000w0010	nf	nf	nf	nf	nf	nf	nf

SharedMemory (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc

SharedMemory (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	cc	T-F--T	T-F--T	----T	cc	cc	F-T--F
000010	cc	F--TT-	F--TT-	---T-	---T-	cc	T--TTF-
000020	mp	---TF	---TF	to	to	cc	F-T--TF
000050	mp	---FT	---FT	to	to	cc	---FT
000100	mp	to	to	to	to	to	cc
000200	cc	cc	cc	cc	cc	cc	to

SimpleLoadBal (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc

SimpleLoadBal (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	T----	T----	T----	T----	cc	T--T--
05	nc	-F-T--	-F-T--	-F-T--	-F-T--	FFFTTFFF	to
10	nc	to	to	to	to	FFFFFFFF	to
15	nc	to	to	to	to	cc	-T-TFFT
20	nc	to	to	to	to	to	-T--T-

TokenRing (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	nc	nc	nc	nc	nc	nc
010	nc	nc	nc	nc	nc	nc	nc
020	nc	nc	nc	nc	nc	nc	nc
050	nc	nc	nc	nc	nc	nc	nc
100	nc	nc	nc	nc	nc	nc	nc
200	nc	nc	nc	nc	nc	nc	nc
500	nc	nc	nc	nc	nc	nc	nc

TokenRing (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	?????FFT	--F-FFT	--F-FFT	---FT	--F-FFT	FFFFTFFF	--F--T
010	cc	FTTT-T-F	FTTT-T-F	---T-F	FTTT-T-F	FFFFTFFF	TTFT-T-F
020	mp	----F	----F	----F	----F	to	----F
050	cc	to	to	to	to	to	cc

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)

instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

002	nf	nf	nf	nf	nf	nf
005	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf
IBMB2S565S3960 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nf	nf	nf	nf	nf	nf
QuasiCertifProtocol (colored)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	cc	cc	cc	cc	FFFFFFFF	---FF-
06	cc	cc	cc	cc	FFFFFFFF	T-TTF-F
10	cc	cc	cc	cc	to	--T-T-
18	cc	cc	cc	cc	to	-FT-T-
22	cc	cc	cc	cc	cc	-FFF-T-
28	cc	cc	cc	cc	cc	-FTF--
32	cc	cc	cc	cc	cc	TT--TT-
Vasy2003 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nf	nf	nf	nf	nf	nf

15.3 Score for the CTLMarkingComparison Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**13**	**71**	**71**	**46**	**39**	**36**	**87**
CSRepetitions (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

CSRepetitions (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	5	5	3	2	1	6
max reached	0	2	2	0	0	0	2
best	0	2	2	0	0	0	2
subtotal	**0**	**10**	**10**	**4**	**3**	**2**	**11**
Dekker (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DotAndBoxes (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	1	1	1	1	2	0
max reached	0	0	0	0	0	2	0
best	0	0	0	0	0	2	0
subtotal	**0**	**2**	**2**	**2**	**2**	**7**	**0**
Echo (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Eratosthenes (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
FMS (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GlobalRessAlloc (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0

max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GlobalRessAlloc (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	1	1	1	1	1	1
max reached	0	0	0	0	2	0	0
best	0	0	0	0	2	0	0
subtotal	**0**	**2**	**2**	**2**	**6**	**2**	**2**
Kanban (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
LamportFastMutEx (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
LamportFastMutEx (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	1	1
instances	0	0	0	0	0	1	7
max reached	0	0	0	0	0	0	2
best	0	0	0	0	0	0	2
subtotal	**0**	**0**	**0**	**0**	**0**	**2**	**12**
MAPK (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
NeoElection (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
NeoElection (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	4	4	1	2	2	6
max reached	0	0	0	0	0	0	2
best	0	0	0	0	0	0	2
subtotal	**0**	**5**	**5**	**2**	**3**	**3**	**11**
PermAdmissibility (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PermAdmissibility (P/T)							

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	4	6	6	3	3	1	6
max reached	2	2	2	0	0	0	2
best	2	2	2	0	0	0	2
subtotal	**9**	**11**	**11**	**4**	**4**	**2**	**11**

Peterson (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	3	3	1	1	1	4
max reached	0	0	0	0	0	0	2
best	0	0	0	0	0	0	2
subtotal	**0**	**4**	**4**	**2**	**2**	**2**	**9**

Philosophers (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Philosophers (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	1	11	11	11	2	7	7
max reached	0	2	2	2	0	0	0
best	0	2	2	2	0	0	0
subtotal	**2**	**16**	**16**	**16**	**3**	**8**	**8**

PhilosophersDyn (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PhilosophersDyn (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	2	2	1	2	1	1
max reached	0	0	0	0	0	0	0
best	0	2	2	0	2	0	0
subtotal	**0**	**5**	**5**	**2**	**5**	**2**	**2**

Planning (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Railroad (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0

best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
RessAllocation (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Ring (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
RwMutex (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SharedMemory (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SharedMemory (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	0	1
instances	0	4	4	2	1	0	4
max reached	0	0	0	0	0	0	0
best	0	2	2	0	0	0	2
subtotal	**0**	**7**	**7**	**3**	**2**	**0**	**7**
SimpleLoadBal (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SimpleLoadBal (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	2	2	2	2	2	3
max reached	0	0	0	0	0	0	2
best	0	0	0	0	0	0	2
subtotal	**0**	**3**	**3**	**3**	**3**	**3**	**8**
TokenRing (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TokenRing (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

1st instance	1	1	1	1	1	1	1
instances	1	3	3	3	3	2	3
max reached	0	0	0	0	0	0	0
best	0	2	2	2	2	0	2
subtotal	**2**	**6**	**6**	**6**	**6**	**3**	**6**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**0**	**0**	**0**	**0**	**3**	**12**
HouseConstruction (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	1
instances	0	0	0	0	2	7
max reached	0	0	0	0	0	2
best	0	0	0	0	0	2
subtotal	**0**	**0**	**0**	**0**	**3**	**12**
Vasy2003 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

15.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models

1	2	2
Sara	LoLA	LoLa opt
87 points	71 points	71 points

For "Surprise" Models

1	2
Sara	Marcie
12 points	3 points

Global

1	2	2
Sara	LoLA	LoLa opt
111 points	71 points	71 points

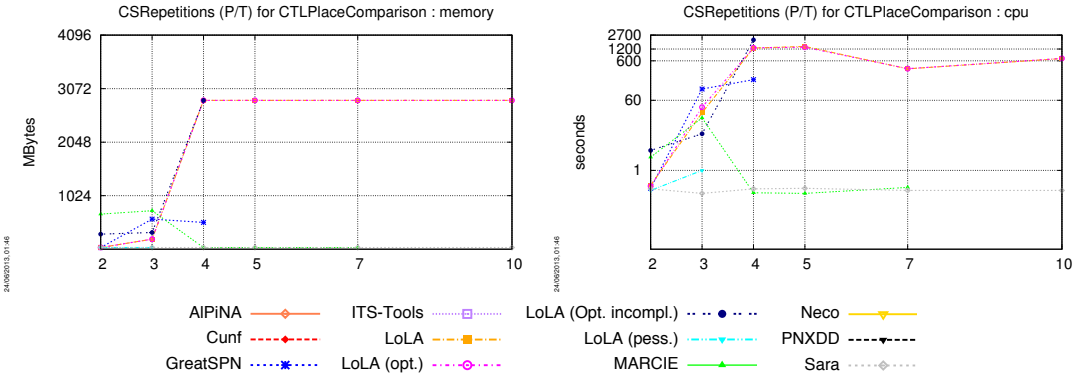
16 The CTLPlaceComparison Examination

This examination deals with CTL properties dealing with the comparison of places marking only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

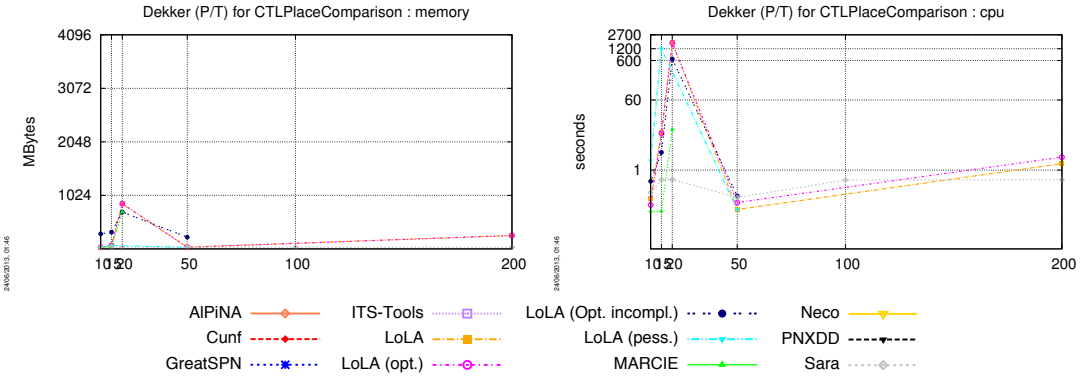
16.1 Handling of Models by Tools

CSRepetitions (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



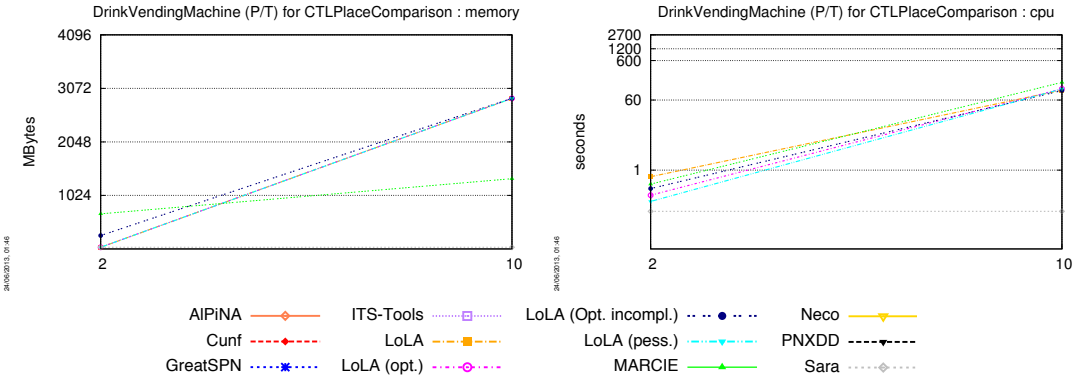
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



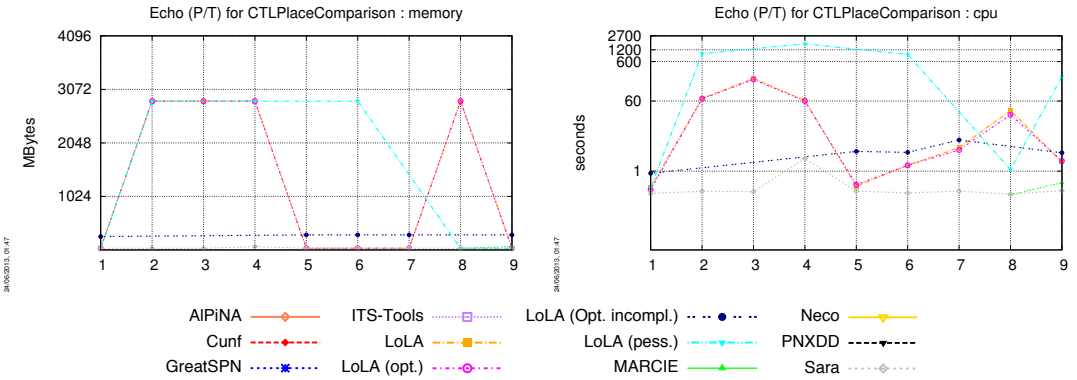
DotAndBoxes (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

DrinkVendingMachine (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

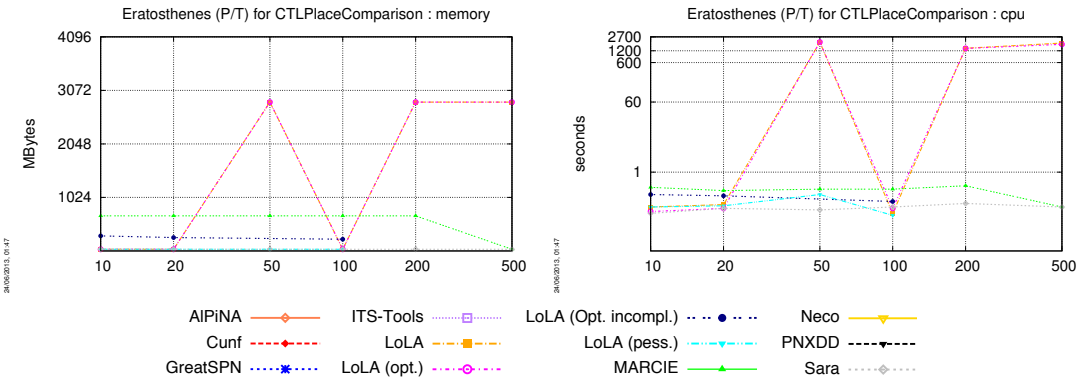
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



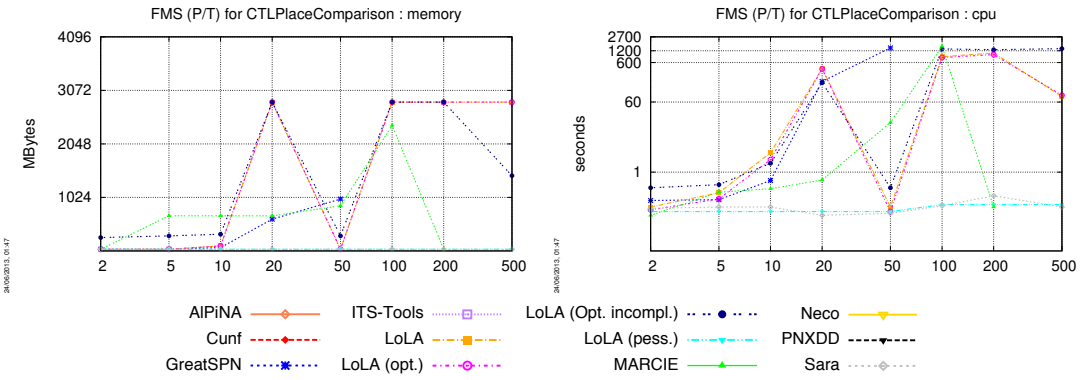
Echo (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

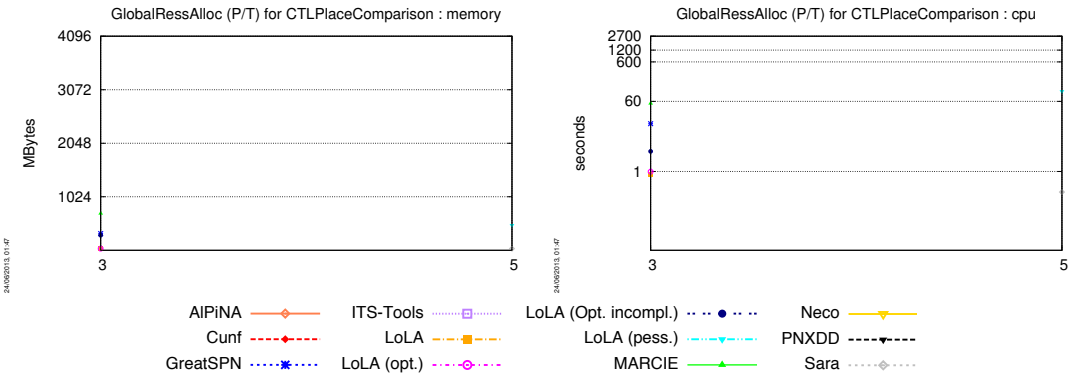


FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

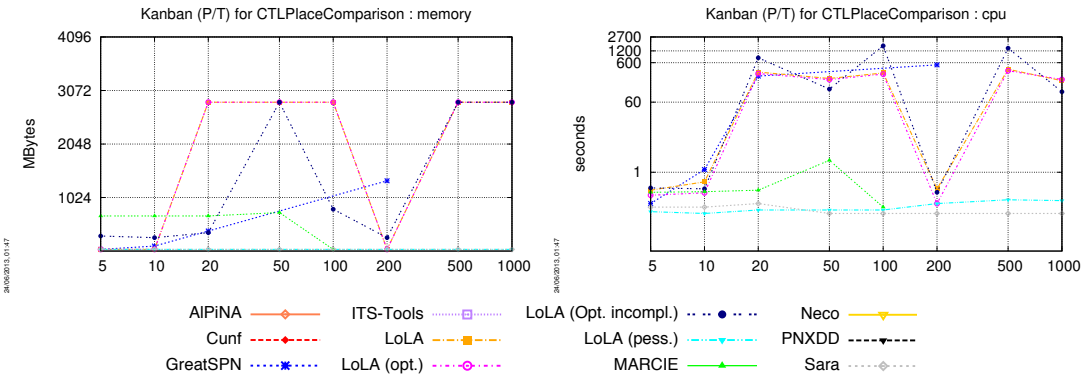


GlobalRessAlloc (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

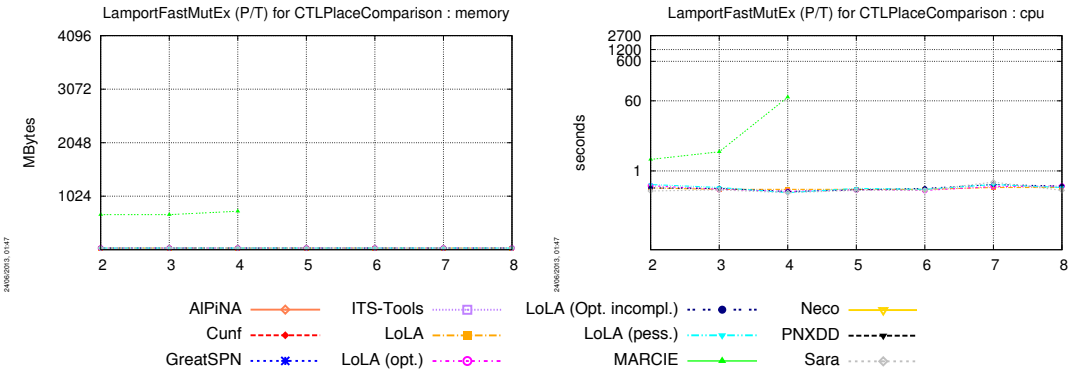


Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

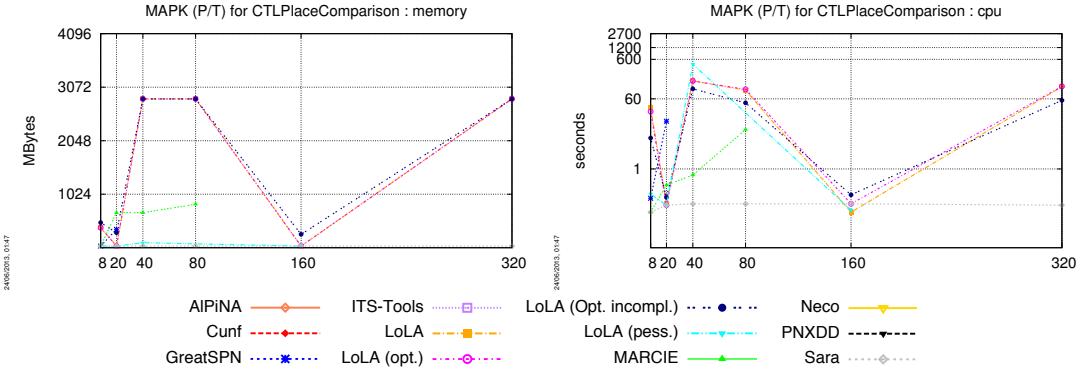


LamportFastMutEx (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

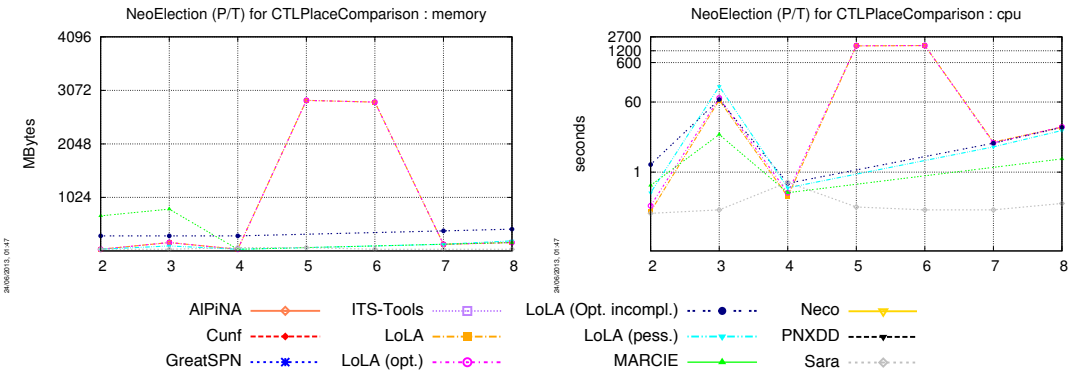


MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



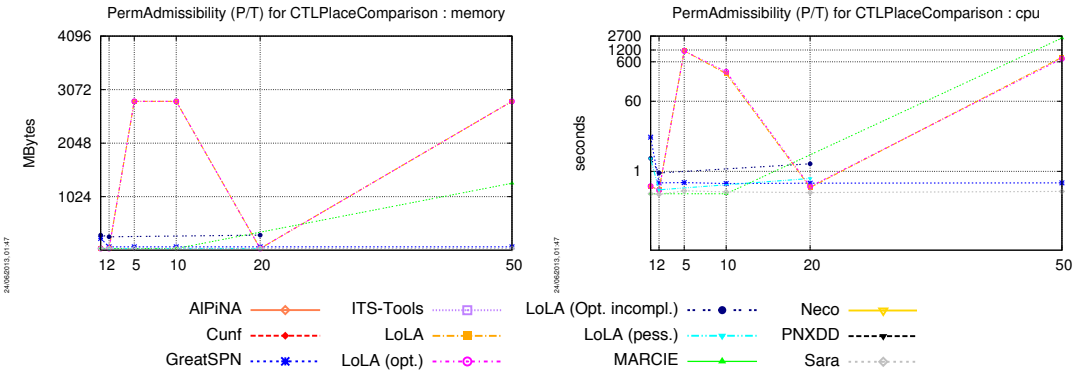
NeoElection (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



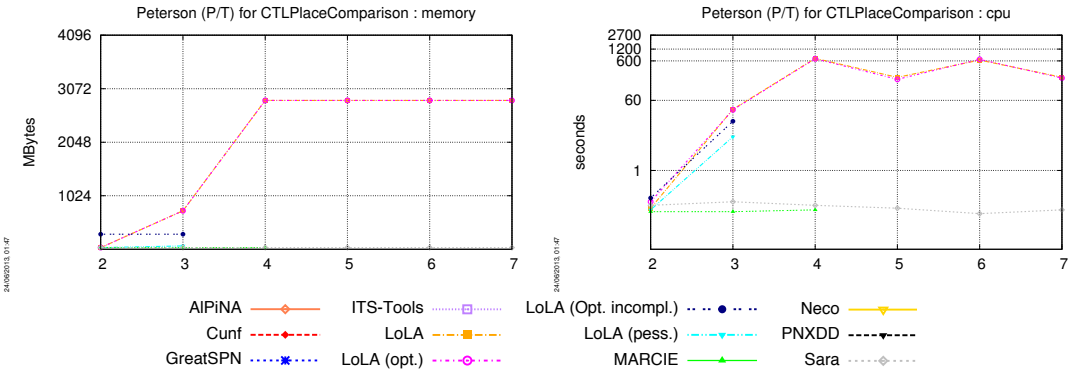
PermAdmissibility (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



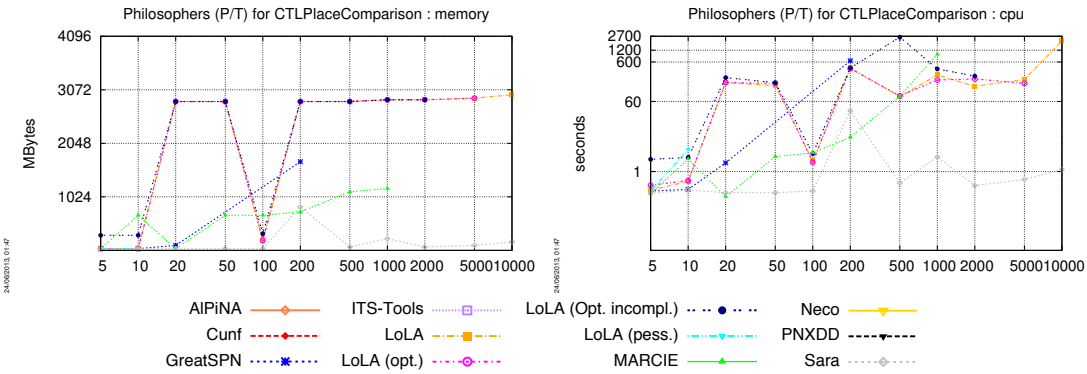
Peterson (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



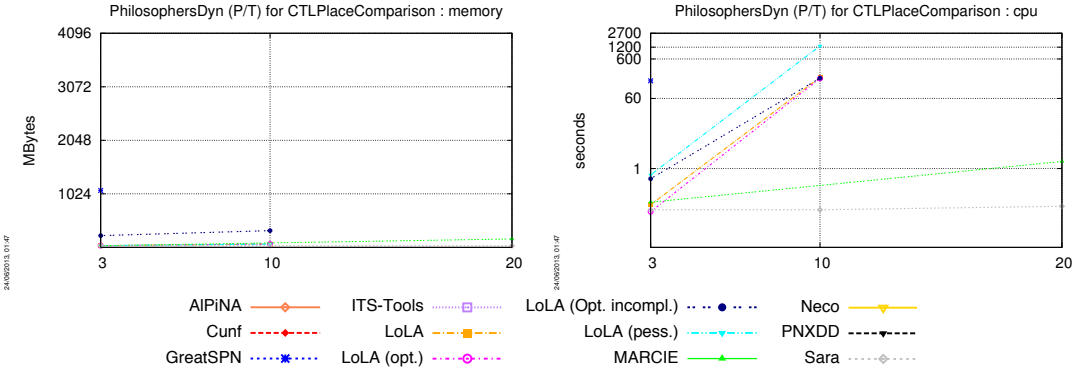
Philosophers (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



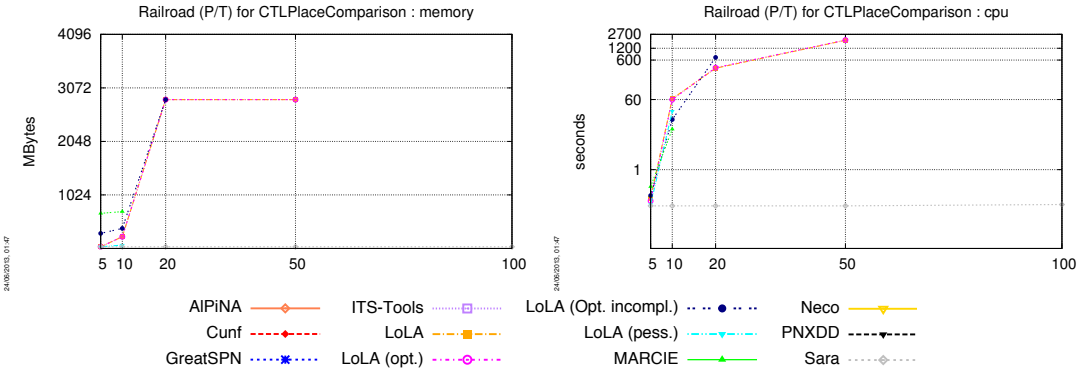
PhilosophersDyn (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

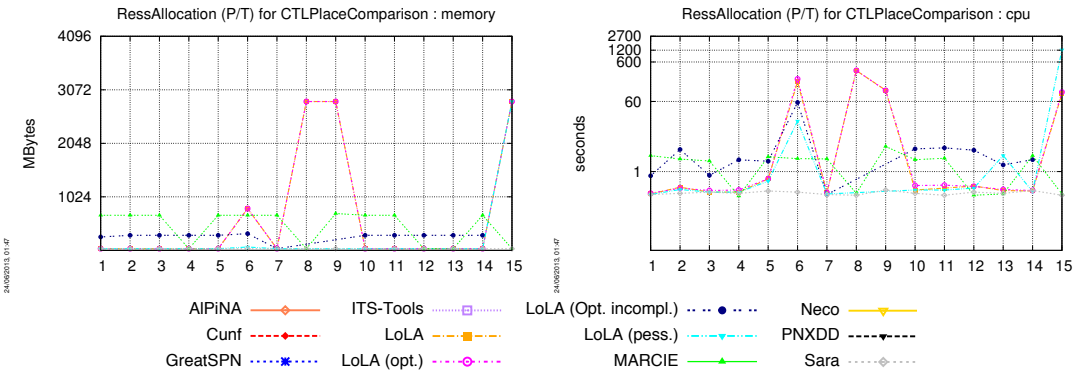


Planning (P/T) No instance of this model could be computed for the **CTLPlaceComparison** examination.

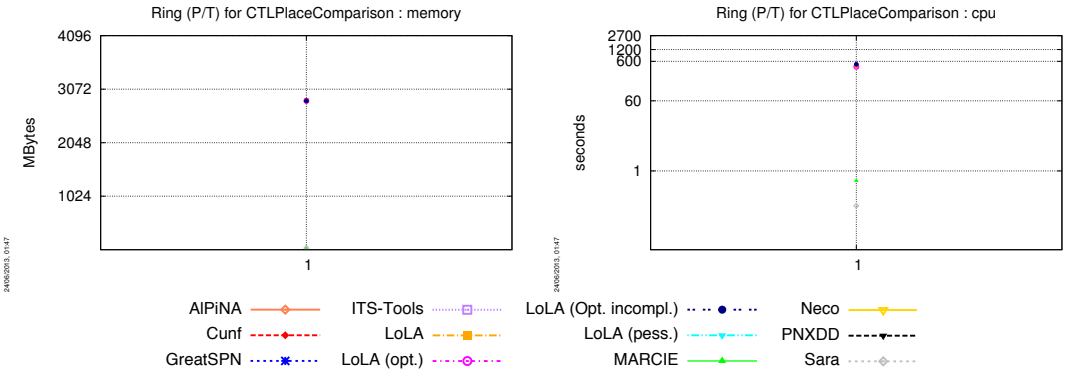
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



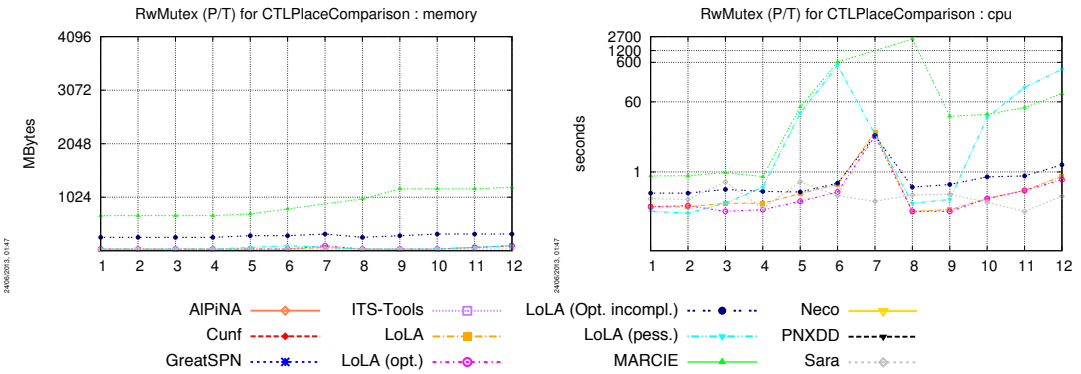
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

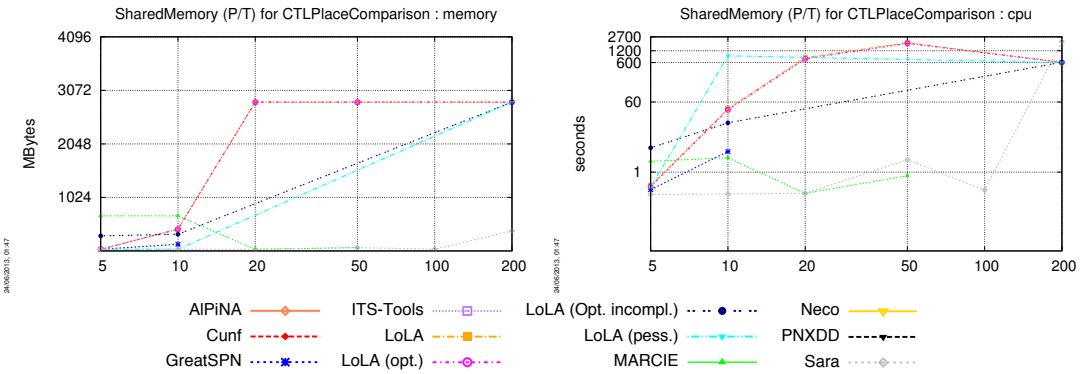


RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



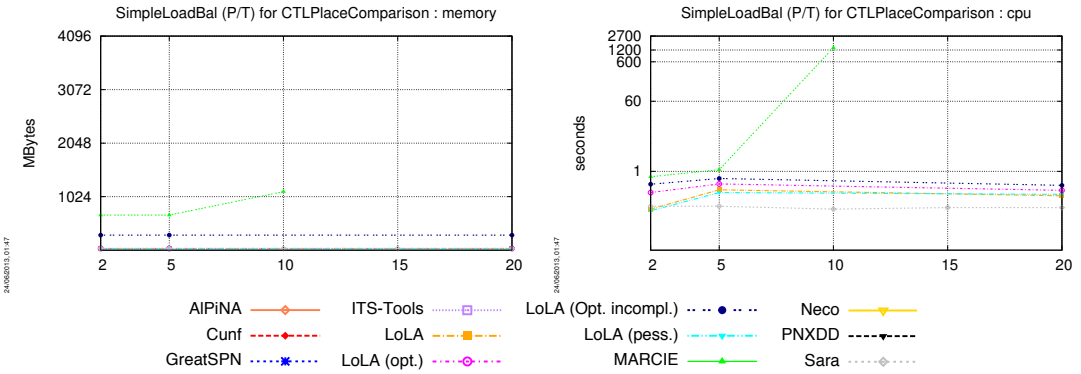
SharedMemory (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



SimpleLoadBal (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

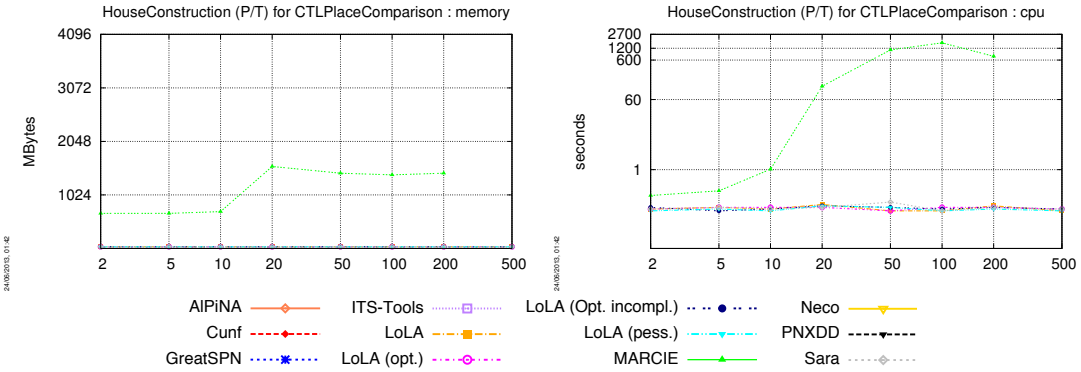
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



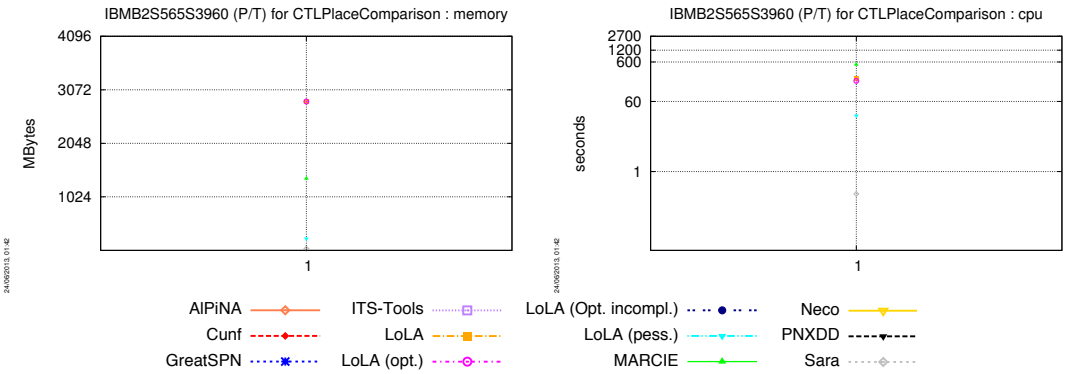
TokenRing (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

TokenRing (P/T) No instance of this model could be computed for the **CTLPlaceComparison** examination.

HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

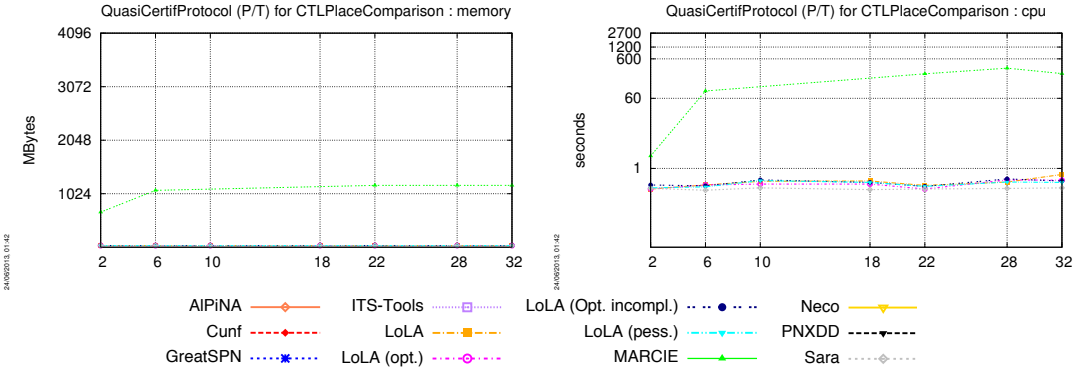


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

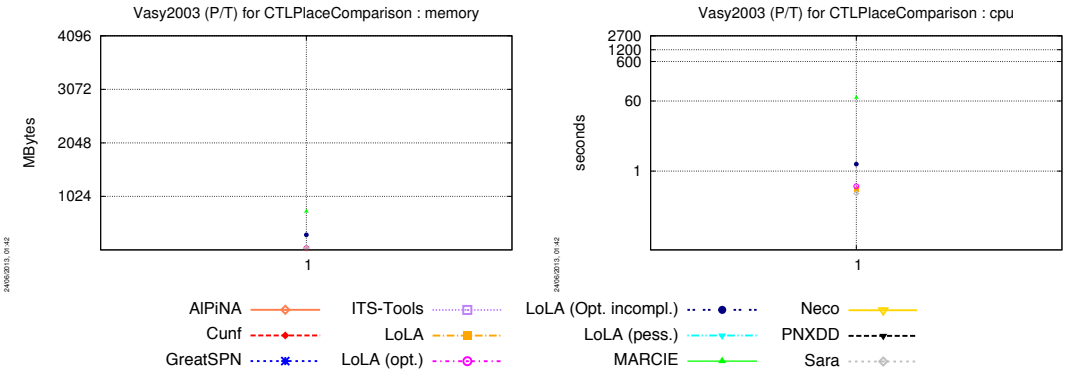


QuasiCertifProtocol (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



16.2 Outputs for the CTLPlaceComparison Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
03	nc	nc	nc	nc	nc	nc	nc
04	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
CSRepetitions (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	FFFFFFFF	TFT-F--	TFT-F--	-F-F--	--F--	FFFFTFFF	cc
03	FTFTFFFF	-T---	-T---	cc	-T---	FFFTTFFF	cc
04	FFFT?FTF	--T--	--T--	--T--	to	cc	cc
05	to	cc	cc	to	to	cc	cc
07	mp	---FT-	---FT-	to	to	cc	cc
10	mp	-F---	-F---	to	to	to	cc
Dekker (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	F--TFT	F--TFT	---TFT	F--TFT	cc	cc
015	nc	T-T---	T-T---	-T---	T-T---	cc	cc
020	nc	-T-F-FT	-T-F-FT	-T-F-F-	to	FFFFTFFF	cc
050	nc	--F-F-	--F-F-	--F-F-	--F-F-	to	cc
100	nc	to	to	to	to	to	cc
200	nc	-TT-F-	-TT-F-	nf	to	to	cc
DotAndBoxes (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	TTTT--	TTTT--	cc	TTTT--	FFFFFFFF	cc
10	nc	cc	cc	cc	cc	FFFFFFFF	cc
Echo (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
d02r09	nc	----F	----F	----F	cc	to	cc
d02r11	nc	T-F---	T-F---	to	T-F---	to	cc
d02r15	nc	cc	cc	to	to	to	cc
d02r19	nc	---T-	---T-	to	---T-	to	---F-
d03r03	nc	F--TTF	F--TTF	F---T-	to	to	cc
d03r05	nc	--T--F	--T--F	--T--F	--T--	to	cc
d03r07	nc	-F--TF-	-F--TF-	-F--TF-	to	to	cc
d04r03	nc	-F---	-F---	to	-F--F	cc	cc
d05r03	nc	-F-T-	-F-T-	-F-T-	-F-T-	cc	cc
Eratosthenes (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	F---F	F---F	cc	cc	FFFFFFFF	cc
020	nc	-T--F-	-T--F-	---F-	---F-	FFFTFFFF	---T-
050	nc	FTF---	FTF---	to	FTF-T-	FFFFFFFF	---T-
100	nc	----F	----F	----F	----F	FFFFTFFF	cc
200	nc	---T-	---T-	to	to	FFFFFFFF	---TF-
500	nc	-TT-TFF	-TT-TFF	to	to	cc	cc
FMS (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	FTFT?FFT	-T-T--T	-T-T--T	-T-T--T	--T--	cc	cc

005	FTFFTTTT	--T-F-F	--T-F-F	cc	cc	FFFFFFFF	cc
010	FFFTTTTF	TFTT-TT-	TFTT-TT-	-F-T-TT-	-F-T-T-	FFFFFFFF	cc
020	FFFFFTTF	T-F--T	T-F--T	--F--	--F--	FFFTTFFF	cc
050	FTFFTFTF	FT--T-	FT--T-	FT--T-	FT--T-	FFTTTFFT	---F-
100	mp	---TFT	---TFT	---TFT	---TFT	FFFFFFFF	cc
200	to	----F	----F	----F	cc	cc	----T
500	to	cc	cc	cc	cc	to	cc

GlobalRessAlloc (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc	nc

GlobalRessAlloc (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FTFFFTTF	--F-TT-	--F-TT-	--F-TT-	to	FFFFFFFF	to
05	cc	to	to	to	cc	to	cc

Kanban (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
0005	FTFTTTTF	T--T-F	T--T-F	---T-F	---T-F	FFFTTFFF	cc
0010	FTFFFTFF	--F-TF-	--F-TF-	--F-TF-	--F-F-	FFFFFFFF	cc
0020	TTFTFTTF	---T-F	---T-F	---T-F	---T-F	FFFTTFFF	cc
0050	to	---T-	---T-	---T-	cc	FFFFFFFF	cc
0100	to	-F-F-F-	-F-F-F-	-F-F-F-	---F-	cc	cc
0200	TTF	-TT-T-	-TT-T-	-TT-T-	--T--	to	cc
0500	mp	-F---	-F---	-F---	-F---	to	cc
1000	to	-TT-T-	-TT-T-	-TT-T-	-TT--	to	cc

LamportFastMutEx (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc

LamportFastMutEx (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	cc	cc	cc	cc	FFFTTFFF	cc
3	nc	cc	cc	cc	cc	FFFFFFFF	cc
4	nc	cc	cc	cc	cc	FFFFTFFF	cc
5	nc	cc	cc	cc	cc	to	cc
6	nc	cc	cc	cc	cc	to	cc
7	nc	cc	cc	cc	cc	to	cc
8	nc	cc	cc	cc	cc	to	cc

MAPK (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
008	TTFT?FTF	-T--TF	-T--TF	---TF	---TF	cc	---F-
020	FFTTTFTF	---T-	---T-	---T-	---T-	FFTTTFFT	cc
040	to	-T-T-F-	-T-T-F-	-T-T-F-	--T-F-	FFTTFFFF	cc
080	to	FTF---	FTF---	FTF---	to	FFFFFFFF	cc
160	to	---TT-	---TT-	---TT-	---TT-	to	cc
320	to	--F-FT	--F-FT	--F-FT	to	to	cc

NeoElection (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc

4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	-TF-T-	-TF-T-	-T---	-TF---	FFFFFFFF	cc
3	nc	-TF-FTT	-TF-FTT	---T-	-TF-FTT	FFFTFFFF	cc
4	nc	--T-FF-	--T-FF-	--T-FF-	--T-FF-	cc	---TT-
5	nc	---FFT	---FFT	to	to	to	cc
6	nc	-TFT-T-	-TFT-T-	to	to	to	cc
7	nc	--T--T	--T--T	--T--T	--T--T	to	cc
8	nc	--F-T-	--F-T-	--F-T-	--F-T-	cc	cc

PermAdmissibility (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	nc	nc	nc	nc	nc	nc	nc
02	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	cc	T--FT-	T--FT-	T---T-	T--FT-	cc	cc
02	cc	---F-	---F-	---F-	---F-	to	cc
05	TFFFFTTF	---F-F	---F-F	to	to	to	cc
10	TFFT?TFF	--T-T-	--T-T-	to	to	cc	---F-
20	cc	-F--T-	-F--T-	-F--T-	---T-	to	cc
50	FTFFT???	-F--F-T	-F--F-T	to	to	cc	cc

Peterson (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	---T-	---T-	cc	cc	cc	---T-
3	nc	-T--TFF	-T--TFF	-T--FF	-T--F-	cc	cc
4	nc	cc	cc	to	to	cc	cc
5	nc	---TF-	---TF-	to	to	to	cc
6	nc	cc	cc	to	to	to	cc
7	nc	--T-F-	--T-F-	to	to	to	cc

Philosophers (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc

100000	nc	nc	nc	nc	nc	nc	nc
Philosophers (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FTFF?FFF	F-F-F-	F-F-F-	F-F--	F----	cc	cc
000010	FFTTTFTF	T-F-T-	T-F-T-	---T-	---T-	FFFFTFFF	cc
000020	FFFF?FTT	---T-	---T-	---T-	to	cc	cc
000050	to	-F---	-F---	-F---	to	FFFFFFFF	cc
000100	to	-FTF--	-FTF--	-FTF--	to	FFFFFFFF	cc
000200	FFFTF	---T-	---T-	---T-	to	FFFFTFFF	cc
000500	to	cc	cc	cc	to	FFFFFFFF	cc
001000	mp	---T-	---T-	---T-	to	FFFTTFFT	cc
002000	mp	----T	----T	----T	to	to	cc
005000	mp	---TTF	---TTF	to	to	to	cc
010000	cc	---T-	to	to	to	to	cc
PhilosophersDyn (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc	nc
PhilosophersDyn (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FTFT?FTF	-T--T-	-T--T-	-T--T-	-T--T-	cc	cc
10	mp	T-FT-T-T	T-FT-T-T	--T--	T-FT-T-T	to	cc
20	mp	to	to	to	to	cc	cc
Planning (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
nf	nf	nf	nf	nf	nf	nf	
Railroad (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	--F-T-	--F-T-	--F-T-	--F-T-	FFFFTFFF	cc
010	nc	---T-T	---T-T	cc	cc	FFFFFFFF	cc
020	nc	---T-	---T-	---T-	to	to	cc
050	nc	--F-FT-	--F-FT-	to	to	to	cc
100	nc	to	to	to	to	to	cc
RessAllocation (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
R002C002	nc	---T-	---T-	---T-	---T-	FFFTFFFF	cc
R003C002	nc	FT-T-F-F	FT-T-F-F	-T-T-F-F	FT-T--F	FFFFFFFT	---T-
R003C003	nc	-F---	-F---	cc	cc	FFFFTFFF	cc
R003C005	nc	-F--TT	-F--TT	---TT	-F--TT	cc	cc
R003C010	nc	-T-T--	-T-T--	cc	cc	FFFFFFFT	cc
R003C015	nc	-FT-F-	-FT-F-	--T-F-	--T-F-	FFFTTFFF	cc
R003C020	nc	cc	cc	cc	cc	FFFTTFFF	cc
R003C050	nc	cc	cc	to	to	cc	cc
R003C100	nc	----F	----F	to	to	FFFTFFFF	cc
R005C002	nc	T-FF-F-T	T-FF-F-T	---F-T	---F-T	FFFFTFFF	cc
R010C002	nc	-F-F-FTF	-F-F-FTF	-F-F--	-F-F--F	FFTTTFFF	cc
R015C002	nc	FT-F-TT-	FT-F-TT-	FT-F-TT-	FT-F-TT-	cc	cc
R020C002	nc	T---F-	T---F-	---F-	T---F-	cc	cc
R050C002	nc	-TT-T-	-TT-T-	-TT-T-	-TT-T-	FFFFFFFF	cc
R100C002	nc	cc	cc	to	cc	cc	cc
Ring (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nc	-F--F-T	-F--F-T	-F--F-T	to	cc	cc
RwMutex (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
r0010w0010	nc	F-T-F-	F-T-F-	F-T--	F-T--	FFFFFFFF	cc
r0010w0020	nc	--F-T-F	--F-T-F	--F-T-F	--F-T-	FFTTFFFF	cc

r0010w0050	nc	-F-FFF	-F-FFF	---FFF	-F-FFF	FFFFFFFF	cc
r0010w0100	nc	F-F-T-T	F-F-T-T	cc	cc	FFFFTFFF	cc
r0010w0500	nc	-TT-F-	-TT-F-	-TT--	-TT-F-	FFTTFFFF	cc
r0010w1000	nc	-F-F-F-T	-F-F-F-T	-F-F-F-T	-F-F-F-T	FFFFTFFF	cc
r0010w2000	nc	-T--T-	-T--T-	cc	to	to	cc
r0020w0010	nc	-FF--T-	-FF--T-	---T-	cc	FFFFFFFF	cc
r0100w0010	nc	-T--TFT	-T--TFT	-T--TFT	-T--F-	cc	---FTF
r0500w0010	nc	TFTF--T	TFTF--T	----T	cc	cc	cc
r1000w0010	nc	F-T-FT-	F-T-FT-	---T-	---T-	cc	cc
r2000w0010	nc	--T-FFT	--T-FFT	--T-FFT	cc	cc	cc

SharedMemory (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc

SharedMemory (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FFFTTFFF	TF-T-TT-	TF-T-TT-	-F-T--	cc	FFFFFFFF	cc
000010	FTFFTFTT	-FF--T	-FF--T	--F--T	--F--	FFFFTFFF	cc
000020	mp	cc	cc	to	to	cc	cc
000050	mp	cc	cc	to	to	cc	---F-
000100	mp	to	to	to	to	to	cc
000200	cc	cc	cc	cc	cc	to	----F

SimpleLoadBal (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc

SimpleLoadBal (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	F-T-FT-	F-T-FT-	--T-FT-	F-T-FT-	FFTTFFFF	cc
05	nc	-TT-T-	-TT-T-	--T-T-	-TT--	FFFFFFFF	cc
10	nc	to	to	to	to	FFFFFFFF	cc
15	nc	to	to	to	to	to	cc
20	nc	T--TFF	T--TFF	T--TFF	T----	to	cc

TokenRing (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nf	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf	nf

TokenRing (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nf	nf	nf	nf	nf	nf	nf

010	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	cc	cc	cc	cc	FFFTFFFF	cc
005	cc	cc	cc	cc	FFFFFFFF	----F
010	cc	cc	cc	cc	FFFFFFFF	cc
020	cc	cc	cc	cc	FFFFFFFF	cc
050	cc	cc	cc	cc	cc	---T-
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	to	cc
IBMB2S565S3960 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	cc	cc	to	cc	FFFTTFFF	cc
QuasiCertifProtocol (colored)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	cc	cc	cc	cc	FFFFFFFT	cc
06	cc	cc	cc	cc	FFFFTFFF	cc
10	cc	cc	cc	cc	to	cc
18	cc	cc	cc	cc	to	cc
22	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc
32	cc	cc	cc	cc	cc	cc
Vasy2003 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	---FT	---FT	---FT	to	FFFFFFFF	cc

16.3 Score for the CTLPlaceComparison Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination						
GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

Total Score	**40**	**192**	**187**	**135**	**102**	**84**	**30**
CSRepetitions (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
CSRepetitions (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	0
instances	3	5	5	2	2	2	0
max reached	0	2	2	0	0	0	0
best	0	2	2	0	0	0	0
subtotal	**4**	**10**	**10**	**3**	**3**	**3**	**0**
Dekker (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	5	5	4	3	1	0
max reached	0	2	2	0	0	0	0
best	0	2	2	0	0	0	0
subtotal	**0**	**10**	**10**	**5**	**4**	**2**	**0**
DotAndBoxes (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	0	1	1	0
instances	0	1	1	0	1	2	0
max reached	0	0	0	0	0	2	0
best	0	0	0	0	0	2	0
subtotal	**0**	**2**	**2**	**0**	**2**	**7**	**0**
Echo (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	0	1
instances	0	8	8	5	5	0	1
max reached	0	2	2	2	2	0	0
best	0	2	2	2	2	0	0
subtotal	**0**	**13**	**13**	**10**	**10**	**0**	**2**
Eratosthenes (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	6	6	2	3	5	3
max reached	0	2	2	0	0	0	0
best	0	2	2	0	0	0	0
subtotal	**0**	**11**	**11**	**3**	**4**	**6**	**4**
FMS (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1

instances	5	7	7	6	5	5	2
max reached	0	0	0	0	0	0	0
best	0	2	2	2	0	0	2
subtotal	**6**	**10**	**10**	**9**	**6**	**6**	**5**

GlobalRessAlloc (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

GlobalRessAlloc (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	0	1	0
instances	1	1	1	1	0	1	0
max reached	0	0	0	0	0	0	0
best	2	2	2	2	0	2	0
subtotal	**4**	**4**	**4**	**4**	**0**	**4**	**0**

Kanban (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	0
instances	4	8	8	8	7	4	0
max reached	0	2	2	2	2	0	0
best	0	2	2	2	2	0	0
subtotal	**5**	**13**	**13**	**13**	**12**	**5**	**0**

LamportFastMutEx (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

LamportFastMutEx (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	1	0
instances	0	0	0	0	0	3	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**0**	**6**	**0**

MAPK (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	2	6	6	6	4	3	1
max reached	0	2	2	2	0	0	0
best	0	2	2	2	0	0	0
subtotal	**3**	**11**	**11**	**11**	**5**	**4**	**2**

NeoElection (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	7	7	5	5	2	1
max reached	0	2	2	2	2	0	0
best	0	2	2	2	2	0	0
subtotal	**0**	**12**	**12**	**10**	**10**	**3**	**2**

PermAdmissibility (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PermAdmissibility (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	0	1
instances	3	6	6	3	3	0	1
max reached	2	2	2	0	0	0	0
best	2	2	2	0	0	0	0
subtotal	**8**	**11**	**11**	**4**	**4**	**0**	**2**
Peterson (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Peterson (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	0	1
instances	0	4	4	1	1	0	1
max reached	0	2	2	0	0	0	0
best	0	2	2	0	0	0	0
subtotal	**0**	**9**	**9**	**2**	**2**	**0**	**2**
Philosophers (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Philosophers (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	0
instances	4	10	9	8	2	6	0
max reached	0	2	0	0	0	0	0
best	0	2	0	0	0	0	0
subtotal	**5**	**15**	**10**	**9**	**3**	**7**	**0**
PhilosophersDyn (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PhilosophersDyn (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	0	0
instances	1	2	2	2	2	0	0
max reached	0	0	0	0	0	0	0
best	0	2	2	2	2	0	0
subtotal	**2**	**5**	**5**	**5**	**5**	**0**	**0**
Planning (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0

max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Railroad (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	4	4	2	1	2	0
max reached	0	0	0	0	0	0	0
best	0	2	2	0	0	0	0
subtotal	**0**	**7**	**7**	**3**	**2**	**3**	**0**
RessAllocation (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	12	12	9	9	10	1
max reached	0	0	0	0	0	0	0
best	0	2	2	2	2	2	0
subtotal	**0**	**15**	**15**	**12**	**12**	**13**	**2**
Ring (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	0	0	0
instances	0	1	1	1	0	0	0
max reached	0	2	2	2	0	0	0
best	0	2	2	2	0	0	0
subtotal	**0**	**6**	**6**	**6**	**0**	**0**	**0**
RwMutex (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	12	12	10	7	7	1
max reached	0	2	2	2	0	0	0
best	0	2	2	2	0	0	0
subtotal	**0**	**17**	**17**	**15**	**8**	**8**	**2**
SharedMemory (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SharedMemory (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	2	2	2	2	1	2	2
max reached	0	0	0	0	0	0	2
best	0	0	0	0	0	0	2
subtotal	**3**	**3**	**3**	**3**	**2**	**3**	**7**
SimpleLoadBal (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SimpleLoadBal (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	3	3	3	3	3	0
max reached	0	2	2	2	2	0	0
best	0	2	2	2	2	0	0
subtotal	**0**	**8**	**8**	**8**	**8**	**4**	**0**
TokenRing (Colored)							

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TokenRing (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**6**	**6**	**6**	**0**	**22**	**5**
HouseConstruction (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	1
instances	0	0	0	0	4	2
max reached	0	0	0	0	0	0
best	0	0	0	0	0	2
subtotal	**0**	**0**	**0**	**0**	**5**	**5**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	1	0
max reached	0	0	0	0	2	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**
Vasy2003 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	0	1	0
instances	1	1	1	0	1	0
max reached	2	2	2	0	2	0
best	2	2	2	0	2	0
subtotal	**6**	**6**	**6**	**0**	**6**	**0**

16.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models

1	2	3
LoLA	LoLa opt	LoLa opt inc
192 points	182 points	135 points

For "Surprise" Models

1	2	2	2
Marcie	LoLA	LoLa opt	LoLa opt inc
22 points	6 points	6 points	6 points

Global

1	2	3
LoLA	LoLa opt	LoLa opt inc
204 points	199 points	147 points

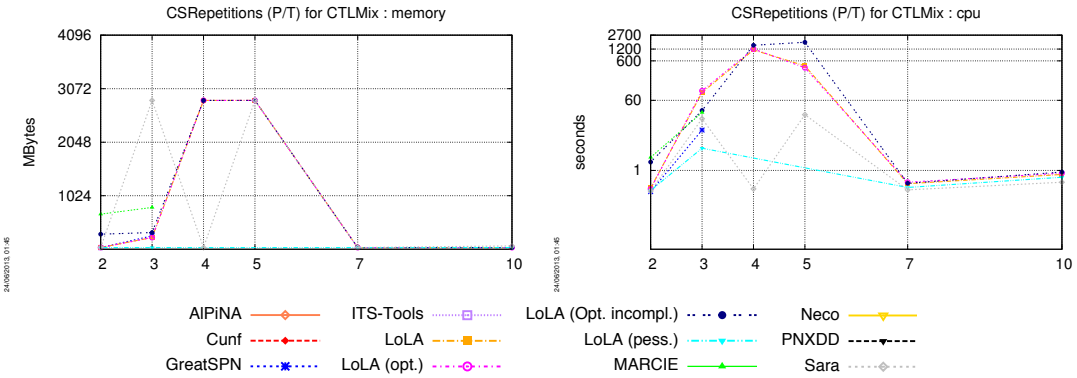
17 The CTLMix Examination

This examination deals with CTL properties dealing with all the previous type of atomic proposition. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

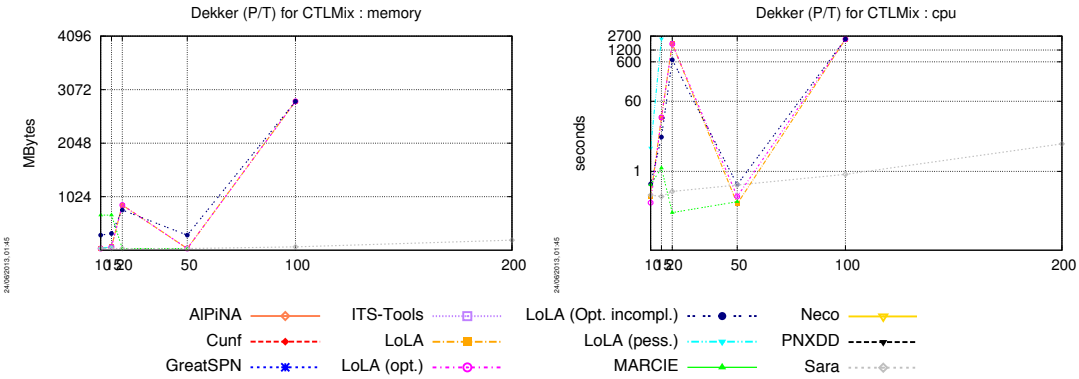
17.1 Handling of Models by Tools

CSRepetitions (colored) No instance of this model could be computed for the **CTLMix** examination.

CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



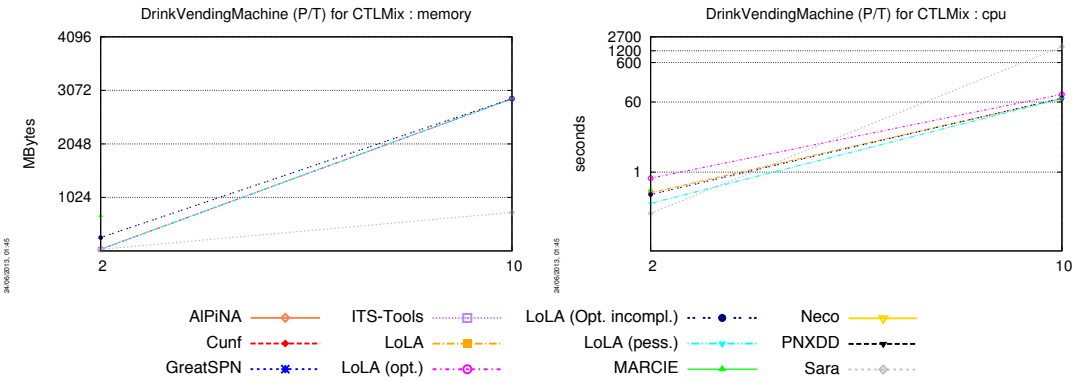
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



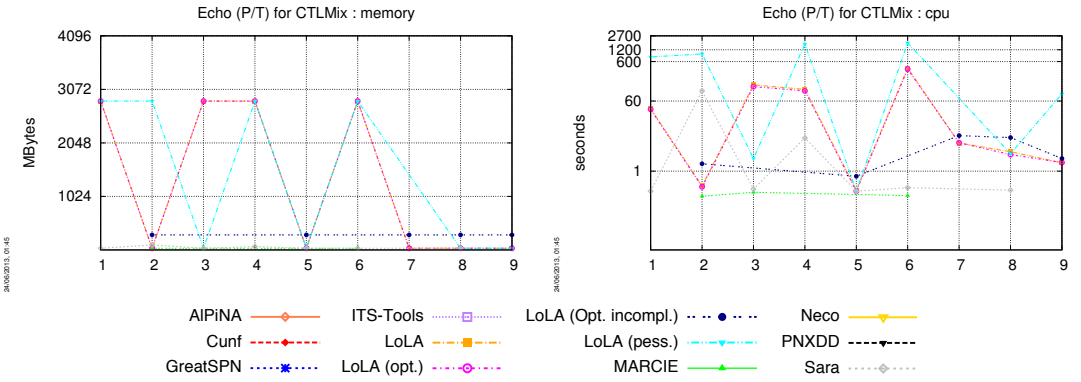
DotAndBoxes (colored) No instance of this model could be computed for the **CTLMix** examination.

DrinkVendingMachine (colored) No instance of this model could be computed for the **CTLMix** examination.

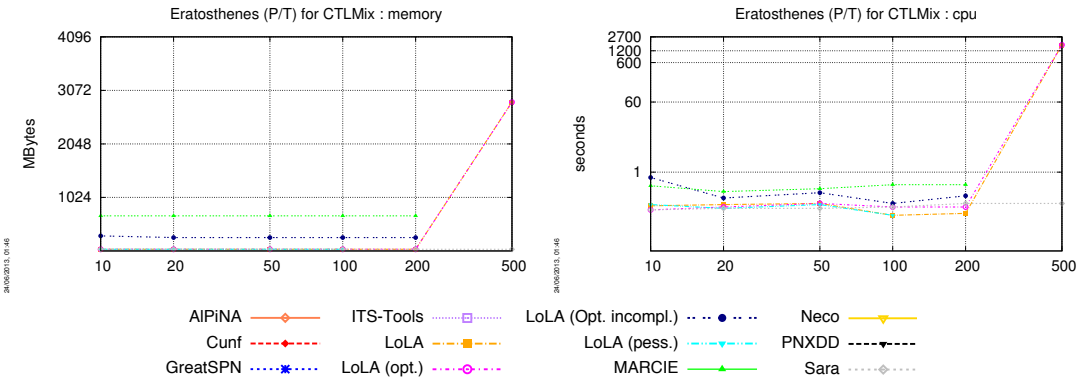
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



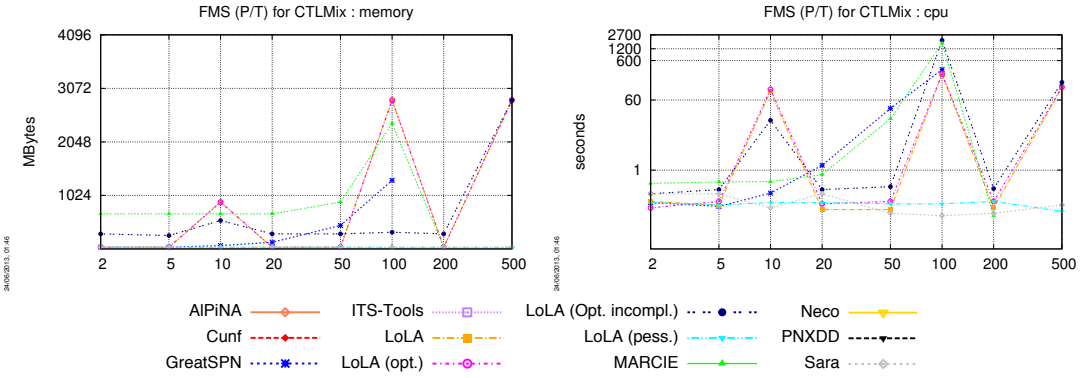
Echo (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

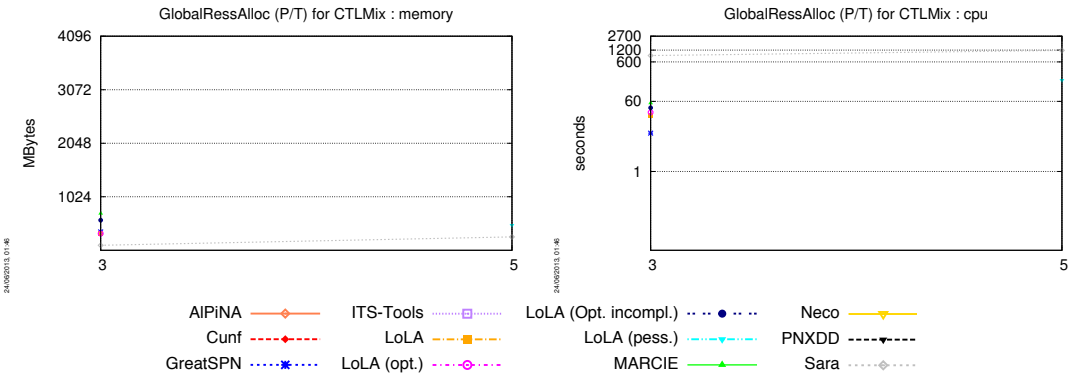


FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

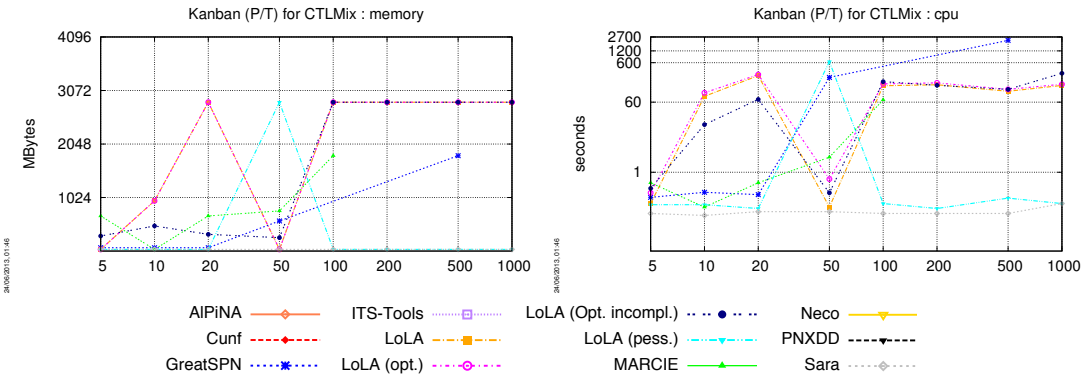


GlobalRessAlloc (colored) No instance of this model could be computed for the **CTLMix** examination.

GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

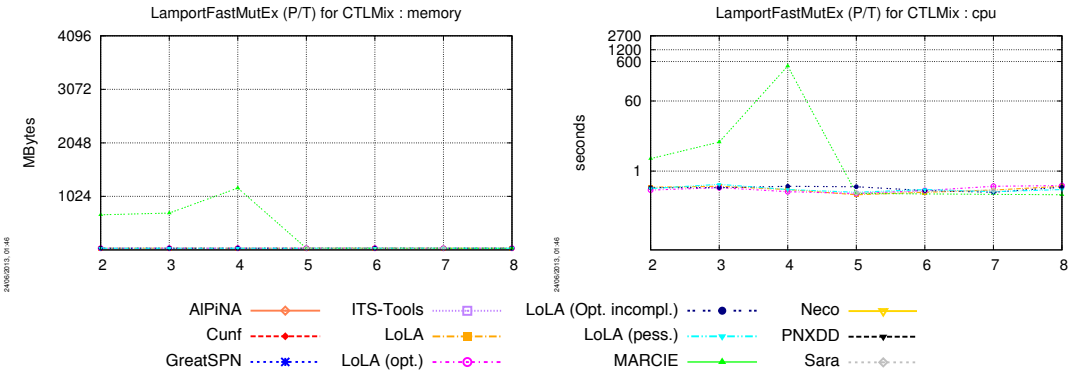


Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

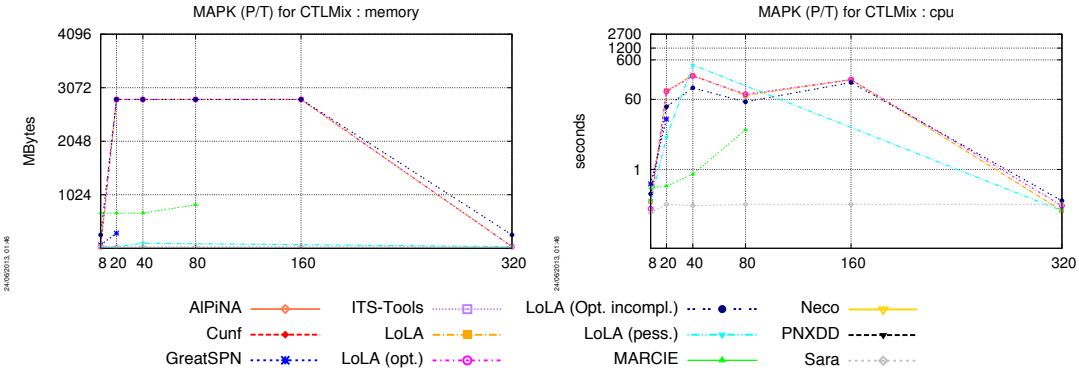


LamportFastMutEx (colored) No instance of this model could be computed for the **CTLMix** examination.

LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

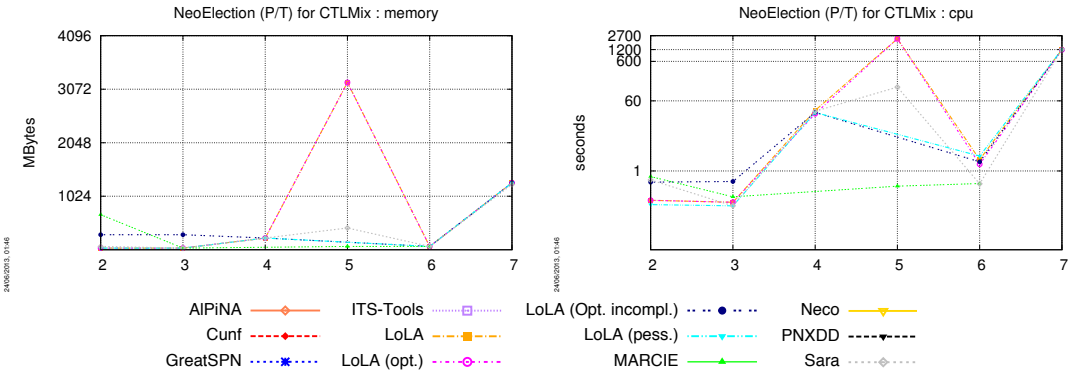


MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



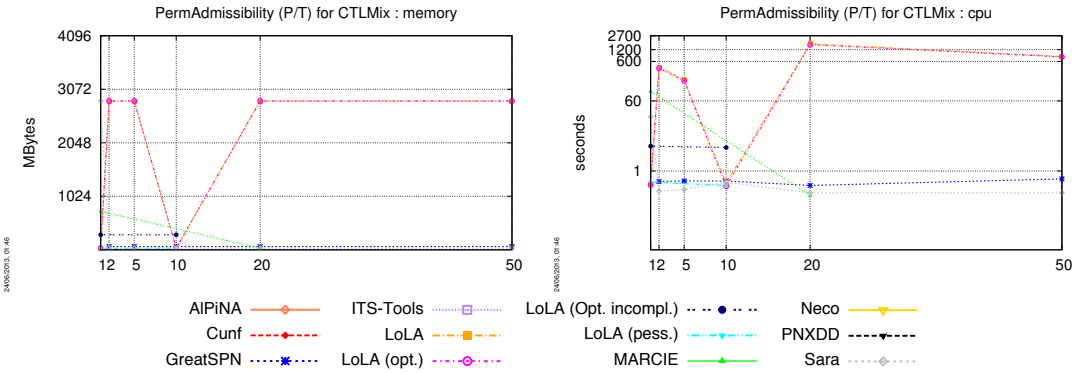
NeoElection (colored) No instance of this model could be computed for the **CTLMix** examination.

NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



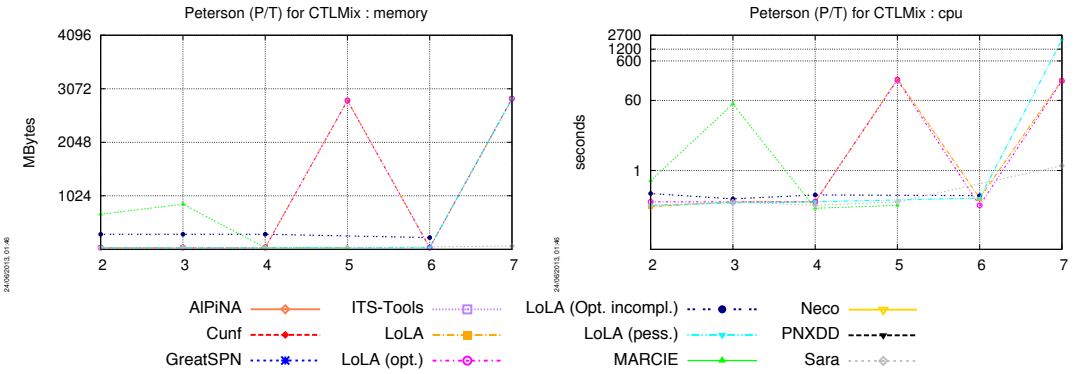
PermAdmissibility (colored) No instance of this model could be computed for the **CTLMix** examination.

PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



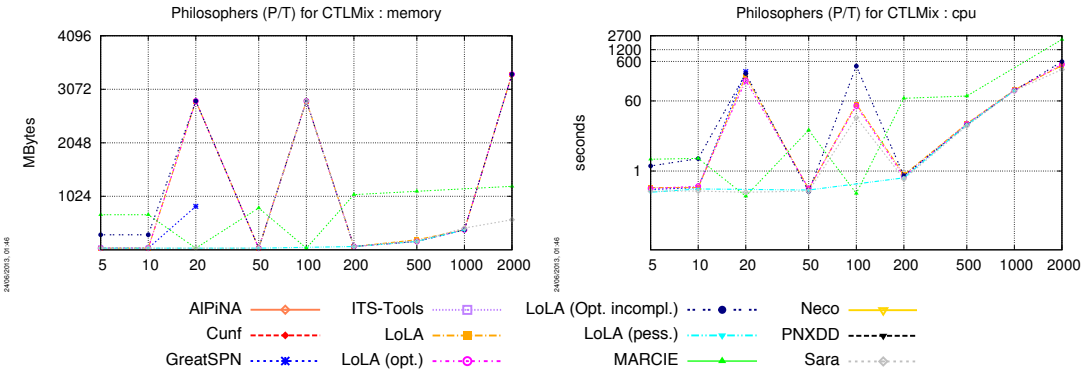
Peterson (colored) No instance of this model could be computed for the **CTLMix** examination.

Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



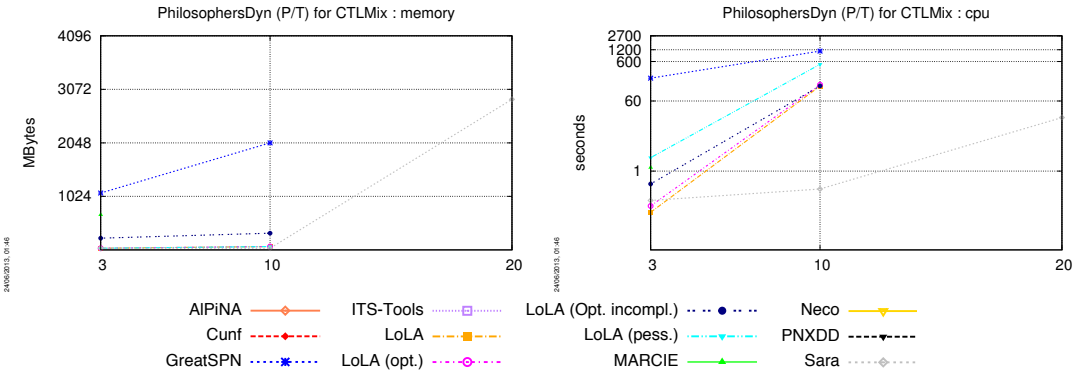
Philosophers (colored) No instance of this model could be computed for the **CTLMix** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



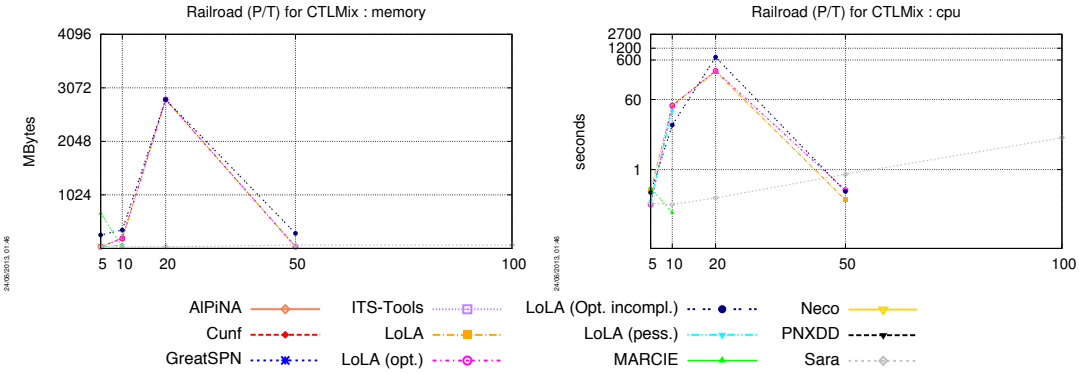
PhilosophersDyn (colored) No instance of this model could be computed for the **CTLMix** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

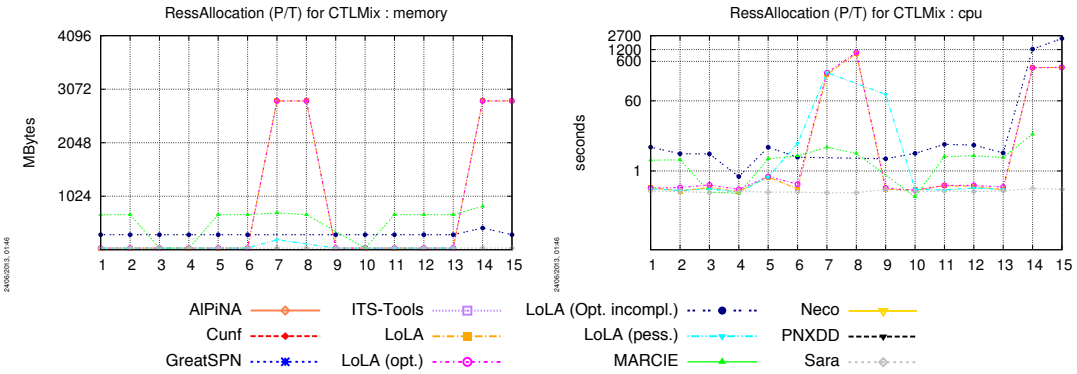


Planning (P/T) No instance of this model could be computed for the **CTLMix** examination.

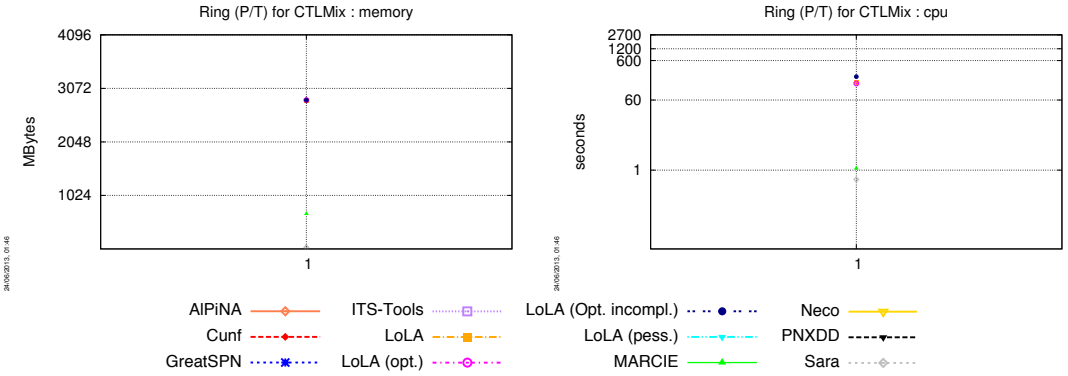
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



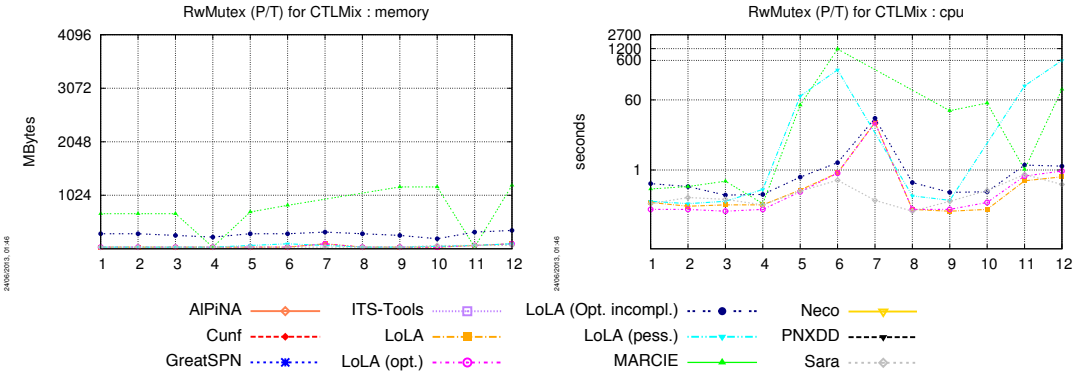
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

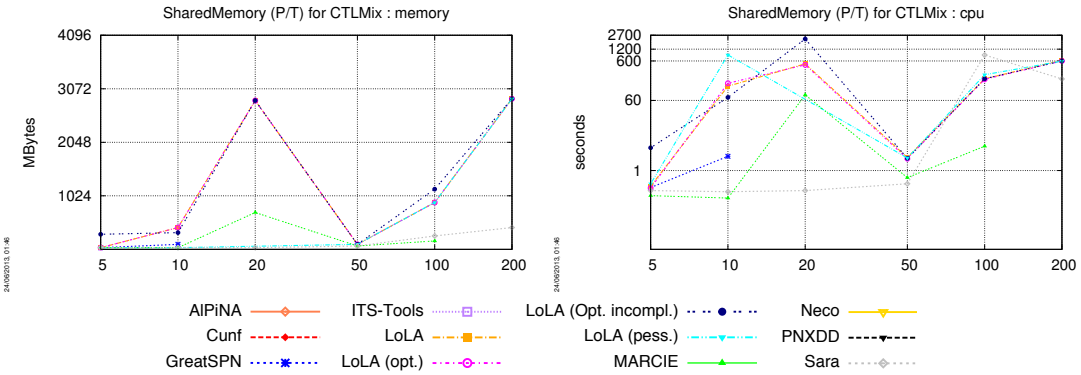


RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



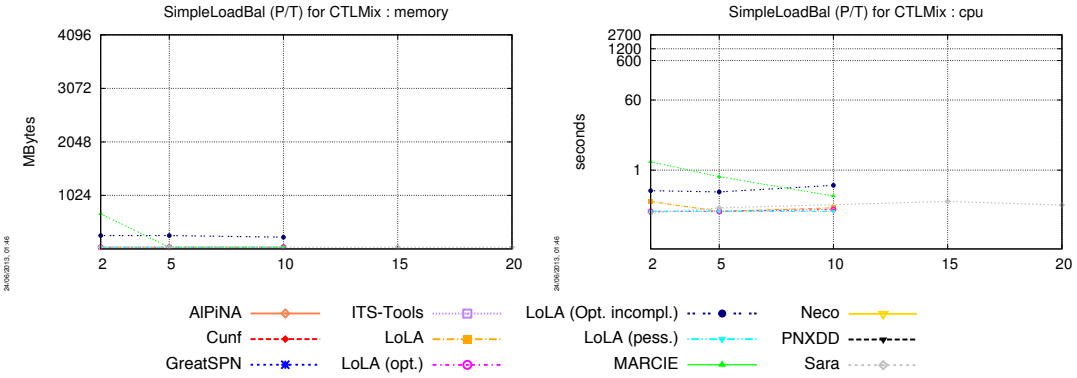
SharedMemory (colored) No instance of this model could be computed for the **CTLMix** examination.

SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



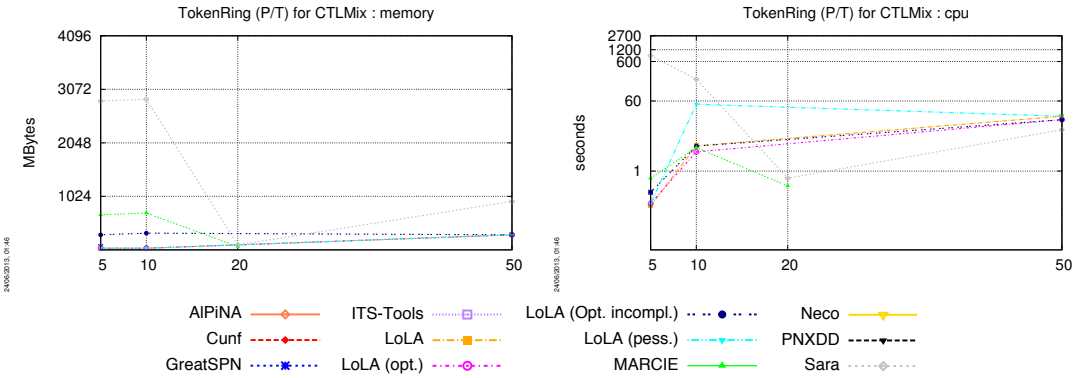
SimpleLoadBal (colored) No instance of this model could be computed for the **CTLMix** examination.

SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

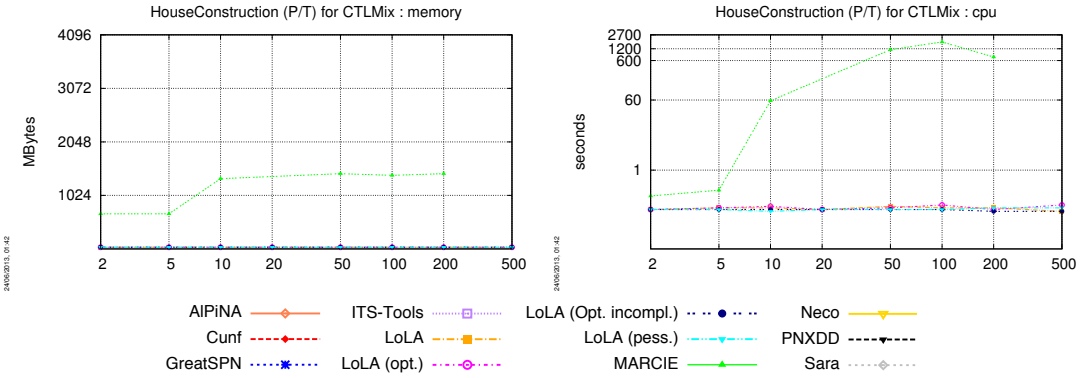


TokenRing (colored) No instance of this model could be computed for the **CTLMix** examination.

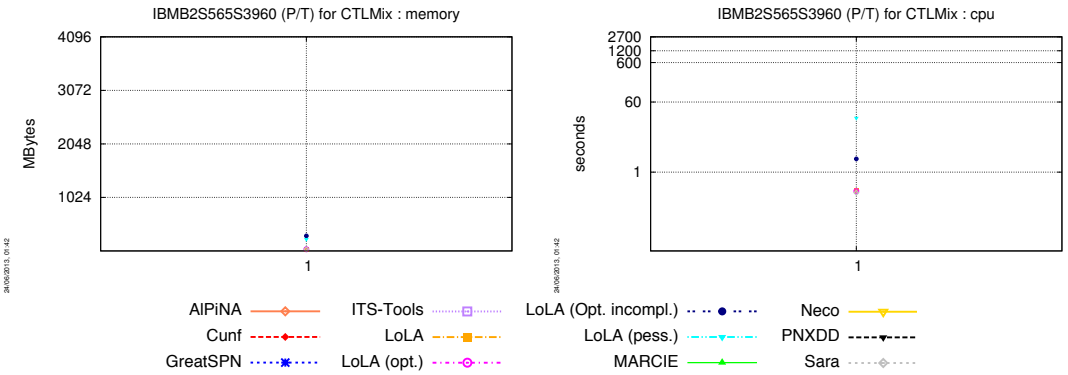
TokenRing (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

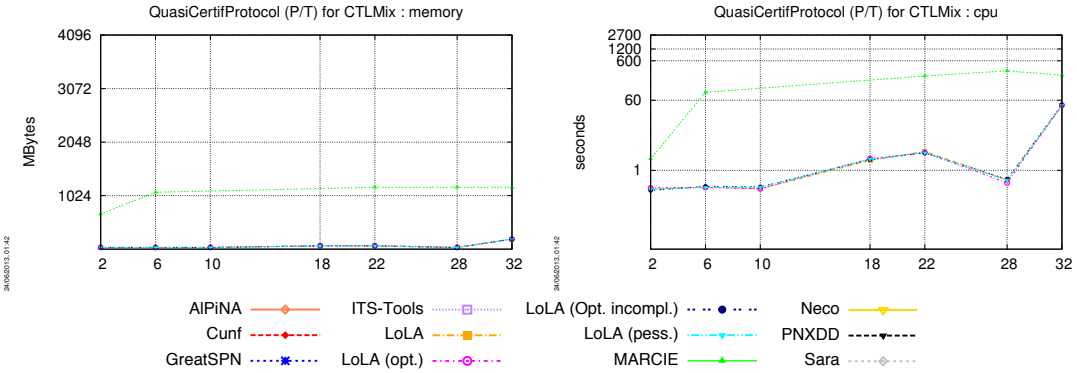


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

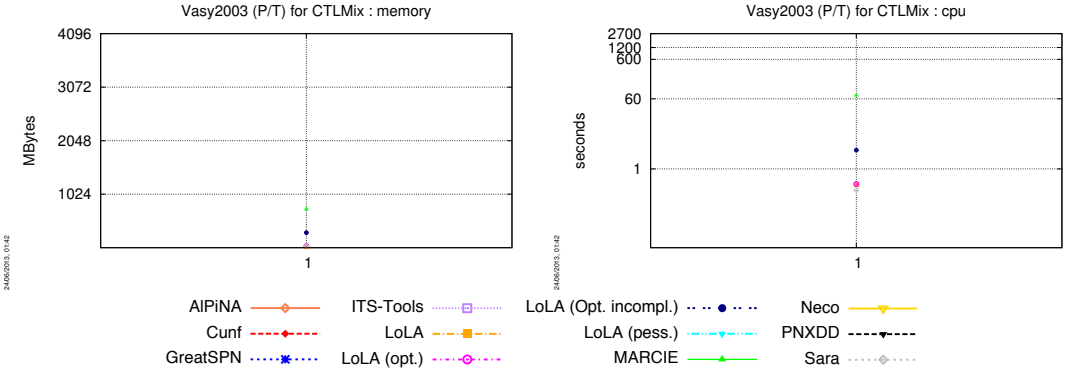


QuasiCertifProtocol (colored) No instance of this model could be computed for the **CTLMix** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



17.2 Outputs for the CTLMix Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
03	nc	nc	nc	nc	nc	nc	nc
04	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
CSRepetitions (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	FTFTFFFF	--T--F	--T--F	--T--F	cc	FFFTTFFF	cc
03	FFFTFTTT	FF-T-FTF	FF-T-FTF	FF-T-T-	TF-T--	FFFTFFTF	cc
04	to	-F-T--	-F-T--	-F-T--	to	to	cc
05	to	-FT---	-FT---	-FT---	to	to	-F---
07	mp	cc	cc	cc	cc	to	cc
10	mp	cc	cc	cc	cc	to	cc
Dekker (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	FTTT--T	FTTT--T	-T-T--T	FTTT--T	FFFFTFFT	cc
015	nc	T--FFT	T--FFT	---FT	T--FFT	FFFFFFFF	cc
020	nc	-FTT-FT-	-FTT-FT-	-F-T-FT-	to	cc	cc
050	nc	FFTT-F-	FFTT-F-	FFTT-F-	to	cc	cc
100	nc	T-T--F-	T-T--F-	T-T--F-	to	to	cc
200	nc	to	to	to	to	to	cc
DotAndBoxes (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (colored)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	---FTF	---FTF	cc	---FTF	FFFTFFFF	cc
10	nc	cc	cc	cc	cc	to	cc
Echo (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
d02r09	nc	T-T--F	T-T--F	to	T-T--F	to	cc
d02r11	nc	-F--T-	-F--T-	-F--T-	-F---	cc	cc
d02r15	nc	--F--	--F--	to	-T-F--	cc	cc
d02r19	nc	-T--FT-	-T--FT-	to	-T--FT-	to	---TF-
d03r03	nc	-F---	-F---	-F---	-F---	to	cc
d03r05	nc	--F--	--F--	to	--F--	cc	cc

d03r07	nc	--T-TF-	--T-TF-	--T-TF-	to	to	to
d04r03	nc	-F-F-FFT	-F-F-FFT	-F-F-FFT	-F-F-FFT	to	cc
d05r03	nc	--F--	--F--	--F--	--F--	to	to

Eratosthenes (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
010	nc	TTTT-F-F	TTTT-F-F	TTTT--	TTTT-F-F	FTFTFFTF	---F-F
020	nc	F-T--	F-T--	F-T--	F-T--	FFFFFFFF	cc
050	nc	-TT-TT-	-TT-TT-	-TT-TT-	-TT-TT-	FFFFTFFF	cc
100	nc	--F--	--F--	--F--	--F--	FFFFTFTF	cc
200	nc	-TF--F	-TF--F	-TF--F	to	FFTTFFTF	----T
500	nc	--F-TF-	--F-TF-	to	to	to	cc

FMS (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	TTFTTFTF	T---T-	T---T-	T---T-	T---T-	FFFFTFTF	---F-
005	FFFTTTTF	-F-T--T	-F-T--T	-F-T--	-F-T--	FFFTFFTF	cc
010	TTTTFFFF	FF--FF-	FF--FF-	---FF-	cc	FFFTTFFF	cc
020	FFTFTTTF	-FT-TT-	-FT-TT-	-FT-TT-	-FT--T-	FFFFTFTF	cc
050	TFFFTFFF	TFFF-F-	TFFF-F-	TFFF-F-	TFFF-F-	FFFFFFFF	---T-
100	F	F-T-T-	F-T-T-	F-T-T-	F-T--	FFFTFFTF	cc
200	to	FT--F-F	FT--F-F	FT--F-F	-T---F	cc	---T-
500	to	-T-T-FT-	-T-T-FT-	-T-T-FT-	-T-T--	to	cc

GlobalRessAlloc (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc	nc

GlobalRessAlloc (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FFFTTFFF	F-TF-FF-	F-TF-FF-	---FF-	to	FTFTTFFF	---TT-
05	cc	to	to	to	cc	to	cc

Kanban (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
0005	FTTTTTTT	-TT-T-T	-TT-T-T	-TT-T-T	---T-	FTTTFFFF	cc
0010	FTFT?FTF	TT--TF	TT--TF	-T--TF	cc	cc	---F-
0020	FTTTFFFT	---FT	---FT	---FT	---FT	FFFFFFFT	cc
0050	FTTTFTTF	-T-TT-	-T-TT-	-T-TT-	-T---	FTFTFTTF	---TT-
0100	to	---F-F	---F-F	---F-F	cc	FFFTFFFF	cc
0200	mp	cc	cc	cc	cc	to	cc
0500	FTTF	T----	T----	T----	cc	to	cc
1000	to	-F-T--T	-F-T--T	-F-T--T	-F-T--	to	----F

LamportFastMutEx (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc

LamportFastMutEx (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	cc	cc	cc	cc	FFFFTFTF	cc
3	nc	cc	cc	cc	cc	FFFFTFFF	cc
4	nc	cc	cc	cc	cc	FFFTFFFF	cc
5	nc	cc	cc	cc	cc	cc	cc
6	nc	cc	cc	cc	cc	to	cc

7	nc	cc	cc	cc	cc	to	cc
8	nc	cc	cc	cc	cc	cc	cc

MAPK (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
008	FFTFFTTF	-FTF--	-FTF--	-FTF--	-FTF--	FFTTTFFF	cc
020	TTFTTFFF	-T-T-F-	-T-T-F-	-T-T-F-	-T-T-F-	FFFTFFFF	cc
040	to	---T-	---T-	---T-	---T-	FFFFFFFF	cc
080	to	-TFF--	-TFF--	-TFF--	to	FFTTFFFF	cc
160	to	--F-F-	--F-F-	--F-F-	to	to	cc
320	to	----T	----T	----T	----T	to	cc

NeoElection (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	FTFT--	FTFT--	cc	FTFT--	FFFFTFFF	cc
3	nc	--T-F-	--T-F-	--T-F-	---F-	cc	cc
4	nc	cc	cc	cc	cc	to	cc
5	nc	---T-	---T-	to	to	cc	cc
6	nc	cc	cc	cc	cc	cc	cc
7	nc	cc	cc	cc	cc	to	cc
8	nc	to	to	to	to	to	to

PermAdmissibility (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	nc	nc	nc	nc	nc	nc	nc
02	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
01	to	TTFF-F-	TTFF-F-	TTFF-F-	TTFF--	FTFFTFFF	cc
02	FTFTTTTF	-F-F--F	-F-F--F	to	to	to	cc
05	?????FFT	cc	cc	to	to	to	cc
10	FTFTFFTT	FFTF-T-	FFTF-T-	FFTF-T-	FFTF-T-	to	---T-
20	FFFT?FTF	--T--	--T--	to	to	cc	cc
50	FFTFFTFT	---TT	---TT	to	to	to	cc

Peterson (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
2	nc	-F-TT-	-F-TT-	-F--T-	-T---	FFFFFFTF	cc
3	nc	---T-	---T-	---T-	cc	FFFTFFFF	cc
4	nc	-T--TF	-T--TF	-T--TF	-T--TF	cc	cc
5	nc	-T---	-T---	to	to	cc	cc
6	nc	-F--T	-F--T	-F--T	-F--T	to	to
7	nc	---FF	---FF	to	----F	to	cc

Philosophers (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc

Philosophers (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FFFTTFTF	-F--T-	-F--T-	-F--T-	-F--T-	FFTTTFTF	---F-
000010	FTFFFTTT	--F-T-T	--F-T-T	--F-T-T	--F-T-T	FTFFFFFF	cc
000020	TTFF?FTF	T-F--	T-F--	T-F--	to	cc	cc
000050	mp	cc	cc	cc	cc	FTFTFFFF	cc
000100	mp	-T-T--	-T-T--	-T-T--	to	cc	cc
000200	mp	cc	cc	cc	cc	FFFTFFFF	cc
000500	to	cc	cc	cc	cc	FFFFFFFF	cc
001000	mp	cc	cc	cc	cc	to	cc
002000	mp	--F--	--F--	--F--	to	cc	cc
005000	mp	to	to	to	to	to	to
010000	cc	to	to	to	to	to	to

PhilosophersDyn (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc	nc

PhilosophersDyn (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
03	FTFTTFFF	---F-	---F-	---F-	---F-	FFFFFFFF	cc
10	FTTT	---FFF	---FFF	---F-	cc	to	cc
20	mp	to	to	to	to	to	cc

Planning (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
nf	nf	nf	nf	nf	nf	nf	

Railroad (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	-TF-F-	-TF-F-	---F-	-TF-F-	FFFFFFFF	cc
010	nc	-F--T-T	-F--T-T	-F---	---T-T	cc	cc
020	nc	-F--TT	-F--TT	-F--TT	to	to	---FF
050	nc	---T-F	---T-F	---T-F	to	to	---F-T
100	nc	to	to	to	to	to	cc

RessAllocation (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
R002C002	nc	F-T-TFT	F-T-TFT	--T-TFT	F-T-TFT	FFFFTFFF	---FT-
R003C002	nc	-FTT-F-	-FTT-F-	-FTT-F-	-FTT-F-	FFFTFFFF	cc
R003C003	nc	F--TTF	F--TTF	---TTF	---T-	cc	cc
R003C005	nc	-F---	-F---	-F---	-F---	cc	cc
R003C010	nc	FFFF-F-	FFFF-F-	-F-F-F-	-F-F-F-	FFFFTFFF	cc
R003C015	nc	-FF--T	-FF--T	-FF--T	-FF--	FFFFFFFF	-FF--
R003C020	nc	--F--	--F--	to	--F--	FFFFTFTF	cc
R003C050	nc	--F-F-	--F-F-	to	to	FFFTFFFF	cc

R003C100	nc	TT---F	TT---F	TT---F	TT---F	to	----T
R005C002	nc	FF-F-T-	FF-F-T-	-F-F-T-	-F-F-T-	cc	cc
R010C002	nc	-FTT-TTT	-FTT-TTT	-F-T-TTT	-FTT-TTT	FFFTFFFF	cc
R015C002	nc	FTTF-F-T	FTTF-F-T	FTTF-F-T	FTTF-F-T	FTTTTFFT	cc
R020C002	nc	T-F-F-F-	T-F-F-F-	T-F-F-F-	T-F-F-F-	FFFFTFFF	cc
R050C002	nc	cc	cc	cc	to	FFFTTFFF	cc
R100C002	nc	FFF---	FFF---	FFF---	to	to	FFF---

Ring (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	nc	-F--F-	-F--F-	-F--F-	to	FFFFFFFF	cc

RwMutex (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
r0010w0010	nc	TFTT-T-F	TFTT-T-F	TFTT--	TFTT--	FFFTFFFF	cc
r0010w0020	nc	F--TTT	F--TTT	---TTT	cc	FFFTTFTF	cc
r0010w0050	nc	-T-F-T-	-T-F-T-	-T-F-T-	cc	FTFFFFFF	cc
r0010w0100	nc	---FTT	---FTT	---T-	cc	cc	cc
r0010w0500	nc	F-TF-F-	F-TF-F-	cc	F-TF-F-	FFFFFFFF	cc
r0010w1000	nc	-FTT-T-	-FTT-T-	-F-T--	-FTT-T-	FFFTFFFF	cc
r0010w2000	nc	-FT-T-F	-FT-T-F	----F	to	to	cc
r0020w0010	nc	-TF--FT	-TF--FT	-TF--F-	-T--F-	to	cc
r0100w0010	nc	--T--	--T--	--T--	--T--	cc	cc
r0500w0010	nc	---T-	---T-	---T-	to	cc	---F-
r1000w0010	nc	FT-T-FFT	FT-T-FFT	--T-FFT	--T-FT	cc	----F
r2000w0010	nc	--TFT-	--TFT-	--TF--	cc	cc	cc

SharedMemory (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	nc	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc	nc

SharedMemory (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
000005	FTTT?FFT	-F-F-TFF	-F-F-TFF	-F-F-F-	-F-F--	cc	cc
000010	FFFF?FTF	-TF--T	-TF--T	--F--	cc	cc	cc
000020	mp	TFT---	TFT---	TFT---	to	FFFFFFFF	cc
000050	mp	cc	cc	cc	cc	cc	cc
000100	mp	---TFT	---TFT	---TFT	---TFT	cc	---FT
000200	cc	cc	cc	cc	cc	to	cc

SimpleLoadBal (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc

SimpleLoadBal (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	---FT-	---FT-	---T-	---T-	FFFFFFTF	cc
05	nc	---F-	---F-	---F-	---F-	cc	cc
10	nc	-F--FF-	-F--FF-	-F--FF-	-F---	cc	to

15	nc	to	to	to	to	to	cc
20	nc	to	to	to	to	to	cc

TokenRing (colored)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	nc	nc	nc	nc	nc	nc	nc
010	nc	nc	nc	nc	nc	nc	nc
020	nc	nc	nc	nc	nc	nc	nc
050	nc	nc	nc	nc	nc	nc	nc
100	nc	nc	nc	nc	nc	nc	nc
200	nc	nc	nc	nc	nc	nc	nc
500	nc	nc	nc	nc	nc	nc	nc

TokenRing (P/T)

Instances	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
005	FTFTFFTF	TF--T-T	TF--T-T	-F---	-F---	FTFTFFTF	T--T-T
010	to	F-T-TT-	F-T-TT-	---T-	---T-	FTFTFFTF	cc
020	mp	to	to	to	to	cc	cc
050	cc	cc	cc	cc	cc	to	cc

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)

instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
002	cc	cc	cc	cc	FFFTTFTF	cc
005	cc	cc	cc	cc	FTFTTFFF	cc
010	cc	cc	cc	cc	FFTTTFTT	cc
020	cc	cc	cc	cc	to	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	to	cc

IBMB2S565S3960 (P/T)

instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	F---TF	F---TF	F---TF	F---T-	to	cc

QuasiCertifProtocol (colored)

instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc

QuasiCertifProtocol (P/T)

instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
02	cc	cc	cc	cc	FFFFTFFF	cc
06	cc	cc	cc	cc	FFFFFFFF	cc
10	cc	cc	cc	cc	to	cc
18	cc	cc	cc	cc	to	cc
22	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc
32	cc	cc	cc	cc	cc	cc

Vasy2003 (P/T)

instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
none	FT--TT-	FT--TT-	FT--TT-	to	FFFFFFFF	cc

17.3 Score for the CTLMix Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**47**	**191**	**191**	**158**	**116**	**92**	**52**
CSRepetitions (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
CSRepetitions (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	2	4	4	4	1	2	1
max reached	0	0	0	0	0	0	0
best	0	2	2	2	0	0	2
subtotal	**3**	**7**	**7**	**7**	**2**	**3**	**4**
Dekker (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	5	5	5	2	2	0
max reached	0	0	0	0	0	0	0
best	0	2	2	2	0	0	0
subtotal	**0**	**8**	**8**	**8**	**3**	**3**	**0**
DotAndBoxes (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	0	1	1	0
instances	0	1	1	0	1	1	0
max reached	0	0	0	0	0	0	0
best	0	2	2	0	2	2	0
subtotal	**0**	**4**	**4**	**0**	**4**	**4**	**0**
Echo (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	0	1
instances	0	9	9	5	8	0	1
max reached	0	2	2	2	2	0	0

best	0	2	2	2	2	0	0
subtotal	**0**	**14**	**14**	**10**	**13**	**0**	**2**

Eratosthenes (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	6	6	5	4	5	2
max reached	0	2	2	0	0	0	0
best	0	2	2	0	0	0	0
subtotal	**0**	**11**	**11**	**6**	**5**	**6**	**3**

FMS (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	6	8	8	8	7	6	3
max reached	0	2	2	2	2	0	0
best	0	2	2	2	2	0	0
subtotal	**7**	**13**	**13**	**13**	**12**	**7**	**4**

GlobalRessAlloc (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

GlobalRessAlloc (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	0	1	1
instances	1	1	1	1	0	1	1
max reached	0	0	0	0	0	0	0
best	2	2	2	2	0	2	2
subtotal	**4**	**4**	**4**	**4**	**0**	**4**	**4**

Kanban (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	5	7	7	7	4	4	3
max reached	0	2	2	2	2	0	2
best	0	2	2	2	2	0	2
subtotal	**6**	**12**	**12**	**12**	**9**	**5**	**8**

LamportFastMutEx (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

LamportFastMutEx (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	1	0
instances	0	0	0	0	0	3	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**0**	**6**	**0**

MAPK (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	0
instances	2	6	6	6	4	4	0
max reached	0	2	2	2	2	0	0
best	0	2	2	2	2	0	0
subtotal	**3**	**11**	**11**	**11**	**9**	**5**	**0**

NeoElection (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara

1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	3	3	1	2	1	0
max reached	0	0	0	0	0	0	0
best	0	2	2	0	0	0	0
subtotal	**0**	**6**	**6**	**2**	**3**	**2**	**0**

PermAdmissibility (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PermAdmissibility (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	5	5	5	2	2	1	1
max reached	2	2	2	0	0	0	0
best	2	2	2	0	0	0	0
subtotal	**10**	**10**	**10**	**3**	**3**	**2**	**2**

Peterson (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	6	6	4	4	2	0
max reached	0	2	2	0	2	0	0
best	0	2	2	0	2	0	0
subtotal	**0**	**11**	**11**	**5**	**9**	**3**	**0**

Philosophers (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Philosophers (P/T)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	3	5	5	5	2	5	1
max reached	0	0	0	0	0	0	0
best	0	2	2	2	0	0	0
subtotal	**4**	**8**	**8**	**8**	**3**	**6**	**2**

PhilosophersDyn (Colored)

	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0

subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PhilosophersDyn (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	0
instances	2	2	2	2	1	1	0
max reached	0	0	0	0	0	0	0
best	2	2	2	2	0	0	0
subtotal	**5**	**5**	**5**	**5**	**2**	**2**	**0**
Planning (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Railroad (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	4	4	4	2	1	2
max reached	0	0	0	0	0	0	0
best	0	2	2	2	0	0	2
subtotal	**0**	**7**	**7**	**7**	**3**	**2**	**5**
RessAllocation (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	14	14	12	12	10	4
max reached	0	2	2	2	0	0	2
best	0	2	2	2	0	0	2
subtotal	**0**	**19**	**19**	**17**	**13**	**11**	**9**
Ring (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	0	1	0
instances	0	1	1	1	0	1	0
max reached	0	2	2	2	0	2	0
best	0	2	2	2	0	2	0
subtotal	**0**	**6**	**6**	**6**	**0**	**6**	**0**
RwMutex (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1
instances	0	12	12	11	6	5	2
max reached	0	2	2	2	0	0	0
best	0	2	2	2	0	0	0
subtotal	**0**	**17**	**17**	**16**	**7**	**6**	**3**
SharedMemory (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SharedMemory (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	2	4	4	4	2	1	1
max reached	0	0	0	0	0	0	0
best	0	2	2	2	2	0	2
subtotal	**3**	**7**	**7**	**7**	**5**	**2**	**4**
SimpleLoadBal (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0

instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SimpleLoadBal (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	1	1	1	1	1	0
instances	0	3	3	3	3	1	0
max reached	0	0	0	0	0	0	0
best	0	2	2	2	2	0	0
subtotal	**0**	**6**	**6**	**6**	**6**	**2**	**0**
TokenRing (Colored)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TokenRing (P/T)							
	GreatSPN	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1
instances	1	2	2	2	2	2	1
max reached	0	0	0	0	0	0	0
best	0	2	2	2	2	2	0
subtotal	**2**	**5**	**5**	**5**	**5**	**5**	**2**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
Total Score	**12**	**12**	**12**	**6**	**17**	**0**
HouseConstruction (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	1	0	0
instances	1	1	1	1	0	0
max reached	2	2	2	2	0	0
best	2	2	2	2	0	0
subtotal	**6**	**6**	**6**	**6**	**0**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**

Vasy2003 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara
1st instance	1	1	1	0	1	0
instances	1	1	1	0	1	0
max reached	2	2	2	0	2	0
best	2	2	2	0	2	0
subtotal	**6**	**6**	**6**	**0**	**6**	**0**

17.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models

1	1	3
LoLA	LoLa opt	LoLa opt inc
191 points	191 points	158 points

For "Surprise" Models

1	2	2	2
Marcie	LoLA	LoLa opt	LoLa opt inc
17 points	12 points	12 points	12 points

Global

1	1	3
LoLA	LoLa opt	LoLa opt inc
215 points	215 points	182 points

Part V

LTL-based Analysis

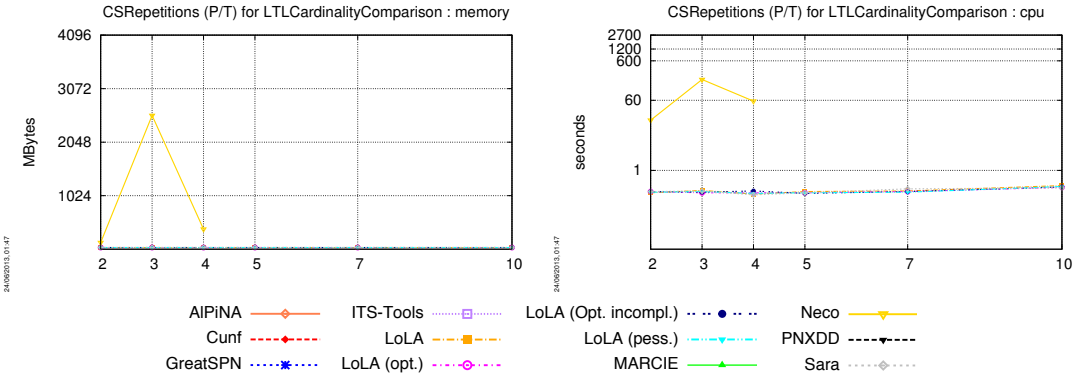
18 The LTLCardinalityComparison Examination

This examination deals with LTL properties dealing with checking cardinality of marking only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

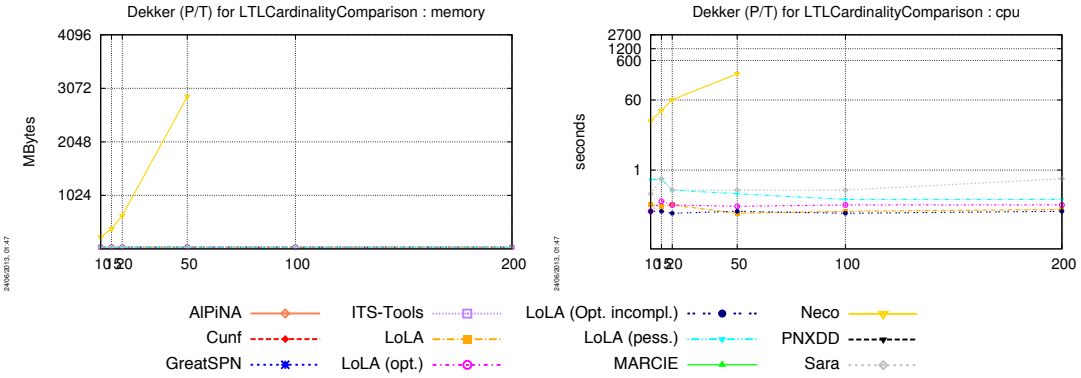
18.1 Handling of Models by Tools

CSRepetitions (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



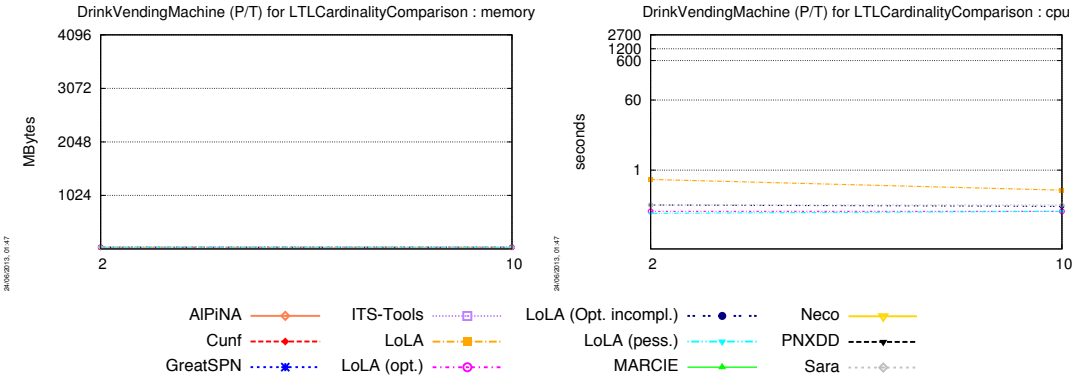
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



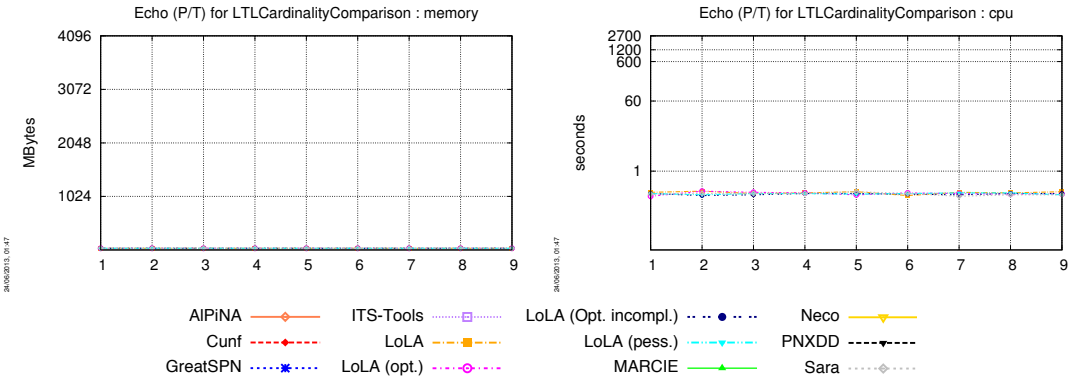
DotAndBoxes (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

DrinkVendingMachine (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

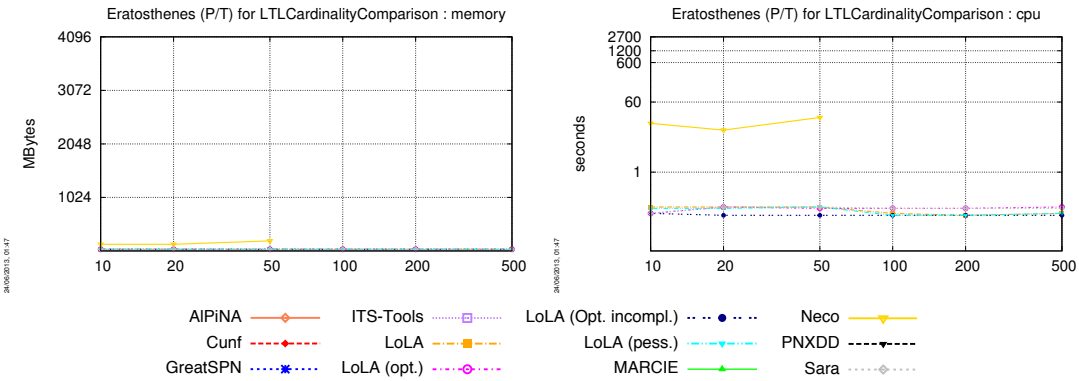
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



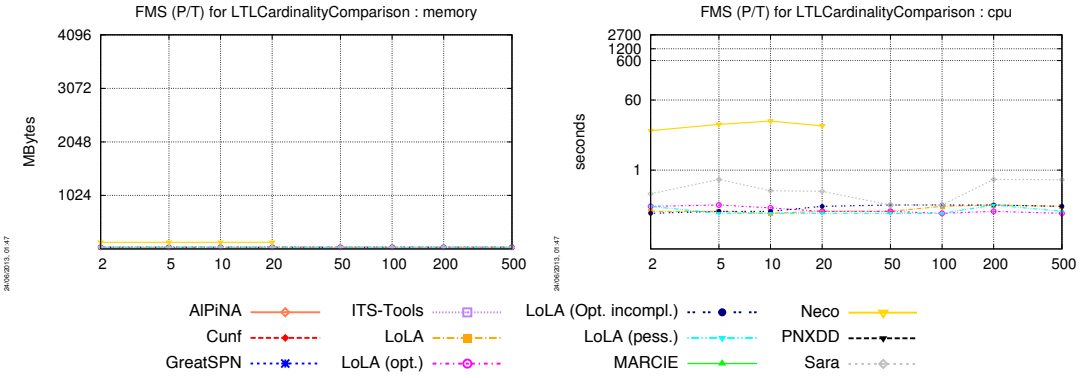
Echo (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

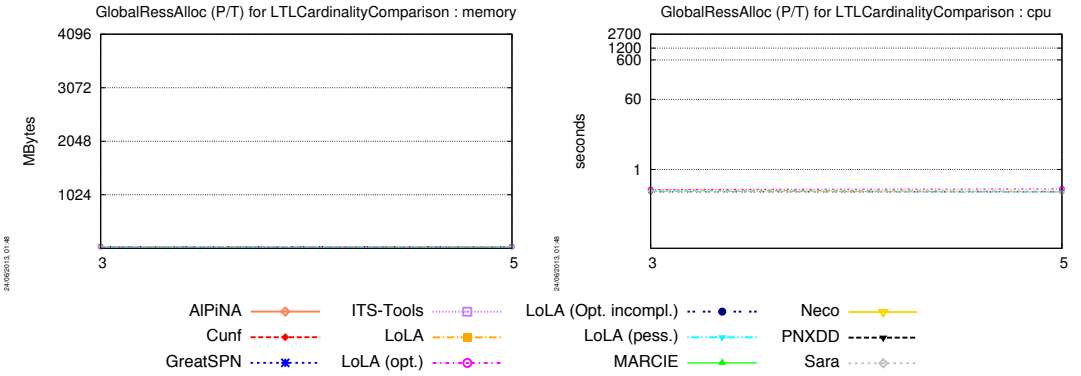


FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

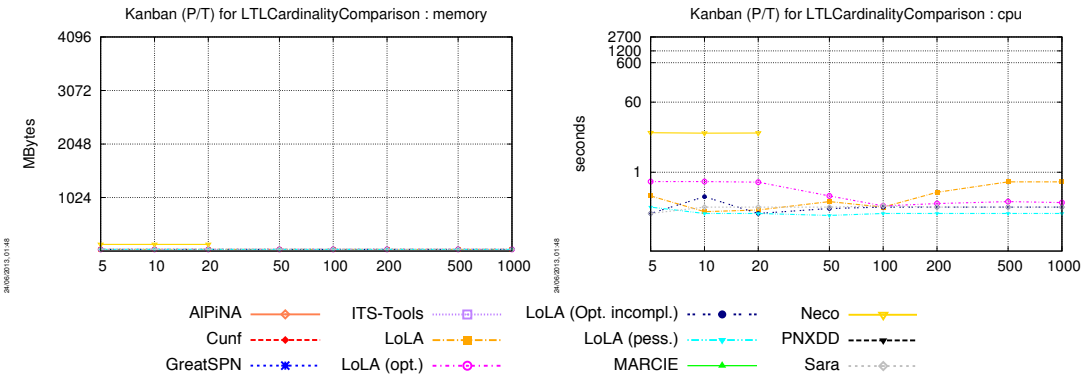


GlobalRessAlloc (colored) No instance of this model could be computed for the **LTLCardinality-Comparison** examination.

GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

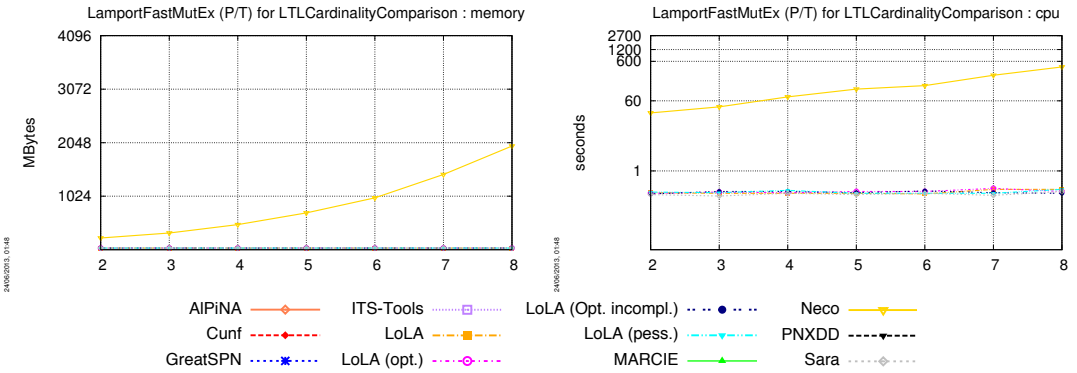


Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

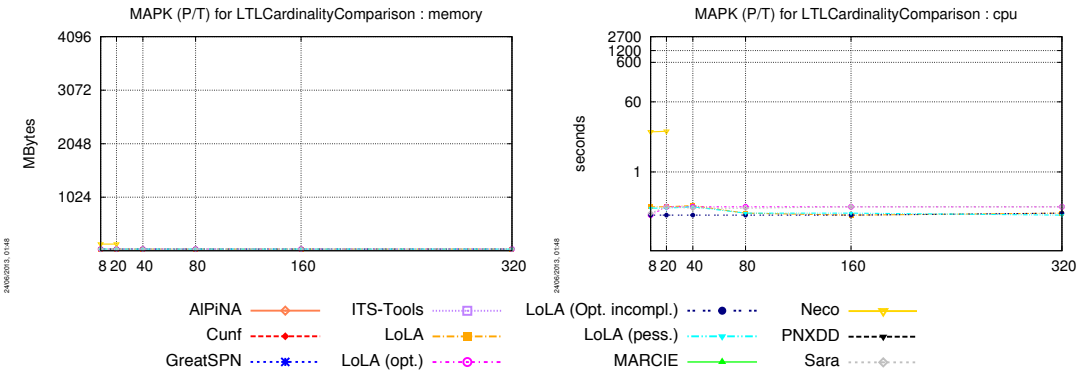


LamportFastMutEx (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

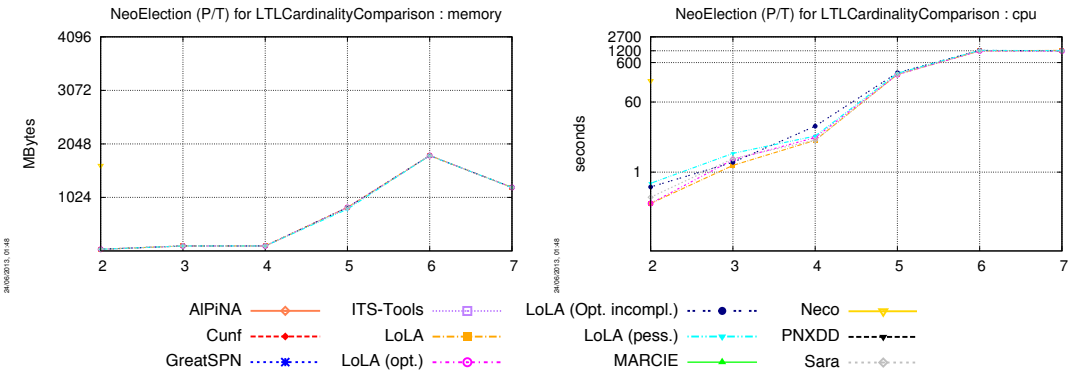


MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



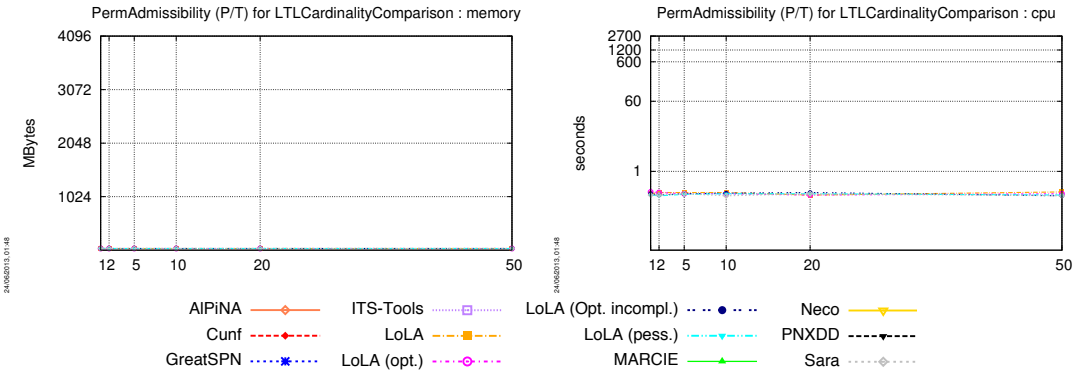
NeoElection (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



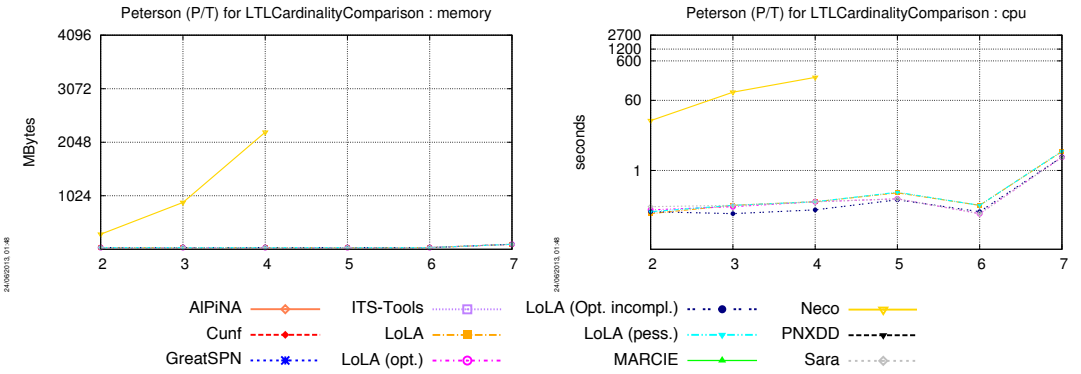
PermAdmissibility (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



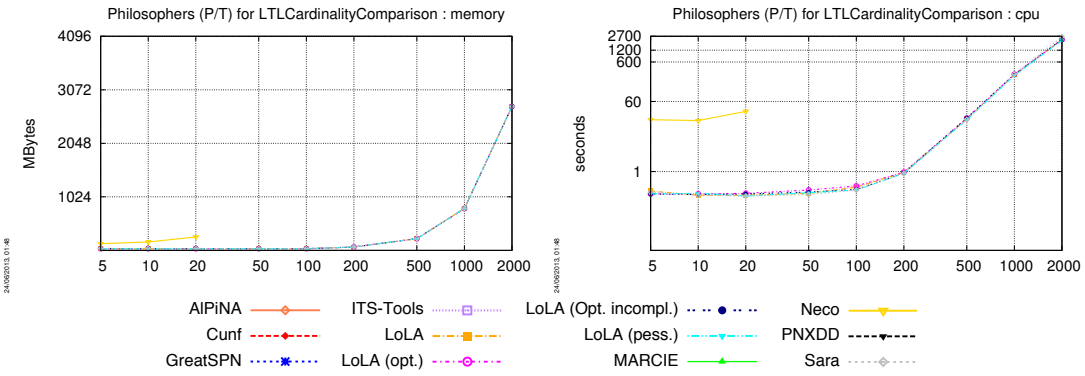
Peterson (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



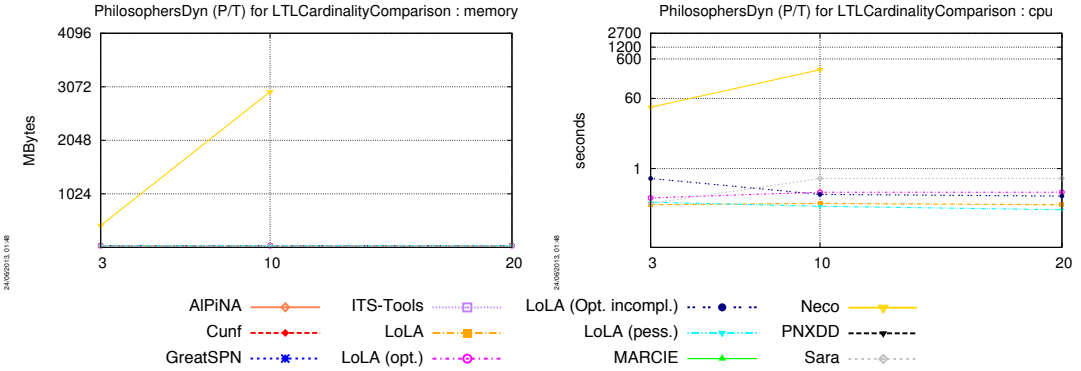
Philosophers (colored) No instance of this model could be computed for the **LTLCardinality-Comparison** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



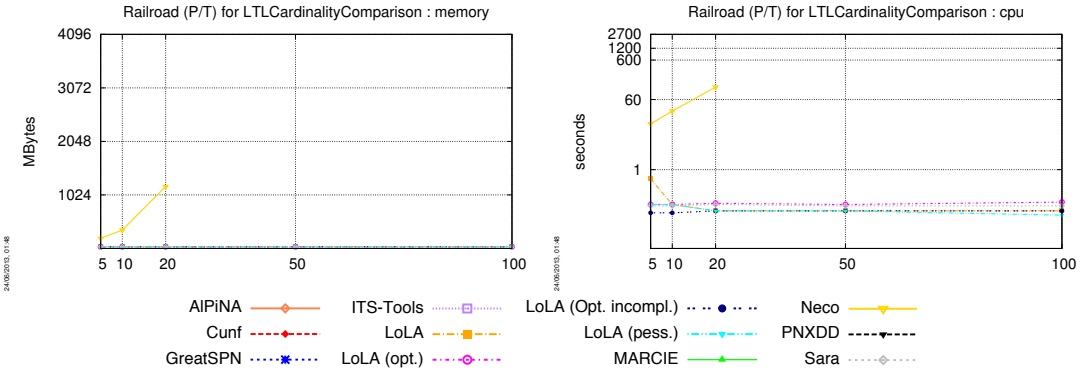
PhilosophersDyn (colored) No instance of this model could be computed for the **LTLCardinality-Comparison** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

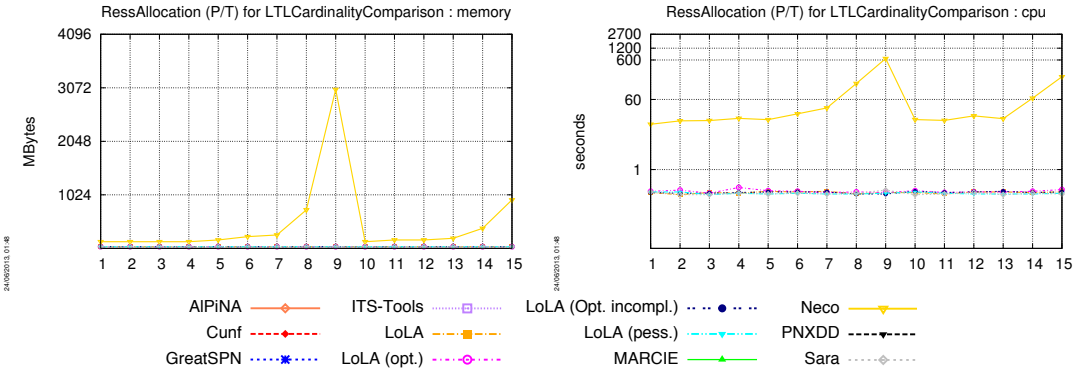


Planning (P/T) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

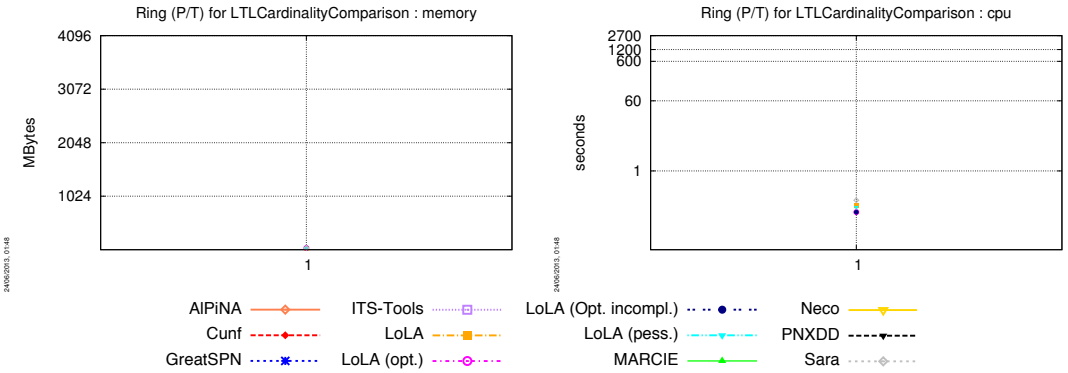
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



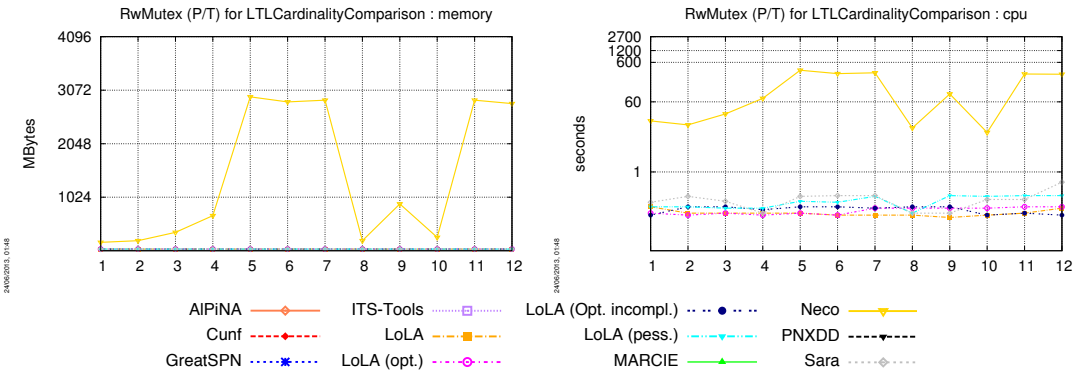
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

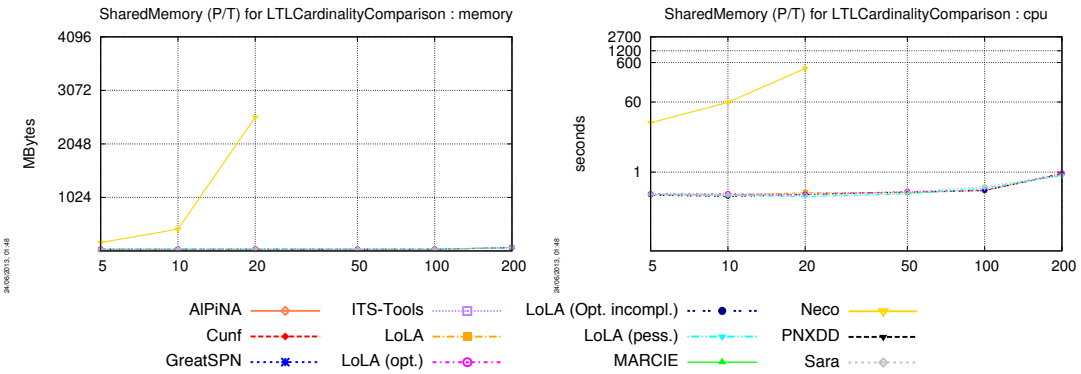


RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



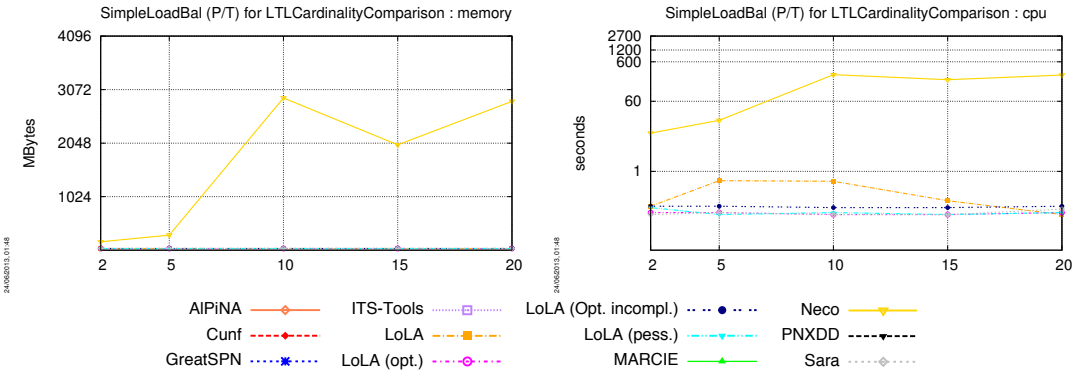
SharedMemory (colored) No instance of this model could be computed for the **LTLCardinality-Comparison** examination.

SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



SimpleLoadBal (colored) No instance of this model could be computed for the **LTLCardinality-Comparison** examination.

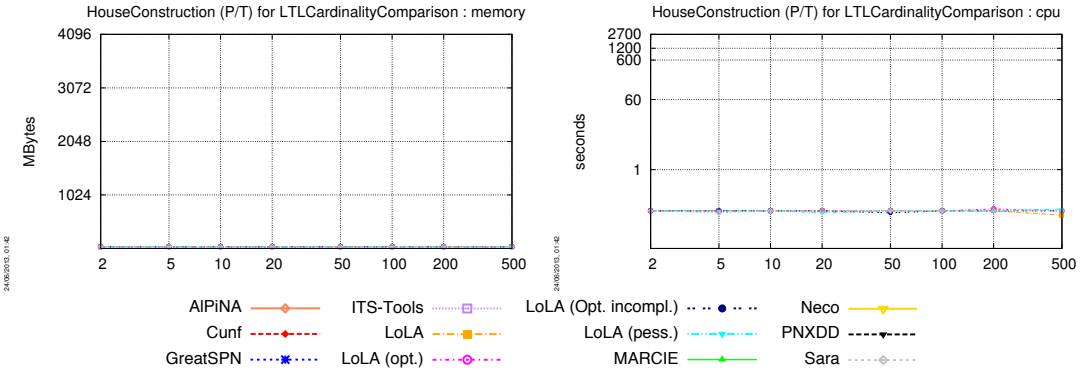
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



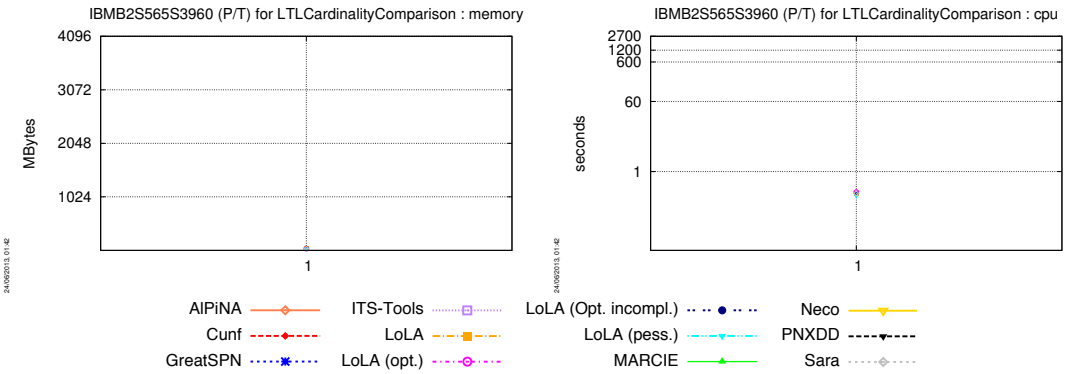
TokenRing (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

TokenRing (P/T) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

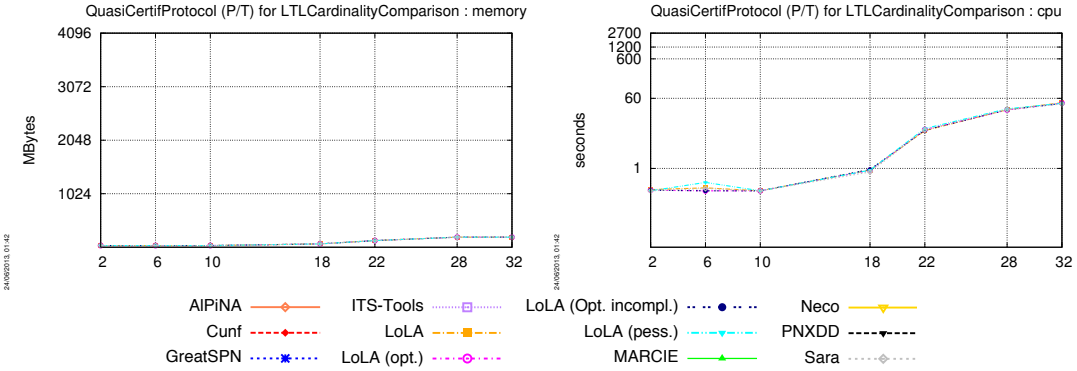


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

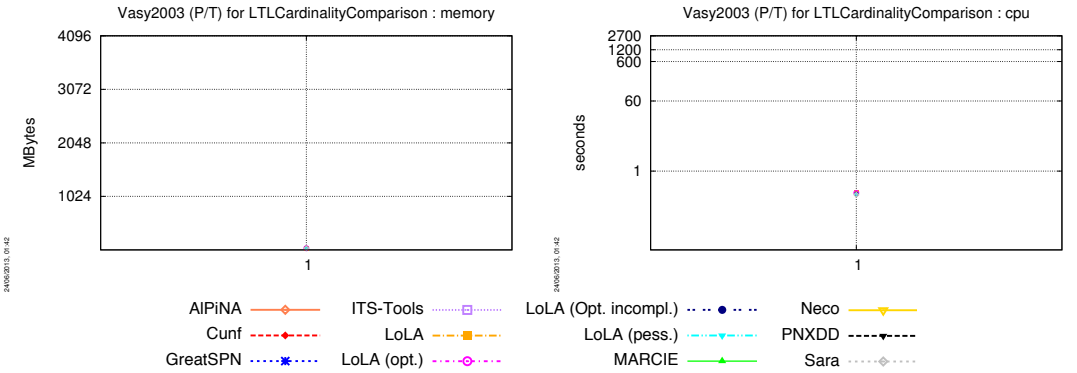


QuasiCertifProtocol (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



18.2 Outputs for the LTLCardinalityComparison Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
03	nc	nc	nc	nc	nc	nc
04	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc

CSRepetitions (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	TTFTTTTF	cc
03	cc	cc	cc	cc	FTTTTFTF	cc
04	cc	cc	cc	cc	FFFFFFFF	cc
05	cc	cc	cc	cc	cc	cc
07	cc	cc	cc	cc	cc	cc
10	cc	cc	cc	cc	cc	cc

Dekker (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
010	cc	cc	cc	cc	FFFFTFFF	cc
015	cc	cc	cc	cc	FTFTTFTF	cc
020	cc	cc	cc	cc	FTFTFFTT	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc

DotAndBoxes (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	nc	cc
10	cc	cc	cc	cc	nc	cc

Echo (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
d02r09	cc	cc	cc	cc	nc	cc
d02r11	cc	cc	cc	cc	nc	cc
d02r15	cc	cc	cc	cc	nc	cc
d02r19	cc	cc	cc	cc	nc	cc
d03r03	cc	cc	cc	cc	nc	cc
d03r05	cc	cc	cc	cc	nc	cc
d03r07	cc	cc	cc	cc	nc	cc
d04r03	cc	cc	cc	cc	nc	cc
d05r03	cc	cc	cc	cc	nc	cc

Eratosthenes (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
010	cc	cc	cc	cc	FTFFTFFF	cc
020	cc	cc	cc	cc	FTFTFFFF	cc
050	cc	cc	cc	cc	TTTTFFTF	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	cc	cc

FMS (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
002	cc	cc	cc	cc	TTFTTTTF	cc

005	cc	cc	cc	cc	FFTTTFFF	cc
010	cc	cc	cc	cc	FTFTTFFF	cc
020	cc	cc	cc	cc	FFFFFFTF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	cc	cc
GlobalRessAlloc (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc
GlobalRessAlloc (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	cc	cc	cc	cc	nc	cc
05	cc	cc	cc	cc	nc	cc
Kanban (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
0005	cc	cc	cc	cc	TTTTTFTT	cc
0010	cc	cc	cc	cc	TTTTTFTF	cc
0020	cc	cc	cc	cc	FFFTTFTF	cc
0050	cc	cc	cc	cc	cc	cc
0100	cc	cc	cc	cc	cc	cc
0200	cc	cc	cc	cc	cc	cc
0500	cc	cc	cc	cc	cc	cc
1000	cc	cc	cc	cc	cc	cc
LamportFastMutEx (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc
LamportFastMutEx (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	FTFTTFFF	cc
3	cc	cc	cc	cc	TTTTFFFF	cc
4	cc	cc	cc	cc	FFFFTFTT	cc
5	cc	cc	cc	cc	FTFTTFTF	cc
6	cc	cc	cc	cc	TTTTFFTF	cc
7	cc	cc	cc	cc	TTTTTFTF	cc
8	cc	cc	cc	cc	TTTTTTTF	cc
MAPK (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
008	cc	cc	cc	cc	FTFTFFFF	cc
020	cc	cc	cc	cc	FTFTTFTF	cc
040	cc	cc	cc	cc	cc	cc
080	cc	cc	cc	cc	cc	cc
160	cc	cc	cc	cc	cc	cc
320	cc	cc	cc	cc	cc	cc
NeoElection (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc

4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	FTFTFFFF	cc
3	cc	cc	cc	cc	cc	cc
4	cc	cc	cc	cc	cc	cc
5	cc	cc	cc	cc	cc	cc
6	cc	cc	cc	cc	cc	cc
7	cc	cc	cc	cc	cc	cc
8	to	to	to	to	cc	to

PermAdmissibility (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
01	nc	nc	nc	nc	nc	nc
02	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
01	cc	cc	cc	cc	nc	cc
02	cc	cc	cc	cc	nc	cc
05	cc	cc	cc	cc	nc	cc
10	cc	cc	cc	cc	nc	cc
20	cc	cc	cc	cc	nc	cc
50	cc	cc	cc	cc	nc	cc

Peterson (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	FTFTTFFF	cc
3	cc	cc	cc	cc	TTFTFFTF	cc
4	cc	cc	cc	cc	cc	cc
5	cc	cc	cc	cc	cc	cc
6	cc	cc	cc	cc	cc	cc
7	cc	cc	cc	cc	cc	cc

Philosophers (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc

100000	nc	nc	nc	nc	nc	nc
Philosophers (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	cc	cc	cc	cc	TTTTTFFF	cc
000010	cc	cc	cc	cc	FTTTTTTT	cc
000020	cc	cc	cc	cc	FTFTTFFF	cc
000050	cc	cc	cc	cc	cc	cc
000100	cc	cc	cc	cc	cc	cc
000200	cc	cc	cc	cc	cc	cc
000500	cc	cc	cc	cc	cc	cc
001000	cc	cc	cc	cc	cc	cc
002000	cc	cc	cc	cc	cc	cc
005000	to	to	to	to	cc	to
010000	to	to	to	to	cc	to
PhilosophersDyn (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc
PhilosophersDyn (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	cc	cc	cc	cc	FTFTTFTF	cc
10	cc	cc	cc	cc	cc	cc
20	cc	cc	cc	cc	cc	cc
Planning (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
nf	nf	nf	nf	nf	nf	
Railroad (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	cc	cc	cc	cc	FTFTFFFF	cc
010	cc	cc	cc	cc	FFFFFTTF	cc
020	cc	cc	cc	cc	FTTTTFFF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
RessAllocation (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
R002C002	cc	cc	cc	cc	TTFTTTTT	cc
R003C002	cc	cc	cc	cc	FTFTFTTF	cc
R003C003	cc	cc	cc	cc	FTTTFFTT	cc
R003C005	cc	cc	cc	cc	FTTTFTTT	cc
R003C010	cc	cc	cc	cc	TTFTTTTT	cc
R003C015	cc	cc	cc	cc	FTFFTTTF	cc
R003C020	cc	cc	cc	cc	TTTTTFFF	cc
R003C050	cc	cc	cc	cc	FTTTFFTF	cc
R003C100	cc	cc	cc	cc	TTTT?FTF	cc
R005C002	cc	cc	cc	cc	FTTTFTTF	cc
R010C002	cc	cc	cc	cc	FFFFFFTF	cc
R015C002	cc	cc	cc	cc	FTFTFFTF	cc
R020C002	cc	cc	cc	cc	FFFTFFTF	cc
R050C002	cc	cc	cc	cc	FTFTTFTT	cc
R100C002	cc	cc	cc	cc	FFFTTFTF	cc
Ring (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	cc	cc	cc	cc	nc	cc
RwMutex (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
r0010w0010	cc	cc	cc	cc	FTFTTTTT	cc
r0010w0020	cc	cc	cc	cc	FTTTTFTF	cc

r0010w0050	cc	cc	cc	cc	FFFFTFFF	cc
r0010w0100	cc	cc	cc	cc	FFFTTTTT	cc
r0010w0500	cc	cc	cc	cc	cc	cc
r0010w1000	cc	cc	cc	cc	cc	cc
r0010w2000	cc	cc	cc	cc	cc	cc
r0020w0010	cc	cc	cc	cc	FFFFFFFF	cc
r0100w0010	cc	cc	cc	cc	FTFTFFTF	cc
r0500w0010	cc	cc	cc	cc	cc	cc
r1000w0010	cc	cc	cc	cc	cc	cc
r2000w0010	cc	cc	cc	cc	cc	cc

SharedMemory (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc

SharedMemory (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	cc	cc	cc	cc	FFFFTFTF	cc
000010	cc	cc	cc	cc	TTFTTFFF	cc
000020	cc	cc	cc	cc	cc	cc
000050	cc	cc	cc	cc	cc	cc
000100	cc	cc	cc	cc	cc	cc
000200	cc	cc	cc	cc	cc	cc

SimpleLoadBal (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc

SimpleLoadBal (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	FTTTFFFF	cc
05	cc	cc	cc	cc	FTFTTFTF	cc
10	cc	cc	cc	cc	FTFT?FTF	cc
15	cc	cc	cc	cc	TTFTTTTF	cc
20	cc	cc	cc	cc	cc	cc

TokenRing (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf

TokenRing (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	nf	nf	nf	nf	nf	nf

010	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
002	cc	cc	cc	cc	cc	cc
005	cc	cc	cc	cc	cc	cc
010	cc	cc	cc	cc	cc	cc
020	cc	cc	cc	cc	cc	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	cc	cc
IBMB2S565S3960 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	cc	cc	cc	cc	cc	cc
QuasiCertifProtocol (colored)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	cc	cc
06	cc	cc	cc	cc	cc	cc
10	cc	cc	cc	cc	cc	cc
18	cc	cc	cc	cc	cc	cc
22	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc
32	cc	cc	cc	cc	cc	cc
Vasy2003 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	cc	cc	cc	cc	cc	cc

18.3 Score for the LTLCardinalityComparison Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination						
LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara	

Total Score	**0**	**0**	**0**	**0**	**114**	**0**
CSRepetitions (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
CSRepetitions (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
Dekker (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
DotAndBoxes (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Echo (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Eratosthenes (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
FMS (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0

instances	0	0	0	0	4	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**7**	**0**

GlobalRessAlloc (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

GlobalRessAlloc (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Kanban (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**

LamportFastMutEx (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

LamportFastMutEx (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	7	0
max reached	0	0	0	0	2	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**12**	**0**

MAPK (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**

NeoElection (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	1	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**4**	**0**

PermAdmissibility (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
PermAdmissibility (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Peterson (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Peterson (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**
Philosophers (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Philosophers (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
PhilosophersDyn (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
PhilosophersDyn (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	1	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**4**	**0**
Planning (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0

max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Railroad (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**

RessAllocation (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	15	0
max reached	0	0	0	0	2	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**20**	**0**

Ring (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

RwMutex (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	6	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**9**	**0**

SharedMemory (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

SharedMemory (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**

SimpleLoadBal (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

SimpleLoadBal (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	4	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**7**	**0**

TokenRing (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
TokenRing (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
Total Score	**0**	**0**	**0**	**0**	**0**	**0**
HouseConstruction (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Vasy2003 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

18.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models

1

Neco
114 points

For "Surprise" Models

No tool could complete this examination.

Global

1

Neco
114 points

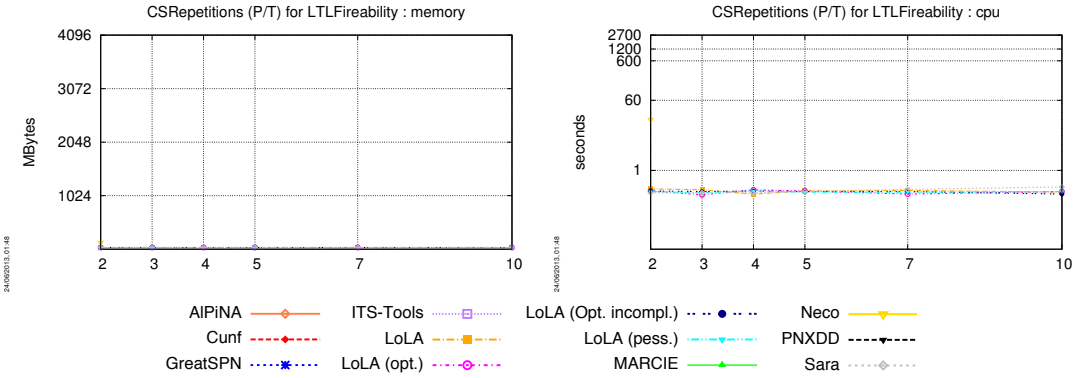
19 The LTLFireability Examination

This examination deals with LTL properties dealing with transition fireability only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

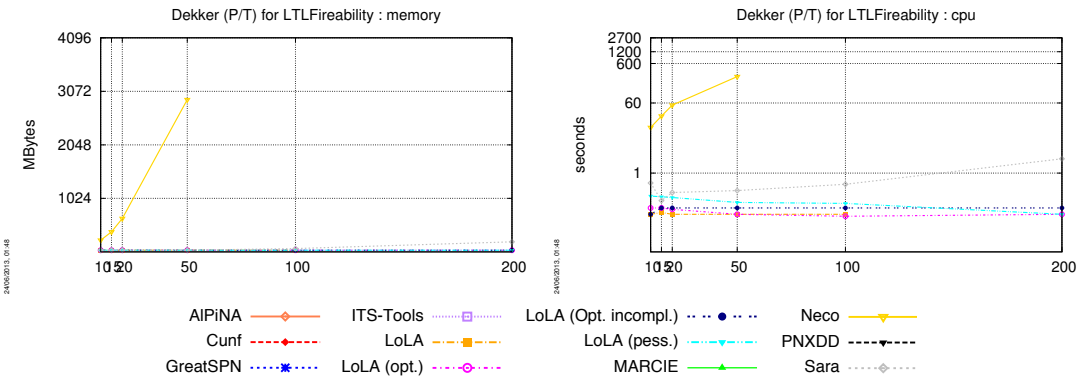
19.1 Handling of Models by Tools

CSRepetitions (colored) No instance of this model could be computed for the **LTLFireability** examination.

CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



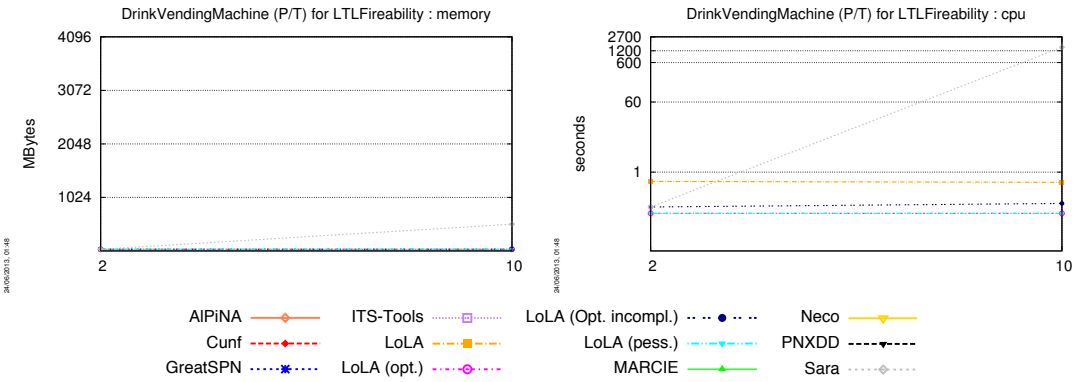
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



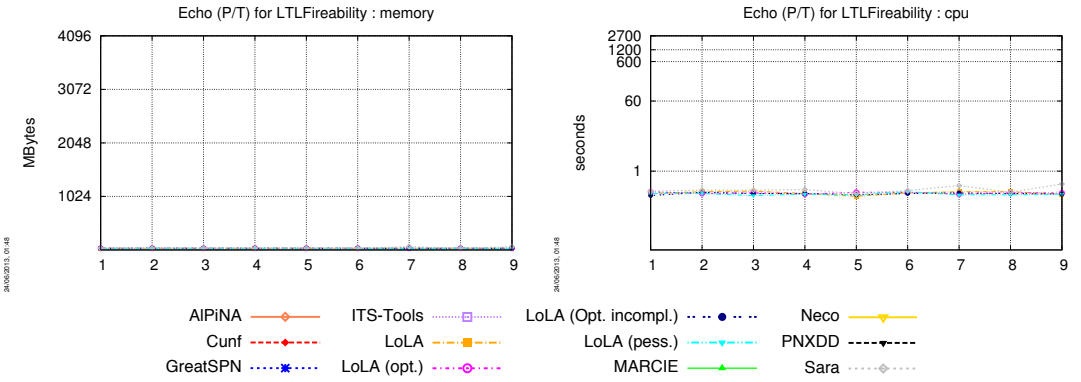
DotAndBoxes (colored) No instance of this model could be computed for the **LTLFireability** examination.

DrinkVendingMachine (colored) No instance of this model could be computed for the **LTLFireability** examination.

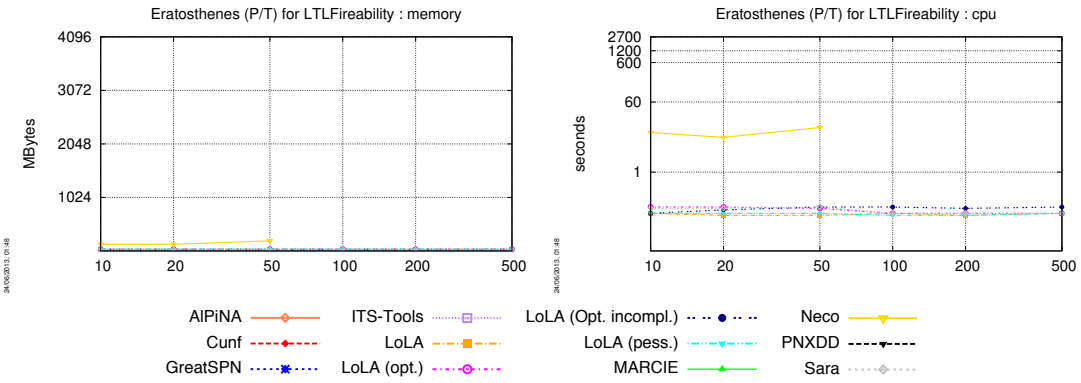
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



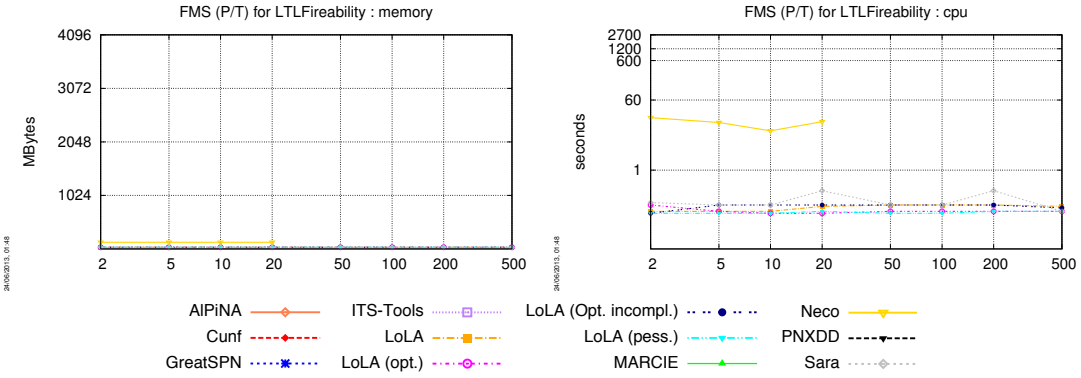
Echo (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

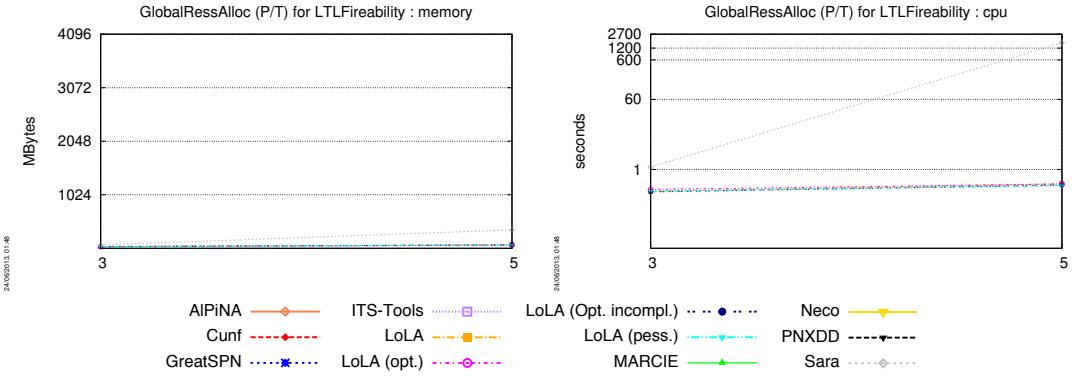


FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

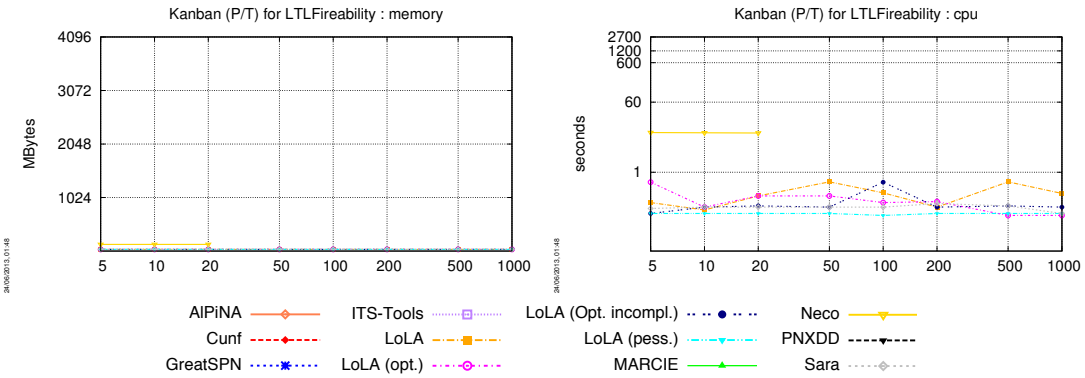


GlobalRessAlloc (colored) No instance of this model could be computed for the **LTLFireability** examination.

GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

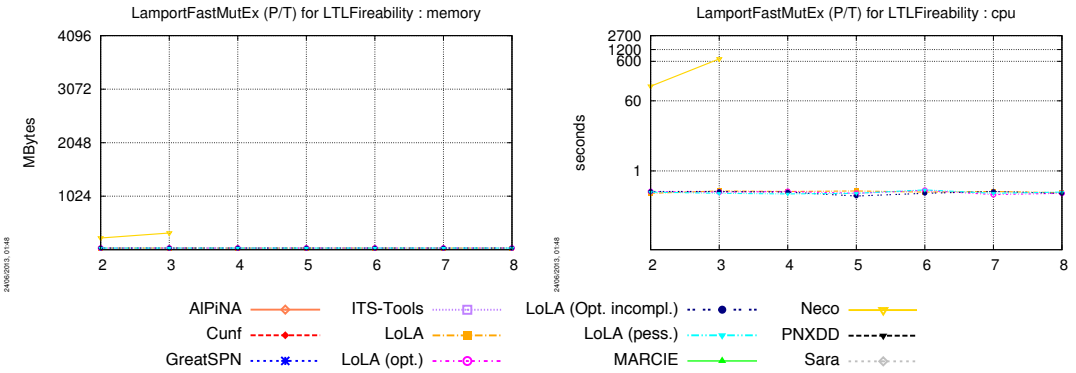


Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

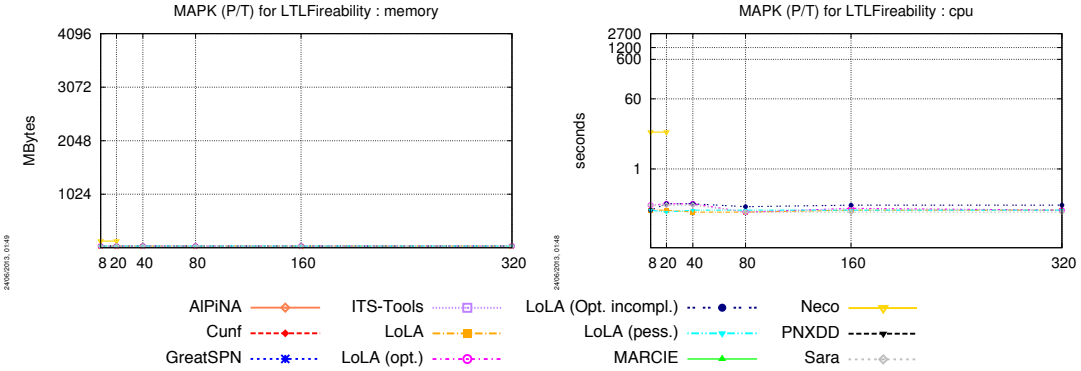


LamportFastMutEx (colored) No instance of this model could be computed for the **LTLFireability** examination.

LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

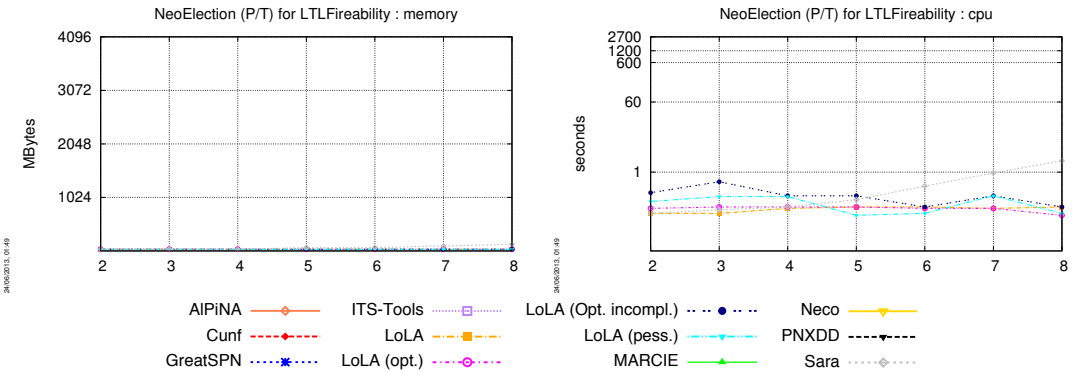


MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



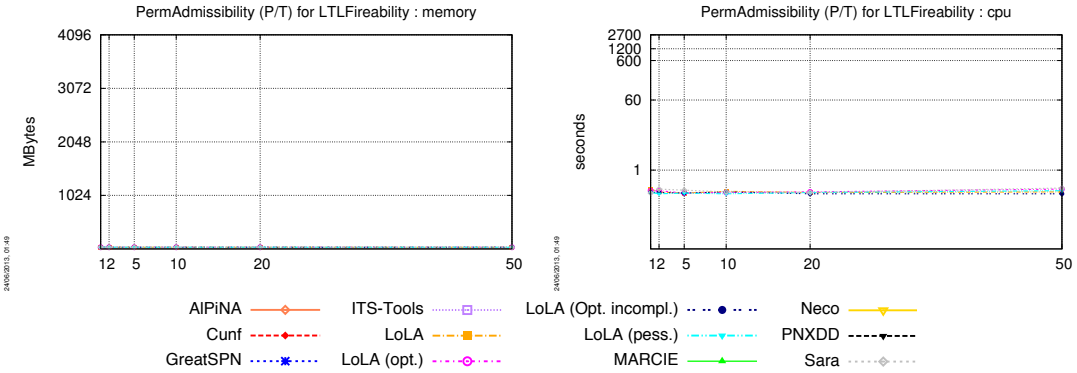
NeoElection (colored) No instance of this model could be computed for the **LTLFireability** examination.

NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



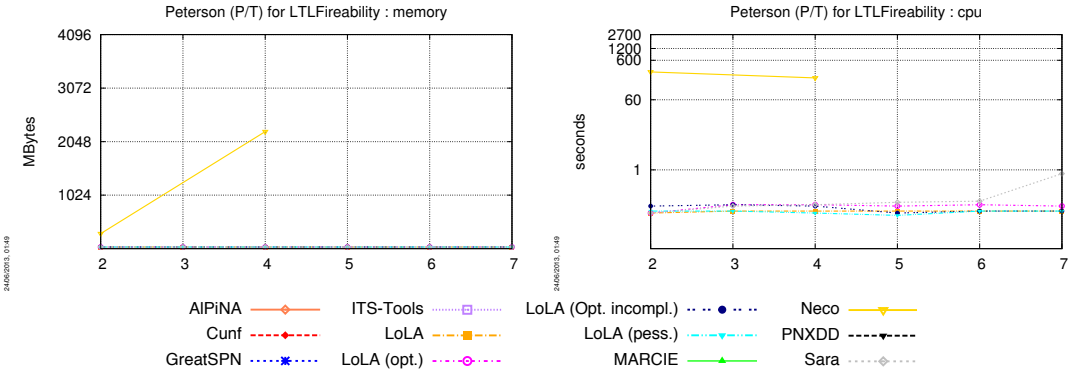
PermAdmissibility (colored) No instance of this model could be computed for the **LTLFireability** examination.

PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



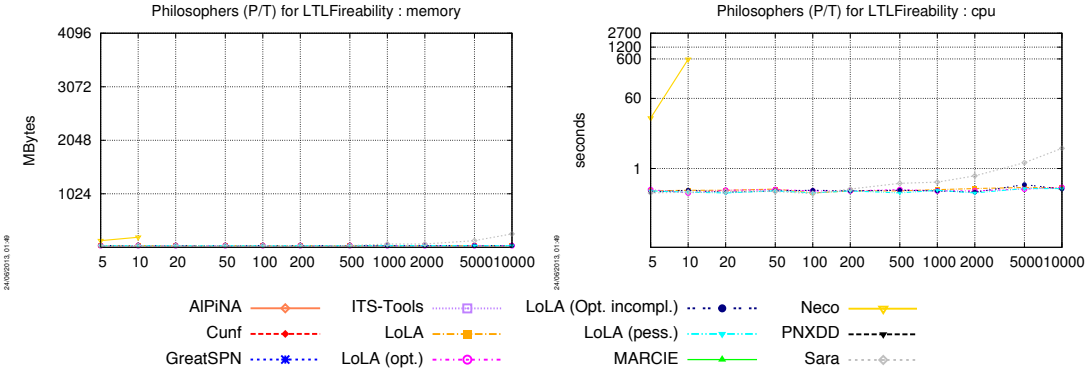
Peterson (colored) No instance of this model could be computed for the **LTLFireability** examination.

Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



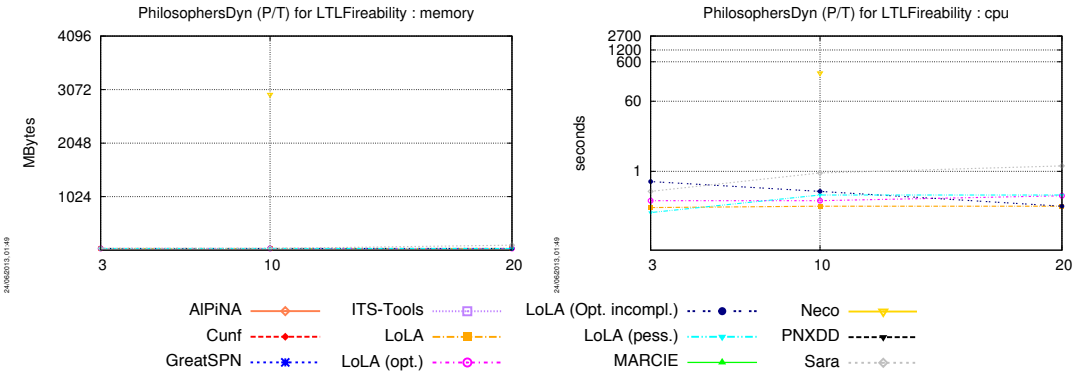
Philosophers (colored) No instance of this model could be computed for the **LTLFireability** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



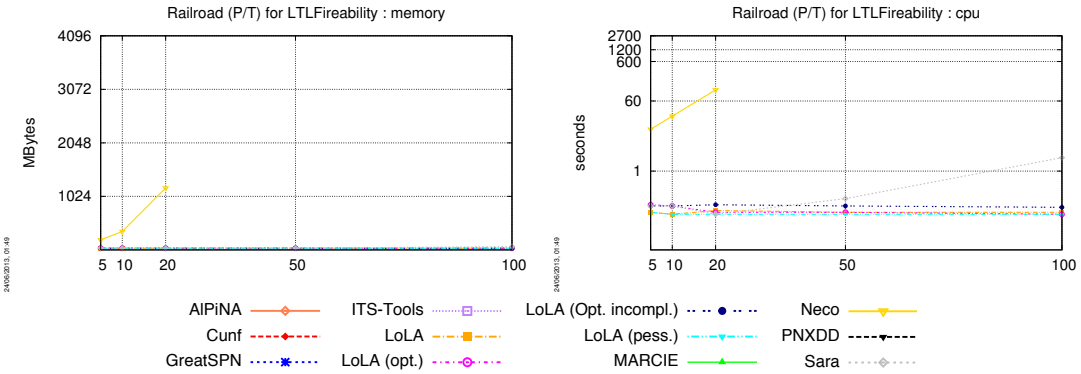
PhilosophersDyn (colored) No instance of this model could be computed for the **LTLFireability** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

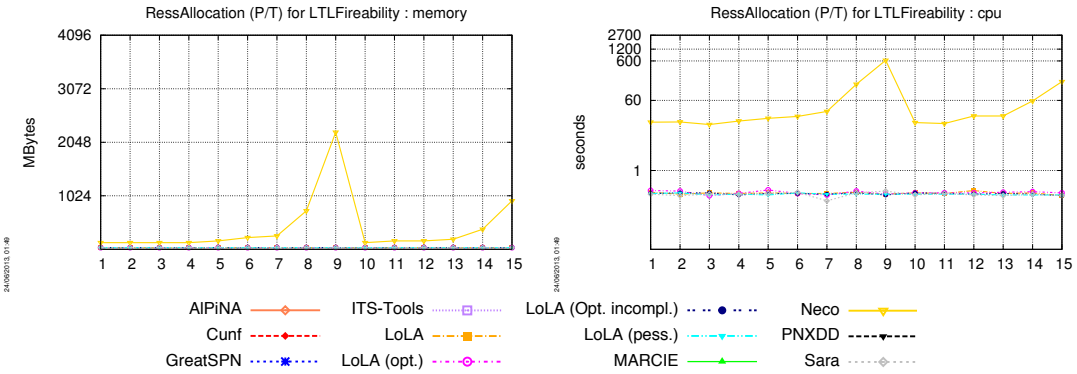


Planning (P/T) No instance of this model could be computed for the **LTLFireability** examination.

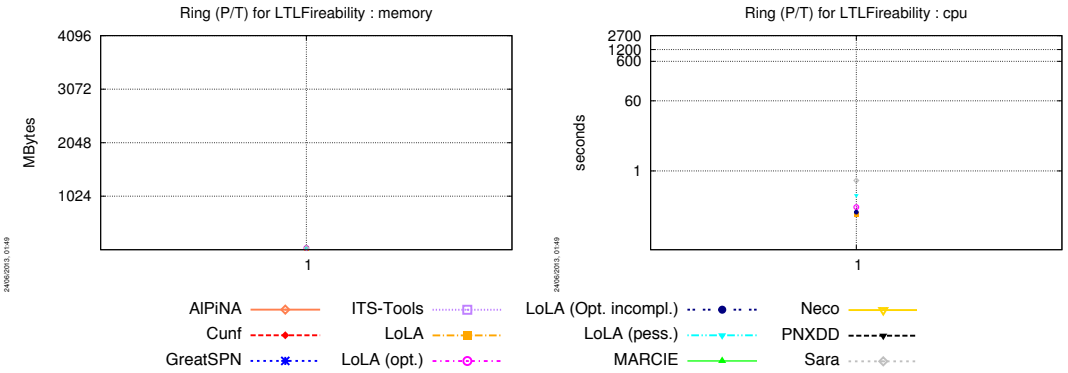
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



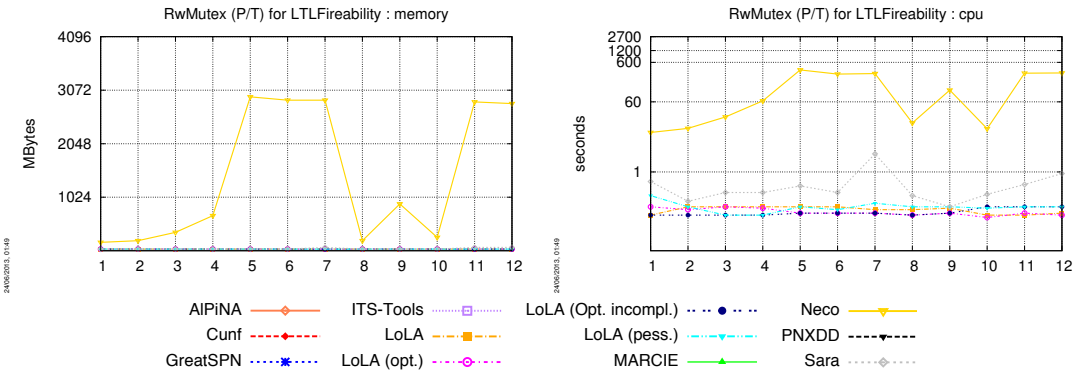
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

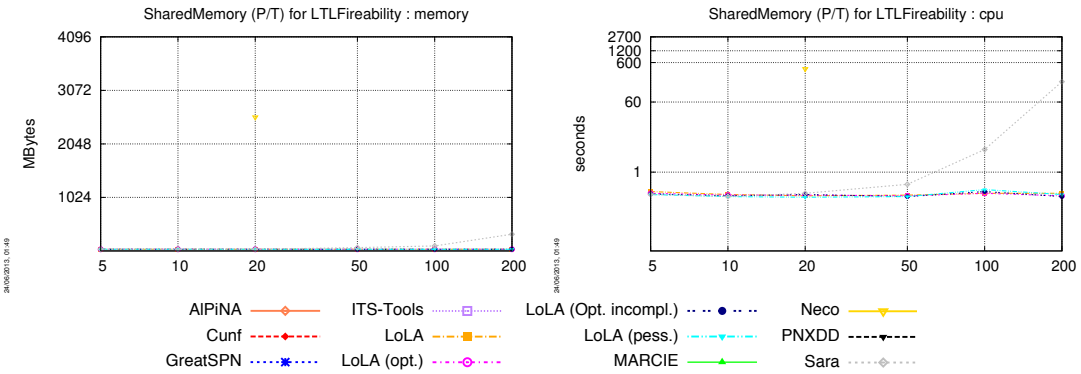


RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



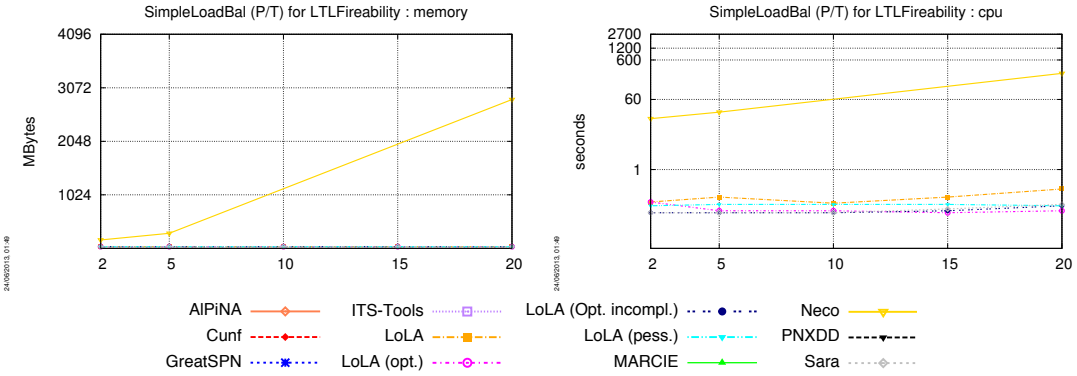
SharedMemory (colored) No instance of this model could be computed for the **LTLFireability** examination.

SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



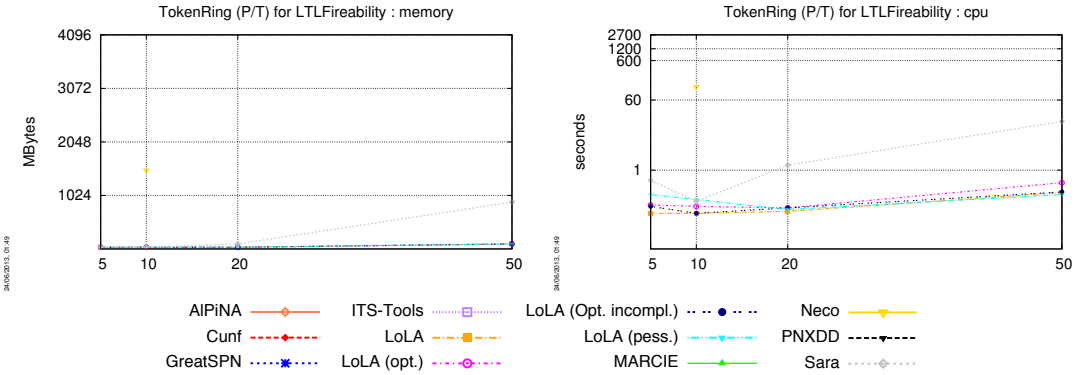
SimpleLoadBal (colored) No instance of this model could be computed for the **LTLFireability** examination.

SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

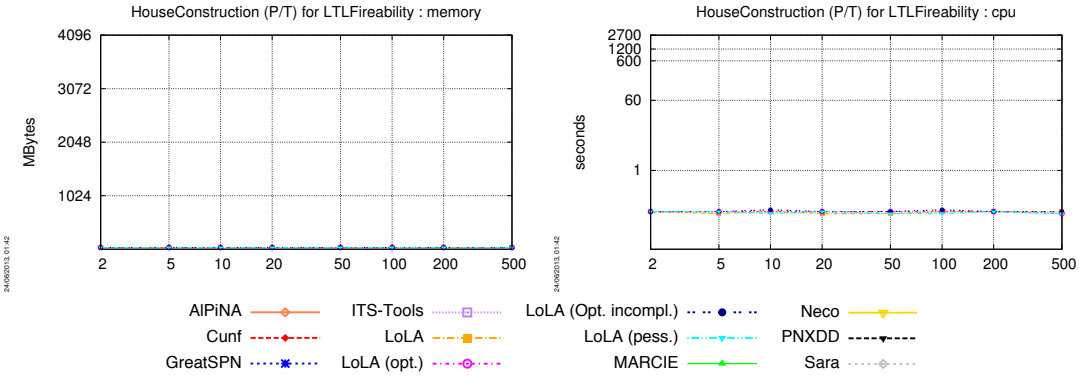


TokenRing (colored) No instance of this model could be computed for the **LTLFireability** examination.

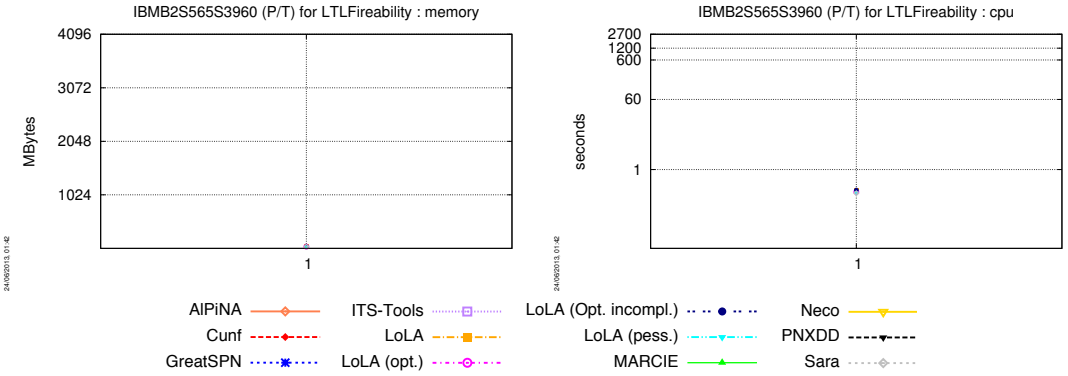
TokenRing (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

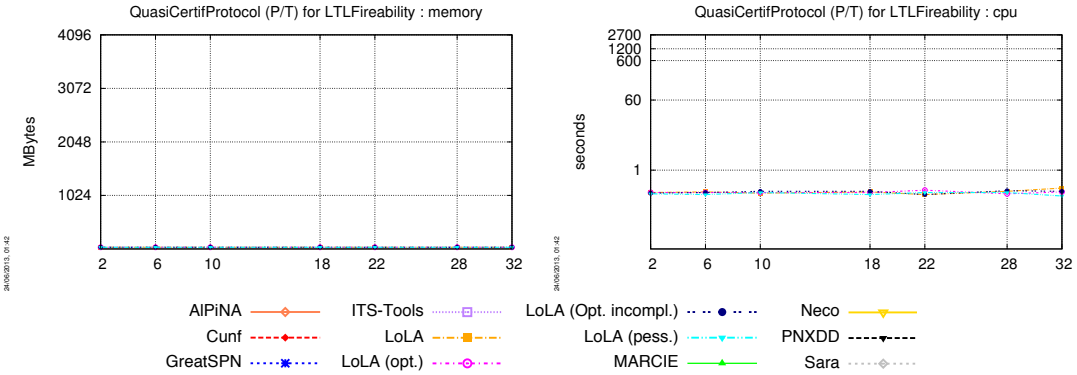


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

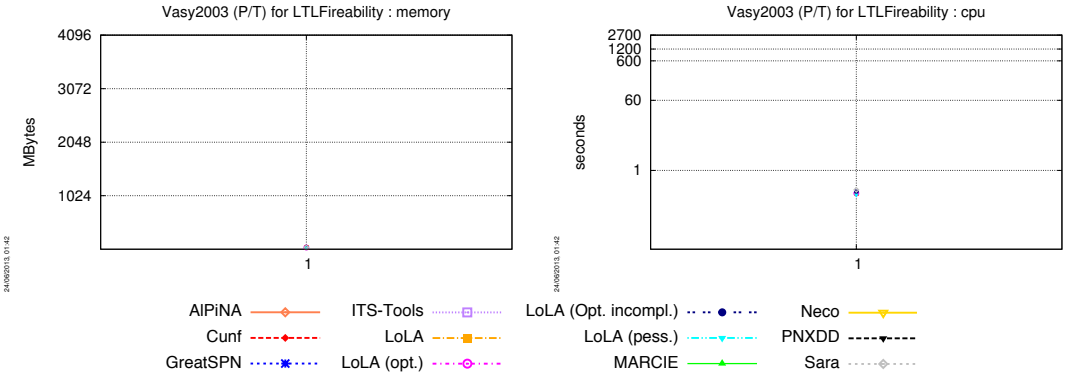


QuasiCertifProtocol (colored) No instance of this model could be computed for the **LTLFireability** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



19.2 Outputs for the LTLFireability Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
03	nc	nc	nc	nc	nc	nc
04	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
CSRepetitions (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	FFFFTFFF	cc
03	cc	cc	cc	cc	to	cc
04	cc	cc	cc	cc	to	cc
05	cc	cc	cc	cc	cc	cc
07	cc	cc	cc	cc	cc	cc
10	cc	cc	cc	cc	cc	cc
Dekker (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
010	cc	cc	cc	cc	FTFTFFFF	cc
015	cc	cc	cc	cc	FFFTTFFF	cc
020	cc	cc	cc	cc	FFFFFFFF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	nc	cc	cc	cc	cc	cc
DotAndBoxes (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	nc	cc
10	cc	cc	cc	cc	nc	cc
Echo (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara

d02r09	cc	cc	cc	cc	nc	cc
d02r11	cc	cc	cc	cc	nc	cc
d02r15	cc	cc	cc	cc	nc	cc
d02r19	cc	cc	cc	cc	nc	cc
d03r03	cc	cc	cc	cc	nc	cc
d03r05	cc	cc	cc	cc	nc	cc
d03r07	cc	cc	cc	cc	nc	cc
d04r03	cc	cc	cc	cc	nc	cc
d05r03	cc	cc	cc	cc	nc	cc
Eratosthenes (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
010	cc	cc	cc	cc	TTFTTTTT	cc
020	cc	cc	cc	cc	TTTTFTTT	cc
050	cc	cc	cc	cc	TTFFTTTF	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	cc	cc
FMS (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
002	cc	cc	cc	cc	FTTTFFFF	cc
005	cc	cc	cc	cc	FTFFFFFF	cc
010	cc	cc	cc	cc	FFFFFFFF	cc
020	cc	cc	cc	cc	FFFFTFTT	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	cc	cc
GlobalRessAlloc (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc
GlobalRessAlloc (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	cc	cc	cc	cc	nc	cc
05	cc	cc	cc	cc	nc	cc
Kanban (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
0005	cc	cc	cc	cc	FFFTFFTF	cc
0010	cc	cc	cc	cc	FFFTTFFF	cc
0020	cc	cc	cc	cc	FTFTTFFF	cc
0050	cc	cc	cc	cc	cc	cc
0100	cc	cc	cc	cc	cc	cc
0200	cc	cc	cc	cc	cc	cc
0500	cc	cc	cc	cc	cc	cc
1000	cc	cc	cc	cc	cc	cc
LamportFastMutEx (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc
LamportFastMutEx (P/T)						

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	FFFFFFFF	cc
3	cc	cc	cc	cc	FFFFTFFF	cc
4	cc	cc	cc	cc	to	cc
5	cc	cc	cc	cc	to	cc
6	cc	cc	cc	cc	to	cc
7	cc	cc	cc	cc	to	cc
8	cc	cc	cc	cc	to	cc

MAPK (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
008	cc	cc	cc	cc	FFFFTFFF	cc
020	cc	cc	cc	cc	FFFTTFFF	cc
040	cc	cc	cc	cc	cc	cc
080	cc	cc	cc	cc	cc	cc
160	cc	cc	cc	cc	cc	cc
320	cc	cc	cc	cc	cc	cc

NeoElection (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	to	cc
3	cc	cc	cc	cc	cc	cc
4	cc	cc	cc	cc	cc	cc
5	cc	cc	cc	cc	cc	cc
6	cc	cc	cc	cc	cc	cc
7	cc	cc	cc	cc	cc	cc
8	cc	cc	cc	cc	cc	cc

PermAdmissibility (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
01	nc	nc	nc	nc	nc	nc
02	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
01	cc	cc	cc	cc	nc	cc
02	cc	cc	cc	cc	nc	cc
05	cc	cc	cc	cc	nc	cc
10	cc	cc	cc	cc	nc	cc
20	cc	cc	cc	cc	nc	cc
50	cc	cc	cc	cc	nc	cc

Peterson (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara

2	cc	cc	cc	cc	FFFTTFFF	cc
3	cc	cc	cc	cc	to	cc
4	cc	cc	cc	cc	cc	cc
5	cc	cc	cc	cc	cc	cc
6	cc	cc	cc	cc	cc	cc
7	cc	cc	cc	cc	cc	cc

Philosophers (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc

Philosophers (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	cc	cc	cc	cc	FFFFFFTT	cc
000010	cc	cc	cc	cc	FTFFFFTF	cc
000020	cc	cc	cc	cc	to	cc
000050	cc	cc	cc	cc	cc	cc
000100	cc	cc	cc	cc	cc	cc
000200	cc	cc	cc	cc	cc	cc
000500	cc	cc	cc	cc	cc	cc
001000	cc	cc	cc	cc	cc	cc
002000	cc	cc	cc	cc	cc	cc
005000	cc	cc	cc	cc	cc	cc
010000	cc	cc	cc	cc	cc	cc

PhilosophersDyn (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc

PhilosophersDyn (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	cc	cc	cc	cc	to	cc
10	cc	cc	cc	cc	cc	cc
20	cc	cc	cc	cc	cc	cc

Planning (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
nf	nf	nf	nf	nf	nf	

Railroad (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	cc	cc	cc	cc	FFFFFFTT	cc
010	cc	cc	cc	cc	FFFTFFFF	cc
020	cc	cc	cc	cc	FFTTFFFF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc

RessAllocation (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
R002C002	cc	cc	cc	cc	FTFTFFFF	cc
R003C002	cc	cc	cc	cc	FFFTTTTT	cc

R003C003	cc	cc	cc	cc	FTFTFFFF	cc
R003C005	cc	cc	cc	cc	FFFFFFFF	cc
R003C010	cc	cc	cc	cc	FFTTFFTF	cc
R003C015	cc	cc	cc	cc	FFFFTFFF	cc
R003C020	cc	cc	cc	cc	FFFFFFFF	cc
R003C050	cc	cc	cc	cc	FTFFTFFF	cc
R003C100	cc	cc	cc	cc	FFFFFFTF	cc
R005C002	cc	cc	cc	cc	FFTTFFTF	cc
R010C002	cc	cc	cc	cc	FFFTFFFF	cc
R015C002	cc	cc	cc	cc	FFFFTFFF	cc
R020C002	cc	cc	cc	cc	FFFFTFFF	cc
R050C002	cc	cc	cc	cc	FFFFFFFF	cc
R100C002	cc	cc	cc	cc	FFFFTFFF	cc

Ring (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	cc	cc	cc	cc	nc	cc

RwMutex (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
r0010w0010	cc	cc	cc	cc	FFFFFFTF	cc
r0010w0020	cc	cc	cc	cc	FTTTFFFT	cc
r0010w0050	cc	cc	cc	cc	FTFFTFFF	cc
r0010w0100	cc	cc	cc	cc	FTFTFTTT	cc
r0010w0500	cc	cc	cc	cc	cc	cc
r0010w1000	cc	cc	cc	cc	cc	cc
r0010w2000	cc	cc	cc	cc	cc	cc
r0020w0010	cc	cc	cc	cc	FFFTFFTF	cc
r0100w0010	cc	cc	cc	cc	FTTTTFTF	cc
r0500w0010	cc	cc	cc	cc	cc	cc
r1000w0010	cc	cc	cc	cc	cc	cc
r2000w0010	cc	cc	cc	cc	cc	cc

SharedMemory (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc

SharedMemory (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	cc	cc	cc	cc	to	cc
000010	cc	cc	cc	cc	to	cc
000020	cc	cc	cc	cc	cc	cc
000050	cc	cc	cc	cc	cc	cc
000100	cc	cc	cc	cc	cc	cc
000200	cc	cc	cc	cc	cc	cc

SimpleLoadBal (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc

20	nc	nc	nc	nc	nc	nc
SimpleLoadBal (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	FTTTTFFF	cc
05	cc	cc	cc	cc	FFFTTFFF	cc
10	cc	cc	cc	cc	to	cc
15	cc	cc	cc	cc	to	cc
20	cc	cc	cc	cc	cc	cc
TokenRing (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	nc	nc	nc	nc	nc	nc
010	nc	nc	nc	nc	nc	nc
020	nc	nc	nc	nc	nc	nc
050	nc	nc	nc	nc	nc	nc
100	nc	nc	nc	nc	nc	nc
200	nc	nc	nc	nc	nc	nc
500	nc	nc	nc	nc	nc	nc
TokenRing (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	cc	cc	cc	cc	to	cc
010	cc	cc	cc	cc	cc	cc
020	cc	cc	cc	cc	cc	cc
050	cc	cc	cc	cc	cc	cc

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
002	cc	cc	cc	cc	cc	cc
005	cc	cc	cc	cc	cc	cc
010	cc	cc	cc	cc	cc	cc
020	cc	cc	cc	cc	cc	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	cc	cc
IBMB2S565S3960 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	cc	cc	cc	cc	cc	cc
QuasiCertifProtocol (colored)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	cc	cc
06	cc	cc	cc	cc	cc	cc
10	cc	cc	cc	cc	cc	cc
18	cc	cc	cc	cc	cc	cc
22	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc
32	cc	cc	cc	cc	cc	cc
Vasy2003 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	cc	cc	cc	cc	cc	cc

19.3 Score for the LTLFireability Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
Total Score	**0**	**0**	**0**	**0**	**88**	**0**
CSRepetitions (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
CSRepetitions (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	1	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**4**	**0**
Dekker (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
DotAndBoxes (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0

subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Echo (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Eratosthenes (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
FMS (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	4	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**7**	**0**
GlobalRessAlloc (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
GlobalRessAlloc (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Kanban (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
LamportFastMutEx (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
LamportFastMutEx (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**
MAPK (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0

instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**

NeoElection (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

PermAdmissibility (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

PermAdmissibility (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	1	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**4**	**0**

Philosophers (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Philosophers (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**

PhilosophersDyn (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

PhilosophersDyn (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Planning (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Railroad (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**

RessAllocation (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	15	0
max reached	0	0	0	0	2	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**20**	**0**

Ring (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

RwMutex (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	6	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**9**	**0**

SharedMemory (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

SharedMemory (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0

max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
SimpleLoadBal (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
SimpleLoadBal (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**
TokenRing (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
TokenRing (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
Total Score	**0**	**0**	**0**	**0**	**0**	**0**
HouseConstruction (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Vasy2003 (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

19.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models

1

Neco
88 points

For "Surprise" Models

No tool could complete this examination.

Global

1

Neco
88 points

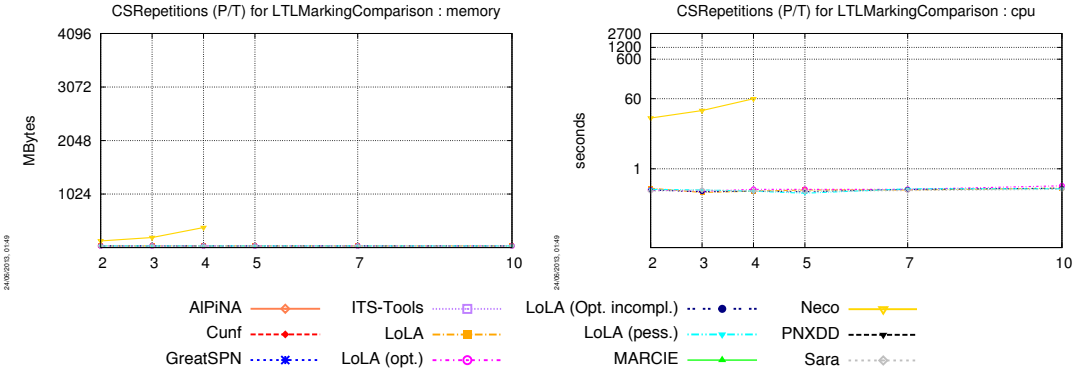
20 The LTLMarkingComparison Examination

This examination deals with LTL properties dealing with marking comparison only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

20.1 Handling of Models by Tools

CSRepetitions (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

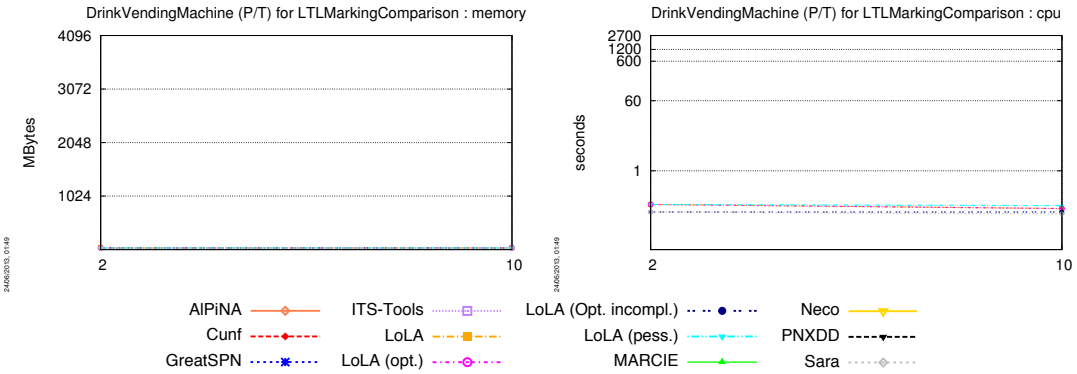


Dekker (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

DotAndBoxes (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

DrinkVendingMachine (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



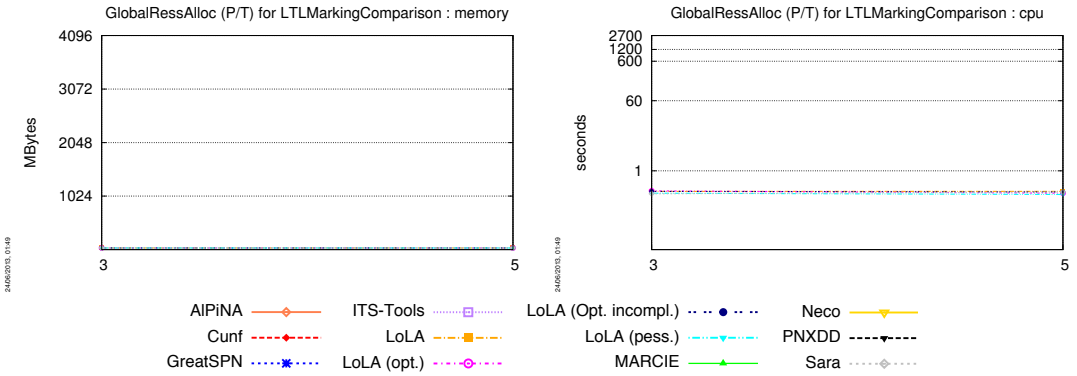
Echo (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

Eratosthenes (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

FMS (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

GlobalRessAlloc (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

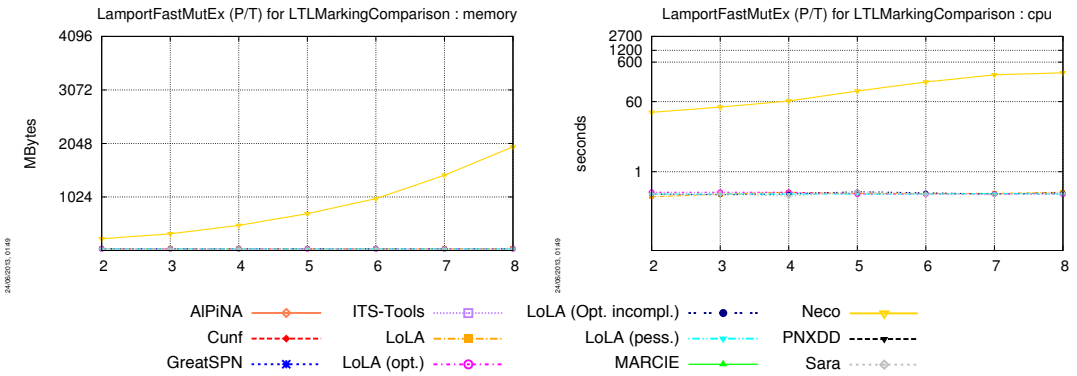
GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Kanban (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

LamportFastMutEx (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

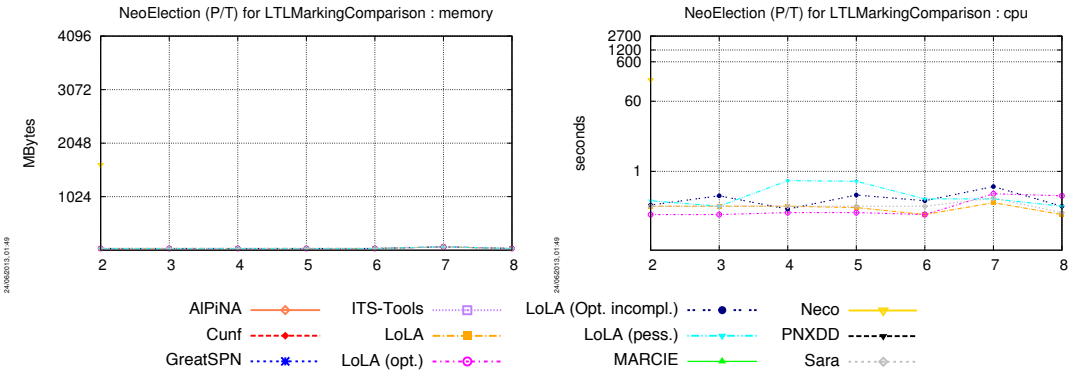
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



MAPK (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

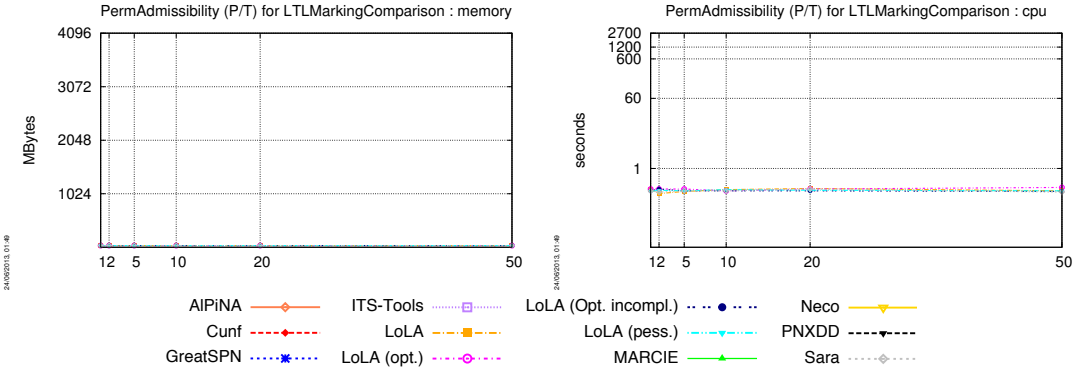
NeoElection (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



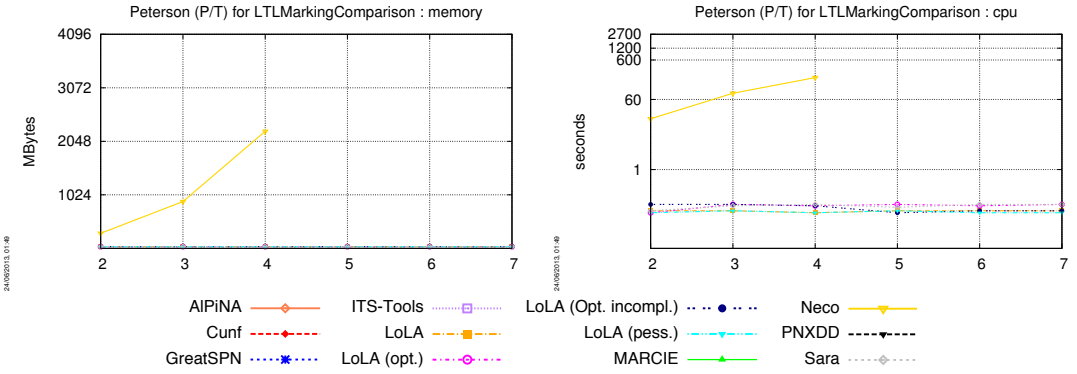
PermAdmissibility (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



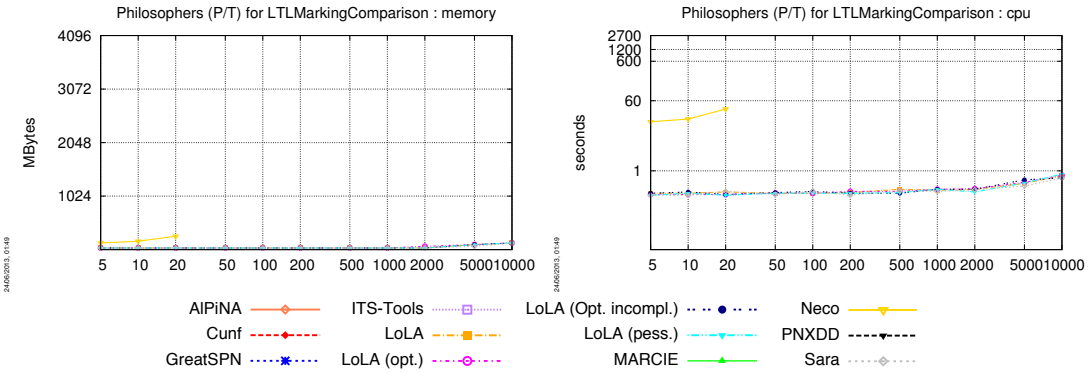
Peterson (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



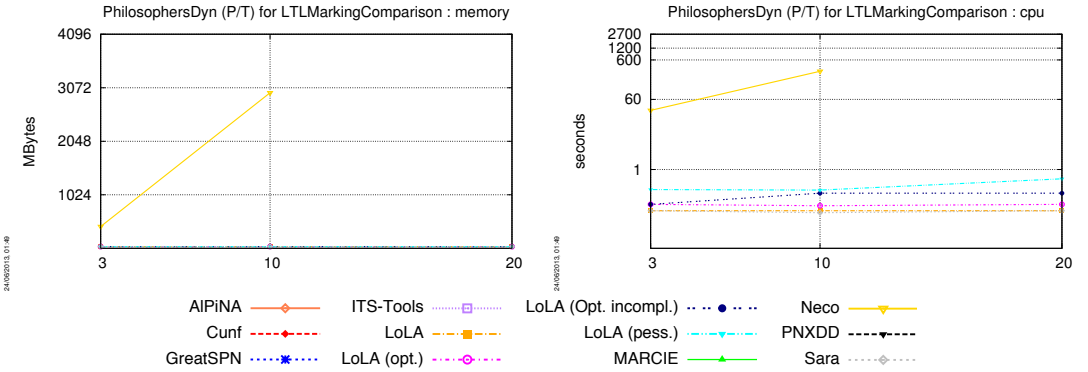
Philosophers (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



PhilosophersDyn (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Planning (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

Railroad (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

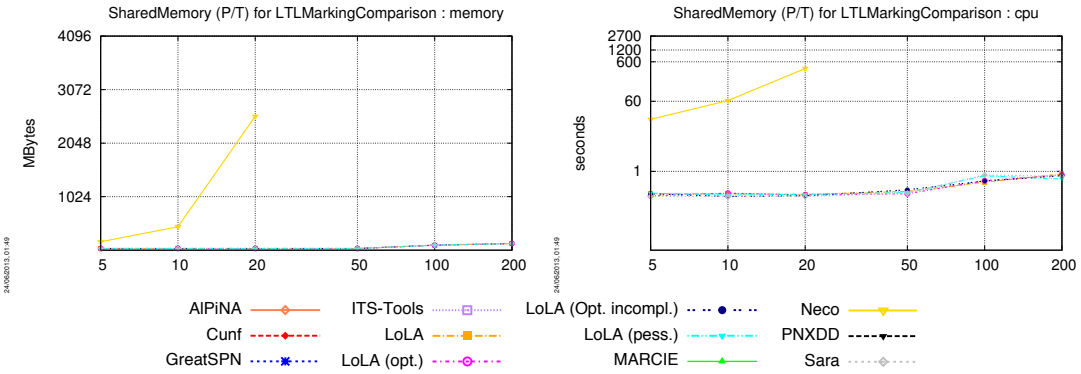
RessAllocation (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

Ring (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

RwMutex (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

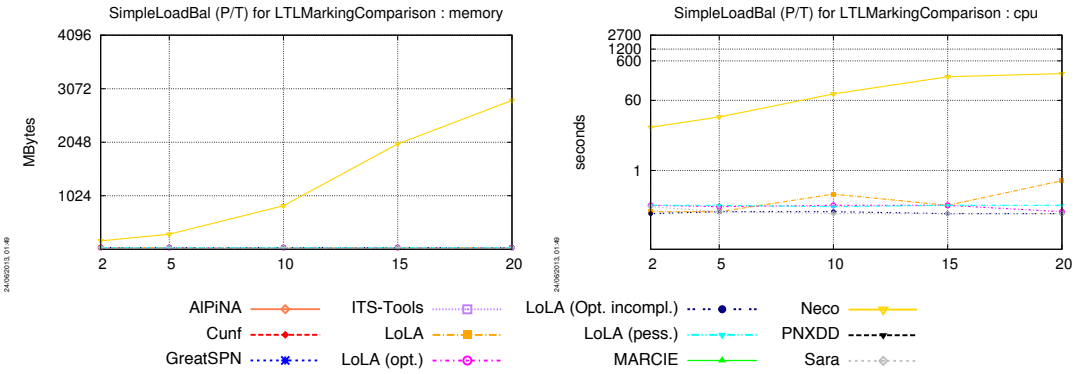
SharedMemory (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



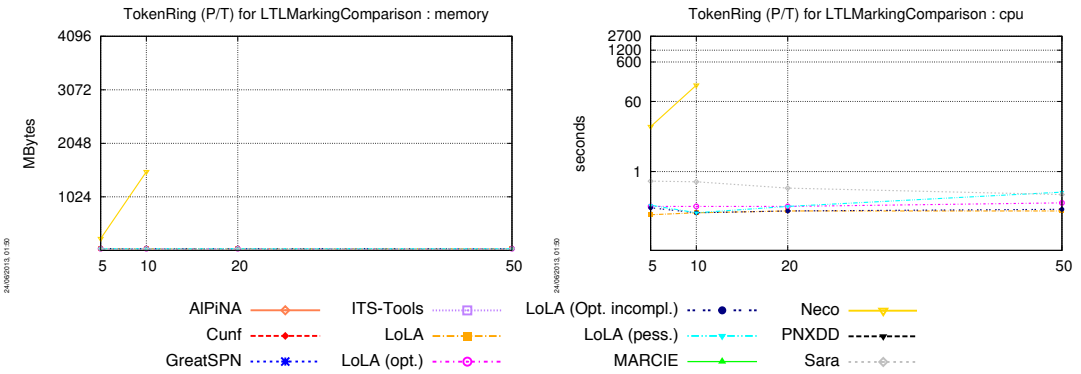
SimpleLoadBal (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



TokenRing (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

TokenRing (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

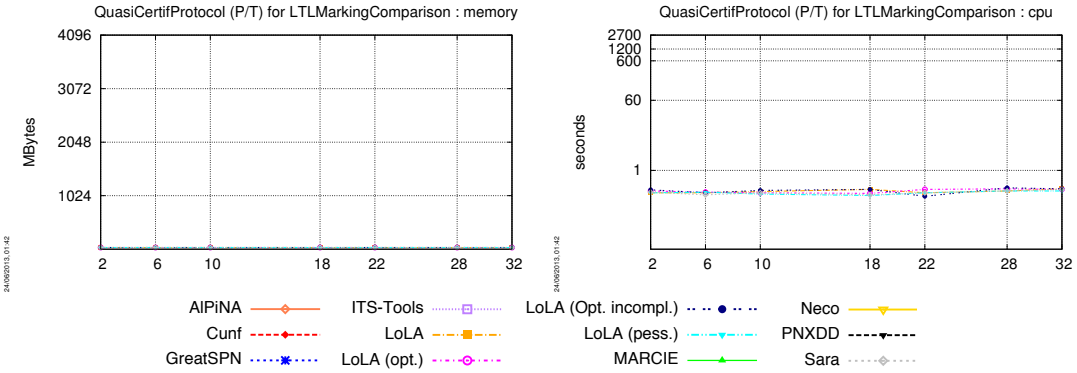


HouseConstruction (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

IBMB2S565S3960 (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

QuasiCertifProtocol (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

20.2 Outputs for the LTLMarkingComparison Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
03	nc	nc	nc	nc	nc	nc
04	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc

CSRepetitions (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	FFFTTFFF	cc
03	cc	cc	cc	cc	FFFFTFFF	cc
04	cc	cc	cc	cc	FFFTFFFF	cc
05	cc	cc	cc	cc	cc	cc
07	cc	cc	cc	cc	cc	cc
10	cc	cc	cc	cc	cc	cc
Dekker (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
010	nf	nf	nf	nf	nf	nf
015	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf
DotAndBoxes (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	nc	cc
10	cc	cc	cc	cc	nc	cc
Echo (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
d02r09	nf	nf	nf	nf	nf	nf
d02r11	nf	nf	nf	nf	nf	nf
d02r15	nf	nf	nf	nf	nf	nf
d02r19	nf	nf	nf	nf	nf	nf
d03r03	nf	nf	nf	nf	nf	nf
d03r05	nf	nf	nf	nf	nf	nf
d03r07	nf	nf	nf	nf	nf	nf
d04r03	nf	nf	nf	nf	nf	nf
d05r03	nf	nf	nf	nf	nf	nf
Eratosthenes (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
010	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf
FMS (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
002	nf	nf	nf	nf	nf	nf
005	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf
GlobalRessAlloc (colored)						

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc

GlobalRessAlloc (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	cc	cc	cc	cc	nc	cc
05	cc	cc	cc	cc	nc	cc

Kanban (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
0005	nf	nf	nf	nf	nf	nf
0010	nf	nf	nf	nf	nf	nf
0020	nf	nf	nf	nf	nf	nf
0050	nf	nf	nf	nf	nf	nf
0100	nf	nf	nf	nf	nf	nf
0200	nf	nf	nf	nf	nf	nf
0500	nf	nf	nf	nf	nf	nf
1000	nf	nf	nf	nf	nf	nf

LamportFastMutEx (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc

LamportFastMutEx (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	FFFFFFFF	cc
3	cc	cc	cc	cc	FFFFTFFF	cc
4	cc	cc	cc	cc	FFFFFFFF	cc
5	cc	cc	cc	cc	FFFFFFFF	cc
6	cc	cc	cc	cc	FFFFFFFF	cc
7	cc	cc	cc	cc	FFFFTFFT	cc
8	cc	cc	cc	cc	FFFFFFFF	cc

MAPK (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
008	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf
040	nf	nf	nf	nf	nf	nf
080	nf	nf	nf	nf	nf	nf
160	nf	nf	nf	nf	nf	nf
320	nf	nf	nf	nf	nf	nf

NeoElection (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	FFFTFFFF	cc

3	cc	cc	cc	cc	cc	cc
4	cc	cc	cc	cc	cc	cc
5	cc	cc	cc	cc	cc	cc
6	cc	cc	cc	cc	cc	cc
7	cc	cc	cc	cc	cc	cc
8	cc	cc	cc	cc	cc	cc

PermAdmissibility (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
01	nc	nc	nc	nc	nc	nc
02	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
01	cc	cc	cc	cc	nc	cc
02	cc	cc	cc	cc	nc	cc
05	cc	cc	cc	cc	nc	cc
10	cc	cc	cc	cc	nc	cc
20	cc	cc	cc	cc	nc	cc
50	cc	cc	cc	cc	nc	cc

Peterson (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	FFFFFFFF	cc
3	cc	cc	cc	cc	FFFTFFFF	cc
4	cc	cc	cc	cc	cc	cc
5	cc	cc	cc	cc	cc	cc
6	cc	cc	cc	cc	cc	cc
7	cc	cc	cc	cc	cc	cc

Philosophers (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc

Philosophers (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	cc	cc	cc	cc	FFFTFFFF	cc
000010	cc	cc	cc	cc	FFTTFFFF	cc
000020	cc	cc	cc	cc	FFFTFFFF	cc
000050	cc	cc	cc	cc	cc	cc
000100	cc	cc	cc	cc	cc	cc

000200	cc	cc	cc	cc	cc	cc
000500	cc	cc	cc	cc	cc	cc
001000	cc	cc	cc	cc	cc	cc
002000	cc	cc	cc	cc	cc	cc
005000	cc	cc	cc	cc	cc	cc
010000	cc	cc	cc	cc	cc	cc

PhilosophersDyn (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc

PhilosophersDyn (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	cc	cc	cc	cc	FFFTTFFF	cc
10	cc	cc	cc	cc	cc	cc
20	cc	cc	cc	cc	cc	cc

Planning (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
nf	nf	nf	nf	nf	nf	

Railroad (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf

RessAllocation (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
R002C002	nf	nf	nf	nf	nf	nf
R003C002	nf	nf	nf	nf	nf	nf
R003C003	nf	nf	nf	nf	nf	nf
R003C005	nf	nf	nf	nf	nf	nf
R003C010	nf	nf	nf	nf	nf	nf
R003C015	nf	nf	nf	nf	nf	nf
R003C020	nf	nf	nf	nf	nf	nf
R003C050	nf	nf	nf	nf	nf	nf
R003C100	nf	nf	nf	nf	nf	nf
R005C002	nf	nf	nf	nf	nf	nf
R010C002	nf	nf	nf	nf	nf	nf
R015C002	nf	nf	nf	nf	nf	nf
R020C002	nf	nf	nf	nf	nf	nf
R050C002	nf	nf	nf	nf	nf	nf
R100C002	nf	nf	nf	nf	nf	nf

Ring (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	nf	nf	nf	nf	nf	nf

RwMutex (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
r0010w0010	nf	nf	nf	nf	nf	nf
r0010w0020	nf	nf	nf	nf	nf	nf
r0010w0050	nf	nf	nf	nf	nf	nf
r0010w0100	nf	nf	nf	nf	nf	nf
r0010w0500	nf	nf	nf	nf	nf	nf
r0010w1000	nf	nf	nf	nf	nf	nf
r0010w2000	nf	nf	nf	nf	nf	nf
r0020w0010	nf	nf	nf	nf	nf	nf
r0100w0010	nf	nf	nf	nf	nf	nf
r0500w0010	nf	nf	nf	nf	nf	nf

r1000w0010	nf	nf	nf	nf	nf	nf
r2000w0010	nf	nf	nf	nf	nf	nf
SharedMemory (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc
SharedMemory (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	cc	cc	cc	cc	FFFFFFFF	cc
000010	cc	cc	cc	cc	FFFFTFFF	cc
000020	cc	cc	cc	cc	cc	cc
000050	cc	cc	cc	cc	cc	cc
000100	cc	cc	cc	cc	cc	cc
000200	cc	cc	cc	cc	cc	cc
SimpleLoadBal (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc
SimpleLoadBal (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	FFFTFFFF	cc
05	cc	cc	cc	cc	FFFFTFFF	cc
10	cc	cc	cc	cc	FFFFFFFF	cc
15	cc	cc	cc	cc	FFFTTFFF	cc
20	cc	cc	cc	cc	cc	cc
TokenRing (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	nc	nc	nc	nc	nc	nc
010	nc	nc	nc	nc	nc	nc
020	nc	nc	nc	nc	nc	nc
050	nc	nc	nc	nc	nc	nc
100	nc	nc	nc	nc	nc	nc
200	nc	nc	nc	nc	nc	nc
500	nc	nc	nc	nc	nc	nc
TokenRing (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	cc	cc	cc	cc	FFFFTFFF	cc
010	cc	cc	cc	cc	FFFTFFFF	cc
020	cc	cc	cc	cc	cc	cc
050	cc	cc	cc	cc	cc	cc

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)								
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara		

002	nf	nf	nf	nf	nf	nf
005	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf
IBMB2S565S3960 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	nf	nf	nf	nf	nf	nf
QuasiCertifProtocol (colored)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	cc	cc
06	cc	cc	cc	cc	cc	cc
10	cc	cc	cc	cc	cc	cc
18	cc	cc	cc	cc	cc	cc
22	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc
32	cc	cc	cc	cc	cc	cc
Vasy2003 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	nf	nf	nf	nf	nf	nf

20.3 Score for the LTLMarkingComparison Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
Total Score	**0**	**0**	**0**	**0**	**54**	**0**
CSRepetitions (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

CSRepetitions (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
Dekker (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
DotAndBoxes (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Echo (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Eratosthenes (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
FMS (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
GlobalRessAlloc (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0

max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

GlobalRessAlloc (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Kanban (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

LamportFastMutEx (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

LamportFastMutEx (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	7	0
max reached	0	0	0	0	2	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**12**	**0**

MAPK (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	1	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**4**	**0**

PermAdmissibility (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

PermAdmissibility (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**

Philosophers (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Philosophers (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**

PhilosophersDyn (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

PhilosophersDyn (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	1	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**4**	**0**

Planning (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Railroad (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0

best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

RessAllocation (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Ring (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

RwMutex (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

SharedMemory (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

SharedMemory (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**

SimpleLoadBal (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

SimpleLoadBal (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	4	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**7**	**0**

TokenRing (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

TokenRing (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara

1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
Total Score	**0**	**0**	**0**	**0**	**0**	**0**
HouseConstruction (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Vasy2003 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

20.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models

1

Neco
54 points

For "Surprise" Models

No tool could complete this examination.

Global

1

Neco
54 points

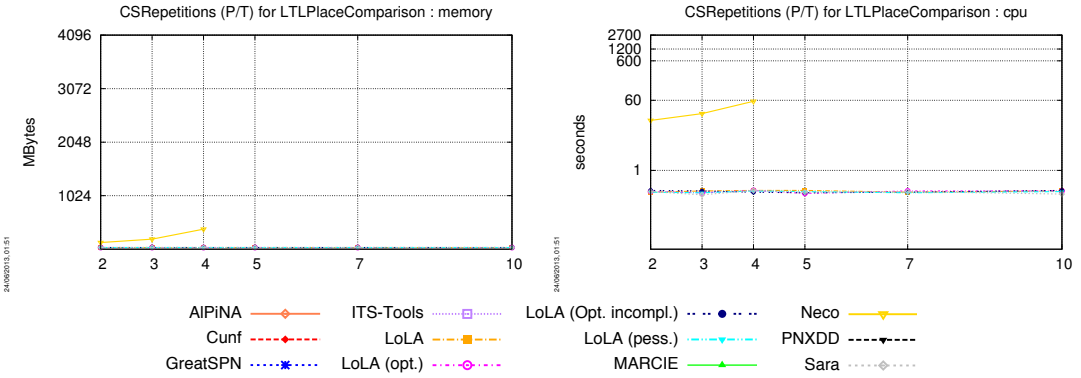
21 The LTLPlaceComparison Examination

This examination deals with LTL properties dealing with the comparison of places marking only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

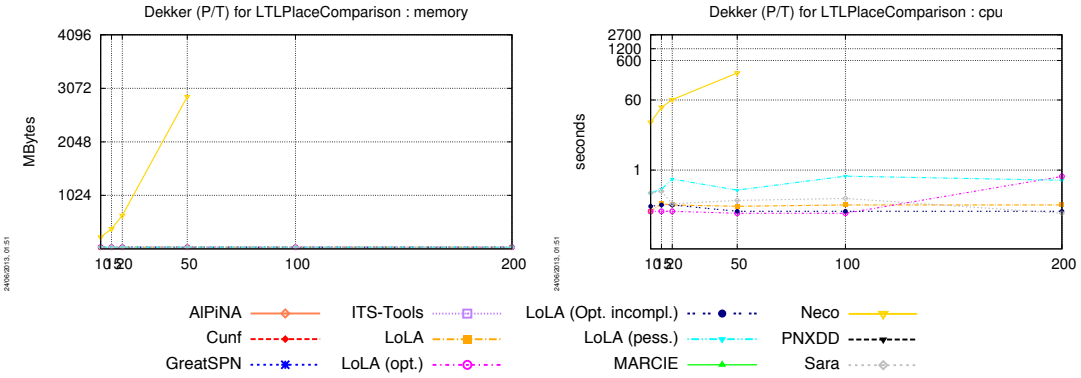
21.1 Handling of Models by Tools

CSRepetitions (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



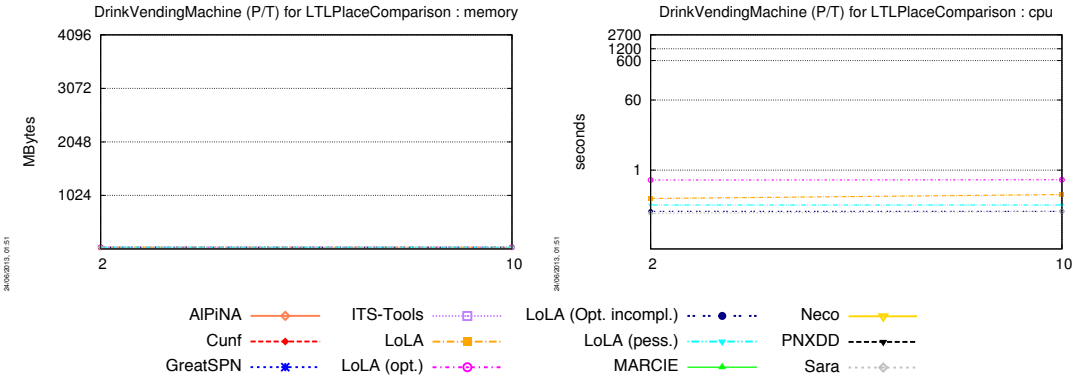
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



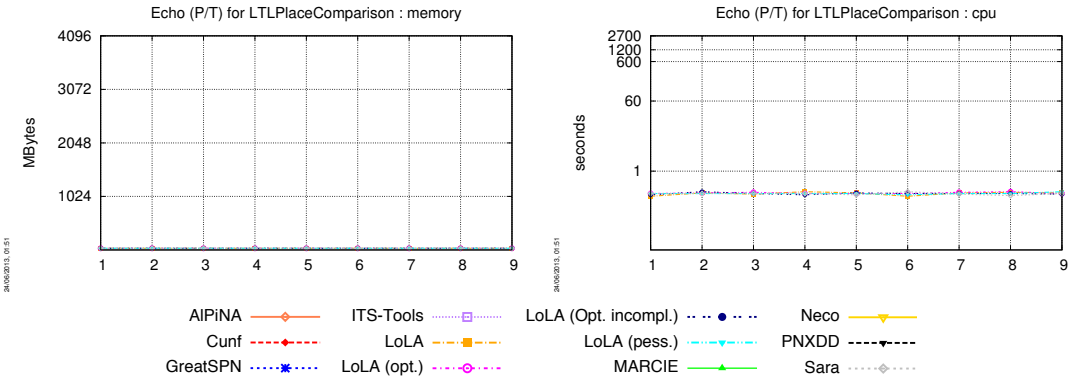
DotAndBoxes (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

DrinkVendingMachine (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

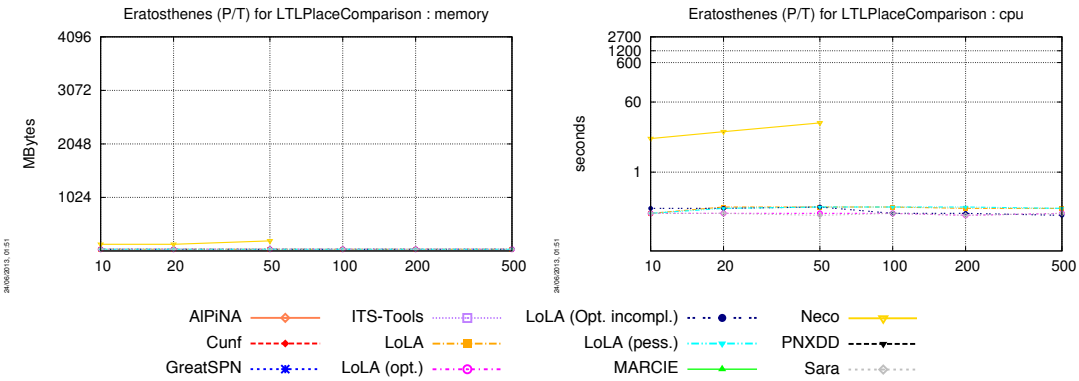
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



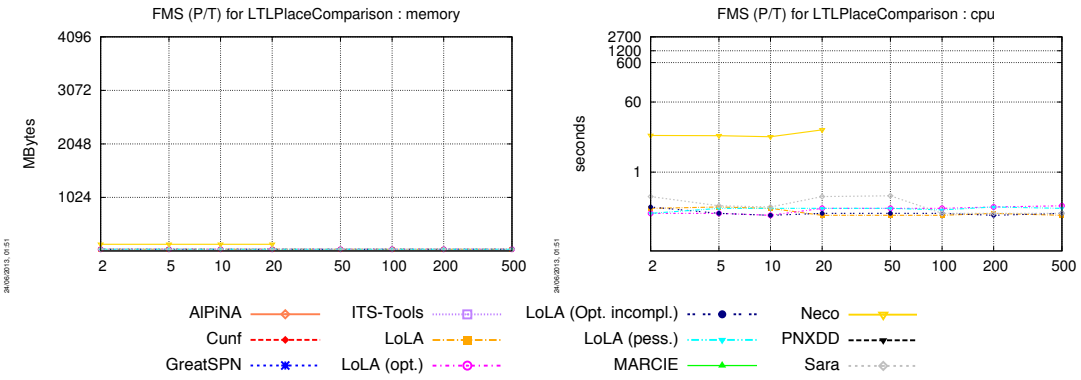
Echo (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

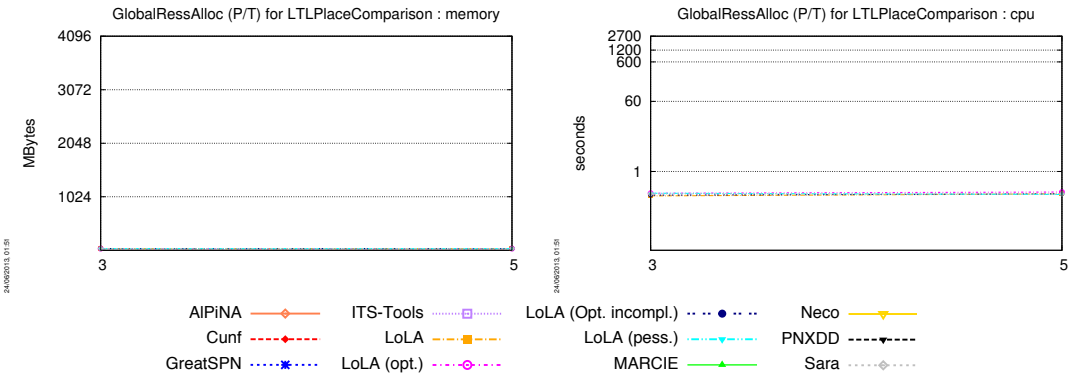


FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

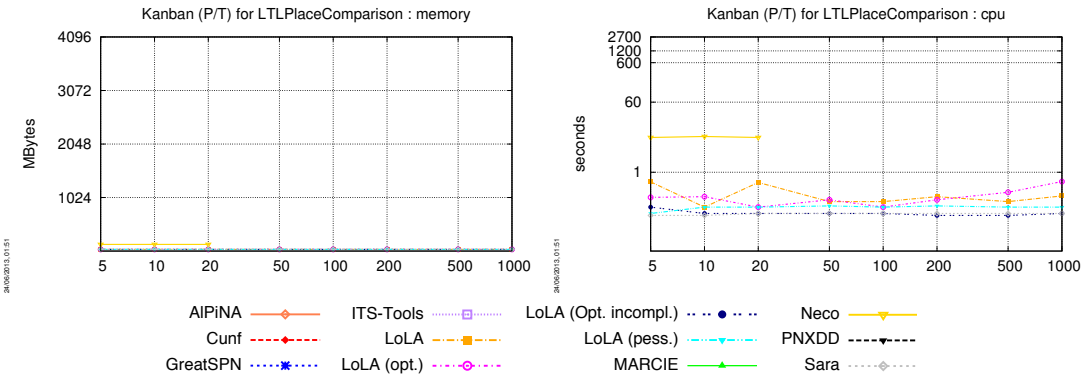


GlobalRessAlloc (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

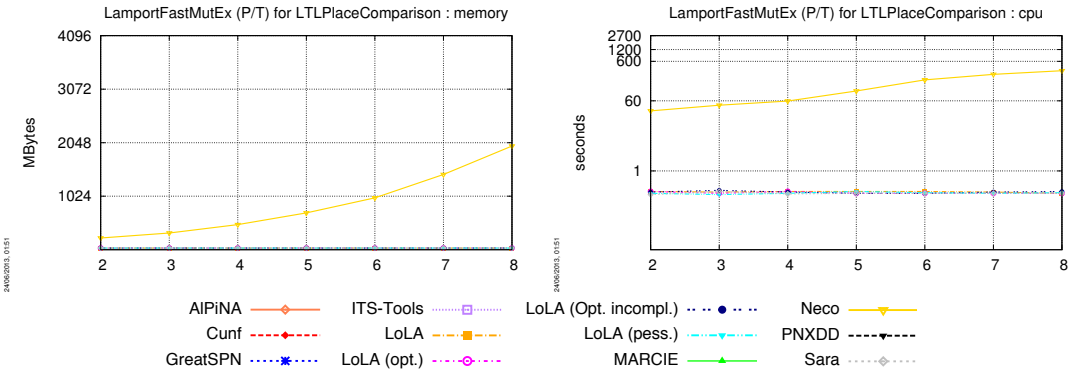


Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

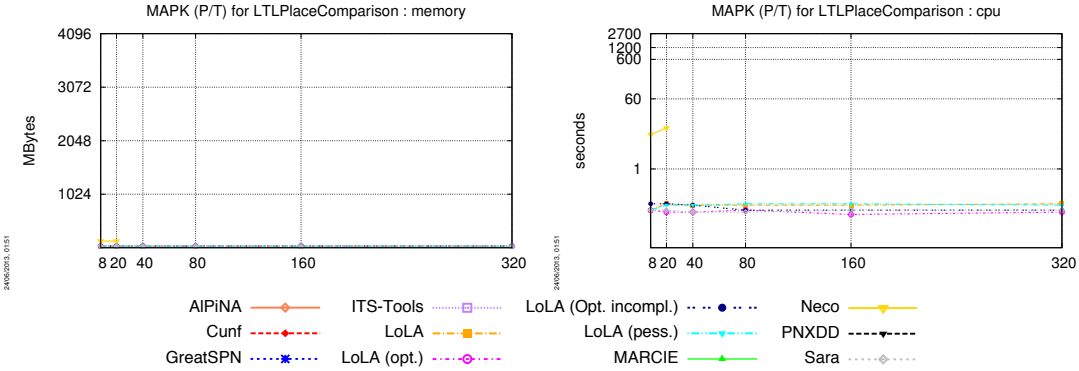


LamportFastMutEx (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

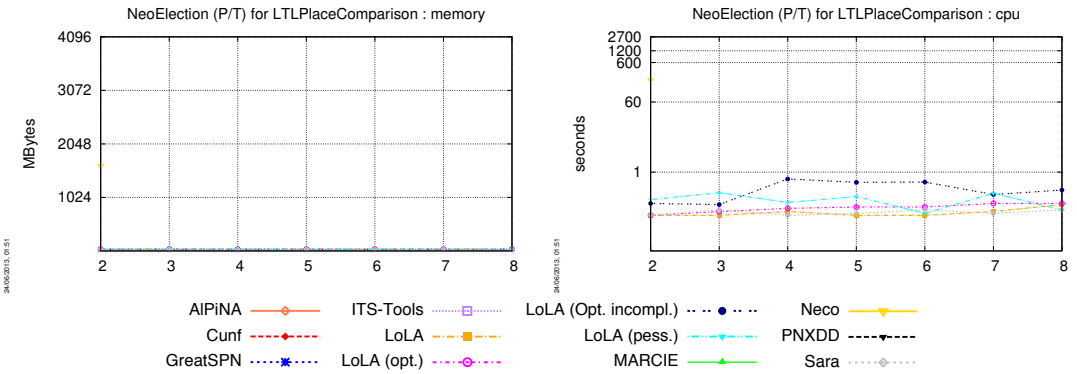


MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



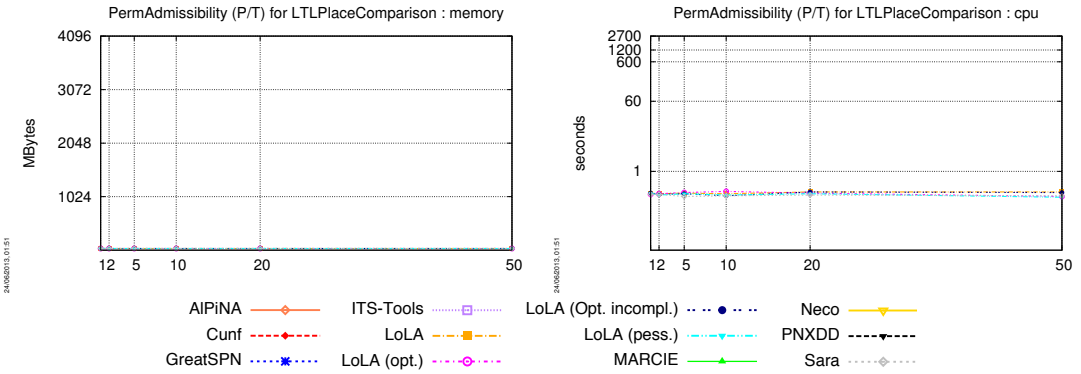
NeoElection (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



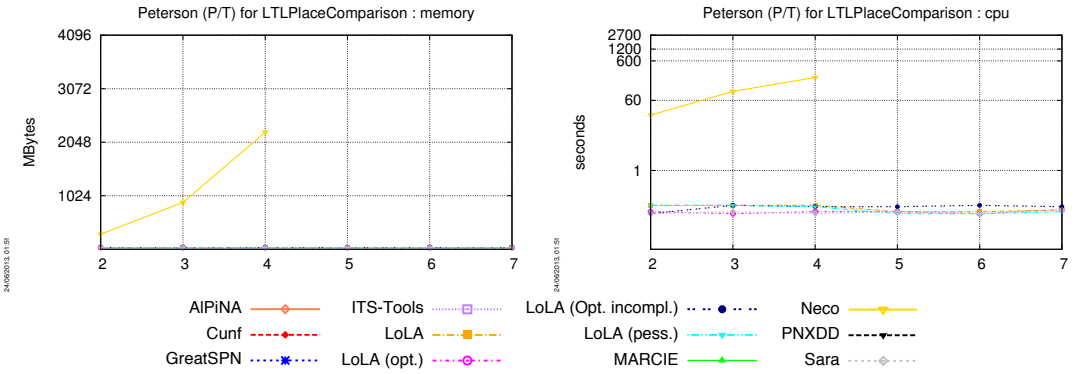
PermAdmissibility (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



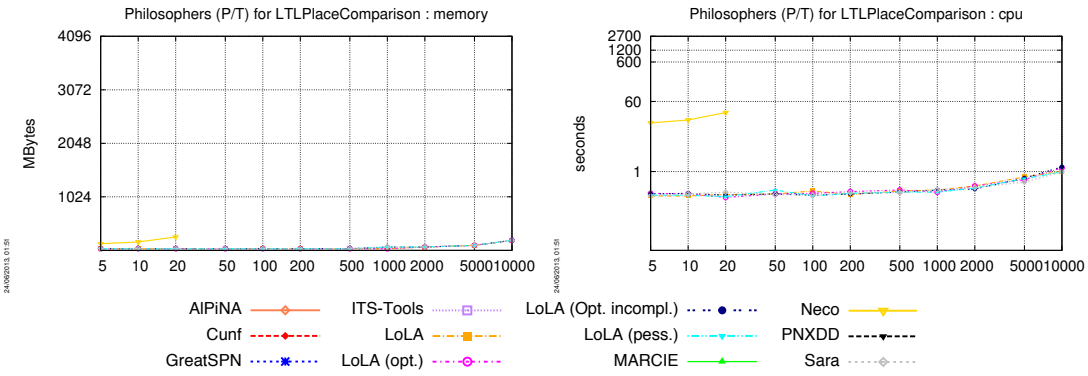
Peterson (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



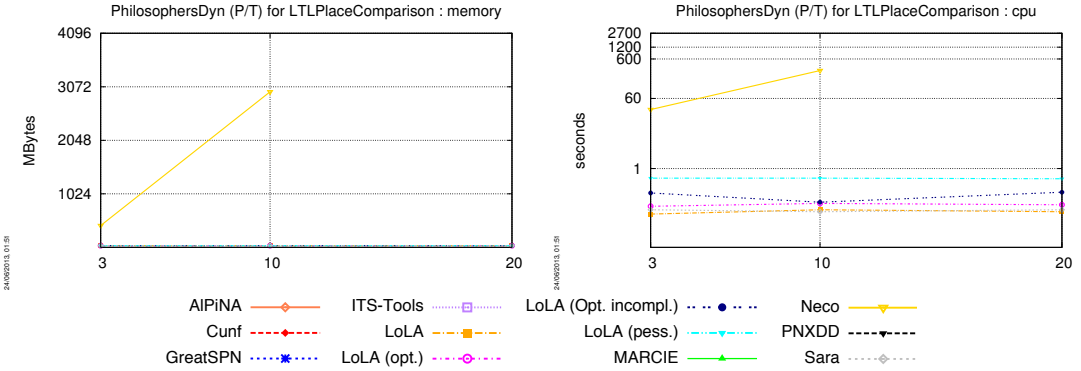
Philosophers (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



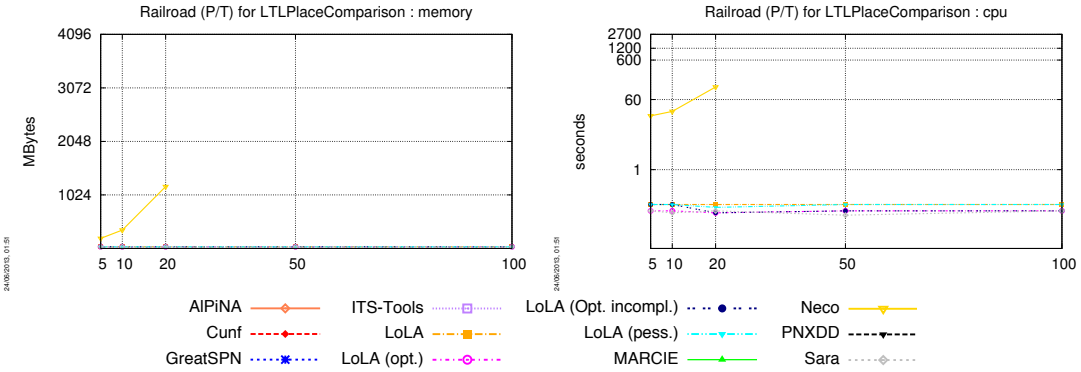
PhilosophersDyn (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

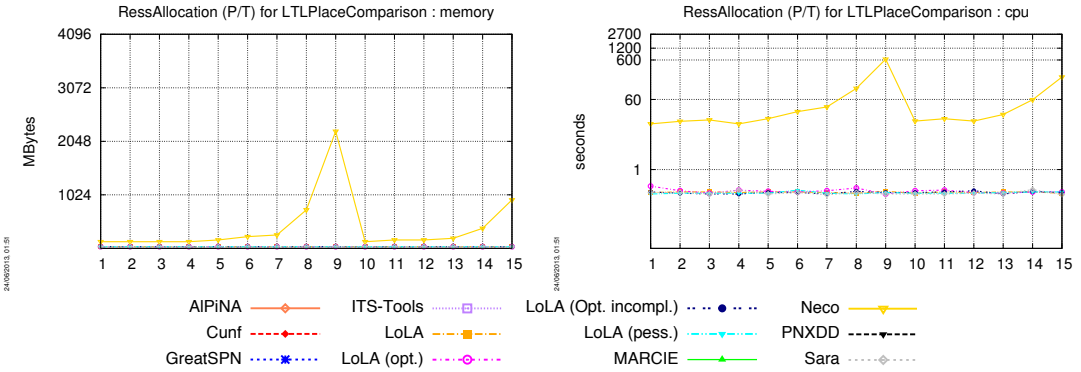


Planning (P/T) No instance of this model could be computed for the **LTLPlaceComparison** examination.

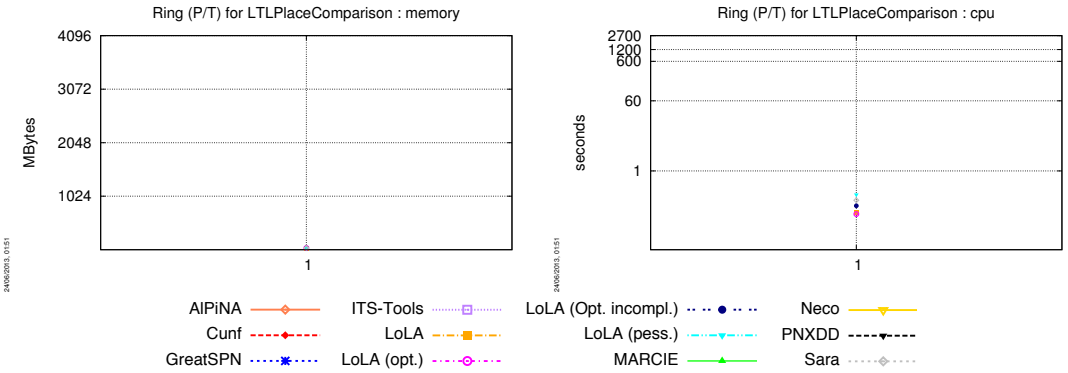
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



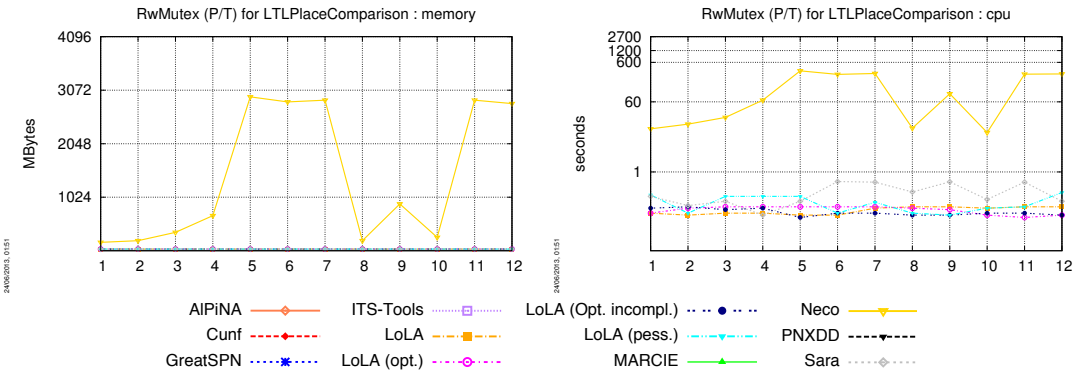
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

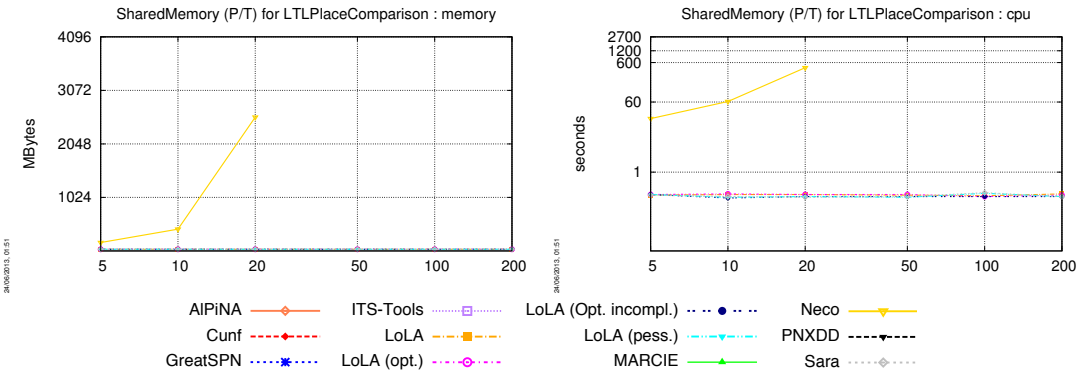


RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



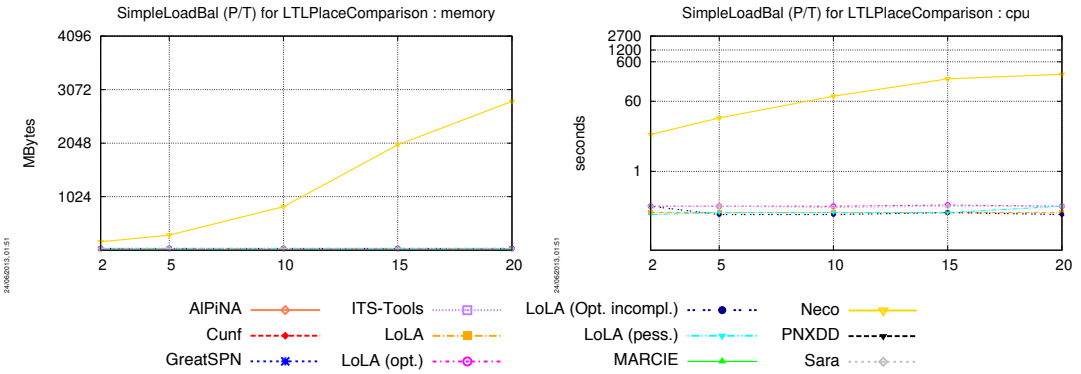
SharedMemory (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



SimpleLoadBal (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

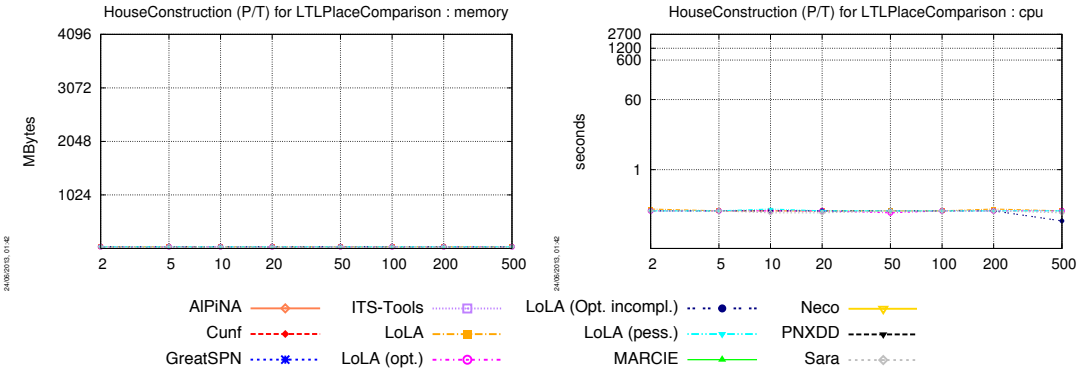
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



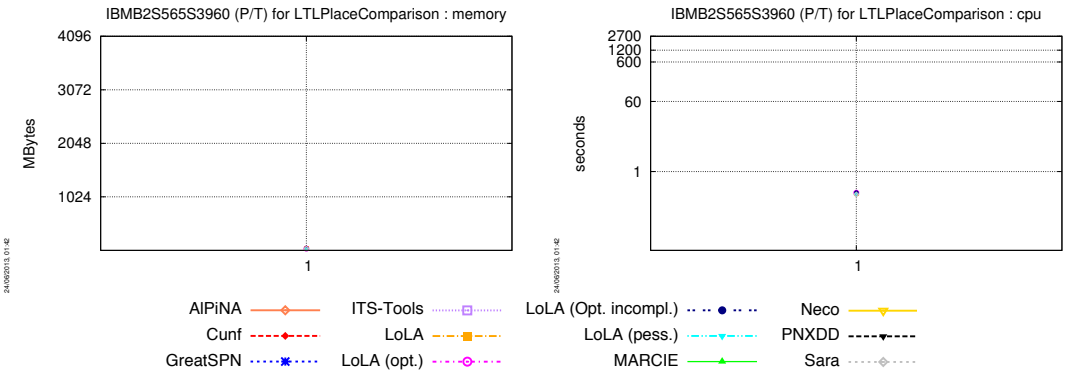
TokenRing (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

TokenRing (P/T) No instance of this model could be computed for the **LTLPlaceComparison** examination.

HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

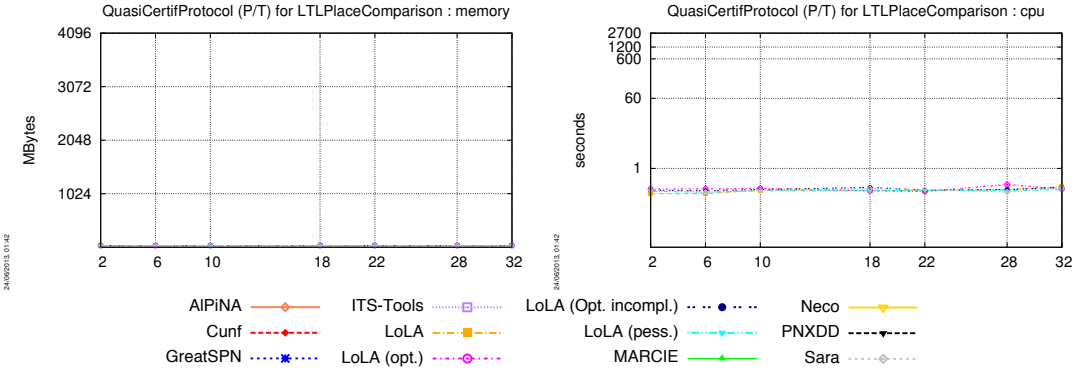


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

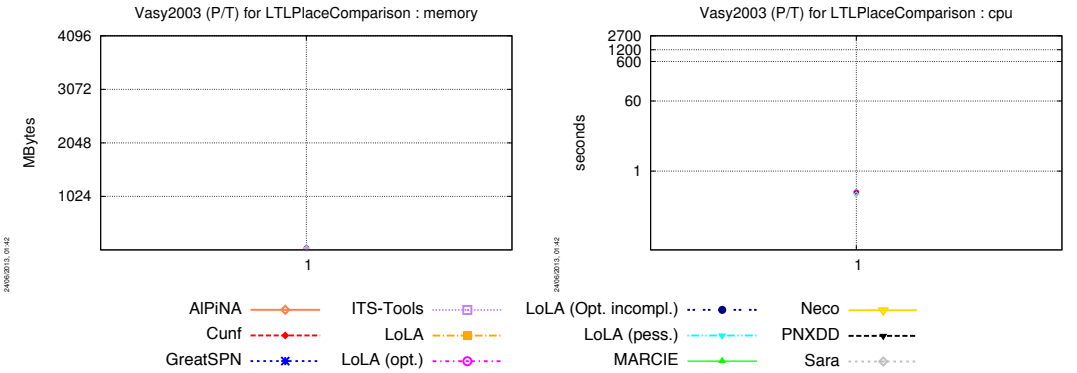


QuasiCertifProtocol (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



21.2 Outputs for the LTLPlaceComparison Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
03	nc	nc	nc	nc	nc	nc
04	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc

CSRepetitions (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	FFFTTFFF	cc
03	cc	cc	cc	cc	FFFFTFFF	cc
04	cc	cc	cc	cc	FFFFFFFT	cc
05	cc	cc	cc	cc	cc	cc
07	cc	cc	cc	cc	cc	cc
10	cc	cc	cc	cc	cc	cc

Dekker (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
010	cc	cc	cc	cc	TTFTTFTF	cc
015	cc	cc	cc	cc	FTFTFFFT	cc
020	cc	cc	cc	cc	FTFTTFFF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc

DotAndBoxes (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc

DrinkVendingMachine (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	nc	cc
10	cc	cc	cc	cc	nc	cc

Echo (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
d02r09	cc	cc	cc	cc	nc	cc
d02r11	cc	cc	cc	cc	nc	cc
d02r15	cc	cc	cc	cc	nc	cc
d02r19	cc	cc	cc	cc	nc	cc
d03r03	cc	cc	cc	cc	nc	cc
d03r05	cc	cc	cc	cc	nc	cc
d03r07	cc	cc	cc	cc	nc	cc
d04r03	cc	cc	cc	cc	nc	cc
d05r03	cc	cc	cc	cc	nc	cc

Eratosthenes (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
010	cc	cc	cc	cc	FTFTFFTF	cc
020	cc	cc	cc	cc	TTFTTFFF	cc
050	cc	cc	cc	cc	FFFTTFFF	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	cc	cc

FMS (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
002	cc	cc	cc	cc	FTFTFTTT	cc

005	cc	cc	cc	cc	FTTTFFFF	cc
010	cc	cc	cc	cc	FTFFTFFF	cc
020	cc	cc	cc	cc	TTTTFFFF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	cc	cc
GlobalRessAlloc (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc
GlobalRessAlloc (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	cc	cc	cc	cc	nc	cc
05	cc	cc	cc	cc	nc	cc
Kanban (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
0005	cc	cc	cc	cc	FTFTFFTF	cc
0010	cc	cc	cc	cc	FFFFTFTF	cc
0020	cc	cc	cc	cc	FTFTTFTF	cc
0050	cc	cc	cc	cc	cc	cc
0100	cc	cc	cc	cc	cc	cc
0200	cc	cc	cc	cc	cc	cc
0500	cc	cc	cc	cc	cc	cc
1000	cc	cc	cc	cc	cc	cc
LamportFastMutEx (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc
LamportFastMutEx (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	FFFFTFFF	cc
3	cc	cc	cc	cc	FFFTFFFF	cc
4	cc	cc	cc	cc	FFFTFFFF	cc
5	cc	cc	cc	cc	FFTTFFFF	cc
6	cc	cc	cc	cc	FFFTFFFF	cc
7	cc	cc	cc	cc	FFFTTFFF	cc
8	cc	cc	cc	cc	FFFFFFFF	cc
MAPK (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
008	cc	cc	cc	cc	FTFTTFFF	cc
020	cc	cc	cc	cc	FFFFTFFF	cc
040	cc	cc	cc	cc	cc	cc
080	cc	cc	cc	cc	cc	cc
160	cc	cc	cc	cc	cc	cc
320	cc	cc	cc	cc	cc	cc
NeoElection (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc

4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	FFFFTFFF	cc
3	cc	cc	cc	cc	cc	cc
4	cc	cc	cc	cc	cc	cc
5	cc	cc	cc	cc	cc	cc
6	cc	cc	cc	cc	cc	cc
7	cc	cc	cc	cc	cc	cc
8	cc	cc	cc	cc	cc	cc

PermAdmissibility (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
01	nc	nc	nc	nc	nc	nc
02	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
01	cc	cc	cc	cc	nc	cc
02	cc	cc	cc	cc	nc	cc
05	cc	cc	cc	cc	nc	cc
10	cc	cc	cc	cc	nc	cc
20	cc	cc	cc	cc	nc	cc
50	cc	cc	cc	cc	nc	cc

Peterson (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	FFFFFFFF	cc
3	cc	cc	cc	cc	FFFTFFFF	cc
4	cc	cc	cc	cc	cc	cc
5	cc	cc	cc	cc	cc	cc
6	cc	cc	cc	cc	cc	cc
7	cc	cc	cc	cc	cc	cc

Philosophers (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc

100000	nc	nc	nc	nc	nc	nc
Philosophers (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	cc	cc	cc	cc	FFFFFFFF	cc
000010	cc	cc	cc	cc	FFFTFFFF	cc
000020	cc	cc	cc	cc	FFFFFFFF	cc
000050	cc	cc	cc	cc	cc	cc
000100	cc	cc	cc	cc	cc	cc
000200	cc	cc	cc	cc	cc	cc
000500	cc	cc	cc	cc	cc	cc
001000	cc	cc	cc	cc	cc	cc
002000	cc	cc	cc	cc	cc	cc
005000	cc	cc	cc	cc	cc	cc
010000	cc	cc	cc	cc	cc	cc
PhilosophersDyn (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc
PhilosophersDyn (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	cc	cc	cc	cc	FFFFFFFF	cc
10	cc	cc	cc	cc	cc	cc
20	cc	cc	cc	cc	cc	cc
Planning (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
nf	nf	nf	nf	nf	nf	
Railroad (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	cc	cc	cc	cc	FTFTFFTT	cc
010	cc	cc	cc	cc	FTTTFFFF	cc
020	cc	cc	cc	cc	TTFTTFTF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
RessAllocation (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
R002C002	cc	cc	cc	cc	FTTTTFFF	cc
R003C002	cc	cc	cc	cc	FTTTTFTF	cc
R003C003	cc	cc	cc	cc	TTFTTFFF	cc
R003C005	cc	cc	cc	cc	FFFFTFFF	cc
R003C010	cc	cc	cc	cc	FTFTFFFF	cc
R003C015	cc	cc	cc	cc	FTFTTFFF	cc
R003C020	cc	cc	cc	cc	TTFTFFFF	cc
R003C050	cc	cc	cc	cc	FTFFTFTF	cc
R003C100	cc	cc	cc	cc	TTFTTFFF	cc
R005C002	cc	cc	cc	cc	FTFTTFTF	cc
R010C002	cc	cc	cc	cc	FTFTTFTT	cc
R015C002	cc	cc	cc	cc	TTTFFFTT	cc
R020C002	cc	cc	cc	cc	FTFTTFFF	cc
R050C002	cc	cc	cc	cc	FTFTFFFF	cc
R100C002	cc	cc	cc	cc	FFFTFFTF	cc
Ring (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	cc	cc	cc	cc	nc	cc
RwMutex (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
r0010w0010	cc	cc	cc	cc	FTFFTFTF	cc
r0010w0020	cc	cc	cc	cc	FTTTFFTF	cc

r0010w0050	cc	cc	cc	cc	TTFTTTTT	cc
r0010w0100	cc	cc	cc	cc	TTTTTFFF	cc
r0010w0500	cc	cc	cc	cc	cc	cc
r0010w1000	cc	cc	cc	cc	cc	cc
r0010w2000	cc	cc	cc	cc	cc	cc
r0020w0010	cc	cc	cc	cc	FTFTFFFF	cc
r0100w0010	cc	cc	cc	cc	TTTTTFTF	cc
r0500w0010	cc	cc	cc	cc	cc	cc
r1000w0010	cc	cc	cc	cc	cc	cc
r2000w0010	cc	cc	cc	cc	cc	cc

SharedMemory (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc

SharedMemory (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	cc	cc	cc	cc	FFFTFFFF	cc
000010	cc	cc	cc	cc	FFFTFFFF	cc
000020	cc	cc	cc	cc	cc	cc
000050	cc	cc	cc	cc	cc	cc
000100	cc	cc	cc	cc	cc	cc
000200	cc	cc	cc	cc	cc	cc

SimpleLoadBal (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc

SimpleLoadBal (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	FFFFFFFF	cc
05	cc	cc	cc	cc	FFFTFFFF	cc
10	cc	cc	cc	cc	FFFFFFFF	cc
15	cc	cc	cc	cc	FFFTFFFF	cc
20	cc	cc	cc	cc	cc	cc

TokenRing (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf

TokenRing (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	nf	nf	nf	nf	nf	nf

010	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
002	cc	cc	cc	cc	cc	cc
005	cc	cc	cc	cc	cc	cc
010	cc	cc	cc	cc	cc	cc
020	cc	cc	cc	cc	cc	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	cc	cc
IBMB2S565S3960 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	cc	cc	cc	cc	cc	cc
QuasiCertifProtocol (colored)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	cc	cc
06	cc	cc	cc	cc	cc	cc
10	cc	cc	cc	cc	cc	cc
18	cc	cc	cc	cc	cc	cc
22	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc
32	cc	cc	cc	cc	cc	cc
Vasy2003 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	cc	cc	cc	cc	cc	cc

21.3 Score for the LTLPlaceComparison Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination						
LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara	

Total Score	**0**	**0**	**0**	**0**	**114**	**0**
CSRepetitions (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
CSRepetitions (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
Dekker (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
DotAndBoxes (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Echo (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Eratosthenes (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
FMS (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0

instances	0	0	0	0	4	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**7**	**0**

GlobalRessAlloc (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

GlobalRessAlloc (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Kanban (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**

LamportFastMutEx (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

LamportFastMutEx (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	7	0
max reached	0	0	0	0	2	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**12**	**0**

MAPK (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**

NeoElection (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	1	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**4**	**0**

PermAdmissibility (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
PermAdmissibility (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Peterson (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Peterson (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**
Philosophers (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Philosophers (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
PhilosophersDyn (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
PhilosophersDyn (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	1	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**4**	**0**
Planning (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0

max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Railroad (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**

RessAllocation (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	15	0
max reached	0	0	0	0	2	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**20**	**0**

Ring (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

RwMutex (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	6	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**9**	**0**

SharedMemory (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

SharedMemory (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**

SimpleLoadBal (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

SimpleLoadBal (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	4	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**7**	**0**

TokenRing (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
TokenRing (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
Total Score	**0**	**0**	**0**	**0**	**0**	**0**
HouseConstruction (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Vasy2003 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

21.4 Trophies for this Examination

Trophies are divided in three categories: "Known" models, "Surprise" models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For "Known" Models

1

Neco
114 points

For "Surprise" Models

No tool could complete this examination.

Global

1

Neco
114 points

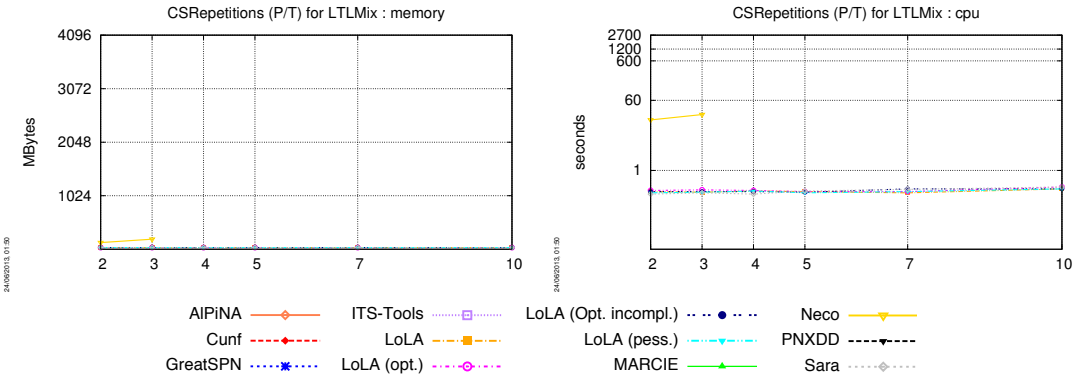
22 The LTLMix Examination

This examination deals with LTL properties dealing with all the previous type of atomic proposition. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

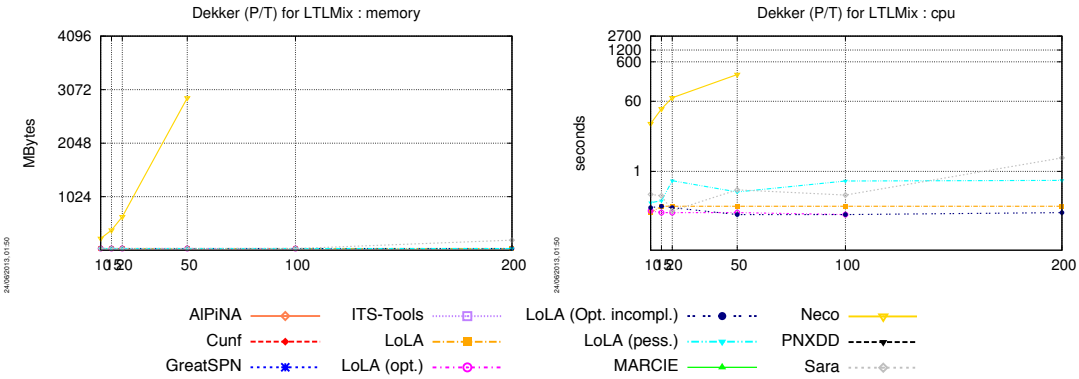
22.1 Handling of Models by Tools

CSRepetitions (colored) No instance of this model could be computed for the **LTLMix** examination.

CSRepetitions (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



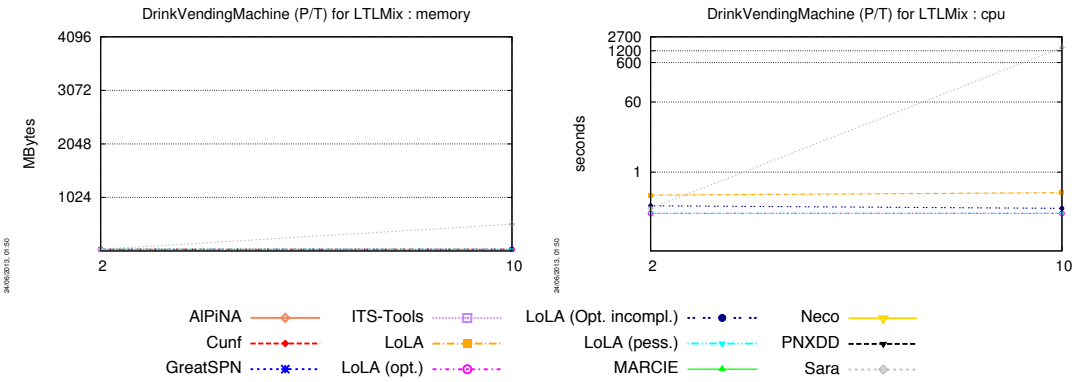
Dekker (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



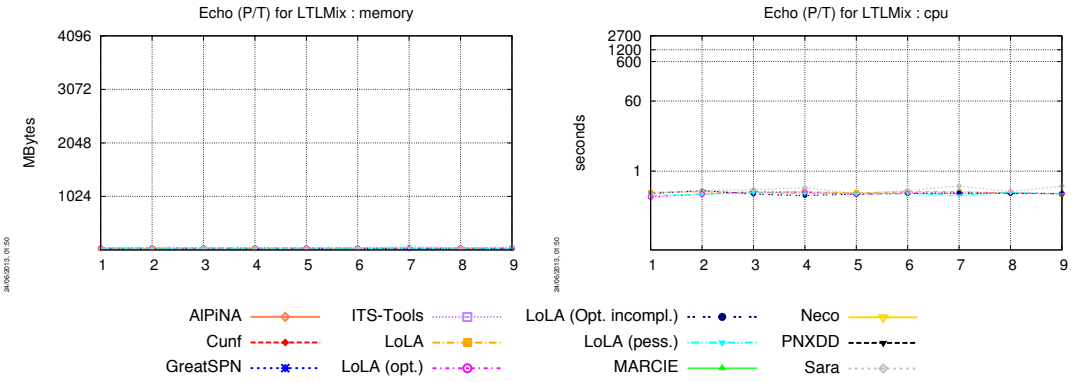
DotAndBoxes (colored) No instance of this model could be computed for the **LTLMix** examination.

DrinkVendingMachine (colored) No instance of this model could be computed for the **LTLMix** examination.

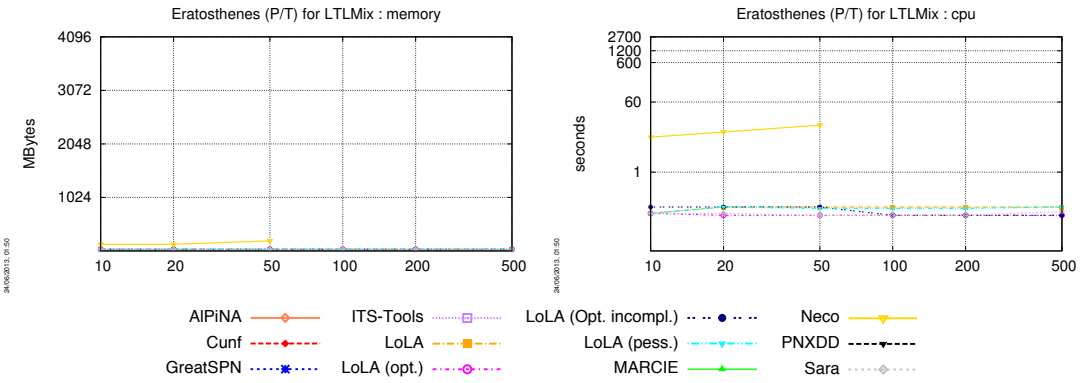
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



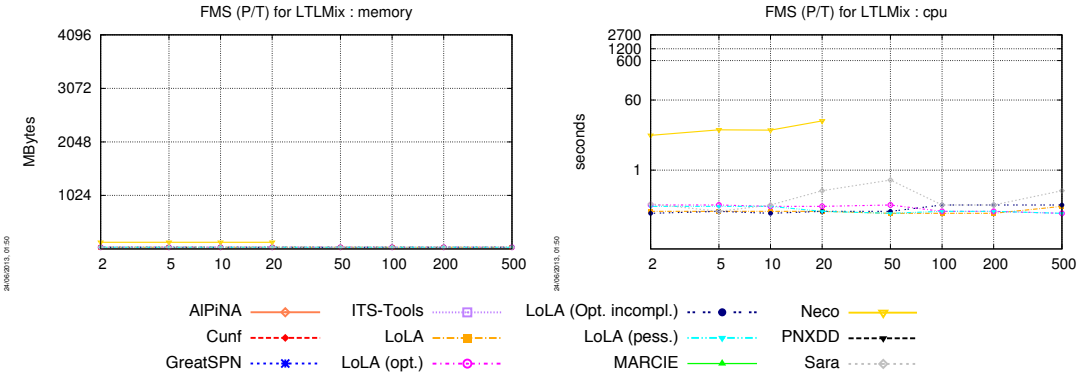
Echo (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Eratosthenes (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

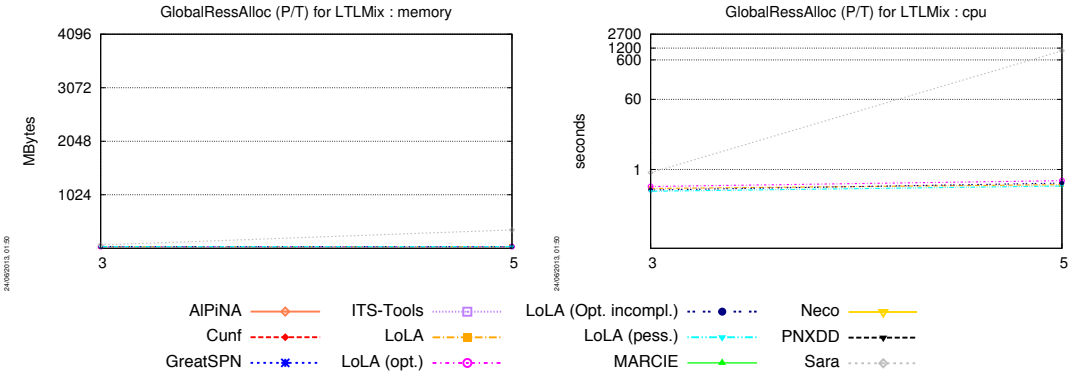


FMS (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

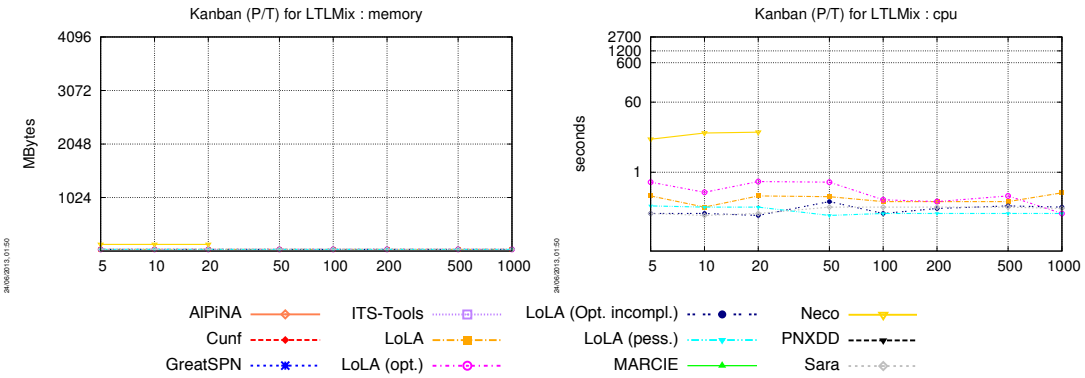


GlobalRessAlloc (colored) No instance of this model could be computed for the **LTLMix** examination.

GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

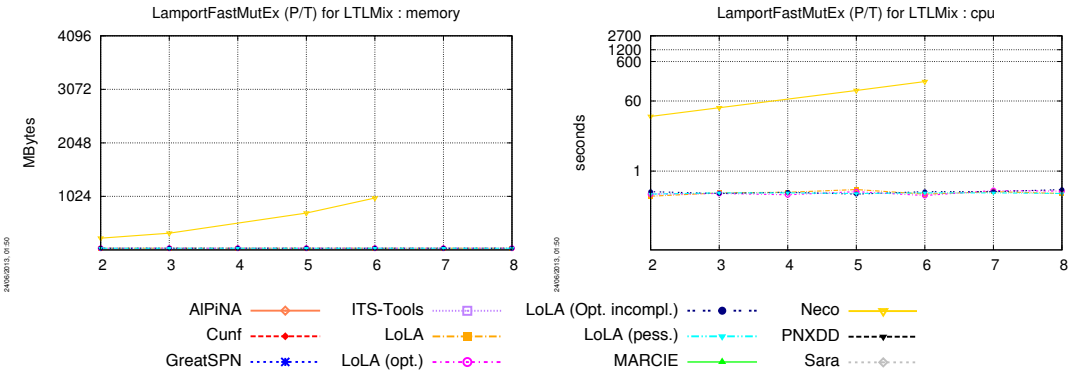


Kanban (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

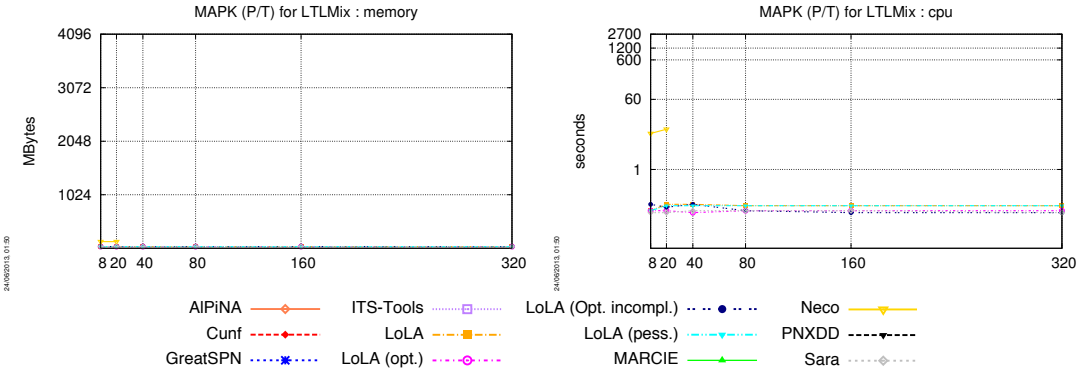


LamportFastMutEx (colored) No instance of this model could be computed for the **LTLMix** examination.

LamportFastMutEx (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

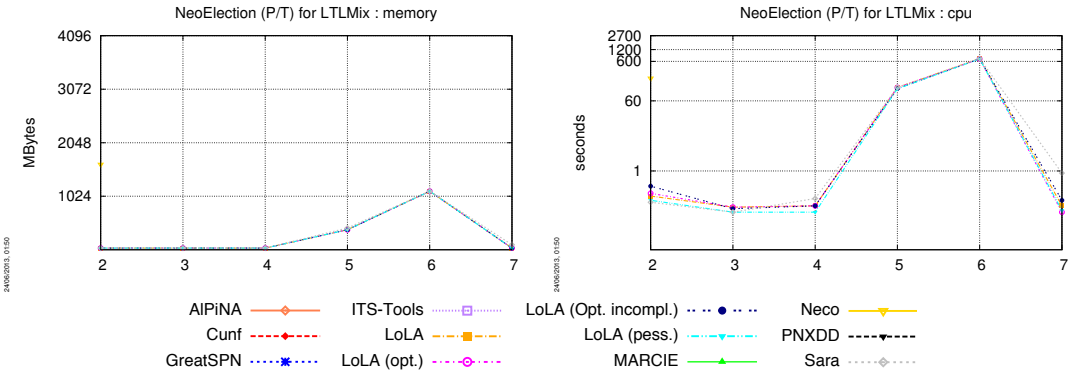


MAPK (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



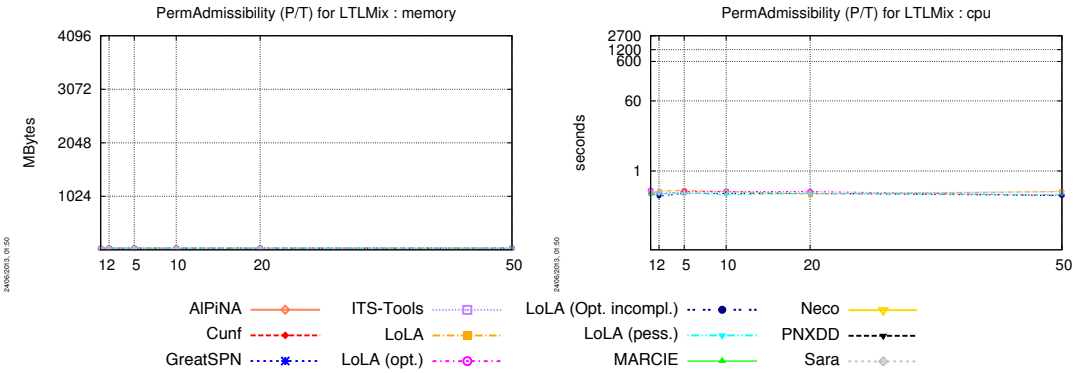
NeoElection (colored) No instance of this model could be computed for the **LTLMix** examination.

NeoElection (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



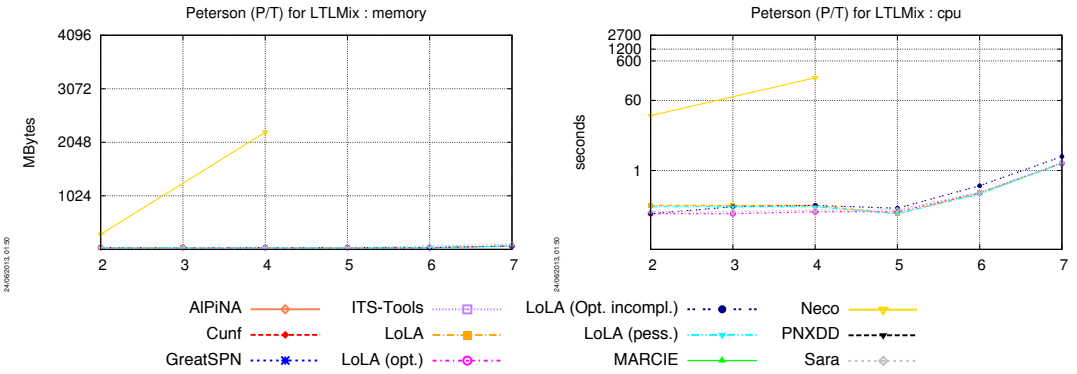
PermAdmissibility (colored) No instance of this model could be computed for the **LTLMix** examination.

PermAdmissibility (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



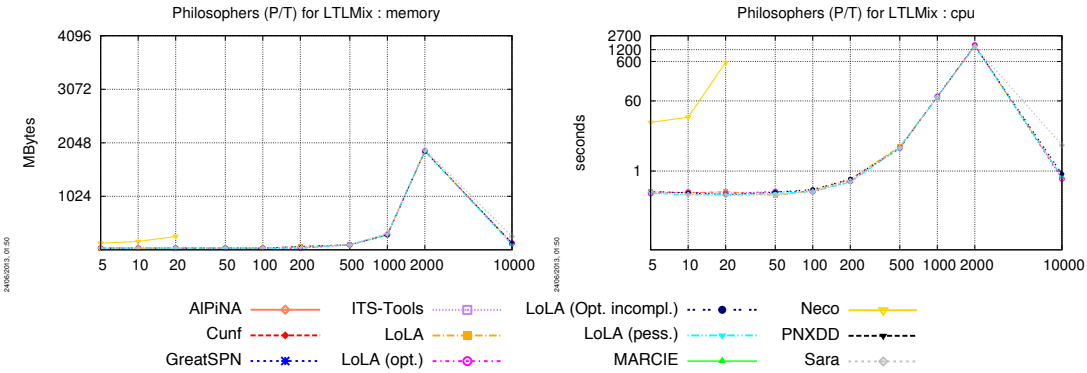
Peterson (colored) No instance of this model could be computed for the **LTLMix** examination.

Peterson (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



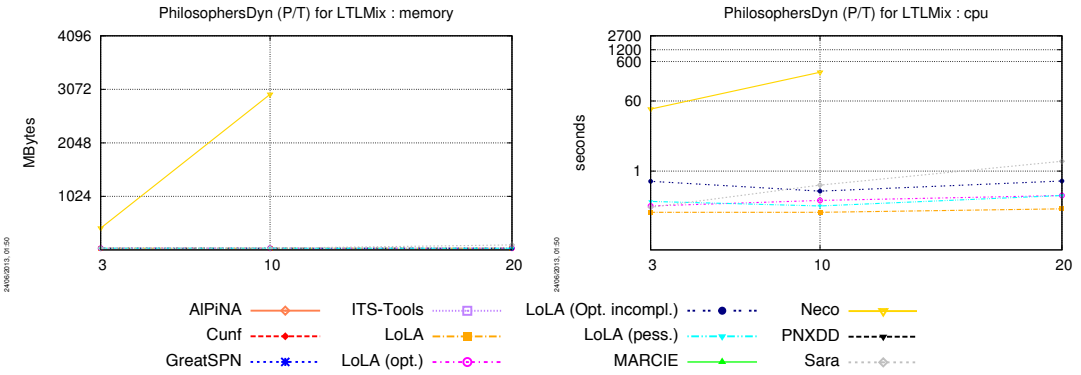
Philosophers (colored) No instance of this model could be computed for the **LTLMix** examination.

Philosophers (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



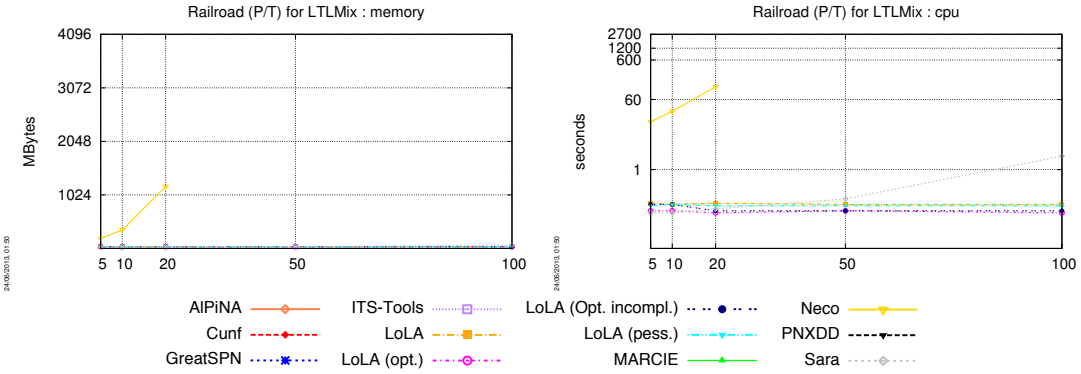
PhilosophersDyn (colored) No instance of this model could be computed for the **LTLMix** examination.

PhilosophersDyn (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

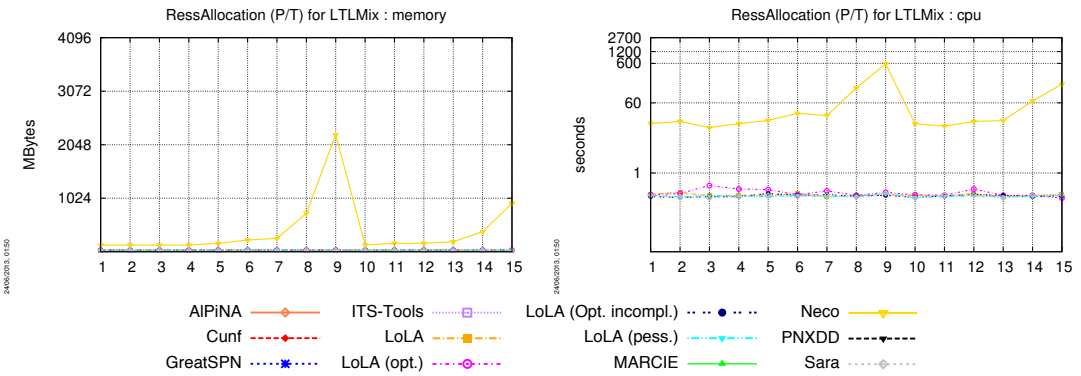


Planning (P/T) No instance of this model could be computed for the **LTLMix** examination.

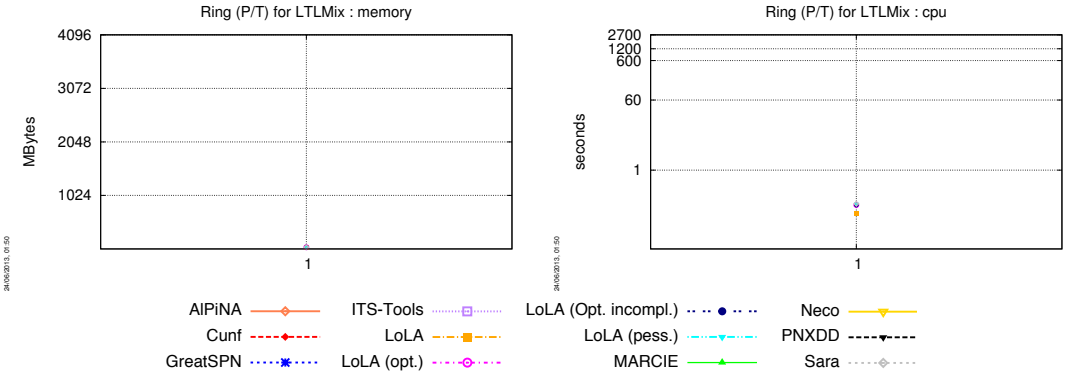
Railroad (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



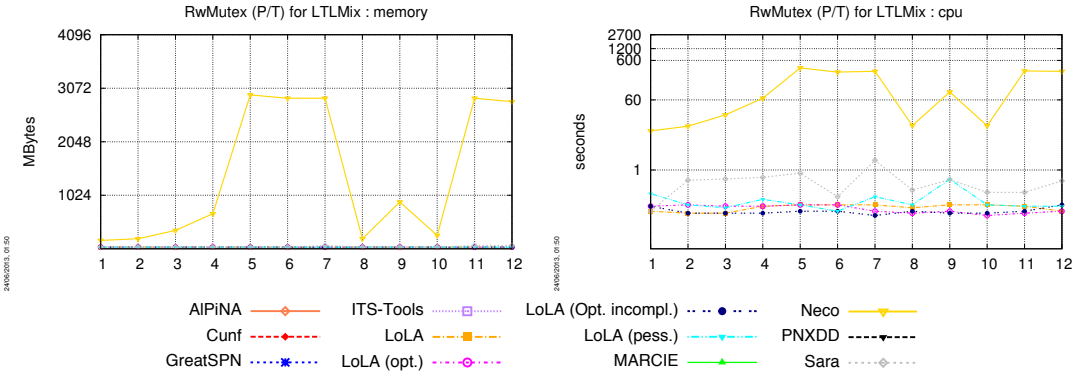
RessAllocation (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



Ring (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

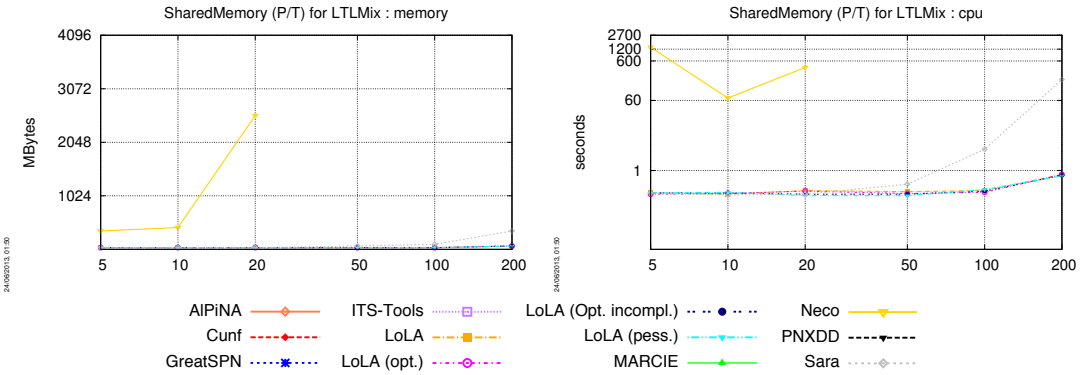


RwMutex (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



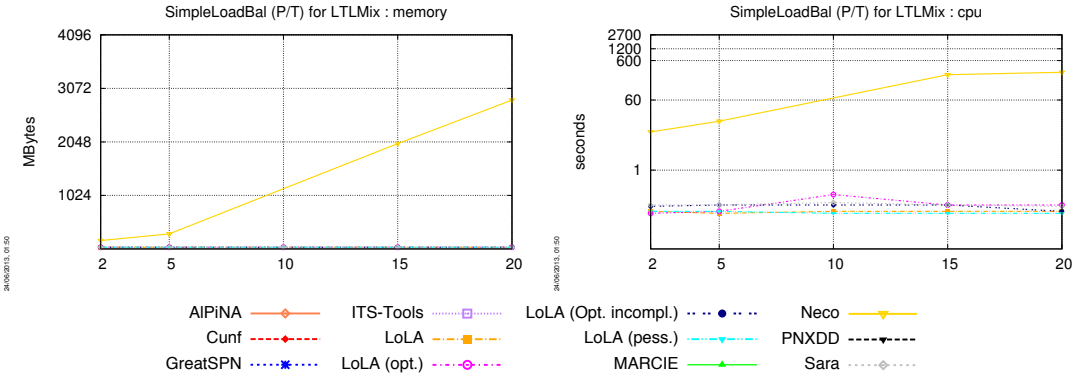
SharedMemory (colored) No instance of this model could be computed for the **LTLMix** examination.

SharedMemory (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



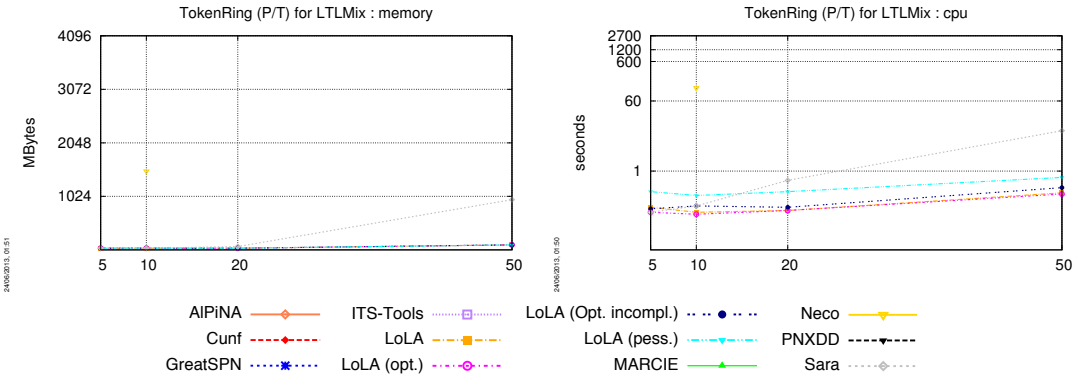
SimpleLoadBal (colored) No instance of this model could be computed for the **LTLMix** examination.

SimpleLoadBal (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).

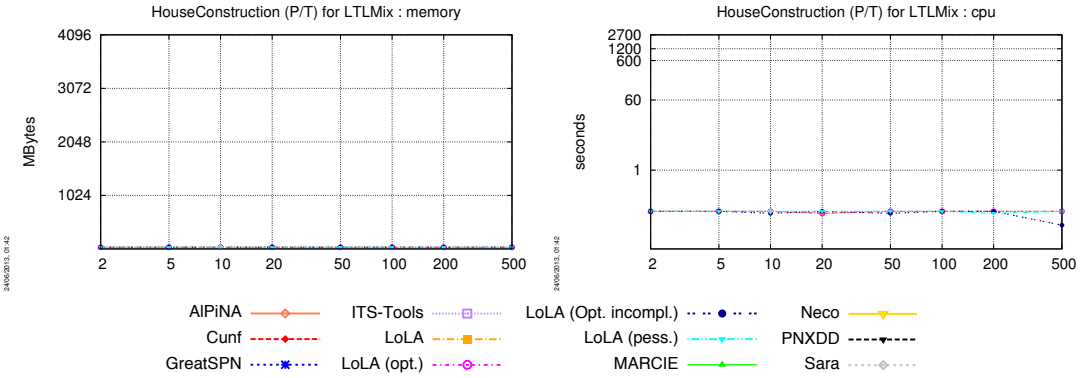


TokenRing (colored) No instance of this model could be computed for the **LTLMix** examination.

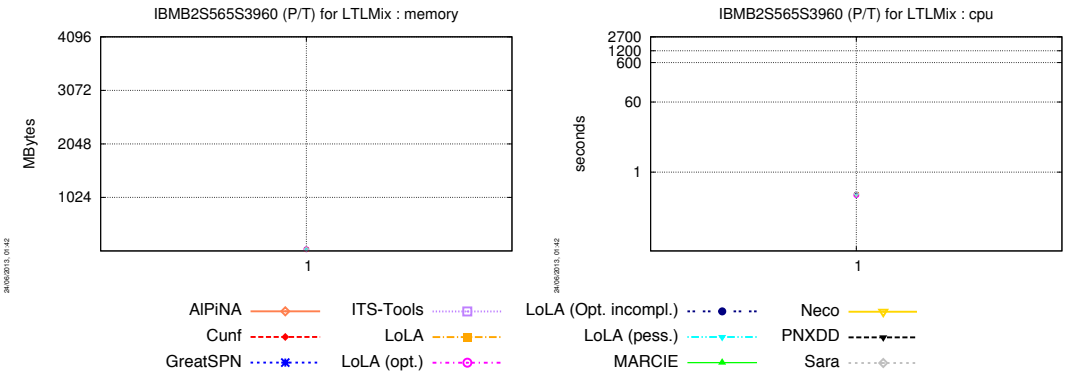
TokenRing (P/T) The charts below respectively show how tools compete with this "Known" model (memory and CPU).



HouseConstruction (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

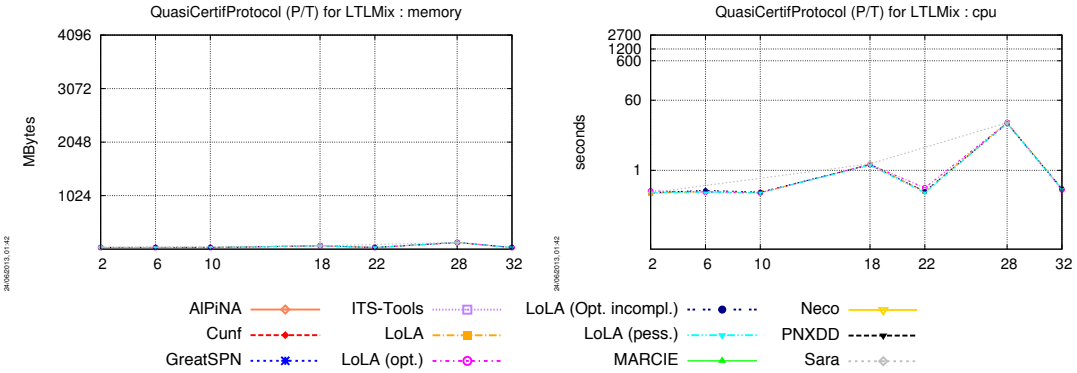


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).

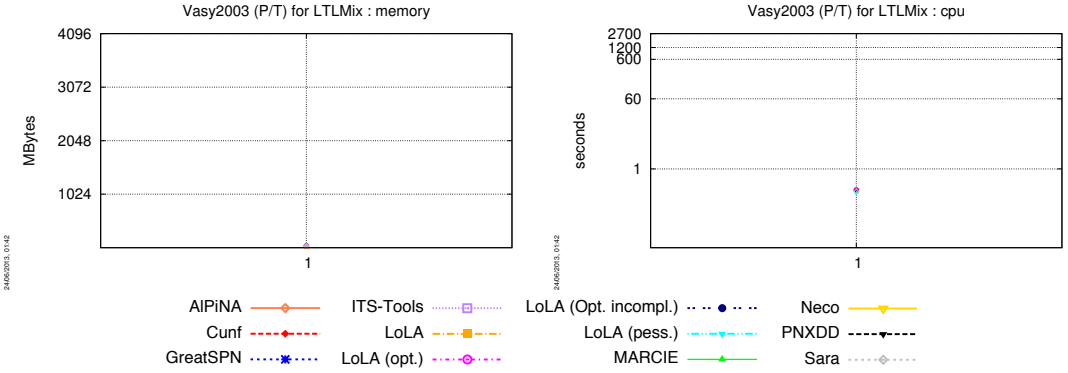


QuasiCertifProtocol (colored) No instance of this model could be computed for the **LTLMix** examination.

QuasiCertifProtocol (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



Vasy2003 (P/T) The charts below respectively show how tools compete with this "Suprise" model (memory and CPU).



22.2 Outputs for the LTLMix Examination

Please find enclosed the brute results for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The legend for the values is provided below:

- **nc**: the tool does not compete this examination for this model/instance,
- **cc**: the tool cannot compute this examination for this model/instance,
- **to**: the tool cannot compute this examination for this model/instance within the maximum allowed time,
- **mp**: the tool encountered a memory problem (stack overflow or memory full),
- **nf**: there is no formula available for this type of examination (typically, this concerns P/T nets where comparing marking cardinality has no signification when there is no equivalent colored net).

Note on the display of results for formulas: each formula is considered as a flag (F if false, T if true, - or ? when the value cannot be determined). These values are concatenated in the order they appear (we assume it is the order of formulas as they were provided).

"Known" Models Results are summarized in the table below.

CSRepetitions (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
03	nc	nc	nc	nc	nc	nc
04	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
CSRepetitions (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	FFFFTFFF	cc
03	cc	cc	cc	cc	FFFTTTTT	cc
04	cc	cc	cc	cc	to	cc
05	cc	cc	cc	cc	cc	cc
07	cc	cc	cc	cc	cc	cc
10	cc	cc	cc	cc	cc	cc
Dekker (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
010	cc	cc	cc	cc	FFFFFFTF	cc
015	cc	cc	cc	cc	FTFTTTTT	cc
020	cc	cc	cc	cc	FFFTFFFF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	nc	cc	cc	cc	cc
DotAndBoxes (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	nc	cc
10	cc	cc	cc	cc	nc	cc
Echo (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
d02r09	cc	cc	cc	cc	nc	cc
d02r11	cc	cc	cc	cc	nc	cc
d02r15	cc	cc	cc	cc	nc	cc
d02r19	cc	cc	cc	cc	nc	cc
d03r03	cc	cc	cc	cc	nc	cc
d03r05	cc	cc	cc	cc	nc	cc

d03r07	cc	cc	cc	cc	nc	cc
d04r03	cc	cc	cc	cc	nc	cc
d05r03	cc	cc	cc	cc	nc	cc
Eratosthenes (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
010	cc	cc	cc	cc	FTFTFFTF	cc
020	cc	cc	cc	cc	FTTTFFTF	cc
050	cc	cc	cc	cc	TTFTTFTF	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	cc	cc
FMS (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
002	cc	cc	cc	cc	FTFTFFFF	cc
005	cc	cc	cc	cc	FTFTTFFF	cc
010	cc	cc	cc	cc	FFFTTFTF	cc
020	cc	cc	cc	cc	FFFFFFFF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	cc	cc
GlobalRessAlloc (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc
GlobalRessAlloc (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	cc	cc	cc	cc	nc	cc
05	cc	cc	cc	cc	nc	cc
Kanban (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
0005	cc	cc	cc	cc	TTTTFTTT	cc
0010	cc	cc	cc	cc	FFFTTFFF	cc
0020	cc	cc	cc	cc	FFFTFFFF	cc
0050	cc	cc	cc	cc	cc	cc
0100	cc	cc	cc	cc	cc	cc
0200	cc	cc	cc	cc	cc	cc
0500	cc	cc	cc	cc	cc	cc
1000	cc	cc	cc	cc	cc	cc
LamportFastMutEx (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc
LamportFastMutEx (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	FFFFTFFF	cc
3	cc	cc	cc	cc	FFFFTFFF	cc
4	cc	cc	cc	cc	to	cc
5	cc	cc	cc	cc	FFFFTTTF	cc
6	cc	cc	cc	cc	FTFTFFFF	cc

7	cc	cc	cc	cc	to	cc
8	cc	cc	cc	cc	to	cc

MAPK (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
008	cc	cc	cc	cc	FFFFFFFF	cc
020	cc	cc	cc	cc	FTFTFFFF	cc
040	cc	cc	cc	cc	cc	cc
080	cc	cc	cc	cc	cc	cc
160	cc	cc	cc	cc	cc	cc
320	cc	cc	cc	cc	cc	cc

NeoElection (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc

NeoElection (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	FFFFTFFF	cc
3	cc	cc	cc	cc	cc	cc
4	cc	cc	cc	cc	cc	cc
5	cc	cc	cc	cc	cc	cc
6	cc	cc	cc	cc	cc	cc
7	cc	cc	cc	cc	cc	cc
8	to	to	to	to	cc	to

PermAdmissibility (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
01	nc	nc	nc	nc	nc	nc
02	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc

PermAdmissibility (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
01	cc	cc	cc	cc	nc	cc
02	cc	cc	cc	cc	nc	cc
05	cc	cc	cc	cc	nc	cc
10	cc	cc	cc	cc	nc	cc
20	cc	cc	cc	cc	nc	cc
50	cc	cc	cc	cc	nc	cc

Peterson (colored)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	nc	nc	nc	nc	nc	nc
3	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc

Peterson (P/T)

Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
2	cc	cc	cc	cc	FFFTTFFF	cc
3	cc	cc	cc	cc	to	cc
4	cc	cc	cc	cc	cc	cc
5	cc	cc	cc	cc	cc	cc
6	cc	cc	cc	cc	cc	cc
7	cc	cc	cc	cc	cc	cc

Philosophers (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc

Philosophers (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	cc	cc	cc	cc	TTFTFFFF	cc
000010	cc	cc	cc	cc	FTFFTFFF	cc
000020	cc	cc	cc	cc	FFFFFFFF	cc
000050	cc	cc	cc	cc	cc	cc
000100	cc	cc	cc	cc	cc	cc
000200	cc	cc	cc	cc	cc	cc
000500	cc	cc	cc	cc	cc	cc
001000	cc	cc	cc	cc	cc	cc
002000	cc	cc	cc	cc	cc	cc
005000	to	to	to	to	cc	to
010000	cc	cc	cc	cc	cc	cc

PhilosophersDyn (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	nc	nc

PhilosophersDyn (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
03	cc	cc	cc	cc	FTFTFFFF	cc
10	cc	cc	cc	cc	cc	cc
20	cc	cc	cc	cc	cc	cc

Planning (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
nf	nf	nf	nf	nf	nf	

Railroad (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	cc	cc	cc	cc	FFFTTFFF	cc
010	cc	cc	cc	cc	FTFTFFFF	cc
020	cc	cc	cc	cc	FTFTTFFF	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc

RessAllocation (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
R002C002	cc	cc	cc	cc	FTTTFFFF	cc
R003C002	cc	cc	cc	cc	FFFTFFTF	cc
R003C003	cc	cc	cc	cc	TTFTTTTF	cc
R003C005	cc	cc	cc	cc	FFFFFFFF	cc
R003C010	cc	cc	cc	cc	FFFFFTTF	cc
R003C015	cc	cc	cc	cc	FTTTFFTF	cc
R003C020	cc	cc	cc	cc	FFFFFFTF	cc
R003C050	cc	cc	cc	cc	FTFFTFFF	cc

R003C100	cc	cc	cc	cc	FFFFTFFF	cc
R005C002	cc	cc	cc	cc	FTFTTFFF	cc
R010C002	cc	cc	cc	cc	TTFTFFTF	cc
R015C002	cc	cc	cc	cc	FTFTTFFF	cc
R020C002	cc	cc	cc	cc	FTTTFFFF	cc
R050C002	cc	cc	cc	cc	FTFFTFFF	cc
R100C002	cc	cc	cc	cc	FTFTTFFF	cc
Ring (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	cc	cc	cc	cc	nc	cc
RwMutex (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
r0010w0010	cc	cc	cc	cc	FTFTTFTF	cc
r0010w0020	cc	cc	cc	cc	FFFFTTTT	cc
r0010w0050	cc	cc	cc	cc	FTFTFTTT	cc
r0010w0100	cc	cc	cc	cc	FFFTFFTF	cc
r0010w0500	cc	cc	cc	cc	cc	cc
r0010w1000	cc	cc	cc	cc	cc	cc
r0010w2000	cc	cc	cc	cc	cc	cc
r0020w0010	cc	cc	cc	cc	TTTTTFFF	cc
r0100w0010	cc	cc	cc	cc	FTTTFTTF	cc
r0500w0010	cc	cc	cc	cc	cc	cc
r1000w0010	cc	cc	cc	cc	cc	cc
r2000w0010	cc	cc	cc	cc	cc	cc
SharedMemory (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	nc	nc	nc	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	nc	nc	nc
SharedMemory (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
000005	cc	cc	cc	cc	FFFTFFFF	cc
000010	cc	cc	cc	cc	FFFTTFFF	cc
000020	cc	cc	cc	cc	cc	cc
000050	cc	cc	cc	cc	cc	cc
000100	cc	cc	cc	cc	cc	cc
000200	cc	cc	cc	cc	cc	cc
SimpleLoadBal (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc
SimpleLoadBal (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	FFFFFFFF	cc
05	cc	cc	cc	cc	FTFTTFTF	cc
10	cc	cc	cc	cc	to	cc

15	cc	cc	cc	cc	FFFFTFFF	cc
20	cc	cc	cc	cc	cc	cc
TokenRing (colored)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	nc	nc	nc	nc	nc	nc
010	nc	nc	nc	nc	nc	nc
020	nc	nc	nc	nc	nc	nc
050	nc	nc	nc	nc	nc	nc
100	nc	nc	nc	nc	nc	nc
200	nc	nc	nc	nc	nc	nc
500	nc	nc	nc	nc	nc	nc
TokenRing (P/T)						
Instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
005	cc	cc	cc	cc	to	cc
010	cc	cc	cc	cc	cc	cc
020	cc	cc	cc	cc	cc	cc
050	cc	cc	cc	cc	cc	cc

"Surprise" Models Results are summarized in the table below.

HouseConstruction (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
002	cc	cc	cc	cc	cc	cc
005	cc	cc	cc	cc	cc	cc
010	cc	cc	cc	cc	cc	cc
020	cc	cc	cc	cc	cc	cc
050	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	cc	cc
IBMB2S565S3960 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	cc	cc	cc	cc	cc	cc
QuasiCertifProtocol (colored)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	nc	nc
QuasiCertifProtocol (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
02	cc	cc	cc	cc	cc	cc
06	cc	cc	cc	cc	cc	cc
10	cc	cc	cc	cc	cc	cc
18	cc	cc	cc	cc	cc	cc
22	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc
32	cc	cc	cc	cc	cc	cc
Vasy2003 (P/T)						
instances	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
none	cc	cc	cc	cc	cc	cc

22.3 Score for the LTLMix Examination

Please find enclosed the scores for this examination ("Known" and "Surprise" models). We display only the score of tools that provide a results for at least one instance of one model. The total is first listed in the table below followed by a detail, for each proposed model. Meaning of the line labels are:

- **1st instance**: the tool gets a bonus for having processed the first instance of this model (+1 point),
- **instances**: the tool gets 1 point per instances treated (for that, we assume that at least one formula has been successfully computed),
- **max reached**: the tool could process all the instances for the model (+2 points),
- **best**: the tool is among the ones that processed a maximum of instances within the time and memory confinement (+2 points).

"Known" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 411 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
Total Score	**0**	**0**	**0**	**0**	**106**	**0**
CSRepetitions (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
CSRepetitions (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**
Dekker (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
DotAndBoxes (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
DrinkVendingMachine (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Echo (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0

best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Eratosthenes (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**

FMS (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	4	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**7**	**0**

GlobalRessAlloc (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

GlobalRessAlloc (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Kanban (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**

LamportFastMutEx (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

LamportFastMutEx (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	4	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**7**	**0**

MAPK (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**

NeoElection (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara

1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

NeoElection (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	1	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**4**	**0**

PermAdmissibility (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

PermAdmissibility (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Peterson (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	1	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**4**	**0**

Philosophers (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Philosophers (P/T)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**

PhilosophersDyn (Colored)

	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0

subtotal	**0**	**0**	**0**	**0**	**0**	**0**
PhilosophersDyn (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	1	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**4**	**0**
Planning (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
Railroad (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
RessAllocation (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	15	0
max reached	0	0	0	0	2	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**20**	**0**
Ring (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
RwMutex (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	6	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**9**	**0**
SharedMemory (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
SharedMemory (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	2	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**5**	**0**
SimpleLoadBal (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0

instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
SimpleLoadBal (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	1	0
instances	0	0	0	0	3	0
max reached	0	0	0	0	0	0
best	0	0	0	0	2	0
subtotal	**0**	**0**	**0**	**0**	**6**	**0**
TokenRing (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
TokenRing (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

"Surprise" Models Scores are summarized in the table below. For each model in this category, a tool may collect up to 49 points.

Total score of the tools for this examination						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
Total Score	**0**	**0**	**0**	**0**	**0**	**0**
HouseConstruction (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
IBMB2S565S3960 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (Colored)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**
QuasiCertifProtocol (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

Vasy2003 (P/T)						
	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Neco	Sara
1st instance	0	0	0	0	0	0
instances	0	0	0	0	0	0
max reached	0	0	0	0	0	0
best	0	0	0	0	0	0
subtotal	**0**	**0**	**0**	**0**	**0**	**0**

22.4 Trophies for this Examination

Trophies are divided in three categories: “Known” models, “Surprise” models, and the global trophies (formula is then $score_{global} = score_{known} + 2 \times score_{surprise}$).

For “Known” Models

1

Neco
110 points

For “Surprise” Models

No tool could complete this examination.

Global

1

Neco
110 points

References

1. Baarir, S., Beccuti, M., Cerotti, D., Pierro, M.D., Donatelli, S., Franceschinis, G.: The greatspn tool: recent enhancements. SIGMETRICS Performance Evaluation Review 36(4), 4–9 (2009)
2. Babar, J., Beccuti, M., Donatelli, S., Miner, A.S.: GreatSPN Enhanced with Decision Diagram Data Structures. In: Applications and Theory of Petri Nets, 31st International Conference. Lecture Notes in Computer Science, vol. 6128, pp. 308–317. Springer (2010)
3. Baldan, P., Bruni, A., Corradini, A., König, B., Rodríguez, C., Schwoon, S.: Efficient unfolding of contextual Petri nets. Theor. Comput. Sci. 449, 2–22 (2012)
4. Baldan, P., Corradini, A., König, B., Schwoon, S.: McMillan's Complete Prefix for Contextual Nets. T. Petri Nets and Other Models of Concurrency I, 199–220 (2008)
5. Bashirov, R., Kordon, F., Lort, H.: Exploiting colored Petri nets to decide on permutation admissibility. Acta Informatica 46(1), 43–55 (February 2009)
6. Bonnaire, X., Cortés, R., Kordon, F., Marin, O.: A Scalable Architecture for Highly Reliable Certification. In: 12th IEEE International Conference on Trust, Security and Privacy in Computing and Communications – TrustCom. p. to be published. IEEE Computer Society, Melbourne, Australia (April 2013)
7. Buchs, D., Hostettler, S., Marechal, A., Risoldi, M.: AlPiNA: A symbolic model checker. In: 31st International Conference on Applications and Theory of Petri Nets, LNCS, vol. 6128, pp. 287–296. Springer (2010)
8. Buchs, D., Hostettler, S., Marechal, A., Risoldi, M.: AlPiNA: An Algebraic Petri Net Analyzer. In: Tools and Algorithms for the Construction and Analysis of Systems, LNCS, vol. 6015, pp. 349–352. Springer (2010)
9. Chen, A., Buchs, D., Lucio, L., Pedro, L., Risoldi, M.: Modeling distributed systems using concurrent object oriented petri nets. In: 4th International Workshop on Modelling of Objects, Components and Agents (MOCA). pp. 103–122 (2006)
10. Chiola, G., Franceschinis, G.: Colored GSPN Models and Automatic Symmetry Detection. In: Petri Nets and Performance Models, The Proceedings of the Third International Workshop, PNPM '89. pp. 50–60. IEEE Computer Society (1989)
11. Choppy, C., Dedova, A., Evangelista, S., Hong, S., Klai, K., Petrucci, L.: The NEO Protocol for Large-Scale Distributed Database Systems: Modelling and Initial Verification. In: 31st International Conference on Petri Nets and Other Models of Concurrency (ICATPN 2010). LNCS, vol. 6128, pp. 145–164. springer (2010), moVe INT LIP6
12. Ciardo, G.: Advances in compositional approaches based on kronecker algebra: Application to the study of manufacturing systems. In: 3rd International Workshop on Performability Modeling of Computer and Communication Systems. pp. 61–65 (1996)
13. Ciardo, G., Trivedi, K.: A decomposition approach for stochastic reward net models. Perf. Eval 18, 37–59 (1993)
14. Ciardo, G., Lüttgen, G., Siminiceanu, R.: Efficient Symbolic State-Space Construction for Asynchronous Systems. In: Application and Theory of Petri Nets 2000, LNCS, vol. 1825, pp. 103–122. Springer Berlin / Heidelberg (2000)
15. Colange, M., Baarir, S., Kordon, F., Thierry-Mieg, Y.: Towards Distributed Software Model-Checking using Decision Diagrams. In: 25th International Conference on Computer Aided Verification (CAV). Lecture Notes in Computer Science, vol. 8044, pp. 830–845. Springer, Rome, Italy (March 2013)
16. Couvreur, J.M., Thierry-Mieg, Y.: Hierarchical Decision Diagrams to Exploit Model Structure. In: 25th IFIP WG 6.1 International Conference on Formal Techniques for Networked and Distributed Systems (FORTE'05). LNCS, vol. 3731, pp. 443–457. Springer (2005)
17. Dasgupta, S., Yakovlev, A.: Modeling and verification of globally asynchronous and locally synchronous ring architectures. In: Design, Automation and Test in Europe Conference and Exposition (DATE). pp. 568–569. IEEE Computer Society (2005)
18. Dijkstra, E.W.: Self-stabilizing systems in spite of distributed control. Commun. ACM 17(11), 643–644 (1974)
19. Duret-Lutz, A.: Manipulating LTL formulas using Spot 1.0. In: 11th International Symposium on Automated Technology for Verification and Analysis (ATVA). Lecture Notes in Computer Science, vol. to appear, p. to appear. Springer (Jul 2013)
20. Duret-Lutz, A., Poitrenaud, D.: SPOT: an Extensible Model Checking Library using Transition-based Generalized Büchi Automata. In: 12th IEEE/ACM International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS '04). pp. 76–83. IEEE Computer Society Press (oct 2004)
21. Fahland, D., Favre, C., Koehler, J., Lohmann, N., Völzer, H., Wolf, K.: Modular Modelling of Software Product Lines with Feature Nets. In: 7^{th} International Conference on Business Process Management (BPM). Lecture Notes in Computer Science, vol. 5701, pp. 278–293. Springer (2009)
22. Fronc, L., Duret-Lutz, A.: LTL Model Checking with Neco. In: 11th International Symposium on Automated Technology for Verification and Analysis (ATVA). Lecture Notes in Computer Science, vol. to appear, p. to appear. Springer (Jul 2013)

23. Fronc, L., Pommereau, F.: Optimizing the Compilation of Petri Net Models. In: Proc. of SUMo'11. vol. 726. CEUR (2011)
24. Garavel, H.: Efficient Petri Net tool for computing quasi-liveness, posted at the Petri Net mailing-list (http://www.informatik.uni-hamburg.de/cgi-bin/TGI/pnml/getpost?id=2003/07/2709) (checked in 2013)
25. Hamez, A., Thierry-Mieg, Y., Kordon, F.: Building efficient model checkers using hierarchical set decision diagrams and automatic saturation. Fundamenta Informaticae 94(3-4), 413–437 (September 2009)
26. Heiner, M., Gilbert, D., Donaldson, R.: Petri nets for systems and synthetic biology. In: 8th International School on Formal Methods for the Design of Computer - SFM 2008. LNCS, vol. 5016, pp. 215–264. Springer (2008)
27. Heiner, M., Rohr, C., Schwarick, M.: MARCIE - Model Checking and Reachability Analysis Done Efficiently. In: Application and Theory of Petri Nets and Concurrency - 34th International Conference. Lecture Notes in Computer Science, vol. 7927, pp. 389–399. Springer (2013)
28. Hong, S., Kordon, F., Paviot-Adet, E., Evangelista, S.: Computing a Hierarchical Static order for Decision Diagram-Based Representation from P/T Nets. ToPNoC: Transactions on Petri Nets and Other Models of Concurrency V (2012)
29. Hostettler, S., Marechal, A., Linard, A., Risoldi, M., Buchs, D.: High-Level Petri Net Model Checking with AlPiNA. Fundamenta Informaticae 113 (2011)
30. Jorgensen, J., Kristensen, L.: Computer aided verification of Lamport's fast mutual exclusion algorithm using colored Petri nets and occurrence graphs with symmetries. IEEE Transactions on Parallel and Distributed Systems 10(7), 714–732 (1999)
31. Kordon, F., Gibelin, N., Hulin-Hubard, F., Pommereau, F.: BenchKit User Manual. http://benchkit.cosyverif.org (2013)
32. Kordon, F., Linard, A., Beccuti, M., Buchs, D., Fronc, L., Hulin-Hubard, F., Legond-Aubry, F., Lohmann, N., Marechal, A., Paviot-Adet, E., Pommereau, F., Rodrigues, C., Rohr, C., Thierry-Mieg, Y., Wimmel, H., Wolf, K.: Web Report on the Model Checking Contest @ Petri Net 2013, available at http://mcc.lip6.fr (June 2013)
33. Kordon, F., Linard, A., Buchs, D., Colange, M., Evangelista, S., Fronc, L., Hillah, L.M., Lohmann, N., Paviot-Adet, E., Pommereau, F., Rohr, C., Thierry-Mieg, Y., Wolf, K.: Raw Report on the Model Checking Contest at Petri Nets 2012. Tech. rep., CoRR (September 2012), http://arxiv.org/abs/1209.2382
34. Kordon, F., Linard, A., Buchs, D., Colange, M., Evangelista, S., Lampka, K., Lohmann, N., Paviot-Adet, E., Thierry-Mieg, Y., Wimmel, H.: Report on the Model Checking Contest at Petri Nets 2011. Transactions on Petri Nets and Other Models of Concurrency (ToPNoC) VI, 169–196 (march 2012)
35. Kordon, F., Linard, A., Paviot-Adet, E.: Optimized Colored Nets Unfolding. In: 26th International Conference on Formal Methods for Networked and Distributed Systems (FORTE'06). LNCS, vol. 4229, pp. 339–355. Springer, Paris, France (September 2006)
36. Krakoviak, S.: Principles of Operating Systems. MIT Press (1988)
37. Muschevici, R., Proença, J., Clarke, D.: Modular Modelling of Software Product Lines with Feature Nets. In: 9^{th} International Conference on Software Engineering and Formal Methods (SEFM). Lecture Notes in Computer Science, vol. 7041, pp. 318–333. Springer (2011)
38. Peterson, G.L.: Myths about the mutual exclusion problem. Inf. Process. Lett. 12(3), 115–116 (1981)
39. Peterson, J.L.: Petri Net Theory and the Modeling of Systems. Prentice Hall (1981)
40. Pommereau, F.: SNAKES is the net algebra kit for editors and simulators. http://www.ibisc.univ-evry.fr/~fpommereau/snakes.htm
41. Reisig, W.: Elements of Distributed Algorithms. Springer (1998)
42. Schwarick, M., Rohr, C., Heiner, M.: MARCIE - Model checking And Reachability analysis done effiCIEntly. In: Proc. 8th International Conference on Quantitative Evaluation of SysTems (QEST 2011). pp. 91 – 100. IEEE CS Press (September 2011)
43. Schwarick, M., Tovchigrechko, A.: IDD-based model validation of biochemical networks. TCS 412 pp. 2884–2908 (2010)
44. Thierry-Mieg, Y., Poitrenaud, D., Hamez, A., Kordon, F.: Hierarchical Set Decision Diagrams and Regular Models. In: 15th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS'09). LNCS, vol. 5505, pp. 1–15. Springer (2009)
45. Tovchigrechko, A.: Model Checking Using Interval Decision Diagrams. Ph.D. thesis, BTU Cottbus, Dep. of CS (2008)
46. Tricas, F., Ezpeleta, J.: Computing minimal siphons in petri net models of resource allocation systems: a parallel solution. IEEE Transactions on Systems, Man, and Cybernetics, Part A 36(3), 532–539 (2006)
47. Wikipedia: Dining philosophers problem, http://en.wikipedia.org/wiki/Dining_philosophers_problem (checked in 2012)
48. Wikipedia: Sieve of eratosthenes, http://en.wikipedia.org/wiki/Sieve_of_Eratosthenes (checked in 2012)

49. Wimmel, H., Wolf, K.: Applying CEGAR to the Petri net state equation. In: Tools and Algorithms for the Construction and Analysis of Systems, 17th International Conference, TACAS 2011. LNCS, vol. 6605, pp. 224–238. Springer (2011)
50. Wolf, K.: Generating Petri net state spaces. In: 28th International Conference on Applications and Theory of Petri Nets and Other Models of Concurrency. LNCS, vol. 4546, pp. 29–42. Springer (Jun 2007)

Index

— M —

- MCC 5, 22
  - 2011 ..... iii, 7, 18
  - 2012 ..... iii, 7, 18
  - 2013 ..... iii, 5, 6, 9, 13, 16–20, 22
- Model
  - Definition
    - CSRepetitions 7
    - Dekker 9
    - DotAndBoxes 9
    - DrinkVendingMachine 9
    - Echo 7
    - Eratosthenes 8
    - FMS 7
    - GlobalRessAlloc 8
    - Kanban 7
    - LamportFastMutEx 8
    - MAPK 7
    - NeoElection 7, 8
    - PermAdmissibility 9, 10
    - Peterson 7
    - Philosophers 7
    - PhilosophersDyn 8
    - Planning 7, 8
    - Railroad 8
    - RessAllocation 10
    - Ring 7, 9
    - RwMutex 9
    - SharedMemory 7
    - SimpleLoadBal 9
    - TokenRing 7
  - Colored
    - CSRepetitions . 25, 37, 53, 64, 77, 88, 101, 112, 125, 130, 143, 154, 167, 178, 193, 202, 214, 223, 235, 240, 253, 262, 274, 283, 297, 306, 318, 327, 339, 344, 357, 366, 378, 387
    - DotAndBoxes . 26, 38, 54, 65, 78, 89, 102, 113, 125, 131, 144, 155, 168, 179, 193, 202, 214, 223, 235, 241, 253, 262, 274, 283, 297, 306, 318, 327, 339, 345, 357, 366, 378, 387
    - DrinkVendingMachine 26, 38, 54, 65, 78, 89, 102, 113, 125, 131, 144, 155, 168, 179, 193, 202, 214, 223, 235, 241, 253, 262, 274, 283, 297, 306, 318, 327, 339, 345, 357, 366, 378, 387
    - GlobalRessAlloc 27, 38, 55, 65, 79, 89, 103, 113, 126, 131, 145, 155, 169, 179, 195, 203, 216, 224, 236, 241, 255, 263, 276, 284, 299, 307, 320, 328, 340, 345, 359, 367, 380, 388
    - LamportFastMutEx 28, 39, 56, 66, 80, 90, 104, 114, 126, 132, 146, 156, 170, 180, 195, 203, 216, 224, 236, 242, 255, 263, 276, 284, 299, 307, 320, 328, 340, 346, 359, 367, 380, 388
    - NeoElection ... 29, 39, 57, 66, 81, 90, 105, 114, 126, 132, 147, 156, 171, 180, 196, 203, 217, 225, 236, 242, 256, 263, 277, 285, 300, 307, 321, 329, 340, 346, 360, 367, 381, 389
    - PermAdmissibility . 30, 40, 58, 66, 82, 91, 106, 115, 127, 133, 148, 156, 172, 180, 196, 204, 217, 225, 237, 243, 256, 264, 277, 285, 300, 308, 321, 329, 341, 347, 360, 368, 381, 389
    - Peterson . 30, 40, 59, 67, 83, 91, 107, 115, 127, 133, 149, 157, 172, 181, 197, 204, 218, 225, 237, 243, 257, 264, 278, 285, 301, 308, 322, 329, 341, 347, 361, 368, 382, 389
    - Philosophers .. 31, 40, 59, 67, 83, 91, 107, 115, 128, 133, 149, 157, 173, 181, 197, 204, 218, 226, 238, 243, 257, 264, 278, 286, 301, 308, 322, 330, 342, 347, 361, 368, 382, 390
    - PhilosophersDyn .. 32, 41, 60, 67, 84, 92, 108, 116, 128, 134, 150, 157, 173, 181, 198, 205, 219, 226, 238, 244, 258, 265, 278, 286, 302, 309, 323, 330, 342, 348, 362, 369, 382, 390
    - SharedMemory 34, 42, 61, 68, 85, 93, 109, 117, 128, 135, 151, 158, 175, 182, 199, 206, 220, 227, 238, 245, 259, 266, 280, 287, 303, 310, 324, 331, 342, 349, 363, 370, 384, 391
    - SimpleLoadBal 34, 42, 62, 69, 86, 93, 110, 117, 129, 135, 152, 159, 175, 183, 199, 206, 220, 227, 239, 245, 259, 266, 280, 287, 303, 310, 324, 331, 343, 349, 363, 370, 384, 391
    - TokenRing 35, 42, 62, 69, 86, 93, 110, 117, 129, 135, 152, 159, 176, 183, 200, 206, 221, 228, 239, 245, 260, 266, 281, 288, 304, 310, 325, 332, 343, 349, 364, 370, 385, 392
  - P/T
    - CSRepetitions . 25, 38, 53, 64, 77, 89, 101, 113, 125, 131, 143, 154, 167, 178, 193, 202, 214, 223, 235, 241, 253, 262, 274, 283, 297, 306, 318, 327, 339, 345, 357, 366, 378, 387
    - Dekker ... 25, 38, 53, 64, 77, 89, 101, 113, 125, 131, 143, 154, 167, 178, 193, 202, 214, 223, 235, 241, 253, 262, 274, 283, 297, 306, 318, 327, 339, 345, 357, 366, 378, 387
    - DrinkVendingMachine 26, 38, 54, 65, 78, 89, 102, 113, 125, 131, 144, 155, 168, 179, 193, 202, 214, 223, 235, 241, 253, 262, 274, 283, 297, 306, 318, 327, 339, 345, 357, 366, 378, 387
    - Eratosthenes .. 26, 38, 55, 65, 79, 89, 103, 113, 126, 131, 145, 155, 169, 179, 194, 202, 215, 224, 236, 241, 254, 262, 275, 284, 298, 306, 319, 328, 340, 345, 358, 366, 379, 388

↪ FMS . 27, 38, 55, 65, 79, 89, 103, 113, 126, 131, 145, 155, 169, 179, 194, 202, 215, 224, 236, 241, 254, 262, 275, 284, 298, 306, 319, 328, 340, 345, 358, 366, 379, 388
↪ GlobalRessAlloc 27, 39, 56, 65, 80, 90, 104, 114, 126, 132, 146, 155, 169, 179, 195, 203, 216, 224, 236, 242, 255, 263, 276, 284, 299, 307, 320, 328, 340, 346, 359, 367, 380, 388
↪ Kanban ... 28, 39, 56, 65, 80, 90, 104, 114, 126, 132, 146, 155, 170, 179, 195, 203, 216, 224, 236, 242, 255, 263, 276, 284, 299, 307, 320, 328, 340, 346, 359, 367, 380, 388
↪ LamportFastMutEx 28, 39, 57, 66, 81, 90, 105, 114, 126, 132, 147, 156, 170, 180, 196, 203, 217, 224, 236, 242, 256, 263, 277, 284, 300, 307, 321, 328, 340, 346, 360, 367, 381, 388
↪ MAPK 29, 39, 57, 66, 81, 90, 105, 114, 126, 132, 147, 156, 171, 180, 196, 203, 217, 225, 236, 242, 256, 263, 277, 285, 300, 307, 321, 329, 340, 346, 360, 367, 381, 389
↪ NeoElection ... 29, 39, 58, 66, 82, 90, 106, 114, 127, 132, 148, 156, 171, 180, 196, 204, 217, 225, 237, 242, 256, 264, 277, 285, 300, 308, 321, 329, 341, 346, 360, 368, 381, 389
↪ PermAdmissibility . 30, 40, 58, 67, 82, 91, 106, 115, 127, 133, 148, 157, 172, 180, 197, 204, 218, 225, 237, 243, 257, 264, 278, 285, 301, 308, 322, 329, 341, 347, 361, 368, 382, 389
↪ Peterson . 31, 40, 59, 67, 83, 91, 107, 115, 127, 133, 149, 157, 173, 181, 197, 204, 218, 225, 237, 243, 257, 264, 278, 285, 301, 308, 322, 329, 341, 347, 361, 368, 382, 389
↪ Philosophers .. 31, 40, 59, 67, 83, 91, 107, 115, 128, 133, 149, 157, 173, 181, 197, 205, 218, 226, 238, 243, 257, 265, 278, 286, 301, 309, 322, 330, 342, 347, 361, 369, 382, 390
↪ PhilosophersDyn .. 32, 41, 60, 68, 84, 92, 108, 116, 128, 134, 150, 158, 174, 181, 198, 205, 219, 226, 238, 244, 258, 265, 279, 286, 302, 309, 323, 330, 342, 348, 362, 369, 383, 390
↪ Planning . 32, 41, 60, 68, 84, 92, 108, 116, 128, 134, 150, 158, 174, 182, 198, 205, 219, 226, 238, 244, 258, 265, 279, 286, 302, 309, 323, 330, 342, 348, 362, 369, 383, 390
↪ Railroad .. 32, 41, 60, 68, 84, 92, 108, 116, 128, 134, 150, 158, 174, 182, 198, 205, 219, 226, 238, 244, 258, 265, 279, 286, 302, 309, 323, 330, 342, 348, 362, 369, 383, 390
↪ RessAllocation 33, 41, 60, 68, 84, 92, 108, 116, 128, 134, 150, 158, 174, 182, 198, 205, 219, 226, 238, 244, 258, 265, 279, 286, 302, 309, 323, 330, 342, 348, 362, 369, 383, 390
↪ Ring . 33, 41, 61, 68, 85, 92, 109, 116, 128, 134, 151, 158, 174, 182, 199, 205, 220, 227, 238, 244, 259, 265, 279, 287, 303, 309, 324, 331, 342, 348, 363, 369, 383, 391
↪ RwMutex . 33, 41, 61, 68, 85, 92, 109, 116, 128, 134, 151, 158, 175, 182, 199, 205, 220, 227, 238, 244, 259, 265, 280, 287, 303, 309, 324, 331, 342, 348, 363, 369, 384, 391
↪ SharedMemory 34, 42, 61, 69, 85, 93, 109, 117, 129, 135, 151, 159, 175, 183, 199, 206, 220, 227, 239, 245, 259, 266, 280, 287, 303, 310, 324, 331, 343, 349, 363, 370, 384, 391
↪ SimpleLoadBal 35, 42, 62, 69, 86, 93, 110, 117, 129, 135, 152, 159, 176, 183, 200, 206, 221, 228, 239, 245, 260, 266, 280, 287, 304, 310, 325, 332, 343, 349, 364, 370, 384, 391
↪ TokenRing 35, 42, 62, 69, 86, 93, 110, 117, 129, 135, 152, 159, 176, 183, 200, 206, 221, 228, 239, 245, 260, 266, 281, 288, 304, 310, 325, 332, 343, 349, 364, 370, 385, 392
○— Model (surprise)
—○ Definition
↪ HouseConstruction 9
↪ IBMB2S565S3960 9
↪ QuasiCertifProtocol 9, 10
↪ Vasy2003 10
—○ Colored
↪ QuasiCertifProtocol 36, 43, 63, 69, 87, 94, 111, 118, 130, 136, 153, 159, 177, 183, 201, 207, 222, 228, 240, 246, 261, 267, 282, 288, 305, 311, 326, 332, 344, 350, 365, 371, 386, 392
—○ P/T
↪ HouseConstruction 36, 42, 63, 69, 87, 93, 111, 117, 130, 135, 153, 159, 176, 183, 200, 207, 221, 228, 240, 245, 260, 267, 281, 288, 304, 311, 325, 332, 344, 349, 364, 371, 385, 392
↪ IBMB2S565S3960 .. 36, 43, 63, 69, 87, 94, 111, 118, 130, 136, 153, 159, 177, 183, 200, 207, 222, 228, 240, 246, 260, 267, 281, 288, 304, 311, 326, 332, 344, 350, 364, 371, 385, 392
↪ QuasiCertifProtocol 36, 43, 63, 70, 87, 94, 111, 118, 130, 136, 153, 160, 177, 184, 201, 207, 222, 228, 240, 246, 261, 267, 282, 288, 305, 311, 326, 332, 344, 350, 365, 371, 386, 392
↪ Vasy2003 . 37, 43, 64, 70, 88, 94, 112, 118, 130, 136, 154, 160, 177, 184, 201, 207, 222, 228, 240, 246, 261, 267, 282, 288, 305, 311, 326, 332, 344, 350, 365, 371, 386, 392

—◉—

○— Outputs
—○ CTLCardinalityComparison 201
↪ CSRepetitions (colored) 202
↪ CSRepetitions (P/T) 202
↪ Dekker (P/T) 202
↪ DotAndBoxes (colored) 202
↪ DrinkVendingMachine (colored) 202
↪ DrinkVendingMachine (P/T) 202
↪ Echo (P/T) 202
↪ Eratosthenes (P/T) 202
↪ FMS (P/T) 202

↪ GlobalRessAlloc (colored) 203
↪ GlobalRessAlloc (P/T) 203
↪ HouseConstruction (P/T) 207
↪ IBMB2S565S3960 (P/T) 207
↪ Kanban (P/T) 203
↪ LamportFastMutEx (colored) 203
↪ LamportFastMutEx (P/T) 203
↪ MAPK (P/T) 203
↪ NeoElection (colored) 203
↪ NeoElection (P/T) 204
↪ PermAdmissibility (colored) 204
↪ PermAdmissibility (P/T) 204
↪ Peterson (colored) 204
↪ Peterson (P/T) 204
↪ Philosophers (colored) 204
↪ Philosophers (P/T) 205
↪ PhilosophersDyn (colored) 205
↪ PhilosophersDyn (P/T) 205
↪ Planning (P/T) 205
↪ QuasiCertifProtocol (colored) 207
↪ QuasiCertifProtocol (P/T) 207
↪ Railroad (P/T) 205
↪ RessAllocation (P/T) 205
↪ Ring (P/T) 205
↪ RwMutex (P/T) 205
↪ SharedMemory (colored) 206
↪ SharedMemory (P/T) 206
↪ SimpleLoadBal (colored) 206
↪ SimpleLoadBal (P/T) 206
↪ TokenRing (colored) 206
↪ TokenRing (P/T) 206
↪ Vasy2003 (P/T) 207
—○ CTLFireability 223
↪ CSRepetitions (colored) 223
↪ CSRepetitions (P/T) 223
↪ Dekker (P/T) 223
↪ DotAndBoxes (colored) 223
↪ DrinkVendingMachine (colored) 223
↪ DrinkVendingMachine (P/T) 223
↪ Echo (P/T) 223
↪ Eratosthenes (P/T) 224
↪ FMS (P/T) 224
↪ GlobalRessAlloc (colored) 224
↪ GlobalRessAlloc (P/T) 224
↪ HouseConstruction (P/T) 228
↪ IBMB2S565S3960 (P/T) 228
↪ Kanban (P/T) 224
↪ LamportFastMutEx (colored) 224
↪ LamportFastMutEx (P/T) 225
↪ MAPK (P/T) 225
↪ NeoElection (colored) 225
↪ NeoElection (P/T) 225
↪ PermAdmissibility (colored) 225
↪ PermAdmissibility (P/T) 225
↪ Peterson (colored) 225
↪ Peterson (P/T) 225
↪ Philosophers (colored) 226
↪ Philosophers (P/T) 226
↪ PhilosophersDyn (colored) 226
↪ PhilosophersDyn (P/T) 226
↪ Planning (P/T) 226
↪ QuasiCertifProtocol (colored) 228
↪ QuasiCertifProtocol (P/T) 228
↪ Railroad (P/T) 226
↪ RessAllocation (P/T) 226
↪ Ring (P/T) 227
↪ RwMutex (P/T) 227
↪ SharedMemory (colored) 227
↪ SharedMemory (P/T) 227
↪ SimpleLoadBal (colored) 227
↪ SimpleLoadBal (P/T) 228
↪ TokenRing (colored) 228
↪ TokenRing (P/T) 228
↪ Vasy2003 (P/T) 228
—○ CTLMarkingComparison 240
↪ CSRepetitions (colored) 240
↪ CSRepetitions (P/T) 241
↪ Dekker (P/T) 241
↪ DotAndBoxes (colored) 241
↪ DrinkVendingMachine (colored) 241
↪ DrinkVendingMachine (P/T) 241
↪ Echo (P/T) 241
↪ Eratosthenes (P/T) 241
↪ FMS (P/T) 241
↪ GlobalRessAlloc (colored) 242
↪ GlobalRessAlloc (P/T) 242
↪ HouseConstruction (P/T) 245
↪ IBMB2S565S3960 (P/T) 246
↪ Kanban (P/T) 242
↪ LamportFastMutEx (colored) 242
↪ LamportFastMutEx (P/T) 242
↪ MAPK (P/T) 242
↪ NeoElection (colored) 242
↪ NeoElection (P/T) 242
↪ PermAdmissibility (colored) 243
↪ PermAdmissibility (P/T) 243
↪ Peterson (colored) 243
↪ Peterson (P/T) 243
↪ Philosophers (colored) 243
↪ Philosophers (P/T) 243
↪ PhilosophersDyn (colored) 244
↪ PhilosophersDyn (P/T) 244
↪ Planning (P/T) 244
↪ QuasiCertifProtocol (colored) 246
↪ QuasiCertifProtocol (P/T) 246
↪ Railroad (P/T) 244
↪ RessAllocation (P/T) 244
↪ Ring (P/T) 244
↪ RwMutex (P/T) 244
↪ SharedMemory (colored) 245
↪ SharedMemory (P/T) 245
↪ SimpleLoadBal (colored) 245

↪ SimpleLoadBal (P/T) 245
↪ TokenRing (colored) 245
↪ TokenRing (P/T) 245
↪ Vasy2003 (P/T) 246
—○ CTLMix 282
↪ CSRepetitions (colored) 283
↪ CSRepetitions (P/T) 283
↪ Dekker (P/T) 283
↪ DotAndBoxes (colored) 283
↪ DrinkVendingMachine (colored) 283
↪ DrinkVendingMachine (P/T) 283
↪ Echo (P/T) 283
↪ Eratosthenes (P/T) 284
↪ FMS (P/T) 284
↪ GlobalRessAlloc (colored) 284
↪ GlobalRessAlloc (P/T) 284
↪ HouseConstruction (P/T) 288
↪ IBMB2S565S3960 (P/T) 288
↪ Kanban (P/T) 284
↪ LamportFastMutEx (colored) 284
↪ LamportFastMutEx (P/T) 284
↪ MAPK (P/T) 285
↪ NeoElection (colored) 285
↪ NeoElection (P/T) 285
↪ PermAdmissibility (colored) 285
↪ PermAdmissibility (P/T) 285
↪ Peterson (colored) 285
↪ Peterson (P/T) 285
↪ Philosophers (colored) 286
↪ Philosophers (P/T) 286
↪ PhilosophersDyn (colored) 286
↪ PhilosophersDyn (P/T) 286
↪ Planning (P/T) 286
↪ QuasiCertifProtocol (colored) 288
↪ QuasiCertifProtocol (P/T) 288
↪ Railroad (P/T) 286
↪ RessAllocation (P/T) 286
↪ Ring (P/T) 287
↪ RwMutex (P/T) 287
↪ SharedMemory (colored) 287
↪ SharedMemory (P/T) 287
↪ SimpleLoadBal (colored) 287
↪ SimpleLoadBal (P/T) 287
↪ TokenRing (colored) 288
↪ TokenRing (P/T) 288
↪ Vasy2003 (P/T) 288
—○ CTLPlaceComparison 261
↪ CSRepetitions (colored) 262
↪ CSRepetitions (P/T) 262
↪ Dekker (P/T) 262
↪ DotAndBoxes (colored) 262
↪ DrinkVendingMachine (colored) 262
↪ DrinkVendingMachine (P/T) 262
↪ Echo (P/T) 262
↪ Eratosthenes (P/T) 262
↪ FMS (P/T) 262
↪ GlobalRessAlloc (colored) 263
↪ GlobalRessAlloc (P/T) 263
↪ HouseConstruction (P/T) 267
↪ IBMB2S565S3960 (P/T) 267
↪ Kanban (P/T) 263
↪ LamportFastMutEx (colored) 263
↪ LamportFastMutEx (P/T) 263
↪ MAPK (P/T) 263
↪ NeoElection (colored) 263
↪ NeoElection (P/T) 264
↪ PermAdmissibility (colored) 264
↪ PermAdmissibility (P/T) 264
↪ Peterson (colored) 264
↪ Peterson (P/T) 264
↪ Philosophers (colored) 264
↪ Philosophers (P/T) 265
↪ PhilosophersDyn (colored) 265
↪ PhilosophersDyn (P/T) 265
↪ Planning (P/T) 265
↪ QuasiCertifProtocol (colored) 267
↪ QuasiCertifProtocol (P/T) 267
↪ Railroad (P/T) 265
↪ RessAllocation (P/T) 265
↪ Ring (P/T) 265
↪ RwMutex (P/T) 265
↪ SharedMemory (colored) 266
↪ SharedMemory (P/T) 266
↪ SimpleLoadBal (colored) 266
↪ SimpleLoadBal (P/T) 266
↪ TokenRing (colored) 266
↪ TokenRing (P/T) 266
↪ Vasy2003 (P/T) 267
—○ LTLCardinalityComparison 305
↪ CSRepetitions (colored) 306
↪ CSRepetitions (P/T) 306
↪ Dekker (P/T) 306
↪ DotAndBoxes (colored) 306
↪ DrinkVendingMachine (colored) 306
↪ DrinkVendingMachine (P/T) 306
↪ Echo (P/T) 306
↪ Eratosthenes (P/T) 306
↪ FMS (P/T) 306
↪ GlobalRessAlloc (colored) 307
↪ GlobalRessAlloc (P/T) 307
↪ HouseConstruction (P/T) 311
↪ IBMB2S565S3960 (P/T) 311
↪ Kanban (P/T) 307
↪ LamportFastMutEx (colored) 307
↪ LamportFastMutEx (P/T) 307
↪ MAPK (P/T) 307
↪ NeoElection (colored) 307
↪ NeoElection (P/T) 308
↪ PermAdmissibility (colored) 308
↪ PermAdmissibility (P/T) 308
↪ Peterson (colored) 308
↪ Peterson (P/T) 308

↪ Philosophers (colored) 308
↪ Philosophers (P/T) 309
↪ PhilosophersDyn (colored) 309
↪ PhilosophersDyn (P/T) 309
↪ Planning (P/T) 309
↪ QuasiCertifProtocol (colored) 311
↪ QuasiCertifProtocol (P/T) 311
↪ Railroad (P/T) 309
↪ RessAllocation (P/T) 309
↪ Ring (P/T) 309
↪ RwMutex (P/T) 309
↪ SharedMemory (colored) 310
↪ SharedMemory (P/T) 310
↪ SimpleLoadBal (colored) 310
↪ SimpleLoadBal (P/T) 310
↪ TokenRing (colored) 310
↪ TokenRing (P/T) 310
↪ Vasy2003 (P/T) 311
⊸ LTLFireability 327
↪ CSRepetitions (colored) 327
↪ CSRepetitions (P/T) 327
↪ Dekker (P/T) 327
↪ DotAndBoxes (colored) 327
↪ DrinkVendingMachine (colored) 327
↪ DrinkVendingMachine (P/T) 327
↪ Echo (P/T) 327
↪ Eratosthenes (P/T) 328
↪ FMS (P/T) 328
↪ GlobalRessAlloc (colored) 328
↪ GlobalRessAlloc (P/T) 328
↪ HouseConstruction (P/T) 332
↪ IBMB2S565S3960 (P/T) 332
↪ Kanban (P/T) 328
↪ LamportFastMutEx (colored) 328
↪ LamportFastMutEx (P/T) 329
↪ MAPK (P/T) 329
↪ NeoElection (colored) 329
↪ NeoElection (P/T) 329
↪ PermAdmissibility (colored) 329
↪ PermAdmissibility (P/T) 329
↪ Peterson (colored) 329
↪ Peterson (P/T) 329
↪ Philosophers (colored) 330
↪ Philosophers (P/T) 330
↪ PhilosophersDyn (colored) 330
↪ PhilosophersDyn (P/T) 330
↪ Planning (P/T) 330
↪ QuasiCertifProtocol (colored) 332
↪ QuasiCertifProtocol (P/T) 332
↪ Railroad (P/T) 330
↪ RessAllocation (P/T) 330
↪ Ring (P/T) 331
↪ RwMutex (P/T) 331
↪ SharedMemory (colored) 331
↪ SharedMemory (P/T) 331
↪ SimpleLoadBal (colored) 331
↪ SimpleLoadBal (P/T) 332
↪ TokenRing (colored) 332
↪ TokenRing (P/T) 332
↪ Vasy2003 (P/T) 332
⊸ LTLMarkingComparison 344
↪ CSRepetitions (colored) 344
↪ CSRepetitions (P/T) 345
↪ Dekker (P/T) 345
↪ DotAndBoxes (colored) 345
↪ DrinkVendingMachine (colored) 345
↪ DrinkVendingMachine (P/T) 345
↪ Echo (P/T) 345
↪ Eratosthenes (P/T) 345
↪ FMS (P/T) 345
↪ GlobalRessAlloc (colored) 346
↪ GlobalRessAlloc (P/T) 346
↪ HouseConstruction (P/T) 349
↪ IBMB2S565S3960 (P/T) 350
↪ Kanban (P/T) 346
↪ LamportFastMutEx (colored) 346
↪ LamportFastMutEx (P/T) 346
↪ MAPK (P/T) 346
↪ NeoElection (colored) 346
↪ NeoElection (P/T) 346
↪ PermAdmissibility (colored) 347
↪ PermAdmissibility (P/T) 347
↪ Peterson (colored) 347
↪ Peterson (P/T) 347
↪ Philosophers (colored) 347
↪ Philosophers (P/T) 347
↪ PhilosophersDyn (colored) 348
↪ PhilosophersDyn (P/T) 348
↪ Planning (P/T) 348
↪ QuasiCertifProtocol (colored) 350
↪ QuasiCertifProtocol (P/T) 350
↪ Railroad (P/T) 348
↪ RessAllocation (P/T) 348
↪ Ring (P/T) 348
↪ RwMutex (P/T) 348
↪ SharedMemory (colored) 349
↪ SharedMemory (P/T) 349
↪ SimpleLoadBal (colored) 349
↪ SimpleLoadBal (P/T) 349
↪ TokenRing (colored) 349
↪ TokenRing (P/T) 349
↪ Vasy2003 (P/T) 350
⊸ LTLMix 386
↪ CSRepetitions (colored) 387
↪ CSRepetitions (P/T) 387
↪ Dekker (P/T) 387
↪ DotAndBoxes (colored) 387
↪ DrinkVendingMachine (colored) 387
↪ DrinkVendingMachine (P/T) 387
↪ Echo (P/T) 387
↪ Eratosthenes (P/T) 388
↪ FMS (P/T) 388

↪ GlobalRessAlloc (colored) 388
↪ GlobalRessAlloc (P/T) 388
↪ HouseConstruction (P/T) 392
↪ IBMB2S565S3960 (P/T) 392
↪ Kanban (P/T) 388
↪ LamportFastMutEx (colored) 388
↪ LamportFastMutEx (P/T) 388
↪ MAPK (P/T) 389
↪ NeoElection (colored) 389
↪ NeoElection (P/T) 389
↪ PermAdmissibility (colored) 389
↪ PermAdmissibility (P/T) 389
↪ Peterson (colored) 389
↪ Peterson (P/T) 389
↪ Philosophers (colored) 390
↪ Philosophers (P/T) 390
↪ PhilosophersDyn (colored) 390
↪ PhilosophersDyn (P/T) 390
↪ Planning (P/T) 390
↪ QuasiCertifProtocol (colored) 392
↪ QuasiCertifProtocol (P/T) 392
↪ Railroad (P/T) 390
↪ RessAllocation (P/T) 390
↪ Ring (P/T) 391
↪ RwMutex (P/T) 391
↪ SharedMemory (colored) 391
↪ SharedMemory (P/T) 391
↪ SimpleLoadBal (colored) 391
↪ SimpleLoadBal (P/T) 391
↪ TokenRing (colored) 392
↪ TokenRing (P/T) 392
↪ Vasy2003 (P/T) 392
—○ LTLPlaceComparison 365
↪ CSRepetitions (colored) 366
↪ CSRepetitions (P/T) 366
↪ Dekker (P/T) 366
↪ DotAndBoxes (colored) 366
↪ DrinkVendingMachine (colored) 366
↪ DrinkVendingMachine (P/T) 366
↪ Echo (P/T) 366
↪ Eratosthenes (P/T) 366
↪ FMS (P/T) 366
↪ GlobalRessAlloc (colored) 367
↪ GlobalRessAlloc (P/T) 367
↪ HouseConstruction (P/T) 371
↪ IBMB2S565S3960 (P/T) 371
↪ Kanban (P/T) 367
↪ LamportFastMutEx (colored) 367
↪ LamportFastMutEx (P/T) 367
↪ MAPK (P/T) 367
↪ NeoElection (colored) 367
↪ NeoElection (P/T) 368
↪ PermAdmissibility (colored) 368
↪ PermAdmissibility (P/T) 368
↪ Peterson (colored) 368
↪ Peterson (P/T) 368
↪ Philosophers (colored) 368
↪ Philosophers (P/T) 369
↪ PhilosophersDyn (colored) 369
↪ PhilosophersDyn (P/T) 369
↪ Planning (P/T) 369
↪ QuasiCertifProtocol (colored) 371
↪ QuasiCertifProtocol (P/T) 371
↪ Railroad (P/T) 369
↪ RessAllocation (P/T) 369
↪ Ring (P/T) 369
↪ RwMutex (P/T) 369
↪ SharedMemory (colored) 370
↪ SharedMemory (P/T) 370
↪ SimpleLoadBal (colored) 370
↪ SimpleLoadBal (P/T) 370
↪ TokenRing (colored) 370
↪ TokenRing (P/T) 370
↪ Vasy2003 (P/T) 371
—○ ReachabilityCardinalityComparison 64
↪ CSRepetitions (colored) 64
↪ CSRepetitions (P/T) 64
↪ Dekker (P/T) 64
↪ DotAndBoxes (colored) 65
↪ DrinkVendingMachine (colored) 65
↪ DrinkVendingMachine (P/T) 65
↪ Echo (P/T) 65
↪ Eratosthenes (P/T) 65
↪ FMS (P/T) 65
↪ GlobalRessAlloc (colored) 65
↪ GlobalRessAlloc (P/T) 65
↪ HouseConstruction (P/T) 69
↪ IBMB2S565S3960 (P/T) 69
↪ Kanban (P/T) 66
↪ LamportFastMutEx (colored) 66
↪ LamportFastMutEx (P/T) 66
↪ MAPK (P/T) 66
↪ NeoElection (colored) 66
↪ NeoElection (P/T) 66
↪ PermAdmissibility (colored) 66
↪ PermAdmissibility (P/T) 67
↪ Peterson (colored) 67
↪ Peterson (P/T) 67
↪ Philosophers (colored) 67
↪ Philosophers (P/T) 67
↪ PhilosophersDyn (colored) 67
↪ PhilosophersDyn (P/T) 68
↪ Planning (P/T) 68
↪ QuasiCertifProtocol (colored) 69
↪ QuasiCertifProtocol (P/T) 70
↪ Railroad (P/T) 68
↪ RessAllocation (P/T) 68
↪ Ring (P/T) 68
↪ RwMutex (P/T) 68
↪ SharedMemory (colored) 68
↪ SharedMemory (P/T) 69
↪ SimpleLoadBal (colored) 69

↪ SimpleLoadBal (P/T) 69
↪ TokenRing (colored) 69
↪ TokenRing (P/T) 69
↪ Vasy2003 (P/T) 70
—○ ReachabilityDeadlock 88
↪ CSRepetitions (colored) 88
↪ CSRepetitions (P/T) 89
↪ Dekker (P/T) 89
↪ DotAndBoxes (colored) 89
↪ DrinkVendingMachine (colored) 89
↪ DrinkVendingMachine (P/T) 89
↪ Echo (P/T) 89
↪ Eratosthenes (P/T) 89
↪ FMS (P/T) 89
↪ GlobalRessAlloc (colored) 90
↪ GlobalRessAlloc (P/T) 90
↪ HouseConstruction (P/T) 93
↪ IBMB2S565S3960 (P/T) 94
↪ Kanban (P/T) 90
↪ LamportFastMutEx (colored) 90
↪ LamportFastMutEx (P/T) 90
↪ MAPK (P/T) 90
↪ NeoElection (colored) 90
↪ NeoElection (P/T) 90
↪ PermAdmissibility (colored) 91
↪ PermAdmissibility (P/T) 91
↪ Peterson (colored) 91
↪ Peterson (P/T) 91
↪ Philosophers (colored) 91
↪ Philosophers (P/T) 91
↪ PhilosophersDyn (colored) 92
↪ PhilosophersDyn (P/T) 92
↪ Planning (P/T) 92
↪ QuasiCertifProtocol (colored) 94
↪ QuasiCertifProtocol (P/T) 94
↪ Railroad (P/T) 92
↪ RessAllocation (P/T) 92
↪ Ring (P/T) 92
↪ RwMutex (P/T) 92
↪ SharedMemory (colored) 93
↪ SharedMemory (P/T) 93
↪ SimpleLoadBal (colored) 93
↪ SimpleLoadBal (P/T) 93
↪ TokenRing (colored) 93
↪ TokenRing (P/T) 93
↪ Vasy2003 (P/T) 94
—○ ReachabilityFireability 112
↪ CSRepetitions (colored) 112
↪ CSRepetitions (P/T) 113
↪ Dekker (P/T) 113
↪ DotAndBoxes (colored) 113
↪ DrinkVendingMachine (colored) 113
↪ DrinkVendingMachine (P/T) 113
↪ Echo (P/T) 113
↪ Eratosthenes (P/T) 113
↪ FMS (P/T) 113
↪ GlobalRessAlloc (colored) 114
↪ GlobalRessAlloc (P/T) 114
↪ HouseConstruction (P/T) 117
↪ IBMB2S565S3960 (P/T) 118
↪ Kanban (P/T) 114
↪ LamportFastMutEx (colored) 114
↪ LamportFastMutEx (P/T) 114
↪ MAPK (P/T) 114
↪ NeoElection (colored) 114
↪ NeoElection (P/T) 114
↪ PermAdmissibility (colored) 115
↪ PermAdmissibility (P/T) 115
↪ Peterson (colored) 115
↪ Peterson (P/T) 115
↪ Philosophers (colored) 115
↪ Philosophers (P/T) 115
↪ PhilosophersDyn (colored) 116
↪ PhilosophersDyn (P/T) 116
↪ Planning (P/T) 116
↪ QuasiCertifProtocol (colored) 118
↪ QuasiCertifProtocol (P/T) 118
↪ Railroad (P/T) 116
↪ RessAllocation (P/T) 116
↪ Ring (P/T) 116
↪ RwMutex (P/T) 116
↪ SharedMemory (colored) 117
↪ SharedMemory (P/T) 117
↪ SimpleLoadBal (colored) 117
↪ SimpleLoadBal (P/T) 117
↪ TokenRing (colored) 117
↪ TokenRing (P/T) 117
↪ Vasy2003 (P/T) 118
—○ ReachabilityMarkingComparison 130
↪ CSRepetitions (colored) 130
↪ CSRepetitions (P/T) 131
↪ Dekker (P/T) 131
↪ DotAndBoxes (colored) 131
↪ DrinkVendingMachine (colored) 131
↪ DrinkVendingMachine (P/T) 131
↪ Echo (P/T) 131
↪ Eratosthenes (P/T) 131
↪ FMS (P/T) 131
↪ GlobalRessAlloc (colored) 132
↪ GlobalRessAlloc (P/T) 132
↪ HouseConstruction (P/T) 135
↪ IBMB2S565S3960 (P/T) 136
↪ Kanban (P/T) 132
↪ LamportFastMutEx (colored) 132
↪ LamportFastMutEx (P/T) 132
↪ MAPK (P/T) 132
↪ NeoElection (colored) 132
↪ NeoElection (P/T) 132
↪ PermAdmissibility (colored) 133
↪ PermAdmissibility (P/T) 133
↪ Peterson (colored) 133
↪ Peterson (P/T) 133

↪ Philosophers (colored) 133
↪ Philosophers (P/T) 133
↪ PhilosophersDyn (colored) 134
↪ PhilosophersDyn (P/T) 134
↪ Planning (P/T) 134
↪ QuasiCertifProtocol (colored) 136
↪ QuasiCertifProtocol (P/T) 136
↪ Railroad (P/T) 134
↪ RessAllocation (P/T) 134
↪ Ring (P/T) 134
↪ RwMutex (P/T) 134
↪ SharedMemory (colored) 135
↪ SharedMemory (P/T) 135
↪ SimpleLoadBal (colored) 135
↪ SimpleLoadBal (P/T) 135
↪ TokenRing (colored) 135
↪ TokenRing (P/T) 135
↪ Vasy2003 (P/T) 136
⟜ ReachabilityMix 178
↪ CSRepetitions (colored) 178
↪ CSRepetitions (P/T) 178
↪ Dekker (P/T) 178
↪ DotAndBoxes (colored) 179
↪ DrinkVendingMachine (colored) 179
↪ DrinkVendingMachine (P/T) 179
↪ Echo (P/T) 179
↪ Eratosthenes (P/T) 179
↪ FMS (P/T) 179
↪ GlobalRessAlloc (colored) 179
↪ GlobalRessAlloc (P/T) 179
↪ HouseConstruction (P/T) 183
↪ IBMB2S565S3960 (P/T) 183
↪ Kanban (P/T) 179
↪ LamportFastMutEx (colored) 180
↪ LamportFastMutEx (P/T) 180
↪ MAPK (P/T) 180
↪ NeoElection (colored) 180
↪ NeoElection (P/T) 180
↪ PermAdmissibility (colored) 180
↪ PermAdmissibility (P/T) 180
↪ Peterson (colored) 181
↪ Peterson (P/T) 181
↪ Philosophers (colored) 181
↪ Philosophers (P/T) 181
↪ PhilosophersDyn (colored) 181
↪ PhilosophersDyn (P/T) 181
↪ Planning (P/T) 182
↪ QuasiCertifProtocol (colored) 183
↪ QuasiCertifProtocol (P/T) 184
↪ Railroad (P/T) 182
↪ RessAllocation (P/T) 182
↪ Ring (P/T) 182
↪ RwMutex (P/T) 182
↪ SharedMemory (colored) 182
↪ SharedMemory (P/T) 183
↪ SimpleLoadBal (colored) 183
↪ SimpleLoadBal (P/T) 183
↪ TokenRing (colored) 183
↪ TokenRing (P/T) 183
↪ Vasy2003 (P/T) 184
⟜ ReachabilityPlaceComparison 154
↪ CSRepetitions (colored) 154
↪ CSRepetitions (P/T) 154
↪ Dekker (P/T) 154
↪ DotAndBoxes (colored) 155
↪ DrinkVendingMachine (colored) 155
↪ DrinkVendingMachine (P/T) 155
↪ Echo (P/T) 155
↪ Eratosthenes (P/T) 155
↪ FMS (P/T) 155
↪ GlobalRessAlloc (colored) 155
↪ GlobalRessAlloc (P/T) 155
↪ HouseConstruction (P/T) 159
↪ IBMB2S565S3960 (P/T) 159
↪ Kanban (P/T) 156
↪ LamportFastMutEx (colored) 156
↪ LamportFastMutEx (P/T) 156
↪ MAPK (P/T) 156
↪ NeoElection (colored) 156
↪ NeoElection (P/T) 156
↪ PermAdmissibility (colored) 156
↪ PermAdmissibility (P/T) 157
↪ Peterson (colored) 157
↪ Peterson (P/T) 157
↪ Philosophers (colored) 157
↪ Philosophers (P/T) 157
↪ PhilosophersDyn (colored) 157
↪ PhilosophersDyn (P/T) 158
↪ Planning (P/T) 158
↪ QuasiCertifProtocol (colored) 159
↪ QuasiCertifProtocol (P/T) 160
↪ Railroad (P/T) 158
↪ RessAllocation (P/T) 158
↪ Ring (P/T) 158
↪ RwMutex (P/T) 158
↪ SharedMemory (colored) 158
↪ SharedMemory (P/T) 159
↪ SimpleLoadBal (colored) 159
↪ SimpleLoadBal (P/T) 159
↪ TokenRing (colored) 159
↪ TokenRing (P/T) 159
↪ Vasy2003 (P/T) 160
⟜ StateSpace 37
↪ CSRepetitions (colored) 37
↪ CSRepetitions (P/T) 38
↪ Dekker (P/T) 38
↪ DotAndBoxes (colored) 38
↪ DrinkVendingMachine (colored) 38
↪ DrinkVendingMachine (P/T) 38
↪ Echo (P/T) 38
↪ Eratosthenes (P/T) 38
↪ FMS (P/T) 38

↪ GlobalRessAlloc (colored) 39
↪ GlobalRessAlloc (P/T) 39
↪ HouseConstruction (P/T) 42
↪ IBMB2S565S3960 (P/T) 43
↪ Kanban (P/T) 39
↪ LamportFastMutEx (colored) 39
↪ LamportFastMutEx (P/T) 39
↪ MAPK (P/T) 39
↪ NeoElection (colored) 39
↪ NeoElection (P/T) 39
↪ PermAdmissibility (colored) 40
↪ PermAdmissibility (P/T) 40
↪ Peterson (colored) 40
↪ Peterson (P/T) 40
↪ Philosophers (colored) 40
↪ Philosophers (P/T) 40
↪ PhilosophersDyn (colored) 41
↪ PhilosophersDyn (P/T) 41
↪ Planning (P/T) 41
↪ QuasiCertifProtocol (colored) 43
↪ QuasiCertifProtocol (P/T) 43
↪ Railroad (P/T) 41
↪ RessAllocation (P/T) 41
↪ Ring (P/T) 41
↪ RwMutex (P/T) 41
↪ SharedMemory (colored) 42
↪ SharedMemory (P/T) 42
↪ SimpleLoadBal (colored) 42
↪ SimpleLoadBal (P/T) 42
↪ TokenRing (colored) 42
↪ TokenRing (P/T) 42
↪ Vasy2003 (P/T) 43

— P —

○— Performances
—○ CTLCardinalityComparison 193
↪ CSRepetitions (P/T) 193
↪ Dekker (P/T) 193
↪ DrinkVendingMachine (P/T) 193
↪ Echo (P/T) 194
↪ Eratosthenes (P/T) 194
↪ FMS (P/T) 194
↪ GlobalRessAlloc (P/T) 195
↪ HouseConstruction (P/T) 200
↪ IBMB2S565S3960 (P/T) 200
↪ Kanban (P/T) 195
↪ LamportFastMutEx (P/T) 196
↪ MAPK (P/T) 196
↪ NeoElection (P/T) 196
↪ PermAdmissibility (P/T) 197
↪ Peterson (P/T) 197
↪ Philosophers (P/T) 197
↪ PhilosophersDyn (P/T) 198
↪ QuasiCertifProtocol (P/T) 201
↪ Railroad (P/T) 198
↪ RessAllocation (P/T) 198
↪ Ring (P/T) 199
↪ RwMutex (P/T) 199
↪ SharedMemory (P/T) 199
↪ SimpleLoadBal (P/T) 200
↪ Vasy2003 (P/T) 201
—○ CTLFireability 214
↪ CSRepetitions (P/T) 214
↪ Dekker (P/T) 214
↪ DrinkVendingMachine (P/T) 214
↪ Echo (P/T) 215
↪ Eratosthenes (P/T) 215
↪ FMS (P/T) 215
↪ GlobalRessAlloc (P/T) 216
↪ HouseConstruction (P/T) 221
↪ IBMB2S565S3960 (P/T) 222
↪ Kanban (P/T) 216
↪ LamportFastMutEx (P/T) 217
↪ MAPK (P/T) 217
↪ NeoElection (P/T) 217
↪ PermAdmissibility (P/T) 218
↪ Peterson (P/T) 218
↪ Philosophers (P/T) 218
↪ PhilosophersDyn (P/T) 219
↪ QuasiCertifProtocol (P/T) 222
↪ Railroad (P/T) 219
↪ RessAllocation (P/T) 219
↪ Ring (P/T) 220
↪ RwMutex (P/T) 220
↪ SharedMemory (P/T) 220
↪ SimpleLoadBal (P/T) 221
↪ TokenRing (P/T) 221
↪ Vasy2003 (P/T) 222
—○ CTLMarkingComparison 235
↪ CSRepetitions (P/T) 235
↪ DrinkVendingMachine (P/T) 235
↪ GlobalRessAlloc (P/T) 236
↪ LamportFastMutEx (P/T) 236
↪ NeoElection (P/T) 237
↪ PermAdmissibility (P/T) 237
↪ Peterson (P/T) 237
↪ Philosophers (P/T) 238
↪ PhilosophersDyn (P/T) 238
↪ QuasiCertifProtocol (P/T) 240
↪ SharedMemory (P/T) 239
↪ SimpleLoadBal (P/T) 239
↪ TokenRing (P/T) 239
—○ CTLMix 274
↪ CSRepetitions (P/T) 274
↪ Dekker (P/T) 274
↪ DrinkVendingMachine (P/T) 274
↪ Echo (P/T) 275
↪ Eratosthenes (P/T) 275
↪ FMS (P/T) 275
↪ GlobalRessAlloc (P/T) 276
↪ HouseConstruction (P/T) 281
↪ IBMB2S565S3960 (P/T) 281
↪ Kanban (P/T) 276

↪ LamportFastMutEx (P/T) 277
↪ MAPK (P/T) 277
↪ NeoElection (P/T) 277
↪ PermAdmissibility (P/T) 278
↪ Peterson (P/T) 278
↪ Philosophers (P/T) 278
↪ PhilosophersDyn (P/T) 279
↪ QuasiCertifProtocol (P/T) 282
↪ Railroad (P/T) 279
↪ RessAllocation (P/T) 279
↪ Ring (P/T) 279
↪ RwMutex (P/T) 280
↪ SharedMemory (P/T) 280
↪ SimpleLoadBal (P/T) 280
↪ TokenRing (P/T) 281
↪ Vasy2003 (P/T) 282
⊸ CTLPlaceComparison 253
↪ CSRepetitions (P/T) 253
↪ Dekker (P/T) 253
↪ DrinkVendingMachine (P/T) 253
↪ Echo (P/T) 254
↪ Eratosthenes (P/T) 254
↪ FMS (P/T) 254
↪ GlobalRessAlloc (P/T) 255
↪ HouseConstruction (P/T) 260
↪ IBMB2S565S3960 (P/T) 260
↪ Kanban (P/T) 255
↪ LamportFastMutEx (P/T) 256
↪ MAPK (P/T) 256
↪ NeoElection (P/T) 256
↪ PermAdmissibility (P/T) 257
↪ Peterson (P/T) 257
↪ Philosophers (P/T) 257
↪ PhilosophersDyn (P/T) 258
↪ QuasiCertifProtocol (P/T) 261
↪ Railroad (P/T) 258
↪ RessAllocation (P/T) 258
↪ Ring (P/T) 259
↪ RwMutex (P/T) 259
↪ SharedMemory (P/T) 259
↪ SimpleLoadBal (P/T) 260
↪ Vasy2003 (P/T) 261
⊸ LTLCardinalityComparison 297
↪ CSRepetitions (P/T) 297
↪ Dekker (P/T) 297
↪ DrinkVendingMachine (P/T) 297
↪ Echo (P/T) 298
↪ Eratosthenes (P/T) 298
↪ FMS (P/T) 298
↪ GlobalRessAlloc (P/T) 299
↪ HouseConstruction (P/T) 304
↪ IBMB2S565S3960 (P/T) 304
↪ Kanban (P/T) 299
↪ LamportFastMutEx (P/T) 300
↪ MAPK (P/T) 300
↪ NeoElection (P/T) 300
↪ PermAdmissibility (P/T) 301
↪ Peterson (P/T) 301
↪ Philosophers (P/T) 301
↪ PhilosophersDyn (P/T) 302
↪ QuasiCertifProtocol (P/T) 305
↪ Railroad (P/T) 302
↪ RessAllocation (P/T) 302
↪ Ring (P/T) 303
↪ RwMutex (P/T) 303
↪ SharedMemory (P/T) 303
↪ SimpleLoadBal (P/T) 304
↪ Vasy2003 (P/T) 305
⊸ LTLFireability 318
↪ CSRepetitions (P/T) 318
↪ Dekker (P/T) 318
↪ DrinkVendingMachine (P/T) 318
↪ Echo (P/T) 319
↪ Eratosthenes (P/T) 319
↪ FMS (P/T) 319
↪ GlobalRessAlloc (P/T) 320
↪ HouseConstruction (P/T) 325
↪ IBMB2S565S3960 (P/T) 326
↪ Kanban (P/T) 320
↪ LamportFastMutEx (P/T) 321
↪ MAPK (P/T) 321
↪ NeoElection (P/T) 321
↪ PermAdmissibility (P/T) 322
↪ Peterson (P/T) 322
↪ Philosophers (P/T) 322
↪ PhilosophersDyn (P/T) 323
↪ QuasiCertifProtocol (P/T) 326
↪ Railroad (P/T) 323
↪ RessAllocation (P/T) 323
↪ Ring (P/T) 324
↪ RwMutex (P/T) 324
↪ SharedMemory (P/T) 324
↪ SimpleLoadBal (P/T) 325
↪ TokenRing (P/T) 325
↪ Vasy2003 (P/T) 326
⊸ LTLMarkingComparison 339
↪ CSRepetitions (P/T) 339
↪ DrinkVendingMachine (P/T) 339
↪ GlobalRessAlloc (P/T) 340
↪ LamportFastMutEx (P/T) 340
↪ NeoElection (P/T) 341
↪ PermAdmissibility (P/T) 341
↪ Peterson (P/T) 341
↪ Philosophers (P/T) 342
↪ PhilosophersDyn (P/T) 342
↪ QuasiCertifProtocol (P/T) 344
↪ SharedMemory (P/T) 343
↪ SimpleLoadBal (P/T) 343
↪ TokenRing (P/T) 343
⊸ LTLMix 378
↪ CSRepetitions (P/T) 378
↪ Dekker (P/T) 378

↪ DrinkVendingMachine (P/T) 378
↪ Echo (P/T) 379
↪ Eratosthenes (P/T) 379
↪ FMS (P/T) 379
↪ GlobalRessAlloc (P/T) 380
↪ HouseConstruction (P/T) 385
↪ IBMB2S565S3960 (P/T) 385
↪ Kanban (P/T) 380
↪ LamportFastMutEx (P/T) 381
↪ MAPK (P/T) 381
↪ NeoElection (P/T) 381
↪ PermAdmissibility (P/T) 382
↪ Peterson (P/T) 382
↪ Philosophers (P/T) 382
↪ PhilosophersDyn (P/T) 383
↪ QuasiCertifProtocol (P/T) 386
↪ Railroad (P/T) 383
↪ RessAllocation (P/T) 383
↪ Ring (P/T) 383
↪ RwMutex (P/T) 384
↪ SharedMemory (P/T) 384
↪ SimpleLoadBal (P/T) 384
↪ TokenRing (P/T) 385
↪ Vasy2003 (P/T) 386
⊸ LTLPlaceComparison 357
↪ CSRepetitions (P/T) 357
↪ Dekker (P/T) 357
↪ DrinkVendingMachine (P/T) 357
↪ Echo (P/T) 358
↪ Eratosthenes (P/T) 358
↪ FMS (P/T) 358
↪ GlobalRessAlloc (P/T) 359
↪ HouseConstruction (P/T) 364
↪ IBMB2S565S3960 (P/T) 364
↪ Kanban (P/T) 359
↪ LamportFastMutEx (P/T) 360
↪ MAPK (P/T) 360
↪ NeoElection (P/T) 360
↪ PermAdmissibility (P/T) 361
↪ Peterson (P/T) 361
↪ Philosophers (P/T) 361
↪ PhilosophersDyn (P/T) 362
↪ QuasiCertifProtocol (P/T) 365
↪ Railroad (P/T) 362
↪ RessAllocation (P/T) 362
↪ Ring (P/T) 363
↪ RwMutex (P/T) 363
↪ SharedMemory (P/T) 363
↪ SimpleLoadBal (P/T) 364
↪ Vasy2003 (P/T) 365
⊸ ReachabilityCardinalityComparison 53
↪ CSRepetitions (Colored) 53
↪ CSRepetitions (P/T) 53
↪ Dekker (P/T) 53
↪ DotAndBoxes (Colored) 54
↪ DrinkVendingMachine (Colored) 54
↪ DrinkVendingMachine (P/T) 54
↪ Echo (P/T) 54
↪ Eratosthenes (P/T) 55
↪ FMS (P/T) 55
↪ GlobalRessAlloc (Colored) 55
↪ GlobalRessAlloc (P/T) 56
↪ HouseConstruction (P/T) 63
↪ IBMB2S565S3960 (P/T) 63
↪ Kanban (P/T) 56
↪ LamportFastMutEx (Colored) 56
↪ LamportFastMutEx (P/T) 57
↪ MAPK (P/T) 57
↪ NeoElection (Colored) 57
↪ NeoElection (P/T) 58
↪ PermAdmissibility (Colored) 58
↪ PermAdmissibility (P/T) 58
↪ Peterson (Colored) 59
↪ Peterson (P/T) 59
↪ Philosophers (P/T) 59
↪ PhilosophersDyn (P/T) 60
↪ QuasiCertifProtocol (P/T) 63
↪ Railroad (P/T) 60
↪ RessAllocation (P/T) 60
↪ Ring (P/T) 61
↪ RwMutex (P/T) 61
↪ SharedMemory (P/T) 61
↪ SimpleLoadBal (Colored) 62
↪ SimpleLoadBal (P/T) 62
↪ Vasy2003 (P/T) 64
⊸ ReachabilityDeadlock 77
↪ CSRepetitions (Colored) 77
↪ CSRepetitions (P/T) 77
↪ Dekker (P/T) 77
↪ DotAndBoxes (Colored) 78
↪ DrinkVendingMachine (Colored) 78
↪ DrinkVendingMachine (P/T) 78
↪ Echo (P/T) 78
↪ Eratosthenes (P/T) 79
↪ FMS (P/T) 79
↪ GlobalRessAlloc (Colored) 79
↪ GlobalRessAlloc (P/T) 80
↪ HouseConstruction (P/T) 87
↪ IBMB2S565S3960 (P/T) 87
↪ Kanban (P/T) 80
↪ LamportFastMutEx (Colored) 80
↪ LamportFastMutEx (P/T) 81
↪ MAPK (P/T) 81
↪ NeoElection (Colored) 81
↪ NeoElection (P/T) 82
↪ PermAdmissibility (Colored) 82
↪ PermAdmissibility (P/T) 82
↪ Peterson (Colored) 83
↪ Peterson (P/T) 83
↪ Philosophers (P/T) 83
↪ PhilosophersDyn (P/T) 84
↪ QuasiCertifProtocol (P/T) 87

↪ Railroad (P/T) 84
↪ RessAllocation (P/T) 84
↪ Ring (P/T) 85
↪ RwMutex (P/T) 85
↪ SharedMemory (P/T) 85
↪ SimpleLoadBal (Colored) 86
↪ SimpleLoadBal (P/T) 86
↪ TokenRing (P/T) 86
↪ Vasy2003 (P/T) 88
—○ ReachabilityFireability 101
↪ CSRepetitions (Colored) 101
↪ CSRepetitions (P/T) 101
↪ Dekker (P/T) 101
↪ DotAndBoxes (Colored) 102
↪ DrinkVendingMachine (Colored) ... 102
↪ DrinkVendingMachine (P/T) 102
↪ Echo (P/T) 102
↪ Eratosthenes (P/T) 103
↪ FMS (P/T) 103
↪ GlobalRessAlloc (Colored) 103
↪ GlobalRessAlloc (P/T) 104
↪ HouseConstruction (P/T) 111
↪ IBMB2S565S3960 (P/T) 111
↪ Kanban (P/T) 104
↪ LamportFastMutEx (Colored) 104
↪ LamportFastMutEx (P/T) 105
↪ MAPK (P/T) 105
↪ NeoElection (Colored) 105
↪ NeoElection (P/T) 106
↪ PermAdmissibility (Colored) 106
↪ PermAdmissibility (P/T) 106
↪ Peterson (Colored) 107
↪ Peterson (P/T) 107
↪ Philosophers (P/T) 107
↪ PhilosophersDyn (P/T) 108
↪ QuasiCertifProtocol (P/T) 111
↪ Railroad (P/T) 108
↪ RessAllocation (P/T) 108
↪ Ring (P/T) 109
↪ RwMutex (P/T) 109
↪ SharedMemory (P/T) 109
↪ SimpleLoadBal (Colored) 110
↪ SimpleLoadBal (P/T) 110
↪ TokenRing (P/T) 110
↪ Vasy2003 (P/T) 112
—○ ReachabilityMarkingComparison 125
↪ CSRepetitions (P/T) 125
↪ DrinkVendingMachine (P/T) 125
↪ GlobalRessAlloc (P/T) 126
↪ LamportFastMutEx (P/T) 126
↪ NeoElection (P/T) 127
↪ PermAdmissibility (P/T) 127
↪ Peterson (P/T) 127
↪ Philosophers (P/T) 128
↪ PhilosophersDyn (P/T) 128
↪ QuasiCertifProtocol (P/T) 130
↪ SharedMemory (P/T) 129
↪ SimpleLoadBal (P/T) 129
↪ TokenRing (P/T) 129
—○ ReachabilityMix 167
↪ CSRepetitions (Colored) 167
↪ CSRepetitions (P/T) 167
↪ Dekker (P/T) 167
↪ DotAndBoxes (Colored) 168
↪ DrinkVendingMachine (Colored) ... 168
↪ DrinkVendingMachine (P/T) 168
↪ Echo (P/T) 168
↪ Eratosthenes (P/T) 169
↪ FMS (P/T) 169
↪ GlobalRessAlloc (P/T) 169
↪ HouseConstruction (P/T) 176
↪ IBMB2S565S3960 (P/T) 177
↪ Kanban (P/T) 170
↪ LamportFastMutEx (Colored) 170
↪ LamportFastMutEx (P/T) 170
↪ MAPK (P/T) 171
↪ NeoElection (Colored) 171
↪ NeoElection (P/T) 171
↪ PermAdmissibility (Colored) 172
↪ PermAdmissibility (P/T) 172
↪ Peterson (Colored) 172
↪ Peterson (P/T) 173
↪ Philosophers (P/T) 173
↪ PhilosophersDyn (P/T) 174
↪ QuasiCertifProtocol (P/T) 177
↪ Railroad (P/T) 174
↪ RessAllocation (P/T) 174
↪ Ring (P/T) 174
↪ RwMutex (P/T) 175
↪ SharedMemory (P/T) 175
↪ SimpleLoadBal (Colored) 175
↪ SimpleLoadBal (P/T) 176
↪ TokenRing (P/T) 176
↪ Vasy2003 (P/T) 177
—○ ReachabilityPlaceComparison 143
↪ CSRepetitions (Colored) 143
↪ CSRepetitions (P/T) 143
↪ Dekker (P/T) 143
↪ DotAndBoxes (Colored) 144
↪ DrinkVendingMachine (Colored) ... 144
↪ DrinkVendingMachine (P/T) 144
↪ Echo (P/T) 144
↪ Eratosthenes (P/T) 145
↪ FMS (P/T) 145
↪ GlobalRessAlloc (Colored) 145
↪ GlobalRessAlloc (P/T) 146
↪ HouseConstruction (P/T) 153
↪ IBMB2S565S3960 (P/T) 153
↪ Kanban (P/T) 146
↪ LamportFastMutEx (Colored) 146
↪ LamportFastMutEx (P/T) 147
↪ MAPK (P/T) 147

↪ NeoElection (Colored) 147
↪ NeoElection (P/T) 148
↪ PermAdmissibility (Colored) 148
↪ PermAdmissibility (P/T) 148
↪ Peterson (Colored) 149
↪ Peterson (P/T) 149
↪ Philosophers (P/T) 149
↪ PhilosophersDyn (P/T) 150
↪ QuasiCertifProtocol (P/T) 153
↪ Railroad (P/T) 150
↪ RessAllocation (P/T) 150
↪ Ring (P/T) 151
↪ RwMutex (P/T) 151
↪ SharedMemory (P/T) 151
↪ SimpleLoadBal (Colored) 152
↪ SimpleLoadBal (P/T) 152
↪ Vasy2003 (P/T) 154
—○ StateSpace 25
↪ CSRepetitions (Colored) 25
↪ CSRepetitions (P/T) 25
↪ Dekker (P/T) 25
↪ DotAndBoxes (Colored) 26
↪ DrinkVendingMachine (Colored) 26
↪ DrinkVendingMachine (P/T) 26
↪ Eratosthenes (P/T) 26
↪ FMS (P/T) 27
↪ GlobalRessAlloc (Colored) 27
↪ GlobalRessAlloc (P/T) 27
↪ HouseConstruction (P/T) 36
↪ IBMB2S565S3960 (P/T) 36
↪ Kanban (P/T) 28
↪ LamportFastMutEx (Colored) 28
↪ LamportFastMutEx (P/T) 28
↪ MAPK (P/T) 29
↪ NeoElection (Colored) 29
↪ NeoElection (P/T) 29
↪ PermAdmissibility (Colored) 30
↪ PermAdmissibility (P/T) 30
↪ Peterson (Colored) 30
↪ Peterson (P/T) 31
↪ Philosophers (Colored) 31
↪ Philosophers (P/T) 31
↪ PhilosophersDyn (Colored) 32
↪ PhilosophersDyn (P/T) 32
↪ QuasiCertifProtocol (P/T) 36
↪ Railroad (P/T) 32
↪ RessAllocation (P/T) 33
↪ Ring (P/T) 33
↪ RwMutex (P/T) 33
↪ SharedMemory (Colored) 34
↪ SharedMemory (P/T) 34
↪ SimpleLoadBal (Colored) 34
↪ SimpleLoadBal (P/T) 35
↪ TokenRing (Colored) 35
↪ TokenRing (P/T) 35
↪ Vasy2003 (P/T) 37

—R—

○— Results
—○ CTLCardinalityComparison 193
—○ CTLFireability 214
—○ CTLMarkingComparison 235
—○ CTLMix 274
—○ CTLPlaceComparison 253
—○ LTLCardinalityComparison 297
—○ LTLFireability 318
—○ LTLMarkingComparison 339
—○ LTLMix 378
—○ LTLPlaceComparison 357
—○ ReachabilityCardinalityComparison 53
—○ ReachabilityDeadlock 77
—○ ReachabilityFireability 101
—○ ReachabilityMarkingComparison 125
—○ ReachabilityMix 167
—○ ReachabilityPlaceComparison 143
—○ StateSpace 25

—S—

○— Scores
—○ CTLCardinalityComparison 207
↪ CSRepetitions (colored) 208
↪ CSRepetitions (P/T) 208
↪ Dekker (P/T) 208
↪ DotAndBoxes (colored) 208
↪ DrinkVendingMachine (colored) 208
↪ DrinkVendingMachine (P/T) 208
↪ Echo (P/T) 208
↪ Eratosthenes (P/T) 208
↪ FMS (P/T) 208
↪ GlobalRessAlloc (colored) 209
↪ GlobalRessAlloc (P/T) 209
↪ HouseConstruction (P/T) 212
↪ IBMB2S565S3960 (P/T) 212
↪ Kanban (P/T) 209
↪ LamportFastMutEx (colored) 209
↪ LamportFastMutEx (P/T) 209
↪ MAPK (P/T) 209
↪ NeoElection (colored) 209
↪ NeoElection (P/T) 209
↪ PermAdmissibility (colored) 210
↪ PermAdmissibility (P/T) 210
↪ Peterson (colored) 210
↪ Peterson (P/T) 210
↪ Philosophers (colored) 210
↪ Philosophers (P/T) 210
↪ PhilosophersDyn (colored) 210
↪ PhilosophersDyn (P/T) 210
↪ Planning (P/T) 210
↪ QuasiCertifProtocol (colored) 212
↪ QuasiCertifProtocol (P/T) 212
↪ Railroad (P/T) 211
↪ RessAllocation (P/T) 211
↪ Ring (P/T) 211
↪ RwMutex (P/T) 211

↪ SharedMemory (colored) 211
↪ SharedMemory (P/T) 211
↪ SimpleLoadBal (colored) 211
↪ SimpleLoadBal (P/T) 211
↪ TokenRing (colored) 212
↪ TokenRing (P/T) 212
↪ Vasy2003 (P/T) 212
—○ CTLFireability 229
↪ CSRepetitions (colored) 229
↪ CSRepetitions (P/T) 229
↪ Dekker (P/T) 229
↪ DotAndBoxes (colored) 229
↪ DrinkVendingMachine (colored) 229
↪ DrinkVendingMachine (P/T) 229
↪ Echo (P/T) 230
↪ Eratosthenes (P/T) 230
↪ FMS (P/T) 230
↪ GlobalRessAlloc (colored) 230
↪ GlobalRessAlloc (P/T) 230
↪ HouseConstruction (P/T) 233
↪ IBMB2S565S3960 (P/T) 233
↪ Kanban (P/T) 230
↪ LamportFastMutEx (colored) 230
↪ LamportFastMutEx (P/T) 230
↪ MAPK (P/T) 230
↪ NeoElection (colored) 231
↪ NeoElection (P/T) 231
↪ PermAdmissibility (colored) 231
↪ PermAdmissibility (P/T) 231
↪ Peterson (colored) 231
↪ Peterson (P/T) 231
↪ Philosophers (colored) 231
↪ Philosophers (P/T) 231
↪ PhilosophersDyn (colored) 232
↪ PhilosophersDyn (P/T) 232
↪ Planning (P/T) 232
↪ QuasiCertifProtocol (colored) 233
↪ QuasiCertifProtocol (P/T) 234
↪ Railroad (P/T) 232
↪ RessAllocation (P/T) 232
↪ Ring (P/T) 232
↪ RwMutex (P/T) 232
↪ SharedMemory (colored) 232
↪ SharedMemory (P/T) 232
↪ SimpleLoadBal (colored) 233
↪ SimpleLoadBal (P/T) 233
↪ TokenRing (colored) 233
↪ TokenRing (P/T) 233
↪ Vasy2003 (P/T) 234
—○ CTLMarkingComparison 246
↪ CSRepetitions (colored) 246
↪ CSRepetitions (P/T) 247
↪ Dekker (P/T) 247
↪ DotAndBoxes (colored) 247
↪ DrinkVendingMachine (colored) 247
↪ DrinkVendingMachine (P/T) 247
↪ Echo (P/T) 247
↪ Eratosthenes (P/T) 247
↪ FMS (P/T) 247
↪ GlobalRessAlloc (colored) 247
↪ GlobalRessAlloc (P/T) 248
↪ HouseConstruction (P/T) 251
↪ IBMB2S565S3960 (P/T) 251
↪ Kanban (P/T) 248
↪ LamportFastMutEx (colored) 248
↪ LamportFastMutEx (P/T) 248
↪ MAPK (P/T) 248
↪ NeoElection (colored) 248
↪ NeoElection (P/T) 248
↪ PermAdmissibility (colored) 248
↪ PermAdmissibility (P/T) 249
↪ Peterson (colored) 249
↪ Peterson (P/T) 249
↪ Philosophers (colored) 249
↪ Philosophers (P/T) 249
↪ PhilosophersDyn (colored) 249
↪ PhilosophersDyn (P/T) 249
↪ Planning (P/T) 249
↪ QuasiCertifProtocol (colored) 251
↪ QuasiCertifProtocol (P/T) 251
↪ Railroad (P/T) 249
↪ RessAllocation (P/T) 250
↪ Ring (P/T) 250
↪ RwMutex (P/T) 250
↪ SharedMemory (colored) 250
↪ SharedMemory (P/T) 250
↪ SimpleLoadBal (colored) 250
↪ SimpleLoadBal (P/T) 250
↪ TokenRing (colored) 250
↪ TokenRing (P/T) 250
↪ Vasy2003 (P/T) 251
—○ CTLMix 288
↪ CSRepetitions (colored) 289
↪ CSRepetitions (P/T) 289
↪ Dekker (P/T) 289
↪ DotAndBoxes (colored) 289
↪ DrinkVendingMachine (colored) 289
↪ DrinkVendingMachine (P/T) 289
↪ Echo (P/T) 289
↪ Eratosthenes (P/T) 290
↪ FMS (P/T) 290
↪ GlobalRessAlloc (colored) 290
↪ GlobalRessAlloc (P/T) 290
↪ HouseConstruction (P/T) 293
↪ IBMB2S565S3960 (P/T) 293
↪ Kanban (P/T) 290
↪ LamportFastMutEx (colored) 290
↪ LamportFastMutEx (P/T) 290
↪ MAPK (P/T) 290
↪ NeoElection (colored) 290
↪ NeoElection (P/T) 291
↪ PermAdmissibility (colored) 291

↪ PermAdmissibility (P/T) 291
↪ Peterson (colored) 291
↪ Peterson (P/T) 291
↪ Philosophers (colored) 291
↪ Philosophers (P/T) 291
↪ PhilosophersDyn (colored) 291
↪ PhilosophersDyn (P/T) 292
↪ Planning (P/T) 292
↪ QuasiCertifProtocol (colored) 293
↪ QuasiCertifProtocol (P/T) 293
↪ Railroad (P/T) 292
↪ RessAllocation (P/T) 292
↪ Ring (P/T) 292
↪ RwMutex (P/T) 292
↪ SharedMemory (colored) 292
↪ SharedMemory (P/T) 292
↪ SimpleLoadBal (colored) 292
↪ SimpleLoadBal (P/T) 293
↪ TokenRing (colored) 293
↪ TokenRing (P/T) 293
↪ Vasy2003 (P/T) 294
⊸ CTLPlaceComparison 267
↪ CSRepetitions (colored) 268
↪ CSRepetitions (P/T) 268
↪ Dekker (P/T) 268
↪ DotAndBoxes (colored) 268
↪ DrinkVendingMachine (colored) 268
↪ DrinkVendingMachine (P/T) 268
↪ Echo (P/T) 268
↪ Eratosthenes (P/T) 268
↪ FMS (P/T) 268
↪ GlobalRessAlloc (colored) 269
↪ GlobalRessAlloc (P/T) 269
↪ HouseConstruction (P/T) 272
↪ IBMB2S565S3960 (P/T) 272
↪ Kanban (P/T) 269
↪ LamportFastMutEx (colored) 269
↪ LamportFastMutEx (P/T) 269
↪ MAPK (P/T) 269
↪ NeoElection (colored) 269
↪ NeoElection (P/T) 269
↪ PermAdmissibility (colored) 270
↪ PermAdmissibility (P/T) 270
↪ Peterson (colored) 270
↪ Peterson (P/T) 270
↪ Philosophers (colored) 270
↪ Philosophers (P/T) 270
↪ PhilosophersDyn (colored) 270
↪ PhilosophersDyn (P/T) 270
↪ Planning (P/T) 270
↪ QuasiCertifProtocol (colored) 272
↪ QuasiCertifProtocol (P/T) 272
↪ Railroad (P/T) 271
↪ RessAllocation (P/T) 271
↪ Ring (P/T) 271
↪ RwMutex (P/T) 271
↪ SharedMemory (colored) 271
↪ SharedMemory (P/T) 271
↪ SimpleLoadBal (colored) 271
↪ SimpleLoadBal (P/T) 271
↪ TokenRing (colored) 272
↪ TokenRing (P/T) 272
↪ Vasy2003 (P/T) 272
⊸ LTLCardinalityComparison 311
↪ CSRepetitions (colored) 312
↪ CSRepetitions (P/T) 312
↪ Dekker (P/T) 312
↪ DotAndBoxes (colored) 312
↪ DrinkVendingMachine (colored) 312
↪ DrinkVendingMachine (P/T) 312
↪ Echo (P/T) 312
↪ Eratosthenes (P/T) 312
↪ FMS (P/T) 312
↪ GlobalRessAlloc (colored) 313
↪ GlobalRessAlloc (P/T) 313
↪ HouseConstruction (P/T) 316
↪ IBMB2S565S3960 (P/T) 316
↪ Kanban (P/T) 313
↪ LamportFastMutEx (colored) 313
↪ LamportFastMutEx (P/T) 313
↪ MAPK (P/T) 313
↪ NeoElection (colored) 313
↪ NeoElection (P/T) 313
↪ PermAdmissibility (colored) 314
↪ PermAdmissibility (P/T) 314
↪ Peterson (colored) 314
↪ Peterson (P/T) 314
↪ Philosophers (colored) 314
↪ Philosophers (P/T) 314
↪ PhilosophersDyn (colored) 314
↪ PhilosophersDyn (P/T) 314
↪ Planning (P/T) 314
↪ QuasiCertifProtocol (colored) 316
↪ QuasiCertifProtocol (P/T) 316
↪ Railroad (P/T) 315
↪ RessAllocation (P/T) 315
↪ Ring (P/T) 315
↪ RwMutex (P/T) 315
↪ SharedMemory (colored) 315
↪ SharedMemory (P/T) 315
↪ SimpleLoadBal (colored) 315
↪ SimpleLoadBal (P/T) 315
↪ TokenRing (colored) 316
↪ TokenRing (P/T) 316
↪ Vasy2003 (P/T) 316
⊸ LTLFireability 333
↪ CSRepetitions (colored) 333
↪ CSRepetitions (P/T) 333
↪ Dekker (P/T) 333
↪ DotAndBoxes (colored) 333
↪ DrinkVendingMachine (colored) 333
↪ DrinkVendingMachine (P/T) 333

↪ Echo (P/T) 334
↪ Eratosthenes (P/T) 334
↪ FMS (P/T) 334
↪ GlobalRessAlloc (colored) 334
↪ GlobalRessAlloc (P/T) 334
↪ HouseConstruction (P/T) 337
↪ IBMB2S565S3960 (P/T) 337
↪ Kanban (P/T) 334
↪ LamportFastMutEx (colored) 334
↪ LamportFastMutEx (P/T) 334
↪ MAPK (P/T) 334
↪ NeoElection (colored) 335
↪ NeoElection (P/T) 335
↪ PermAdmissibility (colored) 335
↪ PermAdmissibility (P/T) 335
↪ Peterson (colored) 335
↪ Peterson (P/T) 335
↪ Philosophers (colored) 335
↪ Philosophers (P/T) 335
↪ PhilosophersDyn (colored) 336
↪ PhilosophersDyn (P/T) 336
↪ Planning (P/T) 336
↪ QuasiCertifProtocol (colored) 337
↪ QuasiCertifProtocol (P/T) 338
↪ Railroad (P/T) 336
↪ RessAllocation (P/T) 336
↪ Ring (P/T) 336
↪ RwMutex (P/T) 336
↪ SharedMemory (colored) 336
↪ SharedMemory (P/T) 336
↪ SimpleLoadBal (colored) 337
↪ SimpleLoadBal (P/T) 337
↪ TokenRing (colored) 337
↪ TokenRing (P/T) 337
↪ Vasy2003 (P/T) 338
⊸ LTLMarkingComparison 350
↪ CSRepetitions (colored) 350
↪ CSRepetitions (P/T) 351
↪ Dekker (P/T) 351
↪ DotAndBoxes (colored) 351
↪ DrinkVendingMachine (colored) 351
↪ DrinkVendingMachine (P/T) 351
↪ Echo (P/T) 351
↪ Eratosthenes (P/T) 351
↪ FMS (P/T) 351
↪ GlobalRessAlloc (colored) 351
↪ GlobalRessAlloc (P/T) 352
↪ HouseConstruction (P/T) 355
↪ IBMB2S565S3960 (P/T) 355
↪ Kanban (P/T) 352
↪ LamportFastMutEx (colored) 352
↪ LamportFastMutEx (P/T) 352
↪ MAPK (P/T) 352
↪ NeoElection (colored) 352
↪ NeoElection (P/T) 352
↪ PermAdmissibility (colored) 352
↪ PermAdmissibility (P/T) 353
↪ Peterson (colored) 353
↪ Peterson (P/T) 353
↪ Philosophers (colored) 353
↪ Philosophers (P/T) 353
↪ PhilosophersDyn (colored) 353
↪ PhilosophersDyn (P/T) 353
↪ Planning (P/T) 353
↪ QuasiCertifProtocol (colored) 355
↪ QuasiCertifProtocol (P/T) 355
↪ Railroad (P/T) 353
↪ RessAllocation (P/T) 354
↪ Ring (P/T) 354
↪ RwMutex (P/T) 354
↪ SharedMemory (colored) 354
↪ SharedMemory (P/T) 354
↪ SimpleLoadBal (colored) 354
↪ SimpleLoadBal (P/T) 354
↪ TokenRing (colored) 354
↪ TokenRing (P/T) 354
↪ Vasy2003 (P/T) 355
⊸ LTLMix 392
↪ CSRepetitions (colored) 393
↪ CSRepetitions (P/T) 393
↪ Dekker (P/T) 393
↪ DotAndBoxes (colored) 393
↪ DrinkVendingMachine (colored) 393
↪ DrinkVendingMachine (P/T) 393
↪ Echo (P/T) 393
↪ Eratosthenes (P/T) 394
↪ FMS (P/T) 394
↪ GlobalRessAlloc (colored) 394
↪ GlobalRessAlloc (P/T) 394
↪ HouseConstruction (P/T) 397
↪ IBMB2S565S3960 (P/T) 397
↪ Kanban (P/T) 394
↪ LamportFastMutEx (colored) 394
↪ LamportFastMutEx (P/T) 394
↪ MAPK (P/T) 394
↪ NeoElection (colored) 394
↪ NeoElection (P/T) 395
↪ PermAdmissibility (colored) 395
↪ PermAdmissibility (P/T) 395
↪ Peterson (colored) 395
↪ Peterson (P/T) 395
↪ Philosophers (colored) 395
↪ Philosophers (P/T) 395
↪ PhilosophersDyn (colored) 395
↪ PhilosophersDyn (P/T) 396
↪ Planning (P/T) 396
↪ QuasiCertifProtocol (colored) 397
↪ QuasiCertifProtocol (P/T) 397
↪ Railroad (P/T) 396
↪ RessAllocation (P/T) 396
↪ Ring (P/T) 396
↪ RwMutex (P/T) 396

↪ SharedMemory (colored) 396
↪ SharedMemory (P/T) 396
↪ SimpleLoadBal (colored) 396
↪ SimpleLoadBal (P/T) 397
↪ TokenRing (colored) 397
↪ TokenRing (P/T) 397
↪ Vasy2003 (P/T) 398
—○ LTLPlaceComparison 371
↪ CSRepetitions (colored) 372
↪ CSRepetitions (P/T) 372
↪ Dekker (P/T) 372
↪ DotAndBoxes (colored) 372
↪ DrinkVendingMachine (colored) 372
↪ DrinkVendingMachine (P/T) 372
↪ Echo (P/T) 372
↪ Eratosthenes (P/T) 372
↪ FMS (P/T) 372
↪ GlobalRessAlloc (colored) 373
↪ GlobalRessAlloc (P/T) 373
↪ HouseConstruction (P/T) 376
↪ IBMB2S565S3960 (P/T) 376
↪ Kanban (P/T) 373
↪ LamportFastMutEx (colored) 373
↪ LamportFastMutEx (P/T) 373
↪ MAPK (P/T) 373
↪ NeoElection (colored) 373
↪ NeoElection (P/T) 373
↪ PermAdmissibility (colored) 374
↪ PermAdmissibility (P/T) 374
↪ Peterson (colored) 374
↪ Peterson (P/T) 374
↪ Philosophers (colored) 374
↪ Philosophers (P/T) 374
↪ PhilosophersDyn (colored) 374
↪ PhilosophersDyn (P/T) 374
↪ Planning (P/T) 374
↪ QuasiCertifProtocol (colored) 376
↪ QuasiCertifProtocol (P/T) 376
↪ Railroad (P/T) 375
↪ RessAllocation (P/T) 375
↪ Ring (P/T) 375
↪ RwMutex (P/T) 375
↪ SharedMemory (colored) 375
↪ SharedMemory (P/T) 375
↪ SimpleLoadBal (colored) 375
↪ SimpleLoadBal (P/T) 375
↪ TokenRing (colored) 376
↪ TokenRing (P/T) 376
↪ Vasy2003 (P/T) 376
—○ ReachabilityCardinalityComparison 70
↪ CSRepetitions (colored) 70
↪ CSRepetitions (P/T) 70
↪ Dekker (P/T) 70
↪ DotAndBoxes (colored) 71
↪ DrinkVendingMachine (colored) 71
↪ DrinkVendingMachine (P/T) 71
↪ Echo (P/T) 71
↪ Eratosthenes (P/T) 71
↪ FMS (P/T) 71
↪ GlobalRessAlloc (colored) 71
↪ GlobalRessAlloc (P/T) 71
↪ HouseConstruction (P/T) 74
↪ IBMB2S565S3960 (P/T) 75
↪ Kanban (P/T) 71
↪ LamportFastMutEx (colored) 72
↪ LamportFastMutEx (P/T) 72
↪ MAPK (P/T) 72
↪ NeoElection (colored) 72
↪ NeoElection (P/T) 72
↪ PermAdmissibility (colored) 72
↪ PermAdmissibility (P/T) 72
↪ Peterson (colored) 72
↪ Peterson (P/T) 73
↪ Philosophers (colored) 73
↪ Philosophers (P/T) 73
↪ PhilosophersDyn (colored) 73
↪ PhilosophersDyn (P/T) 73
↪ Planning (P/T) 73
↪ QuasiCertifProtocol (colored) 75
↪ QuasiCertifProtocol (P/T) 75
↪ Railroad (P/T) 73
↪ RessAllocation (P/T) 73
↪ Ring (P/T) 73
↪ RwMutex (P/T) 74
↪ SharedMemory (colored) 74
↪ SharedMemory (P/T) 74
↪ SimpleLoadBal (colored) 74
↪ SimpleLoadBal (P/T) 74
↪ TokenRing (colored) 74
↪ TokenRing (P/T) 74
↪ Vasy2003 (P/T) 75
—○ ReachabilityDeadlock 94
↪ CSRepetitions (colored) 94
↪ CSRepetitions (P/T) 95
↪ Dekker (P/T) 95
↪ DotAndBoxes (colored) 95
↪ DrinkVendingMachine (colored) 95
↪ DrinkVendingMachine (P/T) 95
↪ Echo (P/T) 95
↪ Eratosthenes (P/T) 95
↪ FMS (P/T) 95
↪ GlobalRessAlloc (colored) 95
↪ GlobalRessAlloc (P/T) 96
↪ HouseConstruction (P/T) 99
↪ IBMB2S565S3960 (P/T) 99
↪ Kanban (P/T) 96
↪ LamportFastMutEx (colored) 96
↪ LamportFastMutEx (P/T) 96
↪ MAPK (P/T) 96
↪ NeoElection (colored) 96
↪ NeoElection (P/T) 96
↪ PermAdmissibility (colored) 96

↪ PermAdmissibility (P/T) 97
↪ Peterson (colored) 97
↪ Peterson (P/T) 97
↪ Philosophers (colored) 97
↪ Philosophers (P/T) 97
↪ PhilosophersDyn (colored) 97
↪ PhilosophersDyn (P/T) 97
↪ Planning (P/T) 97
↪ QuasiCertifProtocol (colored) 99
↪ QuasiCertifProtocol (P/T) 99
↪ Railroad (P/T) 97
↪ RessAllocation (P/T) 98
↪ Ring (P/T) 98
↪ RwMutex (P/T) 98
↪ SharedMemory (colored) 98
↪ SharedMemory (P/T) 98
↪ SimpleLoadBal (colored) 98
↪ SimpleLoadBal (P/T) 98
↪ TokenRing (colored) 98
↪ TokenRing (P/T) 98
↪ Vasy2003 (P/T) 99
⊸ ReachabilityFireability 118
↪ CSRepetitions (colored) 118
↪ CSRepetitions (P/T) 119
↪ Dekker (P/T) 119
↪ DotAndBoxes (colored) 119
↪ DrinkVendingMachine (colored) 119
↪ DrinkVendingMachine (P/T) 119
↪ Echo (P/T) 119
↪ Eratosthenes (P/T) 119
↪ FMS (P/T) 119
↪ GlobalRessAlloc (colored) 119
↪ GlobalRessAlloc (P/T) 120
↪ HouseConstruction (P/T) 123
↪ IBMB2S565S3960 (P/T) 123
↪ Kanban (P/T) 120
↪ LamportFastMutEx (colored) 120
↪ LamportFastMutEx (P/T) 120
↪ MAPK (P/T) 120
↪ NeoElection (colored) 120
↪ NeoElection (P/T) 120
↪ PermAdmissibility (colored) 120
↪ PermAdmissibility (P/T) 121
↪ Peterson (colored) 121
↪ Peterson (P/T) 121
↪ Philosophers (colored) 121
↪ Philosophers (P/T) 121
↪ PhilosophersDyn (colored) 121
↪ PhilosophersDyn (P/T) 121
↪ Planning (P/T) 121
↪ QuasiCertifProtocol (colored) 123
↪ QuasiCertifProtocol (P/T) 123
↪ Railroad (P/T) 121
↪ RessAllocation (P/T) 122
↪ Ring (P/T) 122
↪ RwMutex (P/T) 122
↪ SharedMemory (colored) 122
↪ SharedMemory (P/T) 122
↪ SimpleLoadBal (colored) 122
↪ SimpleLoadBal (P/T) 122
↪ TokenRing (colored) 122
↪ TokenRing (P/T) 122
↪ Vasy2003 (P/T) 123
⊸ ReachabilityMarkingComparison 136
↪ CSRepetitions (colored) 136
↪ CSRepetitions (P/T) 137
↪ Dekker (P/T) 137
↪ DotAndBoxes (colored) 137
↪ DrinkVendingMachine (colored) 137
↪ DrinkVendingMachine (P/T) 137
↪ Echo (P/T) 137
↪ Eratosthenes (P/T) 137
↪ FMS (P/T) 137
↪ GlobalRessAlloc (colored) 137
↪ GlobalRessAlloc (P/T) 138
↪ HouseConstruction (P/T) 141
↪ IBMB2S565S3960 (P/T) 141
↪ Kanban (P/T) 138
↪ LamportFastMutEx (colored) 138
↪ LamportFastMutEx (P/T) 138
↪ MAPK (P/T) 138
↪ NeoElection (colored) 138
↪ NeoElection (P/T) 138
↪ PermAdmissibility (colored) 138
↪ PermAdmissibility (P/T) 139
↪ Peterson (colored) 139
↪ Peterson (P/T) 139
↪ Philosophers (colored) 139
↪ Philosophers (P/T) 139
↪ PhilosophersDyn (colored) 139
↪ PhilosophersDyn (P/T) 139
↪ Planning (P/T) 139
↪ QuasiCertifProtocol (colored) 141
↪ QuasiCertifProtocol (P/T) 141
↪ Railroad (P/T) 139
↪ RessAllocation (P/T) 140
↪ Ring (P/T) 140
↪ RwMutex (P/T) 140
↪ SharedMemory (colored) 140
↪ SharedMemory (P/T) 140
↪ SimpleLoadBal (colored) 140
↪ SimpleLoadBal (P/T) 140
↪ TokenRing (colored) 140
↪ TokenRing (P/T) 140
↪ Vasy2003 (P/T) 141
⊸ ReachabilityMix 184
↪ CSRepetitions (colored) 184
↪ CSRepetitions (P/T) 184
↪ Dekker (P/T) 184
↪ DotAndBoxes (colored) 184
↪ DrinkVendingMachine (colored) 185
↪ DrinkVendingMachine (P/T) 185

↪ Echo (P/T) 185
↪ Eratosthenes (P/T) 185
↪ FMS (P/T) 185
↪ GlobalRessAlloc (colored) 185
↪ GlobalRessAlloc (P/T) 185
↪ HouseConstruction (P/T) 188
↪ IBMB2S565S3960 (P/T) 189
↪ Kanban (P/T) 185
↪ LamportFastMutEx (colored) 186
↪ LamportFastMutEx (P/T) 186
↪ MAPK (P/T) 186
↪ NeoElection (colored) 186
↪ NeoElection (P/T) 186
↪ PermAdmissibility (colored) 186
↪ PermAdmissibility (P/T) 186
↪ Peterson (colored) 186
↪ Peterson (P/T) 186
↪ Philosophers (colored) 187
↪ Philosophers (P/T) 187
↪ PhilosophersDyn (colored) 187
↪ PhilosophersDyn (P/T) 187
↪ Planning (P/T) 187
↪ QuasiCertifProtocol (colored) 189
↪ QuasiCertifProtocol (P/T) 189
↪ Railroad (P/T) 187
↪ RessAllocation (P/T) 187
↪ Ring (P/T) 187
↪ RwMutex (P/T) 188
↪ SharedMemory (colored) 188
↪ SharedMemory (P/T) 188
↪ SimpleLoadBal (colored) 188
↪ SimpleLoadBal (P/T) 188
↪ TokenRing (colored) 188
↪ TokenRing (P/T) 188
↪ Vasy2003 (P/T) 189
—○ ReachabilityPlaceComparison 160
↪ CSRepetitions (colored) 160
↪ CSRepetitions (P/T) 160
↪ Dekker (P/T) 160
↪ DotAndBoxes (colored) 161
↪ DrinkVendingMachine (colored) 161
↪ DrinkVendingMachine (P/T) 161
↪ Echo (P/T) 161
↪ Eratosthenes (P/T) 161
↪ FMS (P/T) 161
↪ GlobalRessAlloc (colored) 161
↪ GlobalRessAlloc (P/T) 161
↪ HouseConstruction (P/T) 164
↪ IBMB2S565S3960 (P/T) 165
↪ Kanban (P/T) 161
↪ LamportFastMutEx (colored) 162
↪ LamportFastMutEx (P/T) 162
↪ MAPK (P/T) 162
↪ NeoElection (colored) 162
↪ NeoElection (P/T) 162
↪ PermAdmissibility (colored) 162
↪ PermAdmissibility (P/T) 162
↪ Peterson (colored) 162
↪ Peterson (P/T) 163
↪ Philosophers (colored) 163
↪ Philosophers (P/T) 163
↪ PhilosophersDyn (colored) 163
↪ PhilosophersDyn (P/T) 163
↪ Planning (P/T) 163
↪ QuasiCertifProtocol (colored) 165
↪ QuasiCertifProtocol (P/T) 165
↪ Railroad (P/T) 163
↪ RessAllocation (P/T) 163
↪ Ring (P/T) 163
↪ RwMutex (P/T) 164
↪ SharedMemory (colored) 164
↪ SharedMemory (P/T) 164
↪ SimpleLoadBal (colored) 164
↪ SimpleLoadBal (P/T) 164
↪ TokenRing (colored) 164
↪ TokenRing (P/T) 164
↪ Vasy2003 (P/T) 165
—○ StateSpace 43
↪ CSRepetitions (colored) 43
↪ CSRepetitions (P/T) 44
↪ Dekker (P/T) 44
↪ DotAndBoxes (colored) 44
↪ DrinkVendingMachine (colored) 44
↪ DrinkVendingMachine (P/T) 44
↪ Echo (P/T) 44
↪ Eratosthenes (P/T) 44
↪ FMS (P/T) 44
↪ GlobalRessAlloc (colored) 44
↪ GlobalRessAlloc (P/T) 45
↪ HouseConstruction (P/T) 48
↪ IBMB2S565S3960 (P/T) 48
↪ Kanban (P/T) 45
↪ LamportFastMutEx (colored) 45
↪ LamportFastMutEx (P/T) 45
↪ MAPK (P/T) 45
↪ NeoElection (colored) 45
↪ NeoElection (P/T) 45
↪ PermAdmissibility (colored) 45
↪ PermAdmissibility (P/T) 46
↪ Peterson (colored) 46
↪ Peterson (P/T) 46
↪ Philosophers (colored) 46
↪ Philosophers (P/T) 46
↪ PhilosophersDyn (colored) 46
↪ PhilosophersDyn (P/T) 46
↪ Planning (P/T) 46
↪ QuasiCertifProtocol (colored) 48
↪ QuasiCertifProtocol (P/T) 48
↪ Railroad (P/T) 46
↪ RessAllocation (P/T) 47
↪ Ring (P/T) 47
↪ RwMutex (P/T) 47

↪ SharedMemory (colored) 47
↪ SharedMemory (P/T) 47
↪ SimpleLoadBal (colored) 47
↪ SimpleLoadBal (P/T) 47
↪ TokenRing (colored) 47
↪ TokenRing (P/T) 47
↪ Vasy2003 (P/T) 48

— T —

○— Tool
—○ AlPiNA ..... iii, 13, 22, 37–48
—○ Cunf ..... iii, 13, 22, 88–99
—○ GreatSPN iii, 7, 14, 22, 37–47, 64–74, 88–98, 112–122, 130–140, 154–164, 178–188, 202–212, 223–233, 240–250, 262–272, 283–293
—○ ITS-Tools ... iii, 14, 22, 37–49, 64–74, 88–98, 112–122, 124, 154–164, 178–188
—○ LoLA ... iii, 14, 22, 64–76, 88–100, 112–124, 130–142, 154–166, 178–190, 202–213, 223–234, 240–252, 262–273, 283–294, 306–316, 327–338, 344–355, 366–376, 387–398
↪ (optimistic) . 15, 64–76, 88–100, 112–124, 130–142, 154–166, 178–190, 202–213, 223–234, 240–252, 262–273, 283–294, 306–316, 327–338, 344–355, 366–376, 387–398
↪ (pessimistic) ... 15, 37–47, 64–75, 88–99, 112–123, 130–141, 154–165, 178–189, 202–212, 223–234, 240–251, 262–272, 283–294, 306–316, 327–338, 344–355, 366–376, 387–398
↪ optimistic incomplete 15, 64–76, 88–100, 112–124, 130–141, 154–165, 178–190, 202–212, 223–234, 240–251, 262–273, 283–294, 306–316, 327–338, 344–355, 366–376, 387–398
—○ Marcie ..... iii, 15, 22, 37–49, 64–76, 88–99, 112–124, 130–142, 154–166, 178–190, 202–213, 223–234, 240–252, 262–273, 283–294
—○ Neco .. iii, 15, 22, 37–48, 306–317, 327–338, 344–356, 366–377, 387–398
—○ PNXDD ..... iii, 16, 22, 37–49
—○ Sara .... iii, 16, 22, 64–75, 88–100, 112–123, 130–142, 154–165, 178–189, 202–212, 223–234, 240–252, 262–272, 283–294, 306–316, 327–338, 344–355, 366–376, 387–398
—○ SMART 7
○— Trophies
—○ CTLCardinalityComparison 212
—○ CTLFireability 234
—○ CTLMarkingComparison 251
—○ CTLMix 294
—○ CTLPlaceComparison 272
—○ LTLCardinalityComparison 316
—○ LTLFireability 338
—○ LTLMarkingComparison 355
—○ LTLMix 398
—○ LTLPlaceComparison 376
—○ ReachabilityCardinalityComparison 75
—○ ReachabilityDeadlock 99
—○ ReachabilityFireability 123
—○ ReachabilityMarkingComparison 141
—○ ReachabilityMix 189
—○ ReachabilityPlaceComparison 165
—○ StateSpace 48